Housing, Husbandry, and Welfare of Sheep and Goats

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S1 16126 (sheep or ovin? or ewe or ewes or ram or rams or wether? or goat? or lamb? or kid or kids or kidding) in de,ti
S2 39268 (house? or facilit? or struct? or pen or pens or crate? or confin? or corral? or handl?) in de,ti
S3 42460 transport? or behavio?r? or barn or barns or fence? or fencing or stress? or distress? or welfare or well being or human) in de,ti,id
S4 70637 (diet? or nutrit? or husbandry or rais? or farm?) in de,ti
S5 144214 S2 or S3 or S4
S6 28078 (L100 or L300 or L500 or N100) in CC
S7 20311 (LL100 or LL110 or LL120 or LL140 or LL190 or LL300 or LL810)
S8 48389 S6 or S7
S9 21604 S5 or S8
S10 1550 S1 and S9
S11 9154 (clone or clones or cloning) in de,ti,id
S12 103 S11 and S1
S13 1652 S12 or S10
S14 603 S13 not (py <1995)

1 The 1996 B.S.D.A. study tour. Sheep dairying in Tuscany.
Descriptors: ewe-milk; massese; animal-health; sheep-farming; farming-systems; dairy-farms; ewes; sheep-breeds; comisana; delle-langhe

2 NAL Call No.: QP33.J681
Absorption of short-chain fatty acids across ruminal epithelium of sheep.
Includes references.
Descriptors: sheep; rumen-epithelium; short-chain-fatty-acids; digestive-absorption; propionic-acid; nutrient-transport; ph; sodium; hydrogen-ions; chloride; nitrate; metabolic-inhibitors; cation-exchange; anion-exchange; carbon; anions; in-vitro; bicarbonate

Abstract: Investigations on the absorption of short-chain fatty acids across ruminal epithelium of sheep were performed both in vitro (Ussing chamber technique, using propionic acid representatively for short-chain fatty acids) and in vivo (washed, isolated reticulorumens). A pH-induced, nearly tenfold increase in the concentration of undissociated propionate led to an only twofold increase in mucosal-to-serosal flux of propionate (in vitro). Neither amiloride (1 mmol.l-1, in vitro) nor theophylline (10 mmol.l-1, in vivo), inhibitors of the ruminal
Na+/H+ exchanger, exerted and significant influence on propionate fluxes or short-chain fatty acids absorption, respectively. Total replacement of luminal Na+ (by choline) did not alter short-chain fatty acids absorption (in vivo). Mucosal 4,4’-diisothiocyanatostilbene-2′2′-disulfonic acid (0.1 mmol.l-1) or mucosal nitrate (40 mmol.l-1) markedly reduced propionate net flux (in vitro). Increasing mucosal Cl- concentration brought about a significant drop in mucosal-to-serosal flux of propionate (in vitro) and in short-chain fatty acids net absorption (in vivo), respectively. The results obtained suggest that short-chain fatty acids are absorbed both as anions and as undissociated acids across ruminal epithelium of sheep. It is concluded that short-chain fatty acids anions either compete with Cl- for binding sites at a common anion-exchange mechanism or that they are absorbed by an short-chain fatty acids anion/HCO3(-) exchanger indirectly coupled to a Cl-/HCO3(-) exchanger via intracellular bicarbonate.

3 NAL Call No.: 382-So12
Acacia saligna as a fodder tree for desert livestock and the interaction of its tannins with fibre fractions.
Includes references.
Descriptors: livestock-farming; tannins; acacia-saligna; nitrogen; fiber; fodder; deserts; sheep; goats

Abstract: Acacia saligna was examined as potential fodder for sheep (27.4 kg) and goats (14.8 kg) raised in arid and semi-arid areas. This leguminous tree remains green all year and can be grown in deserts using only runoff water. Phyllodes collected in March had a crude protein content of 12.5% dry matter (DM) and high tannin content (tannins as tannic acid equivalent to 11.3% and condensed tannins as leucocyanidin equivalent to 8.3% DM). DM intake was low, amounting to 0.80% and 1.05% body mass daily for sheep and goats, respectively. Sheep lost 227 g day-1 and goats 196 g day-1 while on this diet. Dry matter, organic matter and energy digestibilities were low in both species but were higher for goats than for sheep, and negative digestibilities were measured for acid detergent fibre (ADF) and acid detergent lignin (ADL). Metabolisable energy intake for goats was 121.9 kJ kg -0.75 day-1 and for sheep was 78 6 kJ kg -0.75 day-1. Apparent N digestibility was 17.5% and 0.9% for goats and sheep, respectively, and both species were in negative N balance of 0.25-0.30 g kg-0.75 day-1. Total water intake and output were higher in sheep than in goats. Extractable tannins were virtually absent in faeces in both species however, output of condensed tannins and protein in the ADF and ADL fractions were substantially higher. This showed the presence of tannin-protein complexes in these fractions which explained the negative digestibilities of ADF and ADL. It was concluded that Acacia saligna could not be used as a sole dietary source for small ruminants because of low intake and negative nitrogen balance. This was due mainly to the high tannin content. However, the tree might have a potential as a supplementary fodder due to its high crude protein content.

4 NAL Call No.: SB111.A2T72
Descriptors: rain-forests; tropical-rain-forests; tropical-forests; agroforestry-systems; development-projects; sheep-feeding; grazing; crop-residues; plantations; bananas; pawpaws; grasslands; animal-husbandry; lambing-rate; birth-weight; economics; management; coffee; cocoa; farms; peasantry; agroforestry; agrosilvopastoral-systems

5 NAL Call No.: 10-J822
Administration in suspension-form of n-alkane external markers for dry matter intake and diet selection studies.
Includes references.
Descriptors: sheep; rumen-digestion; pennisetum-clandestinum; hay; particle-size; dry-matter; feed-intake; alkanes; suspensions; xanthan; markers; feeding-preferences; dosage-effects; feces-composition
6 NAL Call No.: SF756.7.I57 1995
Age at tail docking affects physiology and behaviour of lambs.
Rhodes RC; McAndrews K; Nippo MM; Rutter SM (ed.); Rushen J (ed.); Randle HD(ed.); Eddison JC
Proceedings of the 29th International Congress of the International Society for Applied
Descriptors: docking; animal-behaviour; lambs; tail

7 NAL Call No.: SF85.A1R32
Albania's range and pasture lands.
Descriptors: agricultural-land; private-ownership; land-use; land-management; rangelands; pastures; quercus; fuelwood; coppice; water-erosion; cattle-farming; sheep-farming; forage; fodder; albania

8 NAL Call No.: SF380.I52
Ammoniation of moldy and nonmoldy prairie hay and its feeding value for sheep.
Includes references.
Descriptors: sheep; hay; ammoniated-feeds; fungi; fiber-content; nitrogen-content; feed-intake; digestibility; body-weight; dry-matter; organic-matter; nitrogen-balance; blood-serum; blood-chemistry; enzyme-activity; blood-sugar; poisoning; liver; enzymes; kidneys; nutritive-value; elymus-smithii

9 NAL Call No.: QL750.A6
Amount of experience and prior illness affect the acquisition and persistence of conditioned food aversions in lambs.
Descriptors: lithium-chloride; learning; behaviour; feeding; lambs; oats; wheat; rice; learning-ability; feed-intake; feeding-preferences; toxic-substances; food-intake; feeding-behaviour

10 NAL Call No.: 41.8-V641
Anaemia in housed newborn lambs.
Includes references.
Descriptors: lambs; newborn-animals; anemia; mineral-supplements; iron; intramuscular-injection; disease-prevention; growth-rate; age-differences; hematocrit

11 Analysis of biomass balance and stocking rate in cattle and sheep production systems in Mediterranean areas.
Pulina G; Masala G; Zanda A; Enne G Medit v.6(1): p.27-30; 22 ref (1995)
Descriptors: environmental-impact; environmental-degradation; livestock-farming; models; stocking-rate; soil-degradation; grassland-management; grasslands; Mediterranean-grasslands; grazing; overgrazing; erosion

12 NAL Call No.: QL55.J55
Analysis of sexual behavior in rams (Ovis aries).
Includes references.
Descriptors: sheep; rams; sexual-behavior; behavior-patterns; movement

13 NAL Call No.: 60.19-B773
Animal production evaluation of herbage varieties. 2. Comparison of Aberystwyth S184, AberEndura and Grasslands Huia white clovers.
Descriptors: herbage; grasslands; clovers; liveweight-gain; cultivars; sheep-feeding; persistence; cutting; lamb-production; legumes; nutritive-value; fodder-legumes
Animal production under a series of Pinus radiata-pasture agroforestry systems in south-west Victoria, Australia.
Includes references.
Descriptors: sheep-farming; agroforestry-systems; pinus-radiata; pastures; plant-density; grazing; browsing-damage; liveweight-gain; wool-production; victoria

Animal trade, welfare regulations.
Descriptors: european-union; beef; gatt; meat-hygiene; lambs; international-trade; animal-welfare; trade-in-animals; legislation; EU

Anopheles arabiensis and An. gambiae chromosomal inversion polymorphism, feeding and resting behaviour in relation to insecticide house-spraying in Tanzania.
Mnzava AEP; Rwegoshora RT; Wilkes TJ; Tanner M; Curtis CF Medical-and-Veterinary-Entomology v.9(3): p.316-324; 25 ref (1995)
Descriptors: chromosome-inversion; feeding-behaviour; pyrethroids; organochlorine-insecticides; cytogenetics; resting-places; disease-vectors; chemical-control; vector-control; DDT; lambda-cyhalothrin; control; insecticides; dwellings; genetics; inversion-polymorphism

Apparent digestibility of minerals by lactating cows from a total mixed ration supplemented with poultry litter.
Includes references.
Descriptors: dairy-cows; poultry-manure; digestibility; dietary-minerals; calcium; phosphorus; magnesium; potassium; bioavailability; drinking-water; chemical-composition; intake; trace-elements; sheep; israel

Abstract: Apparent digestibility of minerals by lactating cows from a multiple-component, conventional Israeli TMR (control) and from a TMR containing 10% poultry litter (DM basis) was examined. Ten cows in early lactation were divided into two groups of similar performance (39 kg of milk/d) and fed for ad libitum intake the two TMR for 28 d. Poultry litter contributed, as a percentage of total requirements, 44.4% of Ca, 41.0% of P, 32.0% of S, 22.8% of Mg, and 25.9% of K. Apparent digestibility of the macroelements was higher for cows fed the TMR supplemented with poultry litter than for those fed the control TMR. Apparent digestibility of the control TMR was 22.3% for Ca, 29.4% for Mg, 39.1% for P, and 62.2% for S; the apparent digestibility of the treatment TMR was 30.1% for Ca, 45.6% for Mg, 45.3% for P, and 65.6% for S. Poultry litter contributed the entire requirements of Zn, Mn, and Co; 56% of Cu; and 32% of Se. The apparent digestibility of the control TMR was 15.6% for Cu, 39.6% for Zn, 8.51% for Mn, 42.8% for Co, and 41.6% for Se, and the apparent digestibility of the treatment TMR was 27.9% for Cu, 54.0% for Zn, 17.8% for Mn, 37.0% for Co, and 63.9% for Se. Poultry litter is a good source of macro- and microelements for lactating cows and, at 10% of the TMR, could ensure against mineral deficiencies.

Approximating farm-level returns to incremental advertising expenditure: methods and an application to the Australian meat industry.
Includes references.
Descriptors: beef; lamb-meat; pigmeat; farmers; returns; uncertainty; advertising; expenditure; domestic-markets; economic-impact; decision-making; profitability; production-costs; meat-and-livestock-industry; elasticities; statistical-analysis; mathematical-models; australia; export-markets; cross-commodity-impacts
Abstract: Equilibrium displacement modeling is used to analyze the effects of incremental advertising expenditure by the Australian beef, lamb, and pork industries in domestic and export markets. The effects on prices, quantities traded, revenues, producer surpluses, and profits net of advertising expenditure are reported. Cross-commodity impacts of advertising are highlighted, including how one industry has to adjust its advertising expenditure to preserve profit levels in the face of increased advertising by another industry. The procedures used are useful when decisions about advertising expenditure need to be made quickly.

19 NAL Call No.: QP251.A5
Arena behaviour of ewes selected for superior mothering ability differs from that of unselected ewes.
Descriptors: behaviour; mothering-ability; ewes; selection

20 NAL Call No.: S671.R5
Artificial lighting criteria in intensive lamb breeding barns. [Criteri di illuminazione nei fabbricati per l'allevamento intensivo dell'agnello da carne.]
Mugnozza GS; Fiume G; Russo G Rivista-di-Ingegneria-Agraria v.27(3): p.155-161; 23 ref (1996)
Descriptors: lighting; lambs; animal-housing; animal-physiology; breeding

21
Aspects of 'factor-factor' economic analysis of sheep production.
Descriptors: economic-analysis; animal-production; ewes; milk-production; feeding; animal-health; dairy-farms; economics; factor-analysis; ewe-milk; yields; feeds

22 NAL Call No.: SF85.4.A8A97
Assessing options for farming systems transitions in New Zealand 's mountainlands.
Includes references.
Descriptors: sheep-farming; sustainability; mountain-grasslands; controlled-grazing; production-costs; transitional-farming; new-zealand

23 NAL Call No.: 41.8-On1
Attachment preferences of Hyalomma truncatatum and Hyalomma marginatum rufipes ticks
Descriptors: ectoparasites; feeding-behaviour; feet; anus; genitalia; Dorper; sheep-breeds; sheep-diseases; attachment; Merino

24 NAL Call No.: 41.8-N483
Basal and stress response cortisol levels and stress avoidance learning in sheep (Ovis ovis).
Descriptors: stress-response; ewes; animal-behaviour; limbs; blood-plasma; shock-waves; animal-experiments; stress; avoidance-conditioning; hydrocortisone

25 NAL Call No.: QL.750.A6
Behavior of the Murciano-Granadina goat in the hour before parturition.
Includes references.
Descriptors: goats; prepartum-period; reproductive-behavior; kidding; behavior-patterns; udders; size; twinning

26 NAL Call No.: QP351.B45
Behavioral responses of the chronically instrumented sheep fetus to chemosensory stimuli presented in utero.
Includes references.
Behaviors associated with egg and parasite deposition by gravid and Lambornella clarki-infected Aedes sierrensis.
Descriptors: oviposition; behaviour; aquatic-insects; parasitism; reproduction; host-parasite-relationships; pathology; entomopathogenic-protozoa; hosts; pathogens; parasites

The behaviour and welfare of male lambs transported by sea from New Zealand to Saudi Arabia.
Descriptors: lambs; animal-welfare; transport-of-animals; animal-behaviour

Behaviour of lambs grazing mixed clover-grass pasture sward. [Zachowanie sie jagniat na pastwisku o runi koniczynowo-trawiastej.]
Descriptors: grazing; selective-grazing; legumes; grazing-behaviour

Behavioural and cortisol response of pigs and sheep during transport.
Includes references.
Descriptors: pigs; sheep; transport-of-animals; road-transport; roads; acceleration; animal-welfare; animal-behaviour; hydrocortisone; saliva; species-differences

Behavioural and physiological changes of goats after tethering.
Descriptors: animal-behaviour; physiology; stress; tethered-housing

Body condition during pregnancy in transhumant Arles Merino ewes. Relationship with lamb birth weight and preweaning growth. [Etat corporel pendant la gestation chez la brebis Merinos d'Arles en systeme transhumant. Relations avec le poids a la naissance des agneaux et les performances d'allaitement.]
Teyssier J; Lapeyronie P; Vincent M; Molenat G *Options-Mediterraneennes.-Serie-A,-Seminaires-Mediterraneens*. 1995, No. 27, 43-51; 7 ref
Descriptors: Arles-Merino; ewes; transhumance; extensive-husbandry; body-condition; twinning; dams; birth-weight; growth; progeny; Body-condition-of-sheep-and-goats

Botanical composition and diet quality of goats grazing natural and grass reseeded shrublands.
Includes references.
Descriptors: goats; diet; botanical-composition; chemical-composition; digestibility; feces-collection; sown-grasslands; semiarid-grasslands; shrubs; xerophytes; seasonal-fluctuations; dry-season; rain; wet-season; nutrient-intake; mexico

A brief overview of sheep dairying down under.
35

Programme and summaries.
UK, British Society of Animal Science. 1995, 210 pp
Descriptors: cows; milk-yield; reproduction; feeding; animal-behaviour; feed-formulation; animal-husbandry; ewes; sows; poultry; physiology; British-Society-of-Animal-Science

36

Brousse du Rove [cheese]. La Brousse du Rove.
Florio J di; Di Florio J Chevre. 1995, No. 207, 40-42
Descriptors: cheesemaking; farm-dairies; cheeses; goat-milk; manufacture; marketing; Provence-Alpes-Cote-d'Azur; fresh-cheese; Brousse-du-Rove

37 NAL Call No.: 49-J82
Butylsoyamide protects soybean oil from ruminant biohydrogenation: effects of butylsoyamide on plasma fatty acids and nutrient digestion in sheep.
Includes references.
Descriptors: sheep; dietary-fat; soybean-oil; amides; triacylglycerols; butylamine; rumen-digestion; protected-fat; blood-plasma; blood-lipids; feed-intake; dry-matter; digestibility; volatile-fatty-acids

Abstract: Based on previous results showing partial resistance of fatty acyl amides to ruminal biohydrogenation, butylsoyamide was added to sheep diets in an attempt to increase unsaturation of plasma fatty acids. Twelve wethers averaging 34 +/- 3.2 kg BW were randomly assigned to three diets containing either no added fat (control), 5% soybean oil, or 5% butylsoyamide. Dry matter intake was greater (P < .05) for sheep fed butylsoyamide than for sheep fed soybean oil (740 and 581 g/d, respectively), but neither fat supplement differed from the control diet (680 g/d). The soybean oil supplement reduced (P < .05) total VFA concentration (59.0 and 38.7 mM) and acetate:propionate (4.10 and 2.56) in ruminal samples compared with the control diet. Butylsoyamide had no effect (P > .05) on total VFA (54.4 mM) or acetate: propionate (2.96). Total tract ADF digestibility was not affected (P > .05) by either fat supplement. Relative to the control diet, soybean oil increased (P < .05) plasma linoleic acid concentration 22% compared with a 58% increase from feeding butylsoyamide (26.7, 32.6, and 42.1% of total fatty acids, respectively). Linoleic acid concentration in plasma neutral lipids, relative to the control diet, increased 15.8% (P < .05) for soybean oil compared with 64.9% (P < .05) for butylsoyamide (31.6, 36.6, and 52.1% of total fatty acids, respectively). Converting soybean oil triglycerides to fatty acyl amides substantially reduces negative effects of the oil on ruminal fermentation and increases unsaturated fatty acids in plasma. The increase in plasma unsaturated fatty acids demonstrates at least partial resistance of fatty acyl amides to ruminal biohydrogenation and their and their digestion and absorption postruminally.

38

Catching up in the Saone et Loire. Saone et Loire, un printemps tardif.
Chamba JN Chevre. 1995, No. 207, 27-28
Descriptors: cheesemaking; dairy-farms; dairy-farming; cheeses; goat-milk; production

39 NAL Call No.: QP501.E8
cDNA cloning, overexpression in Escherichia coli, purification and characterization of sheep liver cytosolic serine hydroxymethyltransferase.
Descriptors: characterization; cytosol; liver; gene-expression; purification; serine; folic-acid; glycine; enzymes; nucleotide-sequences; biotechnology; glycine-hydroxymethyltransferase
Changes in live-weight gain, blood constituents and worm egg counts in Thai native and cross-bred goats raised in village environments in Southern Thailand.

Includes references.
Descriptors: goats; anglo-nubian; crossbreds; goat-breeds; grazing; feed-supplements; growth-rate; liveweight-gain; helminth-ova; feces; anthelmintics; blood-serum; blood-protein; blood-composition; globulins; hematocrit; thailand

Changes in the behavioral parameters following the lipopolysaccharide administration in goats.

Takeuchi Y; Kikusui T; Mori Y Journal-of-Veterinary-Medical-Science v.57(6): p.1041-1044; 19 ref (1995) Descriptors: lipopolysaccharides; grooming; animal-behaviour; infection; models; behaviour; stereotypies

Changes in the release of amino acid neurotransmitters in the brains of calves and sheep after head-only electrical stunning and throat cutting.

Includes references.
Descriptors: calves; sheep; stunning; throat; cutting; glutamic-acid; aspartic-acid; brain; release; synergism; consciousness; animal-welfare

Abstract: In calves aged two to five months, throat cutting resulted in an increase in the concentration of the amino acid neurotransmitters glutamate and aspartate in the brain. Electrical head-only stunning by itself also increased the concentrations of these two neurotransmitters. The levels induced by stunning resulted in a seizure state characterised by epileptiform-like activity in the electroencephalograph. Combing head-only stunning with throat cutting within 10 seconds of the stun had a synergistic effect upon glutamate and aspartate, increasing their concentration by a greater amount and more quickly than either procedure on its own. An irreversible loss of brain function also occurred more quickly than after throat cutting alone. The administration of glutamate and aspartate receptor antagonists before the throat cutting lengthened the time to the loss of brain function in a dose dependent manner. Similar changes were observed in sheep but they occurred much more quickly than in cattle.

Changes in the serum, urinary and milk concentrations calcium, phosphorus and magnesium in ewes during the perinatal period.

Shiga A; Tsuchiya Y; Nagamine S Animal-Science-and-Technology v.66(3): p.267-273; 27 ref (1995) Descriptors: lactation; parturition; milk; mineral-metabolism; urine; serum; calcium; phosphorus; magnesium; ewes; pregnancy; milk-composition; minerals; hypomagnesaemia; blood; ewe-milk; ewe-lactation; lactation-stage; nutritional-state

Characteristics of the extensive Greek sheep production systems.


Characterization of the spatial diversity of sheep concentration in relation to agricultural resources of the middle valley of the Ebro.

Olaizola A; Vidal D de L; Teruel A; Manrique E; Bernues A; Albisu LM (ed.); Romero C Environmental and
Descriptors: land-use; sheep-farming; regions; classification; Environmental-and-land-use-issues

46 NAL Call No.: SF380.I52
Chemical composition and nutritive value of fresh and ensiled carnation (Dianthus caryophyllus) by-product.
Includes references.
Descriptors: goats; dianthus-caryophyllus; silage; chemical-composition; feed-intake; digestibility; dry-matter; crude-protein; metabolizable-energy; organic-matter; crude-fiber; ether-extracts; spain

47 NAL Call No.: SF380.I52
Chevon characteristics of goats fed diets with water washed neem (Azadirachta indica) seed kernel cake.
Includes references.
Descriptors: kids; neem-seed-cake; kid-feeding; washing; mustard-protein-concentrate; oat-hay; slaughter-weight; carcass-yield; meat-cuts; dressing-percentage; meat-yield; offal; goat-meat; chemical-composition; sensory-evaluation; bitterness; triterpenoids

48 NAL Call No.: 26-T754
Chlorophyll-derived faecal pigment of an indicator of feed selection in dry-season tropical pastures.
Includes references.
Descriptors: sheep; tropical-grasslands; dry-season; feeding-preferences; poaceae; fabaceae; feed-intake; feces; feces-composition; digestibility; chlorophyll; fodder-legumes; animal-nutrition; australia; chromogen

49 NAL Call No.: QL750.A6
Choice of sheep and cattle between vegetative and reproductive cocksfoot patches.
Includes references.
Descriptors: ewes; heifers; grazing-behavior; plant-height; feeding-preferences; feed-intake; fasting; grazing-time; plant-composition; vegetative-period; reproduction; dactylis-glomerata; france

50
Classification and composition of the carcass of pre-ruminant kid goats of the Granadina breed.
Sanz MR; Ruiz I; Gil F; Boza J Options-Mediterranennnes.-Serie-A,-Seminaires-Mediterraneens. 1995, No. 27, 197-202; 14 ref
Descriptors: bucks; fattening-performance; animal-nutrition; carcasses; carcass-grading; carcass-composition; growth; energy-intake; Body-composition-of-sheep-and-goats; Body-condition-of-sheep-and-goats

51 NAL Call No.: S1.M57
Clausens choose Romanovs.
Descriptors: sheep-farming; romanov; small-farms

52 NAL Call No.: QH442.A1G4
Cloning and characterisation of an ovine interleukin-10-encoding cDNA.
Includes references.
Descriptors: sheep; complementary-dna; interleukins; nucleotide-sequences; amino-acid-sequences; structural-genes; macrophages; molecular-sequence-data; genbank; u11421; ovil-10-gene

Abstract: Expression of the interleukin 10-encoding (IL-10) mRNA by ovine (ov-) cells, in response to mitogenic stimulation, was assessed by Northern blot and polymerase chain reaction (PCR) analyses using a
human (hu) IL-10 cDNA probe and oligodeoxyribonucleotide primers based on homologous regions of the human and murine IL-10 cDNA sequences. A 31 5 bp cDNA generated by the PCR analysis was cloned and used to screen a lipopolysaccharide-stimulated alveolar ov-macrophage cDNA library. The full-length ov-cDNA sequence isolated translates to a protein of 177 amino acids (aa) with a predicted 18-aa leader sequence and molecular mass of 20165 Da. Expression in a mammalian system demonstrated that the ov-cDNA encoded a protein with the expected IL-10 biological activity. Both recombinant huIL-10 and supernatants from COS cells transfected with an expression vector containing the ovIL-10 cDNA inhibited production of IL-1 and tumour necrosis factor-x by ov-alveolar macrophages. Genomic DNA analysis indicated ovIL-10 exists as a single gene within the ov-genome.

53 NAL Call No.: QH442.A1G4
Cloning and characterization of multiple acetyl-CoA carboxylase transcripts in ovine adipose tissue.
Includes references.
Descriptors: sheep; complementary-dna; acetyl-coa-carboxylase; nucleotide-sequences; amino-acid-sequences; gene-expression; messenger-rna; adipose-tissue; molecular-sequence-data; genbank; x80045; open-reading-frames; untranslated-region

Abstract: A full-length ovine acetyl-CoA carboxylase-encoding cDNA (ACC) has been cloned from adipose tissue and completely sequenced. The open reading frame of 7041 nucleotides (nt) is highly homologous to the previously cloned human, rat, chicken, yeast and algal ACC (85, 89, 82, 54 and 54% identity, respectively). Transcript heterogeneity was found in the 5' and 3' untranslated regions (UTR) resulting in ACC transcripts in the range of 9.0 kb to 9.4 kb. Heterogeneity at the 5' end was generated by the insertion of a 47-nt sequence, resulting in transcripts with either 272 or 319 nt in the 5'-UTR. Heterogeneity at the 3' end was the result of the use of different polyadenylation signals. RNase protection analysis demonstrated that shorter transcripts containing 1635 nt predominated over longer transcripts of 2065 nt in the 3'-UTR.

54 NAL Call No.: 381-B522
Cloning and expression analysis of a cytochrome P-450 11 beta cDNA in sheep.
Includes references.
Descriptors: sheep; adrenal-cortex; cytochrome-p-450; complementary-dna; cloning; nucleotide-sequences; amino-acid-sequences; molecular-sequence-data; genbank; l34337; embl; l34337

Abstract: A full length ovine steroid 11 beta-hydroxylase (cytochrome P-450(11 beta)) cDNA clone from a sheep adrenal cortex cDNA library was isolated. Sequence analysis indicates that this cDNA clone resembles bovine P-450(11 beta) cDNA (95% nucleotide sequence homology) more closely than rat P-450 (11 beta) cDNA (69% nucleotide sequence homology). Although the levels of nucleotide sequence homology of this cDNA clone to the rat P-450(11 beta) cDNA and the rat P-450(aldo) cDNA are similar, the putative amino acid sequence shows a closer resemblance to rat P-450(aldo) protein. Northern blot analysis shows that there are three sizes of transcript and they are expressed throughout the adrenal cortex.

55 NAL Call No.: QH442.A1G4
Cloning and expression of a cDNA encoding ovine interleukin 7.
Includes references.
Descriptors: sheep; complementary-dna; interleukins; cloning; nucleotide-sequences; amino-acid-sequences; polymerase-chain-reaction; thymocytes; immune-response; molecular-sequence-data; genbank; u10089

Abstract: Using the polymerase chain reaction (PCR) and primers based on regions of homology between the human and murine interleukin 7 (IL-7)-encoding cDNAs, we have amplified an ovine (ov) IL-7 cDNA from reverse-transcribed RNA extracted from concanavalin A (Con A)-activated ovine lymph-node cells. The nucleotide sequence of the cDNA and the predicted amino acid (aa) sequence showed significant homology to those of the human and murine molecules. The ovIL-7 cDNA encodes a 176-aa polypeptide that, based on
analysis of murine IL-7, is processed to a protein of 151 aa. The cDNA was demonstrated to encode a protein with IL-7 biological activity. Supernatants from COS or CHO-K1 cells transfected with an expression vector containing the ovIL-7 cDNA were able to synergise with a suboptimal level of Con A to induce proliferation of ovine thymocytes. In addition, both supernatants were able to induce thymocyte proliferation, albeit at a reduced level, in the absence of Con A. Further experiments demonstrated that for induction of ovine thymocyte proliferation, recombinant (re)-ovIL-7 was able to synergise with re-human (h) IL-2 but not re-hIL-6 or tumor necrosis factor-alpha (re-hTNF alpha).

56 NAL Call No.: 448.8-V81
Cloning and expression of the nucleoprotein of peste des petits ruminants virus in baculovirus for use in serological diagnosis.
Ismail TM; Yamanaka MK; Saliki JT; El Kholy A; Mebus C; Yilma T Virology-New-York v.208(2): p.776-778; 22 ref (1995)
Descriptors: recombination; gene-expression; laboratory-diagnosis; nucleoproteins; ELISA; production; cell-lines; diagnosis; viral-diseases; biotechnology; sheep-diseases

57 NAL Call No.: QP251.R47
Cloning and sequencing of a cDNA encoding an ovine oestrus-associated oviducal protein.
Includes references.
Descriptors: nucleotide-sequences; amino-acid-sequences; molecular-sequence-data; genbank; u17988

58 NAL Call No.: 444.8-G28
Cloning and sequencing of an equine insulin-like growth factor I cDNA and its expression in fetal and adult tissues.
Includes references.
Descriptors: horses; fetus; adults; insulin-like-growth-factor; complementary-dna; clones; nucleotide-sequences; amino-acid-sequences; comparisons; gene-expression; transcription; biological-development; animal-tissues; man; sheep; rats; evolution; molecular-sequence-data; genbank; u28070; sequence-homology; sequence-alignment

Abstract: A cDNA for equine insulin-like growth factor I (IGF I) has been isolated by reverse transcriptase-polymerase chain reaction and subsequently sequenced. The sequenced fragment contained 465 bp including the coding regions for the signal peptide, the entire mature protein, and 4 amino acids into the E-peptide. Like its human counterpart, the mature equine IGF I peptide contains 70 amino acids and was 100% homologous between horse and man. The 49-amino-acid signal peptide had the threonine in position 26 of the human signal peptide substituted by isoleucine. The nucleotide homology across the entire clone was 96.3% between horse and man and 91.6% between horse and rat. The isolated cDNA hybridized to the same transcripts in fetal and adult tissues.

59 NAL Call No.: QL757.M6
Cloning, expression and characterization of an unusual guanine phosphoribosyltransferase from Giardia lamblia.
Descriptors: cloning; hypoxanthine-phosphoribosyltransferase; xanthine; guanine; molecular-genetics; biochemistry; amino-acid-sequences; genes; enzymes; parasites; guanine-phosphoribosyltransferase

60 NAL Call No.: 448.8-EN2
Cloning of a receptor for prostaglandin F2alpha from the ovine corpus luteum.
Graves PE; Pierce KL; Bailey TJ; Rueda BR; Gil DW; Woodward DF; Yool AJ; Hoyer PB; Regan JW Endocrinology-Philadelphia v.136(8): p.3430-3436; 37 ref (1995)
Descriptors: corpus-luteum; cloning; prostaglandins; receptors; DNA; biotechnology
Cloning, sequencing and expression of the bovine CD3 epsilon and TCR-zeta chains, two invariant components of the T-cell receptor complex.
Includes references.

Descriptors: cattle; receptors; t-lymphocytes; lymphocyte-antigens; complementary-dna; nucleotide-sequences; amino-acid-sequences; cloning; polymerase-chain-reaction; biochemical-techniques; species-differences; sheep; gene-expression; messenger-rna; rapid-amplification-of-the-ends; molecular-sequence-data; genbank; u25687; genbank; u25688

Abstract: CD3 epsilon and the zeta-chain of the bovine T-cell receptor (TCR) are two invariant molecules with an important role in signal transduction via the TCR/CD3 complex. The nucleotide sequence of a bovine CD3 epsilon cDNA clone containing the complete coding sequence was determined and the deduced amino acid (aa) sequence compared to that of other species. The cytoplasmic domains of the different CD3 epsilon clearly show a higher degree of conservation than the extracellular domains. Bovine CD3 epsilon produced in Escherichia coli using different bacterial expression vectors was recognised by antibodies (Ab) directed against the intracytoplasmic domain of human CD3 epsilon. A partial bovine TCR zeta-chain cDNA was generated by the polymerase chain reaction (PCR) using primers that were based on sequences that are conserved between different species; 3' and 5' RACE-PCR were carried out to obtain the complete TCR zeta-chain cDNA sequence. A comparison of the predicted TCR zeta-chain aa sequence reveals that the GDP/GTP-binding motif, which is conserved in other species, shows marked differences in the bovine and ovine TCR zeta-chains. In contrast to CD3 epsilon, the short extracellular domain of the TCR zeta-chain is 100% conserved between the different species and the transmembrane domain also shows a high degree of identity. Ab were raised against the TCR zeta-chain, produced as a glutathione S-transferase fusion protein in E. coli, and were used in Western blot analysis to further characterise TCR zeta-chain expression in T-cells. These reagents provide valuable tools for the study of signal transduction pathways in normal and transformed bovine T-cells.

A cloning strategy for G-protein-coupled hormone receptors: the ovine beta1-adrenergic receptor.

Descriptors: hormone-receptors; cloning; hormones; receptors; dna

Code of recommendations and minimum standards for the welfare of sheep. Rev.

Colostrum and health of newborn lambs.
In the subseries: Sheep management.

Descriptors: lambs; sheep-farming; colostrum; lamb-feeding; colostral-immunity; supplemental-feeding-programs; tube-feeding

Colour discrimination by the sheep blowfly Lucilia sericata.

Descriptors: vision; colour; discrimination; smell; liver; sodium-sulfide; behaviour; host-seeking-behaviour

Comparative digestion in cattle and sheep fed wheat silage diets at low and high intakes.
Includes references.
Descriptors: sheep; steers; wheat-silage; crude-protein; feed-intake; body-weight; maturity-stage; unrestricted-feeding; digestibility; chemical-composition; species-differences; starch; fiber-content; hemicelluloses

Abstract: Winter wheat (Triticum aestivum L.), harvested at late milk, early dough, and hard dough stages of maturity was ensiled for nutritive comparisons. Diets were adjusted to 13% CP with a soy protein concentrate and fed to six ruminally fistulated growing steers and nine adult wethers in a repeated 3 X 3 Latin square design to study the effects of maintenance and ad libitum intakes on digestibility of different feed fractions. At both intakes, digestion values for the steers were greater than or equal to those for the sheep for all feed fractions except CP. Wethers achieved greater intake per unit of BW than steers during ad libitum intake. Voluntary OM intakes of steers only differed between the milk stage diet and the dough stage diets. At low intake, the diets containing the more mature silage were more digestible. At high intake, the OM of diet containing the early dough stage silage was most digestible. Increased intake caused a depression in digestibility of different feed fractions. The magnitude of the depression varied among diets and fractions. Data indicated that the nutritive value of diets based on whole crop wheat silage is affected by stage of maturity, animal species, and amount of intake. The assessment of the nutritive value of diets based on whole crop wheat silage should therefore be made with the animal species and at the amount of intake for which the diets are intended.

67 NAL Call No.: QL750.A6
Comparative foraging strategies of sheep and goats in a T-maze apparatus.
Descriptors: foraging; comparisons; species-differences; feeding-behaviour; learning-ability

68 NAL Call No.: SF55.A78A7
Comparative performance of Damascus goats and Chios ewes in Oman.
Includes references.
Descriptors: goats; ewes; damascus; chios; age-at-first-mating; species-differences; age-at-first-kidding; age-at-first-lambing; age-at-first-conception; female-fertility; litter-weight; twinning; birth-weight; sex-differences; litter-size; weaning-weight; kids; lambs; mortality; milk-yield; lactation-duration; nutrient-requirements; body-weight; goat-milk; ewe-milk; milk-fat-percentage; feed-conversion; feed-intake; growth-rate; diet; oman

69 NAL Call No.: 10-J822
Comparative performance of Omani goats and sheep.
Includes references.
Descriptors: goats; sheep; goat-breeds; animal-husbandry; breed-differences; breeding-efficiency; sexual-reproduction; diets; chemical-composition; female-fertility; lambing-rate; kidding-rate; oman; batinah-goats; dhofari-goats; jabal-akhdhar-goats

70. NAL Call No.: 49-AR23
A comparative study of performance of Egyptian goat breeds II. Growth performance and productivity.
Descriptors: goat-breeds; growth; performance; productivity; birth-weight; breed-differences; sex-differences; litter-size; body-weight; dams; progeny; tropics; plane-of-nutrition; intensive-husbandry; extensive-husbandry; kids; compensatory-growth

71 NAL Call No.: 10-J822
Comparison between reconstituted sheep faeces and rumen fluid inocula and between in vitro and in sacco digestibility methods as predictors of intake and in vivo digestibility.
Includes references.
Descriptors: sheep; feces-composition; roughage; chemical-composition; dry-matter; quantitative-analysis;
72 NAL Call No.: 23-Au792
Comparison of alpha-tocopherol acetate preparations given as single intraperitoneal or subcutaneous doses for increasing plasma and liver alpha-tocopherol in sheep fed a low vitamin E diet.
Includes references.
Descriptors: sheep; alpha-tocopherol; formulations; intraperitoneal-injection; subcutaneous-injection; oral-administration; blood-plasma; liver; concentration; supplementary-feeding; pharmacokinetics

73 NAL Call No.: S539.5.J68
A comparison of sheep grazing with herbicides for weed control in seedling alfalfa in the irrigated Sonoran Desert.
Includes references.
Descriptors: medicago-sativa; seedlings; irrigated-stands; chemical-vs; -cultural-weed-control; eptc; 2,4-db; sethoxydim; sheep; grazing; grazing-effects; mowing; crop-yield; yields; feeding-preferences; weeds; plant-density; nutritive-value; crop-density; crop-quality; california; weed-management; weed-yield; weed-density

Abstract: A three year study was conducted in the irrigated Sonoran Desert to compare the effect of different weed management methods in seedling alfalfa (Medicago sativa L.) on crop stand and yield. Treatments included: grazing with sheep (Ovis aries L.) when the crop was ready for the first harvest, a combination of preemergence and postemergence herbicides, postemergence herbicides only, and an untreated control where weeds were harvested with the hay. Weed management practice did not affect alfalfa yield in the first season, although the herbicide treatments reduced total forage (alfalfa plus weeds) yield compared with the grazed treatments and the untreated control. Crop density was not different between treatments. Herbicide treatments lowered forage yields at the first harvest by eliminating of weeds and because of crop injury in 2 of the 3 yr. At the third and subsequent harvests, there were no differences in forage yield for treatments. Plots were weed free after the second harvest. Lamb grazing selectivity in weedy seedling alfalfa was also quantified by analyzing esophageal extrusa. The lambs were selecting the weeds over the alfalfa as grazing progressed. This preference was consistent between lambs and plots, although there were year differences. Forage quality of the winter annual broadleaf weeds present in this study was comparable with the alfalfa. We concluded that grazing lambs are a good weed control method in seedling alfalfa during the winter grazing season in the irrigated Sonoran Desert.

74 NAL Call No.: QL750.A6
Comparison of the behaviour of goats and sheep on an eroded hill pasture.
Includes references.
Descriptors: goats; sheep; eroded-soils; hill-grasslands; spring; summer; female-animals; ewes; kids; lambs; animal-behavior; grazing; erosion; new-zealand

75 NAL Call No.: HV4701.A557
A comparison of wooden slats and straw bedding on the behaviour of sheep.
Descriptors: sheep-housing; floors; straw; animal-welfare; slatted-floors; animal-behaviour; litter; lairage

76
A complementary sheep flock at a dairy farm. Development of a production system at an experimental farm. [Dans une exploitation laitiere, un troupeau ovin complementaire. Mise au point d'un systeme de production en ferme experimentale.]
Descriptors: ewes; sheepmeat; feed-supplements; profitability; economics; dairy-farms; reproduction; lamb-production; management; mixed-farming
Composition, digestibility and rumen degradability of crab meal.

Includes references.

Descriptors: calves; sheep; crab-waste; meal; nutritive-value; digestibility; rumen; protein-degradation; chemical-composition; feed-intake; liveweight-gain; soybean-oilmeal; rape

Abstract: The nutritive value of dried shellfish waste (referred to as crab meal) produced in New Brunswick in the mid-1980s was evaluated by physical, chemical and biological assays. Typically, the crab meal was high in ash content (about 50%), consisting mainly of calcium carbonate and contained about 20% chitin, 25% crude protein (CP) and less than 2% lipid material. The meal could be separated by screening into a coarse fraction high in ash and chitin and a fine fraction lower in ash and higher in CP. Although the reactivity rate of crab meal ash was not as high as that of similar sized limestone particles (42 vs. 30.4 min for particles that passed a 500-micrometers screen but were retained on a 300-micrometers screen), it was high enough to suggest crab meal could be a useful rumen buffer. The CP of crab meal was highly resistant to degradation in the rumen in sacco. Less than 18% of the crab meal CP disappeared from bags suspended in the rumen for 24 h, compared with more than 87% for soybean meal and full-fat canola seed. The digestibility of crab meal dry matter by sheep was only 34.3 +/- 3.7%, but the CP digestibility was 69.6 +/- 4.1%. The chemical and physical attributes assayed and the results of the in sacco and sheep digestibility trials all suggest that crab meal should be a useful supplement for diets low in digestible undergraded protein. However, its inclusion in a supplement for beef calves fed legume silage resulted in lower feed consumption and rate of gain (P < 0.01). Feeding soybean meal or full-fat canola resulted in a significant increase (P < 0.01) in feed efficiency, compared with calves fed the control and crab meal supplements. It was concluded that crab meal produced in New Brunswick would be a useful supplement for beef cattle if problems of palatability could be overcome.

Composition of diet selected by grazing sheep on natural rangeland.

Descriptors: botanical-composition; feeding-habits; wet-season; semiarid-climate; feeding-preferences; rangelands; grazing; grasslands; selective-grazing; intake

Composition of milk fat from ewes fed a diet supplemented with calcium salts of palm oil fatty acids.

Descriptors: ewes; milk; dry-matter; saturated-fatty-acids; unsaturated-fatty-acids; lucerne-hay; maize; soyabean-oilmeal; lambs; milk-fat; fatty-acids; composition; ewe-milk; ewe-feeding; supplements; milk-composition; palm-oils; milk-yield; protected-fat

Consequences of a low aluminium nutrition in the goat. 2. Milk yield, life expectancy, plasma variables, aluminium content of selected organs. [Die Auswirkungen einer aluminiumarmen Ernahrung bei der Ziege. 2. Mitteilung: Milchleistung, Lebenserwartung, Plasmaparameter, Aluminiumgehalt ausgewählter Organe.]

Descriptors: trace-elements; minerals; deficiency; mortality; tissues; bones; milk-yield; milk-fat-yield; milk-protein-yield; goat-feeding; aluminium; Major-and-trace-elements

Constraints in the adoption of improved sheep and goat practices by the small and marginal farmers of diversified farming.
82 NAL Call No.: 23-Au783
Constraints to the modelling of diet selection and intake in the grazing ruminant.
Special Issue: Ruminant Nutrition.
Descriptors: cattle; sheep; grazing; herbage; browse-plants; feeding-preferences; botanical-composition; feed-intake; organic-matter; digestibility; nutritional-state; simulation-models; australia; grazfeed-simulation-model; model-validation

83 NAL Call No.: S544.3.N9C46
Controlling leafy spurge using goats and sheep.
Descriptors: euphorbia-esula; pastures; biological-control; sheep; goats; leases; mixed-grazing; cattle; nutritive-value; stocking-rate; 2,4-d

84 NAL Call No.: SF81.F3
Cotton seed for milch animals. A review.
Descriptors: cows; ewes; milk-yield; milk-composition; antinutritional-factors; gossypol; toxicity; nutritional-disorders; cottonseed; lactation; reviews; feeding

85 NAL Call No.: 410-J827
Coyote movements in relation to the spatial distribution of sheep.
Includes references.
Descriptors: sheep; spatial-distribution; coyotes; movement; behavior-patterns; predator-prey-relationships; california

86 NAL Call No.: S631.A8 No.405
Crop-livestock farming in the uplands of Taiwan.
Chen HsinHao; Chen HH *Extension-Bulletin -ASPC,-Food-and-Fertilizer-Technology-Center. 1995, No. 405, 7 pp.; 12 ref*
Descriptors: dairy-farming; goat-keeping; deer-farming; grazing-systems; livestock; performance; soil-conservation; extension; constraints; livestock-farming; sloping-land; dairy-farms; upland-areas; silvopastoral-systems; forests; agroforestry-systems

87 NAL Call No.: 45.9-Sv2
Crossbreeding or breeding for combined breeds?. [Korsningsavel eller avel for kombinerade raser?]
Descriptors: ewes; rams; lambs; performance-testing; progeny-testing; pelts; body-weight; growth; carcasses; female-fertility; genetic-improvement; maternal-behaviour; breeding-value; selection; crossbreeding; meat-production

88 NAL Call No.: 41.8-R312
D-glucose transport and glycolytic enzyme activities in erythrocytes of dogs, pigs, cats, horses, cattle and sheep.
Includes references.
Descriptors: dogs; pigs; cats; horses; cattle; sheep; erythrocytes; blood-sugar; nutrient-transport; hexokinase; pyruvate-kinase; enzyme-activity; insulin
**Abstract:** The activities of D-glucose transport (D-GT) and the glycolytic enzymes hexokinase (HK) and pyruvate kinase (PK), were measured in the erythrocytes of dogs, pigs, cats, horses, cattle and sheep. The erythrocytes of dogs had the highest activities of D-GT, HK and PK, significantly higher than the activities in the erythrocytes of the herbivores. The activities of D-GT and HK in cat erythrocytes were significantly lower than in those of dogs. The differences between the activities of D-GT in the erythrocytes of the different species followed the differences in activities of HK but not those in the activities of PK or in the blood glucose concentrations. It is considered that the activity of HK provides a convenient measurement of the relative rates of glucose oxidation in erythrocytes.

89 NAL Call No.: SF1.K7
**Dairy and animal husbandry institute for Sardinia. [Instytut zootechniki i serowarstwa na Sardynii.]**
*Descriptors:* cows; cheeses; ewes; ewe-milk; cheesemaking; legislation; dairy-research; research-institutes; breeding; milk-production; milk-processing; milk-quality; research; dairy-performance; Fiore-Sardo-cheese; Pecorino-Romano-cheese; Pecorino-Sardo-cheese

90 **Dairy goats in France. [Milchziegen in Frankreich.]**
Jurkschat M *Neue-Landwirtschaft.* 1995, No. 10, 87-88
*Descriptors:* French-Alpine; French-Saanen; milk-yield; milk-fat-yield; milk-protein-yield; management; animal-nutrition; flockbooks; dairy-performance; milk-recording; artificial-insemination

91 NAL Call No.: SF375.D38--1996
**Detection and treatment of mineral nutrition problems in grazing sheep.**
*Descriptors:* Sheep-Nutrition-Congresses; Minerals-in-animal-nutrition-Congresses

92 NAL Call No.: 49-J82
**Development of a mechanistic model of intake and chewing activities of sheep.**
Includes references.
*Descriptors:* sheep; feeding-behavior; biting-rates; rumen-digestion; particle-size; digesta; models; transit-time; fiber-content; forage; cell-walls; equations; energy-balance; decision-analysis; sheep-rumination; dry-matter; voluntary-intake; alfalfa-hay; palatability

*Abstract:* A mechanistic model of intake and chewing activities was developed using data from confined sheep in order to integrate the relationships between feeding behavior and digestive processes. The model consists of two interconnected submodels. The ruminal digestion submodel describes flows of nutrients and is based on differential equations to simulate the dynamic evolution of particulate matter and volatile fatty acids (VFA) in the reticulorumen. The diet is characterized by cell wall content and its potential digestibility, by the proportion of large particles (LP) retained on a 1-mm mesh sieve, and by an index of palatability. Particle comminution occurs during eating and ruminating. Intake is determined from attributes of the diet, animal live weight, and satiety status. Particulate outflow is calculated from a description of the activity of the reticulo-omasal orifice. Microbial digestion rates vary with lag phase, chemical fraction, size of particles, and ruminal pH. The VFA are aggregated into one compartment. The feeding decision submodel distinguishes among eating, ruminating, and resting. The choice among these activities is decided at each minute of simulation according to the relative values of functions of intake motivation (FMI) and of satiety (FSAT). The FMI function is based on diet palatability, energy balance, and the diurnal cycle. The FSAT function is determined by rumen load signals and energy balance. When the animal does not eat, the decision between ruminating and resting is related to the proportion of long particles in the rumen. Sensitivity analysis and validations indicate that the overall behavior of the model is adequate.
93 NAL Call No.: SF380.I52
Development of sheep fattening schemes in highland Balochistan, Pakistan.
Includes references.
Descriptors: sheep; lamb-fattening; fattening-performance; development-projects; cooperative-farm-enterprises; concentrates; cereal-byproducts; feed-intake; liveweight-gain; selling-prices; fluctuations; agropastoral-systems; agricultural-credit; cooperative-credit

94 NAL Call No.: 10-J822
Diet-induced variation in acetate metabolism of ovine perirenal adipose tissue in vitro.
Includes references.
Descriptors: lambs; acetates; metabolism; blood-plasma; blood-chemistry; renal-function; adipose-tissue; diet; pulps; protein-content; glucose; insulin; carbon-dioxide; lipids; chemical-composition; carbohydrates; quantitative-analysis; oxidation; dosage-effects; digestible-energy; nutrient-balance; rumen-digestion; slaughter; lamb-meat; food-composition; barley-pulp; sugarbeet-pulp

95 Diet of feral goats and feral pigs on Auckland Island, New Zealand.
Descriptors: conservation; botanical-composition; diets; grasses; browse; forbs; wild-animals; Anisotome-antipode; Durvillea-antarctica

96 NAL Call No.: SF380.I52
Diet selection by goats in the sagebrush steppe of eastern Oregon.
Includes references.
Descriptors: goats; feeding-preferences; artemisia-tridentata; rangelands; diet; botanical-composition; seasonal-fluctuations; age-differences; range-management; browsing; brush-control; biomass; kids; oregon

97 Diet selection by sheep and goats in the arid Karoo.
Descriptors: grassland-management; diets; seasonal-variation; grasslands; arid-grasslands; grazing-systems; grazing; selective-grazing; mixed-grazing; feeding-habits

98 Diet selection by sheep and goats in the Noorsveld.
Descriptors: grassland-management; diets; seasonal-variation; grazing; selective-grazing

99 NAL Call No.: 389.8-B773
Diet selection in sheep: the role of the rumen environment in the selection of a diet from two feeds that differ in their energy density.
Includes references.
Descriptors: sheep; diet; feeding-preferences; rumen-contents; energy-content; experimental-diets; feed-formulation; liveweight-gain; feed-intake; metabolizable-energy; feed-conversion-efficiency; digestive-tract; infusion; fistulation; ph; osmotic-pressure; acid-treatment; alkali-treatment; dosage-effects

Abstract: The effect of the energy density (ED) of feeds offered as a choice on the diet selection of sheep, and the relationship between the rumen environment and the diet selected from feeds of different ED were
investigated in two experiments. In the first experiment two feeds, L and H, and their mixture M (3:1 w/w) were formulated. All feeds had similar calculated metabolizable

100 NAL Call No.: QL750.A6
Dietary habits and social interactions affect choice of feeding location by sheep.
Includes references.
Descriptors: lambs; feeding-preferences; food-preferences; sorghum; wheat; novel-foods; foraging; avoidance-conditioning; spatial-distribution

Abstract: Individuals often occur in subgroups that differ in their choice of forage and habitat, even within the same environment. Different foods occur in disparate locations and thus differences in dietary habits could provide one explanation for the formation of subgroups and their use of the environment. In addition, subgroups may form as a result of social interactions. We conducted experiments to study the effects of food preference and social interactions on choice of feeding location by lambs. In 1992, 12 lambs that had been reared together were separated into two groups of six lambs. Groups were conditioned to prefer one of two grains, either milo (Sorghum bicolor) or wheat (Triticum aestivum) by feeding milo or wheat for 14 days. Lambs were conditioned to avoid the other grain by following its ingestion with a mild dose of the toxin lithium chloride (LiCl) on 3 consecutive days. During testing, milo and wheat were placed at opposite ends of a 0.25 ha pasture. Lambs were first allowed to feed as groups consisting of three lambs that preferred milo and three lambs that preferred wheat, and then allowed to feed as groups in which one lamb preferred milo with three lambs that preferred wheat, and vice versa. Under both conditions, lambs always foraged on their preferred food, even when the locations of the foods were switched. In 1993, we repeated the study from 1992 in a larger pasture (1 ha) and without the use of LiCl. Lambs were reared in three different groups and fed either milo (Group 1), wheat (Group 2), or half of the lambs were fed milo and the other half were fed wheat (Group 3) for 4 months to condition a preference for either milo or wheat. When we combined lambs that preferred milo from Group 1 with lambs that preferred wheat from Group 2 to form subgroups of strangers, lambs fed in different locations. Conversely, social interactions and food preferences both affected choice of foraging location when lambs were reared together (companions). For instance, some lambs that preferred wheat grazed in the vicinity while peers ate milo, whereas lambs that preferred milo grazed in the vicinity while peers ate wheat. In other cases, one or two lambs separated from the rest of the group and ate their preferred grain. We conclude that food preference had a primary influence on choice of foraging location when lambs were reared separately (strangers) and preferred different foods. Food preferences and social interactions both influenced choice of foraging location for companions unless animals were made averse to one of the foods with LiCl, in which case dietary preferences overrode social influences.

101 NAL Call No.: QH540.A8
The dietary overlap between red kangaroos (Macropus rufus) and sheep (Ovis aries) in the arid rangelands of Australia.
Includes references.
Descriptors: sheep; macropus-rufus; feeding-preferences; diet; paddocks; animal-competition; interspecific-competition; shrubs; grasses; rangelands; arid-regions; grazing-experiments; new-south-wales

102 NAL Call No.: SF55.A78A7
Diets of the Philippine indigenous sheep: its comparison to indigenous goats diets and influence of sampling methods.
Includes references.
Descriptors: sheep; goats; selective-grazing; diet; proximate-analysis; mineral-content; sampling; upland-areas; lowland-areas; crude-protein; crude-fiber; species-differences; philippines

103 NAL Call No.: QL750.A6
Differences in ewe and wether behavior when bonded to cattle.
104 NAL Call No.: 45.9-Sv2
Different concentrate strategies around kidding. [Olika kraftfoderstrategier kring killningen.]
Descriptors: goat-milk; yields; birth-weight; kids; plane-of-nutrition; reproduction; concentrates; intake; composition; pregnancy

105 NAL Call No.: 49-J82
Differential effects of plane of protein or energy nutrition on visceral organs and hormones in lambs.
Includes references.
Descriptors: lambs; plane-of-nutrition; dietary-protein; liver; mass; undernutrition; refeeding; body-weight; liveweight-gain; feed-intake; dry-matter; energy-intake; protein-intake; feed-conversion; digestive-tract; lungs; heart; blood-plasma; somatotropin; oxygen-consumption; hormone-secretion; insulin-like-growth-factor; insulin; blood-serum; triiodothyronine; thyroxine

Abstract: Modulation of somatotrophic and homeorhetic hormones, along with changes in visceral mass and metabolic activity, were measured in growing lambs restricted in energy (ER) or metabolizable protein (PR) to maintain BW for 7 wk and then repleted for 2 wk. Control lambs were fed an adequate diet for 9 wk. Serum IGF-I decreased more rapidly in PR, but both ER and PR were 70% of controls by wk 7 of restriction (P < .05) and increased above controls by d 14 of repletion. Somatotropin, increased by PR, returned to control levels upon repletion (P < .05). Insulin was decreased by PR (P < .02) but was transiently elevated above controls by repletion in ER and PR at d 2 (P < .01). Serum triiodothyronine, reduced to 70% of controls by PR and ER, returned to control levels after d 6 of repletion (P < .05). Thyroxine declined gradually to 65% of controls in ER and PR (P < .07) but did not respond to repletion. By wk 7 of restriction, liver mass in ER and PR was decreased to 50% of controls (P < .05). Return of liver mass, on an empty body weight basis, occurred by d 2 of repletion (P < .01). In vitro O2 consumption per gram of liver tissue was increased to 125% of controls by ER and PR (P < .05). Calculated whole liver O2 consumption in ER and PR was 68% of controls at wk 7 of restriction (P < .10). Protein restriction had a more immediate impact on hormones but not on visceral mass or activity compared with energy restriction. Elevated IGF-I levels, as observed in previously restricted lambs, may mediate compensatory growth in ruminants.

106 NAL Call No.: SF380.I52
Direct observation of biting for studying grazing behavior of goats and llamas on garrigue rangelands.
Includes references.
Descriptors: goats; llamas; feeding-preferences; garrigue; feed-intake; dry-matter; spring; summer; grazing-behavior; browse-plants; browsing; botanical-composition; biting-rates; france

107 NAL Call No.: 49.9-Eu7
The diversification of lamb production in extensive farming systems. How do producers adapt their technical systems? A case study of Causse Mejan (France, Southern Massif Central). Diversification de la production de viande ovine en élevage extensif. [Comment les eleveurs adaptent-ils leurs systemes techniques? Le cas du Causse Mejan (France, sud du Massif Central).]
Descriptors: quality; demand; diversification; farm-income; employment; technical-progress; lamb-meat; production; tourism-development; less-favoured-areas; food-consumption; Animal-production-and-rural-tourism
108 NAL Call No.: S1.M57
Dorper: a hardy meat sheep.
Descriptors: sheep; dorper; intensive-livestock-farming; grazing

109
Dry matter consumption of Bengal goats under deep litter system of management in West Bengal.
Descriptors: management; feeding-behaviour; deep-litter-housing; environmental-temperature; feed-intake; housing

110 NAL Call No.: 100-C12Cag
Early sexual experience improves ram breeding.
Descriptors: sheep; rams; reproductive-performance; evaluation; age-at-first-mating; ejaculation; performance-testing; mating-behavior; sexual-development

111 NAL Call No.: 49.9-H19
Eating and rumination behavior in goats receiving rye hay with unchopped or chopped forms harvested at two stages of growth.
Descriptors: processing; feeding-behaviour; mastication; rumination; rye; forage; hay; maturity-stage; particle-size

112 NAL Call No.: 49.9-Eu7 No.83
Economic diversity of mountain sheep farms and complementarity strategies in land use.
Manrique E; Olaizola A; Bernues A; Revilla R; Zervas NP (ed.); Hatziminaoglou J The optimal exploitation of marginal Mediterranean areas by extensive ruminant production systems. Proceedings of an international symposium organized by HSAP and EAA and sponsored by EU(DGVI), FAO and CIHEAM, Thessaloniki, Greece, 18-20 June, 1994. 1996, 61-66; EAA Publication No. 83; 13 ref
Descriptors: classification; sheep-farming; farming-systems; transhumance; mountain-areas ID: optimal-exploitation-of-marginal-Mediterranean-areas-by-extensive-ruminant-production-system

113 NAL Call No.: 60.18-J82
Economic feasibility of grazing sheep on leafy spurge-infested rangeland in Montana.
Includes references.
Descriptors: sheep; euphorbia-esula; selective-grazing; carrying-capacity; ranching; cattle-farming; stocking-rate; farm-budgeting; fencing; profits; cost-benefit-analysis; montana

Abstract: Leafy spurge (Euphorbia esula L.) is a noxious weed on rangelands throughout the Northern Great Plains. Most of these ranges are grazed by cattle which do not use leafy spurge as forage. Although sheep graze leafy spurge, most land managers are reluctant to use sheep to control this noxious weed, which may be related to economic uncertainties regarding their profitability. The purpose of this study was to evaluate the economic feasibility of implementing a sheep enterprise to control leafy spurge on cattle ranches. The physical characteristics of a typical Northern Great Plains ranch, recommended stocking rates for cattle and sheep on native and leafy spurge-infested rangelands, and a sheep enterprise budget were developed using information from the literature. A LOTUS spreadsheet was developed to calculate returns over total costs of implementing various sheep enterprises. Annual returns from implementing sheep grazing on 520 ha of leafy spurge on a 4,905 ha ranch exceeded total costs by $4,675. Given the ownership costs and returns of our ranch, the breakeven lamb price would be $1.16 kg-1. Returns per head and per unit of land will vary with the distribution and size of a leafy spurge infestation, and sheep production costs and returns. Returns from sheep grazing were higher when leafy spurge was concentrated in fewer rather than in many pastures. Returns were positive when as little as 4% of the ranch was infested with leafy spurge. The availability and utility of our model will allow land managers to assess the feasibility of developing sheep enterprises to control leafy spurge.
114 NAL Call No.: HD1930.S4E4
Economic report on Scottish agriculture.
UK, Scottish Office, Agriculture and Fisheries Department. 1995, vi + 67 pp
Descriptors: arable-farming; cereals; oilseeds; land-diversion; mixed-farming; dairy-farming; sheep-farming; cattle-farming; farmers'-income; prices; livestock-numbers; employment; agricultural-manpower; agricultural-censuses; agricultural-situation; farm-surveys; farm-income; cows; dairy-farms

115 NAL Call No.: QH541.5.D4J6
Economic returns from improved technology for livestock production on rangelands in Mendoza, Argentina.
Includes references.
Descriptors: cattle; sheep; goats; rangelands; free-range-husbandry; cattle-husbandry; returns; break-even-point; economic-evaluation; cost-benefit-analysis; improvement; range-management; argentina; net-present-value

116
Descriptors: arable-farming; dairy-farming; livestock-farming; sheep-farming; cattle-farming; farm-income; costs; returns; gross-margins; profitability; farm-surveys; farm-results; dairy-farms

117 NAL Call No.: TX341.F3
Economics of hill sheep production.
Descriptors: costs; returns; farm-results; subsidies; support-measures; sheep-farming; profitability; upland-areas

118 NAL Call No.: 281.9-C332
The economics of sheep farming in Slovakia and forecasts for the year 2000. [Ekonomika chovu oviec na Slovensku a jej predikcia v roku 2000.]
Descriptors: sheepmeat; wool; cheeses; production; supply; prices; sheep-farming; profitability; ewe-milk; animal-production; censuses; meat-production; wool-production

119 NAL Call No.: SF380.I52
Effect of amount offered on intake, digestibility and value of Gliricidia sepium Leucaena leucocephala for west African Dwarf goats.
Includes references.
Descriptors: goats; west-african-dwarf; gliricidia-sepium; leucaena-leucocephala; leaves; chemical-composition; feed-intake; dry-matter; voluntary-intake; goat-feeding; digestibility; plane-of-nutrition; liveweight-gain; feed-conversion; nigeria; refusal-rate

120 NAL Call No.: 10-J822
Effect of condensed tannins in Lotus pedunculatus on the nutritive value of ryegrass (Lolium perenne) fed to sheep.
Includes references.
Descriptors: sheep-feeding; tannins; lotus-uliginosus; nutritive-value; lolium-perenne; feed-evaluation; nitrogen-content; dry-matter; digestibility; rumen-digestion; rumen-metabolism; metabolites; growth; wool; liveweight-gain
Effect of condensed tannins upon the performance of lambs grazing Lotus corniculatus and lucerne (Medicago sativa).
Includes references.
Descriptors: lambs; wool-production; carcass-yield; growth; feed-intake; nutritive-value; grazing; lotus-corniculatus; medicago-sativa; leaves; stems; plant-composition; tannins; feed-evaluation; rumen-digestion; digestibility; metabolites; chemical-composition; new-zealand

The effect of diet in late pregnancy of progesterone concentration and colostrum yield in ewes.
Includes references.
Descriptors: ewes; pregnancy; plane-of-nutrition; blood-serum; progesterone; colostrum; grass-silage; beet-pulp; silage; soybean-oilmeal; feed-supplements; lambing; postpartum-period; igg; yields; energy-intake; protein-intake; crude-protein

Abstract: In the ewe, high level feeding is associated with low levels of circulating progesterone and that progesterone withdrawal is a prerequisite for lactogenesis and the onset of copious milk secretion. A total of 108 ewes was allocated to a 3 X 2 factorial experiment to determine the effect of diet on serum progesterone (P4) concentration and colostrum yield. On D 96 of pregnancy, the ewes were offered either grass silage, molassed sugar beet pulp (beet pulp) silage or grass silage supplemented with beet pulp. A ewes were given ad libitum access to silage. From D 126 of pregnancy, half the diets were supplemented with soybean meal with the aim of achieving a total crude protein intake of 220 g/ewe/day. Blood samples were taken on D 142 of pregnancy and at 1, 10 and 18 h post lambing for P4 determination. Metabolizable energy intakes (Mega Joules/ewe/day) of 9.1, 11.2 and 12.1 (SEM 0.37) and crude protein intakes (g/ewe/day) of 142.8, 167.4 and 162.0 (SEM 3.46) were recorded for grass silage, beet pulp ensiled and beet pulp supplemented silages, respectively, from D 126 to D 147 of pregnancy. Soybean meal supplementation increased the crude protein intake from 97.1 to 217.0 g/ewe/day (SEM 2.86) and Metabolisable Energy intake from 9.0 to 12.6 Mega Joules/ewe/day (SEM 0.31). Supplementation with soybean meal decreased P4 concentration (ng/ml) on D 142(p < 0.05) and at 1 h(P < 0.01), 10h (P <0.01) and 18h post lambing(P < 0.01). Ewes offered grass silage had higher P4 concentrations on D 142 (P < 0.01) and at 1 h after lambing (P < 0.05) than the beet pulp-supplemented ewes. There were negative linear relationships between P4 concentration at D 142 and colostrum yield at 1 h (P < 0.01) and between P4 concentration at 1 h and colostrum yield at 1 h (P < 0.001) and total yield at 18 h (P < 0.001). In conclusion, ewes which were underfed had higher P4 concentrations at all times, and there were negative linear relationships between colostrum yield and P4 concentrations on D 142 of pregnancy and at 1 h post lambing.

Effect of dietary protein level on thermoregulation, digestion and water economy in desert sheep.
Includes references.
Descriptors: sheep; dietary-protein; body-temperature; environmental-temperature; water-balance; nitrogen-balance; crude-protein; feed-intake; dry-matter; liveweight-gain; water-intake; respiration-rate; rumen-contents; ph; ammonia; volatile-fatty-acids; blood; metabolites; sudan

Effect of dietary protein on the regulation of populations of Nematodirus battus by lambs.
Includes references.
Descriptors: lambs; nematodirus-battus; dietary-protein; protein-supplements; nematode-larvae; experimental-infections; nutritional-state; immunity; susceptibility; nematode-control

Abstract: Two groups of seven and two groups of six lambs were offered either a complete basal ruminant diet (13.2 per cent crude protein [CP]) (groups 2 and 4) or the same diet supplemented with fish meal (18.3 per cent crude protein [CP]) (groups 1 and 3). The results indicated that the supplemented diet significantly reduced the population of Nematodirus battus by 80% compared to the basal diet. The study concluded that dietary protein supplementation significantly affects the regulation of Nematodirus battus populations in lambs.
Groups 1 and 2 were infected daily for seven weeks with Nematodirus battus larvae (L3) and groups 3 and 4 served as uninfected challenge controls. All the groups were treated with anthelmintic in the eighth week, challenged with a single dose of 30,000 N battus L3 one week later and killed nine days after the challenge. Although protein supplementation tended to enhance the regulation of the population of N battus in the lambs which had been infected continuously, the effect was not statistically significant. The worm burdens in both the groups of previously infected lambs were significantly reduced both in number and size (P<0.001) and they had a lower proportion of male worms than the uninfected challenge controls. The lambs could be segregated into high or low responders on the basis of their worm burdens, and there was a significant reduction in worm burdens (P<0.001) and size (P<0.01) in parallel with the lambs' responsiveness. The identification of high and low responders shows that when the dietary protein supply is adequate the predominant effect of the host on the pathogenicity of its parasites is the host's genetically-determined susceptibility.

125 NAL Call No.: 41.8-R312
Effect of dietary protein supplementation on the development of immunity to Ostertagia circumcincta in growing lambs.
Includes references.
Descriptors: lambs; teladorsagia-circumcincta; protein-supplements; casein; immunity; development; supplementary-feeding; feed-intake; liveweight-gain; growth-rate

Abstract: Thirty-four-and-a-half-month-old worm-free lambs were used to determine whether the rate of development of immunity to Ostertagia circumcincta infection in growing lambs could be influenced by the addition of a by-pass protein supplement. Sixteen lambs (groups 1 and 2) were fitted with an abomasal catheter and infected daily with 2000 O circumcincta L3 for eight weeks. Group 1 lambs received 45 g of crude protein day 1 (sodium caseinate) as a continuous infusion into the abomasum from week -1 to week 8. At week 9, groups 1 and 2, together with eight naive controls (group 3), were treated with anthelmintic and challenged one week later with 50,000 O circumcincta L3 and killed after a further 10 days. An additional six worm-free lambs provided feed intake and growth rate data. All the lambs were offered a complete ruminant ration (167 g crude protein kg-1) ad libitum. The cumulative liveweight gain of both the trickle-infected groups was less than that of the controls. The mean faecal egg counts were lower in group 1 from day 39 after infection and the mean worm burdens were significantly lower than in group 2. Total Ostertagia populations did not differ significantly between group 3 and either group 1 or 2 lambs. Early L4 stages constituted a greater percentage of the total worm population in group 1 (79.5) and group 2 (48.5) than in the challenge controls (group 3) (20.4). The trickle-infected lambs also had higher concentrations of gastric mast cell protease which correlated positively with the proportion of early L4 stages and negatively with the total worm burden. The provision of by-pass protein supplement accelerated the development of immunity to O.

126 NAL Call No.: 41.8-N483
The effect of electro-ejaculation on aversive behaviour and plasma cortisol concentration in rams.
Stafford KJ; Spoorenberg J; West DM; Vermunt JJ; Petrie N; Lawoko CRO New-Zealand-Veterinary-Journal v.44(3): p.95-98; 17 ref (1996)
Descriptors: hydrocortisone; animal-behaviour; rams; shearing; electroejaculation; stress; animal-welfare

127 NAL Call No.: QL750.E82
Effect of ewe age and high population density on the early nursing behaviour of mouflon.
Descriptors: ewes; lambs; suckling; age; wild-animals

128 NAL Call No.: QP251.A1T5
Effect of exogenous melatonin and plane of nutrition after weaning on estrous activity, endocrine status and ovulation rate in Salz ewes lambing in the seasonal anestrus.
Includes references.
Descriptors: ewes; melatonin; blood-plasma; controlled-release; estrous-cycle; ovulation-rate; body-weight; body-condition; weaning; hormone-secretion; lh; spain
Abstract: Forty-nine Spanish Salz ewes lambing in the second fortnight of March (20 March +/- 15 d) were used to determine the effects of exogenous melatonin and postweaning nutrition on endocrine status, date of first estrus and ovulation rate. Experimental design was a factorial defined by 2 postweaning planes of nutrition, 1.80 (high) and 1.35 (low) times the maintenance requirements, and treatment with a single 18-mg subcutaneous implant of melatonin (M) 32 d after lambing or no treatment control (C). Mean weaning to first estrus interval was shorter in treated than in control ewes (50.8 +/- 4.2 vs 87.6 +/- 6.3 d; P < 0.01). Considering both the treated and control animals together, the ratio between mean night and daytime plasma melatonin levels was significantly correlate with the implant insertion-first estrus interval on Day 5 (0.67; P <0.01) and Day 35 (0.63; P < 0.05) after implantation. Melatonin implants induced a significant increase of mean LH concentrations at Days 14 and 33 after implantation (P < 0.01) without any significant influence of plane of nutrition. Ovulation rate was higher for treated than control ewes the second estrus (P < 0.05). An interaction between plane of nutrition and exogenous melatonin on ovulation rate at the second cycle after weaning was detected (P < 0.01), being close to the significance in the first, fourth and fifth cycles (P < 0.1). These result suggest that exogenous melatonin in April may be an effective way of advancing the breeding season and enhancing ovulation rate associated with a low rather than a high plane of nutrition.

129 NAL Call No.: SF380.I52
Effect of feeding on Leucaena leucocephala supplemented rations on thyroid hormones and fasting heat production in Jamunapari goats.
Includes references.
Descriptors: goats; leucaena-leucocephala; thyroid-function; triiodothyronine; thyroxine; heat-production; fasting; dietary-protein; peanut-oilmeal; diet; oat-hay; maize; feed-intake; dry-matter; respiratory-quotient; body-weight; oxygen-consumption; carbon-dioxide; methane-production

130 NAL Call No.: SF55.A78A7
Descriptors: feed-conversion-efficiency; liveweight-gain; feed-intake; carcass-quality; group-size

131 NAL Call No.: SF380.I52
Effect of genotype and plane of nutrition on carcass characteristics of Thai native and Anglo-Nubian X Thai native male goats.
Includes references.
Descriptors: goats; goat-breeds; anglo-nubian; crossbreds; plane-of-nutrition; feed-intake; carcass-weight; dressing-percentage; muscle-weight; body-fat; bone-weight

132 NAL Call No.: RA639.M44
The effect of host nutrition on itch mite, Psorergates ovis, populations and fleece derangement in sheep.
Includes references.
Descriptors: sheep; psorobia-ovis; infestation; population-density; nutritional-state; diet; fleece; damage; fleece-weight; skin; histology; australia; skin-scurf

Abstract: A group of thirty-two Merino sheep infested with itch mites (Psorergates ovis) and fed a maintenance diet which imposed moderate nutritional stress had a significantly higher mite population, significantly more skin scurf, and significantly more fleece damage or derangement (P < 0.05) than a second group of thirty-two infested sheep fed a diet designed for unrestricted body weight gain and wool growth. Histologically there were no significant differences between the groups in the numbers of mast cells, neutrophils or eosinophils observed in skin sections, but sheep that had high mite counts (> 10 per 200 cm2 of skin area) in both groups, had more dermal mast cells than sheep with fewer mites irrespective of the plane of nutrition. Skin thickness and greasy fleece weight in the group maintained on the low plane of nutrition were significantly less (P < 0.05) than in the
well-nourished group, reflecting the difference in protein and energy content of the two diets. Within the nutritionally stressed group, the sheep with low mite counts had a significantly lower (P < 0.05) greasy fleece weight and a shorter mean staple length than the sheep with high mite counts. There was no significant difference in greasy fleece weight between sheep with low or high mite counts in the group fed on the high plane of nutrition.

133 NAL Call No.: SF1.A56

Effect of increasing level of spineless cactus (Opuntia ficus indica var. inermis) on intake and digestion by sheep given straw-based diets.
Includes references.
Descriptors: sheep; opuntia-ficus-indica; wheat-straw; urea; feed-supplements; protein-content; water-intake; voluntary-intake; digestibility; feed-intake; dry-matter; crude-protein; fiber-content; rumen-fermentation; ammonium-nitrogen; volatile-fatty-acids; rumen-protozoa; cellulose-digestion; enzyme-activity; ph; diurnal-variation; tunisia

134 NAL Call No.: 49-J82

Effect of intravenous glucose infusion on metabolism of portal-drained viscera in sheep fed a cereal/straw-based diet.
Includes references.
Descriptors: sheep; blood-sugar; glucose; infusion; intestinal-absorption; hematocrit; blood-flow; rumen-fermentation; volatile-fatty-acids; nitrogen-content; feed-intake; straw; barley; wheat; soybean-oilmeal; pelleted-feeds; rumen-fluid; metabolites; blood-plasma; insulin; amino-acids

Abstract: This experiment investigated the effect of intrajugular infusion of glucose on whole-body glucose metabolism and the absorption of nutrients by the portal-drained viscera of four Suffolk-cross sheep average BW 46 +/- 7 kg, fed a cereal/straw-based pelleted diet. Each sheep received by random allocation 0 (control), 1.0, or 2.0 mg of glucose kg BW-1.min-1 for 8 h infused into the jugular vein. Glucose irreversible loss rate, measured by simultaneous infusion of 6-[3H]-glucose, increased approximately stoichiometrically during glucose infusion (.51, .75, and 1.09 error mean square [EMS] 0.032 mmol/min for control, 1.0, and 2.0 mg of glucose infused kg BW-1.min-1, respectively). Utilization of glucose increased in portal tissues (P = 0.89) as a result of glucose infusion (.17, .18, and .33 EMS .008 mmol/ min) and was a constant proportion of glucose irreversible loss (.28). Portal blood flow was not affected by glucose infusion (overall mean 1.13 L/min EMS .034). Net portal absorption of acetate increased during glucose infusion although ruminal VFA concentrations were not affected. In contrast, net free amino acid absorption by portal-drained tissues was reduced during glucose infusion (291, 115, and 4 EMS 33,816 micromoles/min, P = .054). These results show that metabolism of nutrients across the gut wall is influenced by glucose availability to gastrointestinal tissues and affects the pattern of nutrients available to the liver and peripheral tissues.

135 NAL Call No.: 26-T754

Effect of legume supplements on cassava peel silage utilization by West African Dwarf goats.
Includes references.
Descriptors: west-african-dwarf-goat-breed; goat-feeding; silage; cassava-peel; leucaena-leaf-meal; gliricidia-sepium; leaf-meal; protein-supplements; nutritive-value; feed-intake; liveweight-gain; growth-rate; ratios; feed-conversion-efficiency y ; nutrition-physiology

136 NAL Call No.: SF15.P7A62

The effect of management and the way of productive use of sheep on the health status of their udders.
Charon KM; Skolasinski W; Swiderek WP Annals-of-Warsaw-Agricultural-University,-Animal-Science. 1995, No. 31, 75-81; 16 ref
Descriptors: animal-husbandry; hygiene; sheep-housing; mastitis; ewes
Effect of management systems on growth performance and behaviour of crossbred goat of Assam.
Descriptors: management; systems; growth; performance; behaviour; body-weight; tropics

The effect of nutrition and exercise on carcass parameters and the level of glycogen in skeletal muscle of Merino sheep.
Includes references.
Descriptors: sheep; feed-intake; exercise; glycogen; ph; skeletal-muscle; carcass-quality; carcass-weight; fat-thickness

Effect of nutritional level on bodyweight, degree of anaemia and carcase composition of sheep infected with Trypanosoma congolense.
Includes references.
Descriptors: sheep; trypanosoma-congolense; plane-of-nutrition; trypanosomiasis; body-weight; hematocrit; anemia; carcass-composition; growth-rate; protein-content; diet; experimental-infections
Abstract: The influence of nutritional level on the bodyweight, degree of anaemia and carcase composition of 24 sheep infected experimentally with Trypanosoma congolense was investigated. The infection caused a marked retardation of growth in the animals fed a low protein ration whereas the infected and control animals fed a high protein ration grew at similar rates. Both groups of infected animals developed similar degrees of anaemia but the infected group fed the high protein diet tended to sustain a higher intensity of parasitaemia than the group fed the low protein diet. The infection was also associated with low killing out percentages and a general reduction of total carcase protein, energy and fat. The decline in these carcase components was greater in the animals fed the low protein diet than in those receiving the high protein diet.

The effect of protein degradation products in grass silages on feed intake and intake behaviour in sheep.
Descriptors: protein-degradation; silage-quality; feed-intake; feeding-behaviour; grass-silage; ammonia; amines

Effect of roasting on site and extent of digestion of soybean meal by sheep. I. Digestion of nitrogen and amino acids.
Includes references.
Descriptors: sheep; soybean-oilmeal; roasting; duration; digestibility; solubility; protected-protein; diet; amino-acids; rumen-metabolism; volatile-fatty-acids; ph; flow; ammonium-nitrogen; nitrogen-metabolism; small-intestine; duodenum
Abstract: Six mature wethers (BW 72 kg) with ruminal, duodenal, and ileal cannulas were fed a control (no added soybean meal [SBM]) diet or diets containing unheated SBM or SBM roasted at 165 degrees C for 75, 150, 180, or 210 min in a 6 X 6 Latin square experiment. Concentrations of indicators of heat exposure (ADIN, ADF, NDF) in SBM increased with increasing roasting time. Duodenal flows of total N, non-bacterial N, and SBM N increased (P < .05) linearly with increased roasting time. Small intestinal (SI) digestibility (percentage entering SI) of total N and SBM N was influenced quadratically (P < .05) by roasting time; SI digestibilities were modestly increased by heating SBM to 150 min, then declined dramatically when SBM was heated for 180 and 210 min. These responses resulted in a quadratic (P < .05) increase in quantity of total and SBM N disappearing in the SI; quantities increased as SBM was heated to 150 min and remained unchanged when SBM was heated for 180 and 210 min. These responses resulted in a quadratic (P < .05) increase in quantity of total
and SBM N disappearing in the SI; quantities increased as SBM was heated to 150 min and remained unchanged when SBM was heated for 180 and 210 min. Duodenal flows and SI digestibilities of total and non-bacterial amino acids (AA) and of most individual AA followed patterns similar to those observed for N. Maximum quantities of total and individual AA disappeared from the SI when wethers were fed SBM roasted at 165 degrees C for 150 min. Evaluation of the effects of heat treatment on the nutritive value of a protein source for ruminants should include considerations for both ruminal protein escape and SI availability of escaped protein and for the nature of the AA supply absorbed from the SI.

142 NAL Call No.: 23-N4892
Effect of sire breed (Southdown, Suffolk), sex, and growth path on carcass composition of crossbred lambs.
Descriptors: suffolk-sheep-breed; carcass-composition; southdown; sex; growth; lambs; cryptorchidism; nutrition; crossbreeding; sex-differences

143 NAL Call No.: SF1.A56
Effect of space allowance during transport on the behavioural and physiological responses of lambs during and after transport.
Includes references.
Descriptors: lambs; transport-of-animals; stress-response; space-requirements; floor-area; heart-rate; hydrocortisone; blood-sampling; posture; blood-plasma; restricted-feeding; water-deprivation; animal-welfare; creatine-kinase; aspartate-amin o transferase; enzyme-activity; body-weight; water-intake; animal-behavior; sheep-rumination; blood-protein; lying; feed-deprivation

144 NAL Call No.: 10-J822
Effect of species composition and sward structure on dietary quality in cattle and sheep grazing South African sourveld.
Includes references.
Descriptors: grasslands; grass-sward; species-diversity; stand-structure; plant-height; biomass; grazing; cattle-feeding; sheep-feeding; feed-evaluation; in-vitro-digestibility; seasonal-variation; soil-water; fire-effects; dormancy; grassland-management; crop-quality; south-africa

145 NAL Call No.: 10-J822
Effect of species composition and sward structure on the ingestive behaviour of cattle and sheep grazing South African sourveld.
Includes references.
Descriptors: grasslands; grass-sward; species-diversity; stand-structure; plant-height; biomass; grazing; cattle-feeding; sheep-feeding; feed-intake; feed-evaluation; grassland-management; crop-quality; south-africa

146 NAL Call No.: SF1.Z6
Effect of stocking density on productive performance and behaviour of artificially reared female kids. [Effetto della densita di allevamento sulle prestazioni produttive e sul comportamento di caprette allattate artificialmente.]
Descriptors: performance; kids; animal-welfare; housing; behaviour; feed-conversion-efficiency; stocking-density; artificial-rearing

147 NAL Call No.: SF55.A78A7
Effects of activated carbon on growth, ruminal characteristics, blood profiles and feed digestibility in sheep.
148 NAL Call No.: QL750.A6
The effects of agonistic behaviour and nutritional stress on both the success of pregnancy and various plasma constituents in Angora goats.
Descriptors: nutrition; aggression; stress; pregnancy; Angora; body-weight; pregnancy-toxaemia; abortion; behaviour; restricted-feeding; glucose; hydrocortisone; blood; agonistic-behaviour

149 NAL Call No.: SF380.I52
Effects of blood meal, fish meal, soybean meal or casein on rumen protein metabolism in lambs.
Includes references.
Descriptors: lambs; blood-meal; soybean-oilmeal; casein; fish-meal; rumen-digestion; protein-digestibility; ammonia; dietary-protein; duodenum; flow; amino-acids; feed-intake; dry-matter

150 NAL Call No.: QL750.A6
Effects of castration on fear reactions of male sheep.
Descriptors: sex-differences; wethers; rams; castration; effects; behaviour; androgens; hormones; fearfulness; animal-behaviour; fright

151 NAL Call No.: SF1.A56
Effects of clover and milk in the diet of grazed lambs on meat quality.
Includes references.
Descriptors: lambs; weaning; sown-grasslands; botanical-composition; grasses; lamb-meat; sensory-evaluation; meat-quality; flavor; cooking-losses; trifolium-repens

152 NAL Call No.: 23-N4892
Effects of contrasting sward heights within forage species on short-term ingestive behaviour of sheep and goats grazing grasses and legumes.
Descriptors: feeding-behaviour; grazing; plant-height; intake; grasses; legumes

153 NAL Call No.: 41.8-C163
Effects of crude protein content, protein degradability and energy concentration of the diet on growth and carcass characteristics of market lambs fed high concentrate diets.
Includes references.
Descriptors: lambs; lamb-feeding; diet; protein-content; energy-content; protein-supplements; growth-rate; carcass-composition; fish-meal; rapeseed-oilmeal; barley; undegradable-protein-supplements

Abstract: Weaned lambs (186 females and 141 castrated males) of various genotypes averaging 16.2 kg were used in an experiment to determine the effects on growth of altering protein and energy content of the diet, and supplementing concentrate diets with undegradable protein. Dietary effects on carcass leanness were assessed using male lambs slaughtered at a live weight of 41 kg. Lambs were fed one of five barley and canola meal based diets: (1) high energy, 15% CP, no fishmeal, (2) high energy, 15% CP, added fishmeal, (3) high energy, 18% CP, no fishmeal, (4) high energy, 18% CP, added fishmeal, and (5) moderate energy, 18% CP, added fishmeal. Canola meal contained 42.3% CP with a rumen degradability of 48.1%, while fishmeal contained...
76.2% CP with a degradability of 15.2%. Diet 5 reduced growth rate, increased days on test, decreased feed efficiency, decreased dressing percentage, reduced internal fat and marginally decreased subcutaneous fat deposition, compared with a higher energy diet. Level of CP and protein degradability had little effect on growth and carcass characteristics. Dietary regime has limited potential to alter carcass leanness of feedlot lambs except by feeding for reduced growth rate which may increase production costs. Genetic selection and use of low input production systems may be more promising methods of improving carcass leanness.

154 NAL Call No.: 41.8-C163
Effects of dietary cation-anion concentrations on performance and acid-base balance in growing lambs.
Includes references.
Descriptors: lambs; experimental-diets; ion-balance; cations; anions; balance-studies; feed-intake; liveweight-gain; digestibility; nutrients; blood-chemistry; urine; acid-base-equilibrium

Abstract: Twenty-four castrated lambs (32.4 +/- 4.1 kg BW) were used to study the effect of varying dietary cation-anion concentration [C-A] on performance and acid-base balance. The diets contained approximately 100, 300, 500 and 700 mequiv Na+K-Cl kg-1 of feed. Each group of six lambs was fed one of the diets ad libitum during a 6-wk test. Increasing the [C-A] of the diets resulted in higher feed intake and higher daily gains (P < 0.01) without affecting feed efficiency. Apparent digestibility of nutrients was not affected by the dietary treatments but a negative relationship was found between intake and energy digestibility (P < 0.01). Blood pH was lower in lambs receiving the 100 [C-A] diet (P < 0.05). Blood bicarbonate and base excess increased as [C-A] in the diet increased from 300 to 700 mequiv (P < 0.05). Plasma Mg concentration decreased with increasing dietary [C-A] (P < 0.01). Urinary pH and urine volume increased as [C-A] in the diet increased (P < 0.01). The results indicate that diets containing between 500 and 700 mequiv Na+K-Cl kg-1 stimulated growth by allowing greater feed intake and greater daily gains with little effect on nutrient digestibility. Blood profile showed a systemic response to dietary changes in [C-A], but indicated that lambs were able to adapt to cation loads since the values obtained for acid-base balance were within physiological range for lambs.

155
Effects of dietary fibre and protected fats on goat milk composition. [Effets des fibres et des matieres grasses protegees sur la composition du lait de chevre.]
Rousselot MC; Broqua CB; Araujo C de; Borgida LP; De Araujo C 2emes rencontres autour des recherches sur les ruminants, Paris, France, 13-14 decembre 1995. 1995, 225-229; 12 ref
Descriptors: goat-milk; lipids; goat-feeding; fibre; fats; protected-fat; milk-yield; milk-fat-yield; milk-protein-yield; yields; composition; supplements; 2emes-rencontres-autour-des-recherches-sur-les-ruminants

156 NAL Call No.: 41.8-C163
Effects of dietary hydroxides on intake, digestion, rumen fermentation and acid-base balance in sheep fed a high-barley diet.
Includes references.
Descriptors: wethers; sheep-feeding; calcium-hydroxide; hydroxides; feed-intake; digestibility; rumen-fermentation; acid-base-equilibrium; metabolites; barley; magnesium-hydroxide

Abstract: Eight mature wethers fitted with rumen cannulae were used in a double 4 X 4 Latin square feeding trial to study the effect of dietary alkalis on digestive physiology of sheep fed a high-barley diet. The treatments were: C = control diet composed of 17% alfalfa meal and 83% concentrate, on as-fed basis; CA = control plus 1% Ca(OH)2; MG = control plus 0.79% Mg(OH)2; CAMG = control plus 5% Ca(OH)2 and 0.39% Mg(OH)2. Dry matter intake averaged 1.91, 2.54, 2.79, and 2.72% of BW for diets C, CA, MG and CAMG, respectively (P < 0.01). Digestible DM intake was also affected by the treatments and averaged 0.97, 1.26, 1.35 and 1.37 kg d-1 for C, CA, MG, and CAMG diets, respectively (P < 0.01). Apparent DM digestibility was higher in sheep fed the C diet than in those fed the other diets (P < 0.03) and it was inversely related to intake (P < 0.01). Total VFA concentration was lower in sheep fed C than in those fed the hydroxides (P < 0.01). Proportions of individual VFA were not altered by the diet except for isobutyrate which was higher in sheep fed the C diet (P < 0.01). Rumen NH3-N concentration was lower in sheep fed the hydroxide-containing diets than in animals fed the
control diet (P < 0.01). Plasma urea nitrogen was lower for the C diet (P < 0.01). Plasma glucose tended to be lower for the C diet than for the other diets (P < 0.06). The control diet induced a mild form of systemic acidosis as indicated by the decrease in blood pH, HCO3- and base excess (P < 0.01). Addition of Ca(OH)2 and Mg(OH)2 to the diet, alone or in combination, improved the systemic acid-base status of sheep and was associated with increased DM intake.

157 NAL Call No.: DISS--F1995279
Effects of dietary level of fat from a combination of full-fat soybeans and calcium soaps on physiologic digestive parameters in the rumen and cecum of the sheep. [Auswirkungen steigender Gaben von Fett aus einer Kombination von Sojavollbohnen und Ca-verseiften Fettsäuren auf verdauungsphysiologische Parameter im Pansen und Caecum des Schafes.]

158 NAL Call No.: SF1.A56
Effects of dietary maize level on net flux across splanchnic tissues of oxygen and nutrients in wethers consuming ad libitum different forages.
Includes references.
Descriptors: sheep; unrestricted-feeding; alfalfa; cynodon-dactylon; hay; ryegrass-hay; maize; portal-circulation; liver; oxygen-consumption; feed-intake; energy-intake; blood; urea; ammonium-nitrogen; digestibility; blood-flow; portal-vein; veins; arteries; nutrient-uptake; hepatic-vein; hepatic-artery

159 NAL Call No.: 23-Au792
Effects of dietary phosphorus deficiency in pregnant and lactating ewes.
Includes references.
Descriptors: sheep; ewes; pregnancy; ewe-lactation; barley-straw; unrestricted-feeding; phosphorus; nutrient-deficiencies; feed-intake; blood-plasma; lambs; liveweight; bones; concentration; calcium; milk; milk-production; kinetics

160 NAL Call No.: SF380.I52
Effects of dietary protein level on performance of Angora and cashmere-producing Spanish goats.
Includes references.
Descriptors: goats; cashmere; angora; dietary-protein; crude-protein; blood-plasma; urea; nitrogen-retention; feed-intake; dry-matter; liveweight-gain; triiodothyronine; thyroxine; fleece-weight; feed-conversion

161 NAL Call No.: 49-J82
Effects of dietary protein percentage and beta-agonist administered to prepubertal ewes on mammary gland growth and hormone secretions.
Includes references.
Descriptors: ewes; dietary-protein; puberty; mammary-glands; milk-yield; beta-adrenergic-agonists; soybean-oilmeal; concentrates; blood-plasma; somatotropin; insulin; insulin-like-growth-factor; depot-fat; ewe-milk; milk-yield; tissues; weight; dna; rna; mammary-gland-fat-pad

Abstract: The effects of dietary protein and beta-agonist, (L-644,969) on mammary growth from weaning to puberty, hormone secretions, and milk yield were studied. Twelve lambs were assigned to each treatment in a 2 x 2 factorial arrangement with dietary protein at 15 or 20% and beta-agonist at 0 or 1 ppm of concentrate. Lambs were fed pelleted concentrate to achieve a target weight gain of 260 g/d. The treatment period continued for 102 d, with protein starting on d 1 and beta-agonist on d 20. Five lambs in each group were slaughtered at the end of treatment to investigate mammary growth before puberty. The remainder were maintained, and, after lambing, daily milk yield was recorded for 7 wk and ewes were then slaughtered. In prepubertal lambs, compared with control, the 20% protein diet had no effect on any variable measured in the mammary glands, whereas beta-agonist increased (P < .05) RNA:DNA ratio. In lactating ewes, the 20% protein diet enhanced mammary gland
weight, parenchyma, parenchymal dry fat-free tissue (P < .05), and parenchymal fat (P < .01). The beta-agonist reduced mammary gland weight (P < .01), parenchyma, parenchymal dry fat-free tissue (P < .05), and parenchymal fat (P < .01). There was a nonsignificant trend for increased milk yield for ewes fed the 20% protein diet and decreased milk yield for beta-agonist. The beta-agonist increased somatotropin concentration, but there was no evidence that increased somatotropin concentration induced mammogenesis in lambs. In conclusion, increased dietary protein may play a role in stimulating mammogenesis in rapidly growing lambs before puberty.

162 NAL Call No.: 49-J82
Effects of dietary supplementation of vitamin E on storage and caselife properties of lamb retail cuts.
Includes references.

Descriptors: lambs; vitamin-e; vitamin-supplements; lamb-meat; meat-cuts; lipid-peroxidation; liveweight-gain; body-weight; dressing-percentage; carcass-weight; fat-thickness; color; keeping-quality; storage-life

Abstract: Thirty wether lambs were randomly assigned to three treatments consisting of a control (C) and two vitamin E-supplemented treatments (VE), one fed 500 IU of vitamin E.lamb-1.d-1 (E500) and the other fed 1,000 IU of vitamin E.lamb-1.d-1(E1000). After a 56-d feeding period, lambs were slaughtered and carcass traits were evaluated. Wholesale legs and loins were vacuum-packaged, stored at 4 degrees C for 7, 14, 21, or 28 d, fabricated into retail cuts, and packaged and displayed to simulate retail industry conditions. The E1000 lambs gained less (P < .05)(kg/d; total gain) and had lower (P < .05) carcass weights than the E500 lambs. Alpha-tocopherol levels in the longissimus lumborum were higher (P < .05)(5.79 vs 3.50 microgram/g of tissue) for VE than for C; however, there was no difference in alpha-tocopherol level in longissimus lumborum between E500 and E1000. Leg retail cuts experienced greater (P < .05) lipid oxidation and received lower (P < .05) lean color scores than did loin retail cuts. Less (P < .05) lipid oxidation occurred from 1 to 7 d of display in VE retail cuts than in C retail cuts. Longer storage periods before retail display resulted in greater (P < .05) lipid oxidation at both 1 and 7 d of display and a higher (P < .05) rate of lipid oxidation during the display period. Supplementing vitamin E had the greatest effect in reducing lipid oxidation when cuts were stored for longer periods before retail display. Subjective scores for lean color and overall appearance were more (P < .05) desirable for VE cuts than for C cuts at all retail display periods. Lean discoloration scores and fat color scores for VE and C cuts were not different at 0 d of display but were more (P < .05) desirable for VE cuts during subsequent display. Supplementing vitamin E extended the caselife of lamb approximately 4 d; supplementing with 1,000 IU did little to improve storage/caselife attributes of lamb cuts beyond that achieved by supplementing 500 IU/d.

163 NAL Call No.: SF380.I52
Effects of different RDP and UDP ratios on voluntary intake, milk production and feed conversion efficiency in lactating goats.
Includes references.

Descriptors: goats; dietary-protein; protected-protein; voluntary-intake; crude-protein; feed-intake; dry-matter; milk-yield; goat-milk; milk-fat-percentage; feed-conversion; body-weight; fodder; concentrates; milk-protein-percentage; production-costs; cottonseed-oilmeal; india

164 NAL Call No.: SF207.B442
Effects of energy intake and protein level in all concentrate diets.
Includes references.

Descriptors: lambs; feeding; trials; organs; protein-efficiency-ratio; growth-rate; liver; kidneys; slaughter-weight

165 NAL Call No.: 49-J82
Effects of energy source and food flavor on conditioned preferences in sheep.
Abstract: Livestock and range managers would have a powerful tool to direct utilization and modify plant communities if animals could be conditioned to eat specific foods or plants. We attempted to condition preferences for a low-quality forage through nutrient loading. Sheep were fed licorice or orange-flavored straw pellets then were gavaged with glucose or propionate (.381 Mcal, which amounted to approximately 13% of the daily maintenance energy requirement) or water. Four groups of ewes (n = 4) were arranged in a cross-blocked design such that each group received a unique energy/flavor combination: 1) propionate + licorice, 2) propionate + orange, 3) glucose + licorice, or 4) glucose + orange. On alternate days, each group received the other flavor plus water to create an internal control. At the end of 8 d of conditioning, preference for the two flavors was measured by two-choice preference tests. A second trial was conducted for 4 d in which the energy level was doubled to .762 Mcal. Low energy levels of either glucose or propionate did not create significant preferences. Propionate at the low-level caused satiety but at the high level conditioned an aversion to both flavors. This high level of propionate apparently caused malaise that was then associated with the taste of the flavors. The high level of glucose conditioned a preference. The high glucose treatment increased rumen microbial mass, the nutrients of which would have been absorbed in the lower gastrointestinal tract, and may have indirectly provided the positive nutrient feedback required to form a preference. There was a flavor preference for orange that was independent of the energy supplements.
Effects of feeding wash-water solids on health and performance of ewes and lambs.


Includes references.

Descriptors: ewes; lambs; dairy-wastes; bacterial-protein; diet; chemical-composition; body-weight; liveweight-gain; survival; blood-picture; dietary-minerals

Abstract: Diets containing 0, 10, or 20% dried wash-water solids (WWS) from a milk processing plant were fed to 48 Hampshire crossbred ewes (average weight 58.1 kg) for 3 yr. Data were obtained on BW gains, hematology, tissue elements, and survival for ewes and BW gains, tissue elements and survival for their lambs. Ewes fed 20% WWS gained less (P < .05) BW during gestation and lactation in yr 1 and had lower BW (P < .05) in yr 2 and 3 than those fed 0 or 10% WOOS. Lambs from ewes fed 20% WWS gained less (P < .05) BW in yr 2 and 3. Hematology variables of ewes, survival of ewes and survival of lambs were not affected by diet. Although WWS-containing diets contained high concentrations of Ca, P, Mn, and Fe and moderate concentrations of Mo, Mg, and Zn, diets had few effects on tissue elements in ewes and lambs. Concentrations of some tissue elements were less (P < .05) in lambs in yr 2 and 3 than in yr 1. Wash-water solids can be incorporated into ruminant diets, providing a disposal alternative that recycles and conserves nutrients. Long-term feeding posed only minor or negligible health or safety problems. Because of low energy and N availability and high ash content, WWS probably should be limited to 10% or less of conventional diets.

Effects of feeding, watering and resting intervals on lambs transported by road and ferry to France.


Includes references.

Descriptors: lambs; transport-of-animals; road-transport; transport; lorries; food-deprivation; water-deprivation; rest; animal-welfare; blood-composition; environmental-temperature; relative-humidity; liveweight; england; france; ferry-transport

Effects of handling during temporary isolation after early weaning on goat kids' later response to humans.


Descriptors: weaning; early-weaning; effects; handling; isolation; kids; animal-welfare; animal-behaviour; husbandry; animal-husbandry; behaviour

Effects of immediate and early post-partum separation on maintenance of maternal responsiveness in parturient multiparous goats.


Descriptors: parental-behaviour; effects; separation; maintenance; maternal-behaviour

Effects of limit feeding a high-grain diet on puberty and reproductive performance of ewes.


Includes references.

Descriptors: ewes; ewe-feeding; targhee; sheep-breeds; forage; alfalfa-hay; maize; soybean-oilmeal; body-condition; breeding-season; restricted-feeding; digestibility; feed-intake; dry-matter; protein-intake; liveweight-gain; puberty; age-at-first-lambing; breed-differences; nitrogen-retention; lambing-rate; birth-weight; weaning-weight; age-at-weaning; blood-plasma; insulin; blood-sugar; ph; rumen-fermentation; volatile-fatty-acids; polypay
Abstract: In Exp. 1, 39 ewe lambs (initial BW 29 +/- .1 kg) were used in a 2 X 2 factorial arrangement with two breeds (Polypay and Targhee) and two diets (high-forage and high-grain) to examine the effects of restricting intake of a high-grain diet on onset of puberty and lamb performance. The experimental diets were fed from 13 to 40 wk of age. The high-forage diet was composed of 80% alfalfa cubes and 20% supplement. The high-grain diet was 90% concentrate and 10% alfalfa cubes. Feed intake of the diets was controlled so that lambs fed the high-grain diet had the same growth rate as those fed the high-forage diet. Plasma insulin concentration was higher (P < .001) for lambs fed the high-grain diet than for those fed the high-forage diet. However, no diet effect on age at puberty was observed. In Exp. 2, 88 mature Targhee ewes were used to determine the effects of limiting intake of a high-grain diet on pregnancy and number of lambs born per ewe. Intake of the high-grain diet was restricted to achieve similar ME intake between diets. There were no diet effects on number of lambs born per ewe or subsequent lamb performance. Ewes fed the high-forage diet had a lower (P < .001) weight gain than those fed the high-grain diet. It was concluded that restricting intake of high-grain diets is an effective alternative to feeding high-forage diets for meeting the nutrient requirements of ewe lambs and gestating ewes; however, no improvements on reproductive performance were observed.
177 NAL Call No.: 49-J82
The effects of physical form of feed, carbohydrate source, and inclusion of sodium bicarbonate on the diet selections of sheep.
Includes references.
Descriptors: sheep; feeding-preferences; alfalfa-hay; alfalfa-pellets; nutrient-density; nutritive-ratio; energy-intake; chop-length; barley; sugarbeet-pulp; pelleted-feeds; sodium-bicarbonate; rumen-fermentation; digestibility; liveweight-gain; feed-intake; feed-conversion

Abstract: We proposed an hypothesis that ruminants attempt to select a diet that promotes high levels of feed intake by maintaining optimal ruminal conditions. Three tests of the hypothesis considered whether the diet selection of sheep given either a choice of two high energy density (ED) feeds or a choice between a high and a low ED feed is affected by 1) sodium bicarbonate inclusion (NaHCO3; 1, 2, and 4% [wt/wt]) in the high [ED] feed); 2) dietary carbohydrate source (barley-based, B and sugar beet/ barley, S) of the high ED feed; or 3) physical form (alfalfa: pelleted, ALFP and long chop, ALFL) of the low ED feed. To conduct these, 42 lambs were used in seven 6 x 6 Latin squares, which were either foods ALFL and ALFP offered alone and paired with feed B or S and their NaHCO3 derivatives as a choice, or foods B and S offered alone and paired with their NaHCO3 derivatives as a choice. Each Latin square period lasted for 3 wk. For the choices between a NaHCO3-supplemented high ED feed and either a high or a low ED one, the inclusion of NaHCO3 increased feed intake. Its level of inclusion had a marked effect on the proportion of unsupplemented high ED feed selected (P < .05) but not on the proportion of low ED feed (alfalfa) selected. More alfalfa was selected when the high ED feed was based on barley (B) rather than sugar beet/barley (S) (P < .05). The physical form of the alfalfa affected diet selection because its selection was greater (P < .001) when ALFP (pelleted) was offered in the feed choice rather than ALFL (long-chop). The significant effects of NaHCO3 level, dietary carbohydrate, and physical form on the diet selection and feed intake of the sheep are consistent with the proposed experimental hypothesis.

178 NAL Call No.: SF380.I52
Effects of protein source and level on performance of lactating Damascus goats in negative energy balance.
Includes references.
Descriptors: goats; damascus; protein-concentrates; goat-feeding; crude-protein; soybean-oilmeal; formaldehyde; treatment; rumen-digestion; protected-protein; chemical-composition; digestibility; milk-yield; goat-milk; milk-composition; body-weight; weight-losses; rumen-metabolism; volatile-fatty-acids; ammonium-nitrogen; ph; dietary-protein; barley-hay; barley-straw; feed-conversion; feed-intake

179 NAL Call No.: 49-J82
Effects of restraint and isolation stress and epidural blockade on endocrine and blood metabolite status, muscle glycogen metabolism, and incidence of dark-cutting longissimus muscle of sheep.
Includes references.
Descriptors: lambs; restraint-of-animals; stress-factors; conduction-anesthesia; lidocaine; lamb-meat; dark-cutting-meat; meat-quality; glycogenolysis; muscle-contraction; ph; blood-serum; metabolites; epinephrine; norepinephrine; insulin; fatty-acids; lactic-acid; postmortem-changes; shear-strength; cooking-losses

Abstract: Crossbred lambs (47.3 kg BW) were used to study the effects of restraint and isolation stress on endocrine status and blood metabolites, antemortem glycogenolysis, and incidence of the dark-cutting condition (DCC) in the longissimus muscle (LM) and to determine the role of muscle contraction in the formation of the
DCC in sheep. Lambs were assigned randomly to three treatments: unstressed controls (C); a single 6-h period of restraint and isolation stress (RIS); and a single 6-h period of RIS following epidural blockade (RISEB) with lidocaine. Blood was collected immediately before lambs were subjected to RIS and RISEB and at 12-min intervals during the 6-h period. Serum concentrations of glucose, lactate, and insulin were higher (P < .01) in RIS and RISEB lambs than in C lambs. Serum free fatty acid concentrations were higher (P < .01) in stressed lambs only during the first 4 h of stress. Plasma epinephrine and cortisol concentrations also were higher (P < .01) in RIS and RISEB lambs than in C lambs. Lambs were slaughtered within 30 min after completion of stress. Immediately after stunning and at .75, 3, 6, 12, and 24 h postmortem, samples were removed from the LM in the hindsaddle and foresaddle for glycogen, lactate, and pH determinations. Muscle pH was elevated (P < .01) by RIS and RISEB; ultimate pH exceeded 6.0. The LM from carcasses of RIS and RISEB lambs had lower (P < .01) glycogen and lactate concentrations in both regions than the LM of C lambs. Subjecting sheep to a single 6-h period of RIS was an effective animal model to induce the DCC. Failure of the epidural blockade to inhibit antemortem glycogen metabolism and formation of the DCC indicates that muscle contraction was not requisite to those processes in sheep.

180
Effects of simulated jet aircraft noise on heart rate and behavior of desert ungulates.
Weisenberger ME; Krausman PR; Wallace MC; Young DW de; Maughan OE; De Young DW Journal-of-Wildlife-Management v.60(1): p.52-61; 48 ref (1996)
Descriptors: wild-animals; wild-sheep; effects; ungulates; animal-welfare; aircraft; noise; heart-rate; behaviour; animal-behaviour; stress

181 NAL Call No.: 49-N62
The effects of simulated transportation on plasma levels of catecholamines, cortisol and glucose and eosinophil count in the goat.
Descriptors: transport; hydrocortisone; effects; blood; catecholamines; glucose; eosinophils; animal-behaviour; metabolism; sympathetic-nervous-system; adrenal-medulla; adrenal-cortex; transport-of-animals; blood-chemistry; behaviour; simulation

182 NAL Call No.: 10-J822
Effects of synchronizing the rate of dietary energy and nitrogen release in diets with a similar carbohydrate composition on rumen fermentation and microbial protein synthesis in sheep.
Descriptors: sheep; sheep-feeding; rumen-fermentation; rumen-fluid; nitrogen-cycle; carbohydrate-metabolism; biodegradation; microbial-proteins; protein-synthesis; ph; metabolizable-energy

183 NAL Call No.: SF380.I52
Effects of tethering management on feed intake and behaviour of Tanzanian goats.
Descriptors: goats; tethering; grazing; brachiaria; feed-intake; digestibility; tanzania

184 NAL Call No.: SF1.L5
Effects of the type and level of supplementation on grazing behaviour of lactating ewes in a Mediterranean natural pasture.
Avondo M; Licitra G; Bognanno M; Keshtkaran AN; Marletta D; D' Urso G Livestock-Production-Science v.44(3): p.237-244; 38 ref (1995)
Descriptors: selective-grazing; ewes; milk-production; liveweight; rangelands; supplements; grazing; carbohydrates; sources; intake; milk-yield
185 NAL Call No.: SF1.Z6
Effects of type of pasture and supplementation level on grazing behaviour of lactating ewes. [Effetti del tipo di pascolo e del livello di integrazione sul comportamento alimentare di pecore in lattazione.]
Descriptors: grazing; ewes; lactation; ewe-lactation; milk-yield; ewe-milk; yields; digestibility; pastures; botanical-composition; concentrates; intake; grazing-behaviour

186 NAL Call No.: 10-J822
Effects of underfeeding and of fish meal supplementation on forage digestion in sheep.
Includes references.
Descriptors: sheep; forage; animal-nutrition; protein-supplements; fish-meal; underfeeding; feed-intake; rumen-fermentation; digestibility

187 NAL Call No.: SF55.A78A7
Effects on eating and rumination behaviour in sheep of formic acid and formaldehyde treatment and methionine-supplementation to ladino clover fibrous residue silage.
Includes references.
Descriptors: sheep; formic-acid; formaldehyde; methionine; clover-silage; feeding-behavior; sheep-rumination; mastication; duration

188 NAL Call No.: 41.8-V641
Effects on sheep of transport by road for up to 24 hours.
Includes references.
Descriptors: sheep; road-transport; transport-of-animals; transit-time; liveweight; heart-rate; animal-behavior; blood-composition; stress

189 NAL Call No.: S494.5.S86S8
The efficiency of protein utilization from various sources of crude protein fed to lambs consuming a barley-based feedlot diet.
Includes references.
Descriptors: lambs; lamb-feeding; crude-protein; sources; protein-utilization; efficiency; fish-meal; blood-meal; feather-meal; mixtures; soybean-oilmeal; urea; protein-supplements; feed-intake; protein-digestibility; feed-conversion-efficiency

190 NAL Call No.: SF1.A56
Efficiency of utilization of absorbed amino acids in growing lambs given forage and forage:barley diets.
Includes references.
Descriptors: lambs; lamb-feeding; forage; barley; amino-acids; intestinal-absorption; retention; digestibility; plane-of-nutrition; feed-conversion

191 NAL Call No.: SF604.63N45S87
Electroejaculation: a welfare issue?
Descriptors: rams; bulls; electric-current; stress; glucocorticoids; anaesthesia; neuroleptics; electroejaculation; animal-welfare

192 NAL Call No.: 41.8-N483
Electroencephalographic studies on the nape shooting of sheep.
An empirical examination of U.S. lamb-related import and domestic market relationships near the farmgate.

Includes references.
Descriptors: lamb-meat; wool-production; meat-and-livestock-industry; domestic-markets; economic-impact; imports; market-prices; simulation-models; econometric-models; domestic-production; usa; vector-autoregressive-model

Endocrine correlates of partner preference behavior in rams.

Includes references.
Descriptors: rams; mating-preferences; homosexuality; testes; steroidogenesis; progesterone; testosterone; brain; oxygenases; enzyme-activity; blood-serum; androstenedione; estrone; estradiol; hormone-secretion; aromatase; 17-alpha-hydroxyprogesterone; dihydrotestosterone

Abstract: We studied a unique group of rams that would not mate with estrous ewes during extensive testing for sexual behavior. The same rams courted males in preference to females in 30-min sexual preference tests and were classified as male-oriented (n = 6). We compared the following endocrine profiles: systemic steroid concentrations, the capacity of the testes to biosynthesize 17alpha-hydroxyprogesterone and testosterone from 3H-progesterone in vitro, and the levels of brain aromatase activity (AA) in male-oriented rams vs. rams that were proven breeders and designated as female-oriented (n = 7). After the last behavioral test, sera were collected, and males in each experimental group were killed. Brains and testes were obtained for subsequent determinations of AA and measurements of steroidogenic enzyme activity. All dissections and subsequent assays were performed without knowledge of experimental group assignments. Serum concentration of testosterone (T), dihydrotestosterone (DHT), androstenedione, estrone (E1), and estradiol-17beta (E2) were determined by RIA. AA was quantified by a 3H2O assay validated for neural tissue of the ram. We studied frontal, parietal and cingulate cortex, cerebellum, hippocampus, olfactory bulb, septum, amygdala, infundibulum-median eminence, and preoptic area (POA). Serum T, E1, and E2 concentrations of female-oriented subjects were significantly higher (p < 0.05) than those in male-oriented subjects (SEM: 1559 +/- 228, 46 +/- 2, and 15 +/- 3 pg/ml vs. 874 +/- 196, 40 +/- 2, and 8 +/- 1 pg/ml serum, respectively). DHT and androstenedione concentrations in the systemic circulation did not differ between groups. Likewise, biosynthesis of labeled T and 17alpha-hydroxyprogesterone from 3H-progesterone by testicular homogenates in vitro was significantly higher (p < 0.05) in female-oriented than in male-oriented subjects (28.8 +/- 8.1 vs. 12.1 +/- 2.3 micromole.h-1.mg protein-1 for T and 416.9 +/- 100.8 vs. 307.5 +/- 30.7 micromole.h-1.mg protein-1 for 17alpha-hydroxyprogesterone). The highest level of AA was found in the POA, which was significantly greater in female-oriented than in male-oriented rams (472 +/- 34 vs. 296 +/- 24 fmol 3H2O.h-1.mg protein-1, p < 0.05). AA in other brain areas did not differ between experimental groups. Our data suggest that the testes of the male-oriented ram have reduced capacity for T production. In other species, T controls in situ estrogen formation not only by providing substrate for aromatization but also by up-regulating P450arom mRNA in the POA. Because the POA is part of a neural circuitry that mediates male sexual behavior in many species, we hypothesize that the capacity for aromatization influences sexual orientation of these rams.
Abstract: A model of producer behavior, which explicitly accounts for both output price and production uncertainty, is formulated and estimated. If the production technology is multiplicatively separable in its deterministic and stochastic components, then the expected utility maximization problem implies cost minimization for planned or expected output. Consequently, our empirical model of three lamb- and wool-producing sectors in Australia involves the estimation of a system of input cost share and cost equations whose disturbances have an error-components structure. The empirical results are evaluated in terms of input demand elasticities, and estimates of the stochastic components of production are presented.

196 NAL Call No.: 60.18-J82
Estimation of botanical composition of esophageal extrusa samples using near infrared reflectance spectroscopy.
Includes references.
Descriptors: sheep; cattle; andropogon-gerardii; botanical-composition; infrared-spectroscopy; grasses; diet; digesta; esophagus; sampling; forbs; oklahoma

Abstract: The objective of this study was to evaluate the potential of near infrared reflectance spectroscopy (NIRS) for estimating botanical composition of esophageal extrusa samples. Spectral data were collected on 361 samples from fistulated sheep and cattle grazing native tallgrass range. Principal components analysis was used to identify a subset of 73 samples with spectral dissimilarity. These samples were microhistologically analyzed to determine botanical composition and were considered 'actual' for regression and calibration purposes. Thirty-six species (12 grasses, 22 forbs, and 2 sedges) were identified in the microhistologically analyzed samples. However, most accounted for less than 5% of the total diet. Additional pure calibration samples were obtained by feeding individual species to confined fistulated sheep. Initial regression analyses and predictions were made on 13 major species or species groups. Satisfactory prediction equations could only be developed for big bluestem andropogon gerardii (Vitman) (r² =0.61), and the total grasses (r² = 0.79) and total forbs (r² = 0.79) groups. Addition of spectra from pure samples into the calibration set was beneficial. In general, valid predictions could not be made for individual species that constituted less than 10% of the sample and/or had a low frequency of occurrence in the calibration samples. The NIRS method offered acceptable precision and accuracy in the prediction of major botanical components and it would be practical and efficient because it reduces the number of samples that would have to be microhistologically analyzed.

197 NAL Call No.: 23-Au792
Estimations of pasture and grain intake of prepartum single- and twin-bearing ewes.
Includes references.
Descriptors: sheep; ewes; pregnancy; prepartum-period; lupins; pastures; oats; mixtures; feed-supplements; feed-intake; supplementary-feeding; litter-size; twinning; animal-nutrition; new-south-wales

198 NAL Call No.: QL876.B5
Estrogen enhances endometrial estrogen receptor gene expression by a posttranscriptional mechanism in the ovariectomized ewe.
Includes references.
Descriptors: ewes; ovariectomized-females; endometrium; estrogen-receptors; hormone-receptors; structural-genes; gene-expression; autoregulation; estradiol; messenger-rna; transcription; complementary-dna; cloning; nucleotide-sequences; amino-acid-sequences; progestosterone; progesterone-receptors; molecular-sequence-data; genbank; u30299; genbank; u30300

Abstract: Prior influence of estrogen is required for many physiological effects of steroid hormones. This study addresses positive autoregulation of estrogen receptor gene expression in endometrium. Groups of
ovariectomized ewes (n = 6) were treated with a single i.m. injection of 50 pg 17 beta-estradiol for 6, 12, 24, or 48 h or of vehicle for 24 h (control) prior to collection of endometrium. Three ewes received a regimen of estradiol-progesterone-estradiol (EPE) designed to mimic the estrous cycle. Northern analysis of endometrial RNA using an ovine estrogen receptor complementary RNA probe indicated that estradiol increased (p < 0.0001) estrogen receptor messenger RNA abundance over time to be 5-fold greater at 24 h postinjection. This effect also occurred after a period of progesterone dominance in EPE ewes (p < 0.05). Ribonuclease protection assays with a complementary RNA probe for the ovine progesterone receptor demonstrated that estradiol treatment increased progesterone receptor messenger RNA abundance at 48 h (p < 0.005). Nuclear runoff analyses indicated that whereas estradiol enhanced the transcription rates of progesterone receptor (p < 0.1) and 28S ribosomal RNA genes (p < 0.002), activity of the estrogen receptor gene was unchanged (p > 0.25). These results suggest that a physiological dose of estradiol, similar to the preovulatory surge of estrogen, up-regulates endometrial estrogen receptor gene expression by a posttranscriptional mechanism.

199

Evaluation of crossbreeding programme in sheep in Rajasthan. 3. Factors affecting adoption of crossbreeding programme in sheep.


Descriptors: animal-nutrition; profitability; socioeconomic-status; economics; crossbreeding; wool-production; mortality

200 NAL Call No.: 23-Au783

An evaluation of the impact of long-range climate forecasting on the physical and financial performance of wool-producing enterprises in Victoria.


Includes references.

Descriptors: sheep-farming; stocking-rate; animal-husbandry; weather-forecasting; drought; simulation-models; victoria

201

Evolution of ewe body condition and the production of lamb and milk in different productive strategies.

Lopez F; Espejo M; Villar A Options-Mediterraneennes.-Serie-A,-Seminaires-Mediterraneens. 1995, No. 27, 53-58; 7 ref

Descriptors: ewes; concentrates; feed-supplements; body-condition; milking; lambing; frequency; management; intensive-husbandry; meat-production; milk-yield; Spanish-Merino; feeding; reproduction; Merino; Body-condition-of-sheep-and-goats

202 NAL Call No.: 23-Au792

Ewe colostrum and subsequent lamb suckling behaviour.


Includes references.

Descriptors: ewes; colostrum; lambs; newborn-animals; sucking; twins; behavior-patterns; birth-weight; body-temperature; postpartum-period

203 NAL Call No.: S544.3.S8E9

Ewe flock sharing arrangements for central South Dakota.


In the subseries: Ag Economics.

Descriptors: sheep; sheep-farming; cooperative-farm-enterprises; production-costs; farm-income

204 NAL Call No.: 44.8-J824

Exogenous sources of Listeria contamination in raw ewe's milk.

Garcia E; Paz M de; Rodriguez JL; Gaya P; Medina M; Nunez M; De Paz M Journal-of-Food-Protection v.59(9): p.950-954; 30 ref (1996)
Exon skipping in the ovine alpha s1-casein gene.
Includes references.
Descriptors: sheep; alphas-casein; complementary-dna; cloning; nucleotide-sequences; exons; reverse-transcription; messenger-rna; molecular-conformation; structure; molecular-sequence-data; rna-conformation; secondary-structure

Abstract: The reported cDNA sequences for the bovine (Bos taurus) and ovine (Ovis aries) alpha(s1)-caseins display a high degree of identity with the exception that a 24 bp region, corresponding to bovine exon 16, is absent in the ovine sequence. Here we show that the ovine gene for alpha (s1)-casein contains a sequence block displaying 23/24 identity to bovine exon 16, indicating that the absence of this block from ovine mRNA is due not to genomic deletion but to exon skipping. Analysis of the products obtained by reverse transcription of ovine alpha(s1)-casein mRNA followed by amplification, demonstrated the presence of mRNA species containing the exon 16 sequence as well as the species in which it had been spliced out. It was estimated that the latter constitutes 20% of the total ovine alpha(s1)-casein mRNA. We propose that a substitution within the donor splice site is responsible for the partial skipping of exon 16, possibly through the formation of an inhibitory RNA secondary structure.
Factors affecting somatic cell count of goat milk: breed and farm.
Meeting held on February 20-22, 1995, Fort Worth, Texas.
Descriptors: goats; somatic-cell-count; goat-milk; goat-breeds; farm-management; arkansas; oklahoma

Farm business survey in Wales: statistical results for 1994/95.
UK, University of Wales, Welsh Institute of Rural Studies. 1995, 119 pp
Descriptors: dairy-farming; cattle-farming; sheep-farming; livestock-farming; farm-income; gross-margins; farm-surveys; farm-results; dairy-farms

Farm incomes in South West England 1994/95.
Descriptors: dairy-farming; cattle-farming; sheep-farming; livestock-farming; crops; arable-farming; farm-income; costs; returns; profitability; farm-surveys; farm-results; dairy-farms

Farm incomes in the United Kingdom 1994/95.
UK, Ministry of Agriculture, Fisheries and Food. 1996, vi + 128 pp
Descriptors: balance-sheets; gross-margins; dairy-farming; cattle-farming; sheep-farming; livestock-farming; cereals; mixed-farming; horticulture; arable-farming; farm-income; non-farm-income; farm-surveys; farmers'-income; agricultural-structure; dairy-farms

Farm management handbook.
UK, University of Exeter, Agricultural Economics Unit. 1996, vi + 129 pp
Descriptors: gross-margins; production-costs; returns; capital; labour-requirements; farm-planning; dairy-farming; cattle-farming; sheep-farming; livestock-farming; crops; arable-farming; handbooks; farm-management; dairy-farms

Farm sector exchange rates, production, financial trends and aggregate output.
Descriptors: beef-cattle; livestock-numbers; value-added; economic-situation; interest-rates; terms-of-trade; profitability; returns; fiscal-policy; taxes; inflation; monetary-parity; sheep-farming; farm-results; beef; production; food-animals

Australia, Australian Bureau of Agricultural and Resource Economics. 1996, vi + 126 pp
Descriptors: farm-income; profitability; returns; costs; dairy-farming; livestock-farming; sheep-farming; cattle-farming; beef; crops; wheat; production; agricultural-households; farm-families; productivity; irrigated-farming; drought; management; farm-surveys; farm-results; dairy-farms

Farmers' response to a package of innovations in goat production in south-western Nigeria.
Includes references.
Descriptors: goats; animal-production; animal-health; animal-nutrition; goat-keeping; adaptation; innovations; adoption; nigeria

Fattening experiments on Dorset and indigenous crossbred sheep.
Descriptors: sheep-feeding; concentrates; supplementary-feeding; grazing; energy; protein; plane-of-nutrition; intake; fattening-performance; growth; carcasses; crossbreeding; crosses; feedlots; breed-differences; sheep-breeds; Dorset

219

Fattening procedures for lambs. Mastverfahren fur Fleischlammer.
Grumbach S; Nurnberg K. *Neue-Landwirtschaft*. 1996, No. 8, 70-72
Descriptors: lambs; males; fattening-performance; feed-supplements; carcass-composition; dressing-percentage; extensive-farming; intensive-husbandry; body-fat; age; crossbreeding; breed-differences; management; growth; carcasses; meat-quality; crosses; German-Blackheaded-Mutton; Texel; Bleu-du-Maine; finishing; carcass-weight; carcass-yield; plane-of-nutrition; sheep-breeds; Merino-Longwool

220 NAL Call No.: QL750.B4

Fear reactions of domestic sheep confronted with either a human or a human-like model.
Descriptors: methodology; behaviour; adaptation; animal-behaviour; fearfulness

221 NAL Call No.: SF380.I52

Fecal NIRS equations to assess diet quality of free-ranging goats.
Includes references.
Descriptors: goats; free-range-husbandry; diet; crude-protein; digestibility; forage; feces; infrared-spectroscopy; reflectance; equations; accuracy; tennessee; near-infrared-reflectance-spectroscopy

222 NAL Call No.: SF380.I52

Feed intake, utilization of nutrients and growth of Assamese X Beetal goats fed three levels of energy.
Includes references.
Descriptors: goats; crossbreds; goat-feeding; body-weight; energy-value; brachiaria-mutica; forage; dry-matter; concentrates; feed-conversion; digestibility; chemical-composition; plane-of-nutrition; liveweight-gain; diet; goat-breeds; beetal; nutritive-value; india

223 NAL Call No.: 10-J822

Feeding behaviour, feed intake, chemical and botanical composition of the diet of indigenous goats raised on natural vegetation in a semi-arid region of Zimbabwe.
Includes references.
Descriptors: goats; grazing; feeding-behavior; feed-intake; chemical-composition; botanical-composition; liveweight-gain; physical-activity; zimbabwe

224 NAL Call No.: 41.8-Au72

Feeding of feral goats before live export by ship.
Descriptors: feeding-behaviour; pellets; chaff; hay; feeding; transport-of-animals; mortality; feed-intake; feedlots

225 NAL Call No.: SF380.I52

Feeding of water washed neem (Azadirachta indica) seed kernel cake to growing goats.
Includes references.
Descriptors: goats; neem-seed-cake; washing; mustard-oilmeal; crude-protein; protein-content; bitterness; protected-protein; rumen-fermentation; triterpenoids; chemical-composition; digestibility; nutrient-balance;
Abstract: To mitigate chronic shortage of feeds for livestock in developing countries, neem seed kernel cake (34-40% CP, bitter in taste, unsuitable for livestock feeding) was waterwashed (WWNSKC) and fed to 5-6-month-old male, growing goats for 180 days as a major source of protein by incorporating it at 15% (group II) and 25% (group III) in the concentrate mixtures. Their performance was compared with goats fed 15% deoiled mustard (Brassica sp.) cake (group I). CP content of group I, II and III concentrate mixtures was 16.7, 15.9 and 17.8%, respectively. Average daily DMI (g), BW gain (g/d) and feed conversion efficiency (unit DM intake/unit gain) on group I, II and III diets were 307.3 +/- 23.27, 324.0 +/- 26.78 and 325.6 +/- 25.57; 22.6 +/- 3.64, 28.9 +/- 3.34 and 25.2 +/- 2.89; 14.6 +/- 1.68, 11.4 +/- 0.63 and 13.1 +/- 0.62, respectively. Goats on all diets digested most nutrients similarly and were on positive N, Ca and P balance. Lowered total as well as NH3-N levels in rumen liquor of WWNSKC-fed goats due to residual neem bitters was indicative of passage of more by-pass protein for digestion in the lower gut. Intake of protein and energy increased linearly with level of WWNSKC incorporation and was within stipulated NRC standards. Among blood and plasma constituents, glucose (P < 0.01) (maybe because of residual neem bitters which exert antihyperglycemic effects), urea-N (P < 0.01) and total protein (P < 0.05) were lower in both experimental groups. Rumen fermentation pattern, urinary creatine and creatinine were comparable among the groups. Thus, WWNSKC can be incorporated in diets of growing goats up to 25% without deleterious effects on nutrient utilisation and metabolism.
**231 NAL Call No.: 49-J82**

**Food preference and acceptance of novel foods by lambs depend on the composition of the basal diet.**


Includes references.

Descriptors: lambs; feeding-preferences; barley; alfalfa-meal; novel-foods; wheat; pelleted-feeds; unrestricted-feeding; feed-intake; flavor; nutrient-requirements; aversions; rabbit-pellets

**Abstract:** Ruminants eat a variety of foods, varying in toxins and nutrients, but no hypotheses adequately explain this behavior. We offer an explanation, one which encompasses avoidance of toxins and acquisition of nutrients. A key concept in this hypothesis is aversion, the decrease in preference for food just eaten as a result of sensory input (taste, odor, texture, i.e., a food's flavor) and postingestive effects (of toxins and nutrients on chemo-, osmo-, and mechano-receptors) unique to each food. On the basis of this hypothesis, we predicted lambs would prefer familiar and novel foods that complemented the macronutrient composition of their basal diet. To assess the validity of this prediction, we fed 10 lambs in each of three treatments different levels of ground barley (high in energy) and alfalfa (high in protein) as a basal diet. We then offered them daily a meal of three ground foods differing in proportions of barley and alfalfa (familiar foods) or wheat and rabbit pellets (novel foods). We found that lambs fed a basal diet high in energy (barley) preferred food lower in energy and higher in protein (alfalfa); those fed a diet high in alfalfa preferred food high in barley (P < .01). In addition, the higher the barley or alfalfa content of the basal diet, the greater the acceptance of novel foods high in alfalfa (i.e., rabbit pellets) or grain (i.e., wheat), respectively (P < .01). All lambs preferred foods high in wheat to rabbit pellets or alfalfa (P < 0.01), evidently because wheat is high in energy and it differs in flavor from barley, which was eaten repeatedly as part of the basal diet. On the basis of these results, we contend that lambs preferred familiar and novel foods that complemented the flavors and macro-nutrient contents of their basal diet.

**232 NAL Call No.: QH541.5.D4J6**

**Food selection by domestic goats in Mediterranean arid shrublands.**


Descriptors: feeding-behaviour; availability; browse-plants; composition; feeding-preferences; shrubs; arid-climate; Launea

**233 NAL Call No.: 1.98-Ag84**

**For the midsouth--a hardy, hairy sheep.**


Descriptors: sheep; sheep-breeds; hybrids; crossing; agricultural-research; wool-production; sheep-farming; arkansas

**234**

**Foraging behaviour of cattle and goats in the grazing-lands of forested zone of Indian Central Himalaya.**


Descriptors: calves; feed-intake; species-diversity; grazing; selective-grazing; intake; grasses; browse; rangelands; forests

**235 NAL Call No.: QL750.A6**

**Free-ranging angora goats: left- or right-handed tendencies while grazing.**


Includes references.

Descriptors: goats; grazing-behavior; foraging; behavior-patterns

**236**

**From Angora to dairy goats. Des Angoras aux chevres laitieres.**

Jaouen JC le; Le Jaouen JC *Chevre. 1995, No. 207, 22-23*

Descriptors: Angora; mountain-areas; dairy-farms; profitability; dairy-farming; farm-dairies; cheesemaking

**237 NAL Call No.: 448.8-J8293**

**Functional characterisation of an ovine endometrial oxytocin receptor cDNA transiently expressed in**
COS-7 cells.
Riley PR; Abayasekara DRE; Stewart HJ; Flint APF *Journal-of-Endocrinology* v.149(3): p.389-396; 47 ref (1996)

Descriptors: complementary-dna; oxytocin; cells; biochemistry; cloning; receptors; nucleotide-sequences; endometrium; DNA; nucleotides; kinetics; biotechnology

238 NAL Call No.: QP901.A33-v.395

**Functional properties of a cloned ovine endometrial oxytocin receptor cDNA.**
Proceedings of a Hanseatic Endocrine Conference on Oxytocin: Cellular and Molecular Approaches in Medicine and Research, April 30-May 4, 1995, Stade, Germany.

Descriptors: ewes; endometrium; oxytocin; hormone-receptors; complementary-dna; clones; properties

239 NAL Call No.: QH442.A1G4

**The gene encoding the ovine gonadotropin-releasing hormone (GnRH) receptor: cloning and initial characterization.**
Includes references.

Descriptors: sheep; structural-genes; hormone-receptors; gnrh; cloning; nucleotide-sequences; amino-acid-sequences; exons; introns; comparisons; mice; man; complementary-dna; promoters; tata-box; species-differences; 5'-untranslated-region; exon-intron-boundaries; transcription-start-points; gnrhr-gene; molecular-sequence-data; genbank; l42937; genbank; l43841; genbank; l43842

Abstract: We have isolated four lambda clones, which, in their aggregate, contain the entire coding sequence of the ovine gene encoding the gonadotropin-releasing hormone (GnRH) receptor (GnRHR). Like its human and murine counterparts, ovine GnRHR exists as a single-copy gene and is comprised of three exons and two introns. Furthermore, the locations of all exon-intron boundaries are perfectly conserved among the human, ovine and murine genes. The most striking difference among these genes is the location of the transcription start points (tsp) and, thus, the length of 5' untranslated region (UTR). This variation in size of the 5' UTR between the murine, human and ovine genes raises the possibility that different mechanisms have evolved for cell-specific expression of this gene. Isolation of the ovine GnRHR and its associated 5' flanking region is the essential first step in defining the molecular mechanisms underlying cell-specific and hormonal regulation of its expression in ruminants.

240 NAL Call No.: 442.8-Z35

**Genetic structure of Greek sheep breeds. [Untersuchungen zur genetischen Struktur der wichtigsten Schafrassen Griechenlands.]**

Descriptors: genetic-equilibrium; structure; greek; biochemical-polymorphism; gene-frequency; breed-differences; breeds; genetic-distance; milk-yield; genetic-polymorphism; ewes; sheep-breeds

241

**Genetic structure of the Karakalpak population of Karakul sheep for blood protein and enzyme polymorphisms.**
Abilova GM; Ochilov KD *Sel'skokhozyaistvennaya-Biologiya. 1995, No. 6, 65-71; 9 ref

Descriptors: genetic-polymerorphism; haemoglobin; blood-proteins; enzymes; biochemical-polymerism; gene-frequency; colour; pelts; Karakul

242 NAL Call No.: 49.9-Eu7 no.71

**Goat breeding systems in southern Spain. [Systemes d'eleavage dans le sud de l'Espagne.]**
Descriptors: semiarid-zones; animal-husbandry; milk-yield; meat-production; growth; grazing; animal-nutrition; livestock; farming-systems; extensive-husbandry; animal-production; management; reproduction; goat-milk; milk-production

243

**A goat centre at Linazay. Un centre de la chevre a Linazay.**
Thomas T Chevre. 1995, No. 208, 9
Descriptors: goat-milk; dairy-farming; animal-production; economics; research-institutes

244 NAL Call No.: 49.9-Eu7 no.71

**Goat farming systems in Morocco.**
Descriptors: goat-meat; goat-milk; cheesemaking; hair; grazing; mortality; feed-conversion-efficiency; marketing; economics; dairy-performance; husbandry; animal-production; management; reproduction; tropics; cheeses; milk-production; production

245 NAL Call No.: 49.9-Eu7 no.71

**Goat farming systems in the French Mediterranean.**
Descriptors: grazing; extensive-husbandry; dairy-performance; meat-production; animal-production; management; crossbreeding; reproduction; goat-milk; milk-production

246 NAL Call No.: SF380.I52

**Goat feeding practices and options for improvement in six villages in southwestern Nigeria.**
Descriptors: goats; traditional-farming; goat-feeding; feeds; cassava-peel; tubers; breadfruits; tropical-rain-forests; savanna-woodlands; maize-byproducts; hay; panicum-maximum; zero-grazing; farm-surveys; crude-protein; browse; leucaena-leucocephala; gliricidia-sepium; feed-intake; dry-matter; nigeria

247 NAL Call No.: 49.9-Eu7 no.71

**Goat husbandry and production systems in Israel.**
Descriptors: history; goat-keeping; breeds; body-weight; litter-size; milk-yield; milk-composition; breeding-season; grazing; browsing; animal-health; milk-products; meat-production; hair; marketing; economics; animal-production; reproduction; m anagement; goat-milk; milk-marketing; milk-production

248 NAL Call No.: 49.9-Eu7 no.71

**Goat husbandry systems in southern Italy.**
Descriptors: animal-husbandry; grazing; meat-production; milk-composition; cheeses; cheesemaking; animal-production; management; reproduction; goat-milk; milk-production

249

**Goat keeping by small farmers in Burundi. Ziegenhaltung bei Kleinbauern in Burundi.**
Jacob U 1995, 209 pp.; Sozialokonomische Schriften zur Ruralen Entwicklung Vol. 113, Diss. Humboldt-Univ., 11 pp. of ref
Descriptors: farm-results; crossbreds; performance; animal-breeding; farm-comparisons; projects; goat-keeping; small-farms; crossbreeding; economics; goat-breeds; crosses; Small-East-African; mountain-areas
Goat production and management in rural Zimbabwe.
Chifamba IK; Prasad VL; Arora LK *Journal-of-the-Zimbabwe-Society-for-Animal-Production*. 1995, 7: 195-198; 7 ref
Descriptors: farming-systems; animal-production; tropics; goat-diseases; animal-diseases; young-animal-diseases

Goat production system study methods.
Descriptors: farming-systems; environmental-factors; animal-production; systems; evaluation

Goat production systems in Algeria and particularly in the Kabylie region.
Descriptors: Berber; Maltese; goat-meat; goat-milk; management; animal-husbandry; farming-systems; grazing; marketing; economics; socioeconomics; goat-breeds; hides-and-skins; arid-zones; semiarid-zones; animal-production; tropics; milk-product i on

Goat production systems in Egypt.
Descriptors: farming-systems; extensive-husbandry; transhumance; intensive-livestock-farming; meat-production; animal-production; management; reproduction; tropics

Descriptors: goat-milk; goat-meat; hair; hides-and-skins; animal-husbandry; marketing; feeding; farming-systems; animal-production; milk-production; dairy-farms

Descriptors: milk-yield; milk-composition; cheesemaking; cheeses; extensive-husbandry; intensive-husbandry; transhumance; labour-requirements; production-costs; profits; animal-production; reproduction; management; goat-milk; milk-production; production

Goat rearing in the humid and sub-humid region of Bizerte. [Caracterisation des systemes d'elevage caprin dans la region humide et subhumide de Bizerte.]
Descriptors: feasibility-studies; research; small-farms; returns; goat-keeping; farming-systems

Goats and garbage in Khartoum, sudan: a study of the urban ecology of animal keeping.
Includes references.

Descriptors: goats; municipal-refuse-disposal; household-surveys; urban-areas; animal-husbandry; linear-models; sudan; loglinear; logit-models

258 NAL Call No.: 41.8-M463
Goats in Poland and their utilization. [Kozy w Polsce i ich uzyczkowanie.]
Descriptors: goat-milk; breeds; animal-husbandry; utilization; dairy-goats; meat-goats

259 NAL Call No.: S605.5.O74
Grass-mowing fertilizer factories.
Descriptors: sheep; sheep-breeds; sheep-farming

260
Grassland farm systems for sheep production.
Descriptors: forage; production; milk-production; meat-production; sheepmeat; ewe-milk; systems; feeding; farms; grasslands; sheep-feeding; reviews; 4th-International-symposium-on-the-nutrition-of-herbivores

261
Grazing behaviour of alpaca and sheep.
Descriptors: grazing; behaviour; feed-intake; diurnal-variation; pastures; intake; botanical-composition; selective-grazing; New-Zealand-Society-of-Animal-Production; grazing-behaviour

262
Grazing in the future: Dutch dairy, beef and sheep production in the year 2005.
Muller J; Koning K de; Wever C; Hiemstra SJ; Havinga H; De Koning K; Schoute JFT(ed.); Finke PA (ed.); Veeneklaas FR (ed.); Wolfert HP Scenario studies for the rural environment: selected and edited proceedings of the symposium Scenario Studies for the Rural Environment, Wageningen, the Netherlands, 12-15 September 1994. 1995, 651-656; Environment & Policy Vol. 5; 2 ref
Descriptors: dairy-farming; sheep-farming; production-structure; livestock-numbers; projections; beef; milk-production; quotas; ewes; cows; dairy-farms; forecasts; Scenario-studies-for-the-rural-environment

263 NAL Call No.: S542.A8A34 no.64
Grazing sheep on improved pasture under double hedgerow rubber planting systems in Malaysia.
Chong DaiThai; Tajuddin I; Stur WW; Chong DT; Mullen BF (ed.); Shelton HM Integration of ruminants into plantation systems in southeast Asia: Proceedings of a workshop at Lake Toba, North Sumatra, Indonesia, 9-13 September 1994. 1995, 68-71; ACIAR Proceedings No. 64; 2 ref
Descriptors: pastures; production; liveweight-gain; animal-health; animal-production; crop-yield; growth; grasses; legumes; mixtures; rubber-plants; spacing; planting; patterns; grassland-improvement; silvopastoral-systems; fodder-plants; agroforestry-systems; farming-systems; agroforestry; systems; tropical-crops; Integration-of-ruminants-into-plantation-systems-in-southeast-Asia

264 NAL Call No.: 286.81-F322
Growing popularity results in large comeback for small ruminants.
Includes references.
Descriptors: goat-breeds; animal-production; ruminants; performance; animal-nutrition; usa; boer-goats; spanish-goats
265 NAL Call No.: 10-J822
Growth and gastrointestinal nematode parasitism in lambs grazing either lucerne (Medicago sativa) or sulla (Hedysarum coronarium) which contains condensed tannins.
Includes references.
Descriptors: lambs; trichostrongylus-colubriformis; nematode-infections; growth; disease-resistance; gastrointestinal-diseases; grazing; medicago-sativa; hedysarum-coronarium; tannins; feed-evaluation; nutritive-value; protein-content; dry-matter; new-zealand

266 NAL Call No.: 41.8-V641
Handling of sheep at markets and the incidence of bruising.
Includes references.
Descriptors: sheep; bruises; incidence; handling; carcasses; markets; movement; loading; unloading; carcass-quality; uk

267
Health status and resistance of Bach Thao goats reared in northern Vietnam. A 3-year study. [Tinh hinh suc khoe va kha nang chiu benh cua dan de bach thao sau hon 3 nam nuoi o mien bac Viet Nam.]
Descriptors: skin-diseases; mastitis; enteritis; helminthoses; management; nutrition; climate; stress; diseases; goat-diseases; bach-thao-goats

268 NAL Call No.: QL750.A6
Heterosexual experience differentially affects the expression of sexual behavior in 6- and 8-month-old ram lambs.
Includes references.
Descriptors: rams; puberty; ewes; estrus; body-weight; age-differences; copulation; stimulation

Abstract: The sexual performance of 6- and 8-month-old ram lambs (175 and 26 subjects, respectively) was quantified when individually exposed to four estrous ewes for 30 min on four occasions 7 days apart. In addition, half of the animals in each age class (experimental subjects) were exposed to 16 estrous females for 6, 16 or 24 h after testing on Test Days 1, 2 and 3. Control subjects received no additional exposure to females. Sexual performance improved for all groups over the 4 weeks of testing. However, 6-month control rams improved at a slower rate than 6-month experimental rams. By the fourth weekly test, 58% of the control rams and 85% of the experimental rams had attained ejaculatory competence. Treatment did not affect the sexual performance of the 8-month-old subjects; both control and experimental groups had attained 100% ejaculatory competence by the fourth week. Length of the extended exposure to females did not affect the results. It was concluded that the sexual responsiveness of ram lambs toward females is sufficiently undeveloped at 6 months (i.e. puberty) that extended exposure to sexually receptive ewes is needed for many males to exhibit adult levels of sexual performance. At 8 months, the sexual development of ram lambs has sufficiently matured so that relatively brief encounters with estrous females releases the full expression of adult sexual behaviors. These findings may be of benefit to sheep breeders who wish to use ram lambs in their breeding programs.

269
Histological structure of the skin in Mountain Corriedale purebred and crossbred lambs.
Descriptors: crosses; Soviet-Mutton-Wool; Tsigai; skin; wool-production; crossbreeding; sheep-breeds

270 NAL Call No.: SF85.4.A8A97
Home range responses of feral goats.
Hormonal and physiological effects of a 15 hour road journey in sheep: comparison with the responses to loading, handling and penning in the absence of transport.
Includes references.

Descriptors: sheep; road-transport; transport-of-animals; animal-welfare; hydrocortisone; prolactin; creatine-kinase; lactate-dehydrogenase; isoenzymes; osmotic-pressure; hematocrit; body-weight; weight-losses; heart-rate; hormone-secretion

Abstract: A controlled study was carried out to investigate the physiological effects of road transport on sheep. Animals (n = 10; body weight 38.9 +/- 1.3 kg), previously with catheters in their jugular veins, were rounded up and loaded onto a vehicle where they were held in a communal pen with eight other lambs. Blood samples were taken at 30 min intervals during the next 15 h while the vehicle remained stationary or was driven a distance of 548 miles (876 km). Measurements were made of plasma concentrations of cortisol, prolactin, creatine phosphokinase and lactase dehydrogenase isozymes and also of plasma osmolality, haematocrit and body weight; heart rate was also recorded in one animal. Loading and the start of driving produced large increases in cortisol and prolactin concentrations. Heart rate also increased whereas osmolality and haematocrit decreased. The major changes in hormone release occurred in the first 3 h period while, during the remaining 12 h, the stimulatory effect of transport was present but small. Body weight loss was similar under both stationary and driven conditions.
distribution indicates that specific expression of the genes corresponding to these two clones occurs in the epithelium of the ruminant forestomach, and to a lesser extent in skin epithelium. In situ hybridization demonstrated that the SPRR mRNA for both clones were localized in the stratum granulosum, in support of their putative physiological function, i.e. formation of the cornified envelope. Based on Northern blot analysis, mRNA complementary the two clones appears in the ruminal epithelium by 1 week of age, corresponding to the formation of the stratum granulosum during ruminal epithelial development. The different patterns of changes in amount of mRNA corresponding to these clones during rumen epithelial development indicate that they play different roles in rumen epithelial development.

275 NAL Call No.: QP251.A5
Immunisation of goat bucks against GnRH to prevent seasonal reproductive and agonistic behaviour.
Godfrey SI; Walkden Brown SW; Martin GB; Speijers EJ Animal-Reproduction-Science v.44(1): p.41-54; 30 ref (1996)
Descriptors: behaviour; lh; testosterone; agonistic-behaviour; bucks; gnrh; castration; semen-production; immunization; breeding-season; pheromones; males; aggression; testes; dimensions; FSH; blood; androgens

276 The impact of CAP reform on animal production systems: dairy and beef cattle, sheep and goats.
Complete results of surveys and farmers' accounts of animal production networks. [Impact de la reforme de la PAC sur les systemes d'elevage: lait et viande bovine, ovine, caprine resultats complets d'enquetes et de temoignages d'eleveurs des reseaux d'elevage.]
France, Institut de l'Elevage. 1995, 316 pp
Descriptors: sheep-farming; dairy-farming; cattle-farming; structural-change; trends; livestock-farming; CAP; economic-impact; economics

277 NAL Call No.: 23-Au783
The impact of sheep trampling and stocking rate on the physical properties of a red duplex soil with two initially different structures.
Includes references.
Descriptors: red-soils; topsoil; soil-structure; infiltration; soil-water-content; sheep; trampling; soil-compaction; stocking-rate; grazing-effects; western-australia

278 NAL Call No.: SF380.I52
Impact of veterinary treatments on goat mortality and offtake in the semi-arid area of Mali.
Includes references.
Descriptors: goats; traditional-farming; kids; mortality; vaccination; semiarid-zones; helminths; anthelmintics; yields; age-differences; sex-differences; body-weight; pasteurellosis; pest-of-small-ruminants-virus; anthrax; mali

279 Impacts of farm size and equity on sheep and beef farm performance.
Descriptors: sheep-farming; farm-size; farm-indebtedness; farm-results; beef-cattle; cattle-farming

280 NAL Call No.: GB500.M68
Impacts on mixed mountain agriculture in the Rupal Valley, Nanga Parbat, northern Pakistan.
Includes references.
Descriptors: mountain-areas; mixed-farming; mixed-grazing; alpine-vegetation; irrigation; seasonal-variation; sheep; goats; social-change; population-pressure; off-farm-employment; pastoralism; subsistence-farming; pakistan
Improving goat production in the tropics: a manual for development workers.
Descriptors: Goats-Breeding-Tropics; Goats-Nutrition-Tropics; Goats-Health-Tropics

In vitro and in vivo development of cloned ovine embryos using in vitro and in vivo matured oocytes.
Descriptors: in-vitro; development; embryos; oocytes; cloning; blastomere; embryonic-development; oviducts; pregnancy-rate; embryo-transfer; biotechnology; in-vivo-maturation; in-vitro-maturation; fusion; in-vitro-development

The incidence of luteal activity, as determined by peripheral plasma progesterone concentration, before the onset of the breeding season in the Rasa Aragonesa breed of sheep.
Includes references.
Descriptors: sheep; aragonese; ovulation; progesterone; hormone-secretion; anestrus; sexual-behavior

Income and employment dynamics of goat farms in different agroclimatic zones of Tamil Nadu.
Descriptors: family-labour; female-labour; production-costs; returns; goat-keeping; households; income; employment

Indian Journal of Small Ruminants.
Parthasarathy S 1995, Inaugural issue., 51 pp
Descriptors: fertility; animal-production; viral-diseases; drug-resistance; nutrition; periodicals; new-journals; sheep-feeding; goat-feeding; sheep-diseases; Indian-Journal-of-Small-Ruminants

An indoor method for studying the preferences of sheep and cattle at pasture.
Descriptors: animal-behaviour; grazing; feed-intake; estimation; methodology; hay; quality; feeding-preferences; starvation; feeding-behaviour; palatability

Influence of a conspecific agemate on distress bleating by lambs.
Includes references.
Descriptors: lambs; removal; vocalization; twins; stress-factors; animal-welfare

Abstract: Lambs typically display behavioral and physiological indicants of distress when they are removed from their mother. In the present experiment, we assessed the effects of the presence of agemate conspecifics on the rate of distress bleating by 3-week-old lambs immediately following maternal separation. When removed from their mother and tested in isolation, lambs emitted more distress bleats than they did when paired with a social partner--either their twin (P < 0.01) or an unfamiliar lamb (P<0.05). Moreover, rates of distress bleating by paired unfamiliar lambs were greater than for familiar twins tested together (P < 0.02). The presence of an agemate lamb therefore appears to alleviate, at least to some extent, the stress associated with maternal separation. Lower rates of bleating by twin pairs in contrast with paired unfamiliar lambs suggest that twins
recognize one another. Prior to testing, twins interacted closely and thereby had the opportunity to become mutually acquainted.

288 NAL Call No.: QL750.A6
Influence of artificial rearing on behavioral and immune response of lambs.
Napolitano F; Marino V; Rosa G de; Capparelli R; Bordi A; De Rosa G
Descriptors: artificial-rearing; immune-response; behaviour; lambs; growth; age; antibodies; stress; hydrocortisone; nonspecific-immunostimulation; animal-behaviour

289 NAL Call No.: 49-J82
Influence of chromium tripicolinate on glucose metabolism and nutrient partitioning in growing lambs.
Includes references.
Descriptors: lambs; chromium; mineral-nutrition; glucose-tolerance-test; dry-matter; feed-intake; liveweight-gain; picolinic-acid; carcass-weight; dressing-percentage; blood-plasma; organs; depot-fat; weight; fat-percentage; longissimus-dorsi; metabolites; insulin; glucagon

Abstract: Twenty-four Suffolk lambs (average BW 38 +/- 2.7 kg; 16 ewes and 8 wethers) were fed either a corn-cottonseed hull-based control diet (CON) or CON plus 250 ppb of Cr as chromium tripicolinate (CrPic). Lambs were penned in groups of three and ADG and DMI were measured through d 85 of the experiment. Jugular blood samples were obtained during wk 2, 7, and 11. An i.v. glucose tolerance test (IVGTT; 500 mg of glucose/kg BW) and an i.v. insulin challenge test (IVICT; .1 IU of ovine insulin/kg BW) were performed during wk 2 and 10 of the trial. This was followed by a N balance trial during wk 3 and 11. Wethers were slaughtered at the end of the experiment and carcass characteristics determined. No differences (P > .10) were observed between dietary treatments in DMI, ADG, or N balance; however, the CrPic-fed wethers had 18% less fat over the 10th rib (P = .082) and a lower yield grade ( P = .014). Plasma NEFA was lower throughout the trial (P < .03) and cholesterol was 17% lower during wk 2 (P < .02) in lambs fed CrPic. There were no differences due to diet (P > .10) in plasma concentrations of urea N, glucose, albumin, total protein, insulin, glucagon, triiodothyronine, or thyroxine. Glucose clearance rate and half-life during the IVGTT and IVICT did not differ (P > .10) between CON and CrPic groups; however, during the IVGTT on wk 2, plasma insulin was elevated (P < .05) and glucose reduced (P = .067) in the lambs fed CrPic. Supplemental CrPic seems to influence metabolic measurements that may affect performance of growing lambs.

290 NAL Call No.: SF380.I52
Influence of deciduous broadleaved woody species in goat nutrition during the dry season in northern Greece.
Papachristou, T. G.; Nastis, A. S.
Includes references.
Descriptors: goats; browse-plants; woody-plants; dry-season; carpinus-orientalis; fraxinus-ornus; dietary-protein; summer; autumn; nitrogen-retention; selective-grazing; botanical-composition; crude-protein; breeding-season; greece

291 NAL Call No.: SF55.A78A7
Influence of dietary energy and postmortem electrical stimulation on meat quality and collagen characteristics of lamb carcasses.
Abouheif, M. A.
Includes references.
Descriptors: lambs; lamb-feeding; poultry-offal-meal; unrestricted-feeding; collagen; solubility; lamb-meat; meat-quality; electrical-stimulation; liveweight-gain; feed-intake; dry-matter; carcass-weight; slaughter-weight; fat-thickness; depot-fat; tail; muscles; ph; temperature; energy-intake; shear-strength; biceps-femoralis

292 NAL Call No.: SF380.I52
Influence of dietary protein content and digestibility on milk yield and blood constituents in lactating
Influence of direct-fed microbials on ruminal microbial fermentation and performance of dairy-cows; lactation; probiotics; feed-additives; rumen-fermentation; rumen-bacteria; mode-of-action; milk-yield; aspergillus-oryzae; saccharomyces-cerevisiae; lactic-acid-bacteria; yeasts; diet; milk-composition; steers; lambs; bulls; calves; performance; feed-intake; literature-reviews

Influence of feeding different crude fiber levels on milk yield and milk composition of Najdi ewes.

Influence of lamb presence on the behaviour at pasture of "Altamurana" breeding ewes.

Influence of mountain big sagebrush browse on intake, digestibility, and nutritive quality of sheep diets.

Influence of nitrogen fertilization and defoliation frequency on nitrogen constituents and feeding value of annual ryegrass.

Abstract: Two experiments were conducted to determine the seasonal effects of N fertilizer (NF) and defoliation interval (DI) on specific N fractions within annual ryegrass (AR) and overall usage of AR N by growing lambs. In Exp. 1, NF (0, 112, 224, and 336 kg of N/ha) and DI of 2, 4, or 6 wk were factorially applied to AR plots. Both decreasing DI and increasing NF increased N levels in AR in a manner that depended on harvest date (NF or DI X harvest date interaction, P < .05). The proportions of .2% NaOH soluble N or soluble protein N were not affected (P > .05) by NF or DI. Although NF had no effect (P > .05 ) on in situ disappearance of DM, decreasing the DI seemed to reduce the severity of the season-induced reduction in DM disappearance (DI X harvest date interaction, P = .04). In Exp. 2, NF (0 or 224 kg of N/ ha) and a DI of 2 or 6 wk were factorially applied to AR plots. Fresh, frozen AR was fed in semipurified diets (48% of DM as AR) to four wether lambs (23 ± 1.3 kg)
using a 4 X 4 Latin square. Diets including AR had greater ruminal DM and plant N digestibilities when AR had a 2-wk vs a 6-wk DI with NF but had reduced digestibilities when AR had a 2-wk vs a 6-wk DI without NF. Lambs retained more N when fed diets with fertilized vs unfertilized AR (P = .01) and when fed diets with AR harvested every 2 wk vs every 6 wk (P = .08). Data suggested that forage management scheme and advancing plant maturity affected ryegrass N distribution and ruminal usage in manners that had only minor consequences relative to animal performance.

298 NAL Call No.: 44.8-J822
Influence of prepartum protein and energy concentrations for dairy goats during pregnancy and early lactation.
Includes references.
Descriptors: goats; goat-feeding; pregnancy; lactation; dietary-protein; metabolizable-energy; body-weight; goat-milk; milk-composition; milk-yield; milk-fat-percentage; crude-protein; kidding-rate; litter-weight; energy-intake; blood-chemistry; metabolites

Abstract: Sixty-three multiparous Alpine does were blocked by pregnancy type (single vs. multiple) on d 90 of pregnancy and assigned to one of nine diets to evaluate the interaction of prepartum protein and energy intake on BW change, kidding, and subsequent production and composition of milk. Treatments were factorial with three percentages of CP (8.5, 11.5, and 14.5% of DM) and three concentrations of metabolizable energy (1.80, 2.16, and 2.53 Mcal/kg of DM). Does were fed for ad libitum intake during pregnancy and switched to a lactation diet (16% CP and 2.35 Mcal of metabolizable energy/kg of DM) after parturition. Milk production and composition were recorded for the first 15 wk of lactation. Prepartum BW gain increased quadratically as protein amount increased but was unaffected by energy. Kidding rate, litter weight, and gestation length were unaffected by protein or energy amounts. Milk production in the subsequent lactation increased quadratically in response to prepartum CP (2.59, 3.26, and 3.07 kg/d for 8.5, 11.5, and 14.5% CP, respectively). Milk production increased linearly in response to prepartum metabolizable energy concentration (2.63, 3.05, and 3.26 kg/d for 1.80, 2.16, and 2.53 Mcal/kg of DM, respectively). Milk fat percentage increased linearly in response to increased prepartum energy. Production of milk fat, protein, SNF, FCM, and SCM were affected quadratically by increased prepartum CP and linearly by prepartum energy, following the pattern for milk production. The present recommendations for prepartum CP and energy appear to be adequate for gestation and subsequent lactation performance of dairy goats.

299 NAL Call No.: 41.8-R312
Influence of supplementation with dietary soyabean meal on resistance to haemonchosis in Hampshire down lambs.
Includes references.
Descriptors: lambs; haemonchus-contortus; disease-resistance; protein-supplements; soybean-oilmeal; nematode-infections; trickle-infection; liveweight; erythrocytes; blood-protein; serum-albumin; carcass-composition; feces

Abstract: The influence of dietary protein supplementation on resistance to haemonchosis was examined in Hampshire down lambs fed either a basal diet or a diet supplemented with soyabean. At seven months of age the lambs were challenged with an initial loading dose of Haemonchus contortus. followed by a trickle infection three times a week. Blood and faecal samples were collected three times a week and bodyweights were recorded weekly. After 10 weeks the lambs were slaughtered and their worm burdens and carcase composition determined. Although their mean worm burdens were similar, the lambs given the basal diet had higher faecal egg counts, lower packed red cell volumes and lower concentrations of total plasma protein and plasma albumin than the lambs given the supplemented diet. The dietary supplementation also improved the carcase composition of the lambs.
The influence of urine and dung deposition on patch grazing patterns of cattle and sheep in the Southern Tall Grassveld.
Descriptors: grasslands; veld; dung-patches; grazing; selective-grazing; urine-patches; grazing-behaviour

Influence of varying RDP:UDP ratios in diets on digestion, nitrogen utilization and milk production efficiency in goats.
Includes references.
Descriptors: goats; protein-intake; dietary-protein; protected-protein; feed-intake; dry-matter; protein-digestibility; crude-protein; nitrogen-balance; milk-yield; feed-conversion; lactation; beetal; crossbreds; cottonseed-oilmeal; maize; protein-sources; goat-milk; total-solids; solids-not-fat; milk-fat-percentage; milk-protein-percentage; india

The influence of vegetation pattern on the grazing of heather moorland by red deer and sheep. I. The location of animals on grass/heather mosaics.
Descriptors: moorlands; grazing-time; vegetation; wild-animals; grazing; selective-grazing; grasses; browse; grasslands; heathlands; comparisons; grazing-behaviour

The influence of vegetation pattern on the grazing of heather moorland by red deer and sheep. II. The impact on heather.
Descriptors: vegetation; grazing; wild-animals; selective-grazing; grazing-behaviour

Inhibitory effect of the ionophore salinomycin on deamination by mixed rumen bacteria.
Includes references.
Descriptors: rumen-bacteria; sheep; rumen-fluid; amino-acids; ammonia; deamination; salinomycin; diet; ryegrass-hay; concentrates; ammonium-nitrogen; aspartic-acid; in-vitro; casein; proteolysis; nad; nadh; cofactors; pyridoxine; 2-oxoglutarate

Intake and behaviour responses by sheep, in different physiological states, when grazing monocultures of grass or white clover.
Includes references.
Descriptors: sheep; feeding-behavior; biting-rates; feed-intake; lolium-perenne; trifolium-repens; grazing-time; lactating-females; plant-height

Intake, digestibility and aerobic stability of barley silage inoculated with mixtures of *Lactobacillus plantarum* and *Enterococcus faecium*.
Includes references.
Abstract: The effect of ensiling barley treated with two bacterial inoculants containing mixtures of Lactobacillus plantarum and Enterococcus faecium (1.0 X 10^5 cfu g^-1 as fed silage) on the nutritional value and aerobic stability of barley silage was examined. Inoculants differed in the strains they contained and were originally selected by Pioneer Hi-Bred International for use with corn or alfalfa silage, SILA-BAC (1174), or with grass silage (X2637). Concentrations of water-soluble carbohydrates were higher (P < 0.05) in inoculated than in control silages. Although inoculants appeared to increase the numbers of lactic acid producing bacteria (LAB) at ensiling, post-ensiling numbers (cfu g^-1) of yeasts and molds were lower (P < 0.05) in inoculated than in control silages. Lactic acid concentrations and pH were similar among the silages and variations in the growth of yeast and mold populations could not be explained by differences in the production of volatile fatty acids (VFA) among silages. Inoculation of barley silage with either inoculant increased (P < 0.01) the average daily gain of lambs. A digestibility experiment with 12 growing ram lambs showed that inoculants did not alter (P > 0.05) DM intake, feed efficiency or the digestion of DM, organic matter, acid detergent fiber (ADF) and neutral detergent fiber (NDF). Nitrogen intake and retention were greater (P < 0.05) in lambs fed silage inoculated with 1174 as compared with control silage. Yeast populations were increased (P < 0.05) in control and 1174 after 2 d of exposure to air but it required 13 d for a similar yeast population to be established in X2637 silage. Increases in the mold populations within the silages were noted after 2, 5 and 13 d of exposure to air for control, 1174 and X2637, respectively. The temperature of control silage increased (P < 0.05) 2 d after exposure to air, whereas increases in temperature were delayed for 4 d in 1174 and 8 d in X2637. Temperatures rose as high as 30 degrees C in control silage, but did not exceed 24 degrees C in inoculated silages during the 13 d period.
Involvement of the main but not the accessory olfactory system in maternal behavior of primiparous and multiparous ewes.

Is there any future for the traditionally small farms in less favoured areas? The case of Greece.

Isolation and characterization of a cDNA clone encoding ovine type I carbonic anhydrase.

Abstract: To identify genes involved in the postnatal development of sheep ruminal epithelium, a lambdagt22a cDNA library was constructed from poly(A)+ RNA isolated from mature sheep ruminal epithelium. A plus/minus screening procedure was used to identify genes expressed in mature but not in neonatal ruminal epithelium. One of the cDNA clones isolated encodes an ovine carbonic anhydrase, based on nucleotide and deduced peptide sequence analysis. The deduced peptide is most closely related to eukaryotic type I carbonic anhydrase, based on a comparison with all available carbonic anhydrase sequences. Northern blot hybridization confirmed that the amount of mRNA complementary to the carbonic anhydrase cDNA clone is more than five times higher in ruminal epithelium from mature sheep (12 wk old) than in ruminal epithelium from neonatal lambs (< 12 h old). Messenger RNA complementary to this cDNA clone was found only in the epithelium of the ruminant forestomach compartments (i.e., rumen, reticulum, and omasum), but small amounts of hybridizable mRNA were also found in sheep skin. This carbonic anhydrase cDNA clone will allow the study of transcriptional regulation of the carbonic anhydrase gene during ruminal epithelial development.

The Jean Faup cheese dairy. *La fromagerie Jean Faup.*
Bargain V Chevre. 1995, No. 208, 20-21

The key to success in goat feeding. *Les cles du succes en alimentation des chevres.*
Morand Fehr P Chevre. 1995, No. 208, 14-16
318 NAL Call No.: 472-N21
Lambing by nuclear transfer.
Descriptors: lambing; transfer; nuclei; cloning; embryos; cell-lines; biotechnology; nuclear-transfer

319
Land freezing and production quotas. Gel des terres et quotas de production.
Laconde C; Morchoine C; Espinasse S Chambres-d'Agriculture. 1995, No. 839, 1-31; 14 tab., 6 fig
Descriptors: quotas; land-management; dairy-farming; cattle-farming; sheep-farming; CAP; livestock-farming; EU-regulations; international-comparisons; legislation; comparisons

320 NAL Call No.: 26-T754
Leaves from tropical trees as protein supplements in diets for sheep.
Includes references.
Descriptors: sheep; animal-production; sheep-feeding; plant-residues; leaves; faidherbia-albida; carissa; dichrostachys-cinerea; leucaena-leucocephala; sesbania-sesban; alfalfa-hay; eragrostis-tef; straw; diets; forage; protein-supplements; dosage-effects; maize; feed-intake; digestibility; plant-composition; anthocyanidins; polyphenols; nitrogen-balance; weight-gain; tropics; carissa-edulis

321 NAL Call No.: 49-J82
Lifetime lamb and wool production of Targhee or Finn-Dorset-Targhee ewes managed as farm or range flock. I. Average annual ewe performance.
Includes references.
Descriptors: ewes; targhee; crossbreds; dorset-horn; lamb-production; finnish-landrace-sheep-breed; range-pastures; lambing-rate; farms; extensive-livestock-farming; litter-size; breed-differences; weaning-weight; age-differences; fleece-weight; lambing; productive-life; survival; sex-differences; south-dakota

Abstract: Lifetime (5 yr) lamb production and wool production from 207 straightbred Targhee (T) and 474 1/4 Finn-1/4 Dorset-1/2 Targhee (FDT) crossbred ewes managed in a range or farm flock system were evaluated for ewe fertility, prolificacy, ewe fleece weight, and total lamb weight weaned per ewe exposed. Data included 2,620 ewe exposures, 2,384 parturitions, 4,638 lambs born, and 3,498 lambs weaned. Ewes were born in 1984 through 1987 and lambed the first time as 2-yr-olds. Expressed as mean annual values, ewe fertility rates were similar (92.2 vs 91.0%, P = .30) for FDT and T ewes. Finn-Dorset-Targhee ewes had higher (P < .001) prolificacy (2.11 vs 1.75), weaned more lambs per ewe exposed (1.41 vs 1.18), produced more total lamb weight weaned per ewe exposed (33.8 vs 29.9 kg), and lambed 2 d earlier than T ewes. Targhee ewes produced more (P < .001) wool (4.5 vs 3.5 kg) than FDT ewes. Range flock ewes had a higher (P < .001) fertility rate (94.5 vs 88.7%), higher number of lambs weaned per ewe exposed (1.38 vs 1.22), and higher total lamb weight weaned per ewe exposed (34.7 vs 29.0 kg) than farm flock ewes. Farm flock ewes had a higher (P < .001) prolificacy (2.00 vs 1.86) and produced more wool (4.2 vs 3.8 kg) than range flock ewes. Targhee ewes had heavier lambs at birth (5.2 vs 4.6 kg; P < .001) and at weaning (25.8 vs 25.4 kg; P < .05). Range flock lambs were heavier (P < .001) at weaning than farm flock lambs (26.2 vs 24.9 kg). Lambs from FDT dams had a higher (P < .01) survival rate than lambs from T dams (75.6 vs 71.4%). Lamb survival from birth to weaning was higher (P < .001) for range flock lambs than for farm flock lambs (76.6 vs 70.4%). Incorporation of Finnsheep and Dorset breeding increased the reproductive performance in both management systems but decreased wool production.

322 NAL Call No.: 49-J82
Lifetime lamb and wool production of Targhee or Finn-Dorset-Targhee ewes managed as farm or range flock. II. Cumulative lamb and wool production.
Includes references.
Descriptors: ewes; lamb-production; wool-production; targhee; crossbreds; finnish-landrace-sheep-breed; lambing-rate; litter-size; weaning-weight; litter-weight; breed-differences; range-pastures; extensive-livestock-farming; farms; age-differences
Abstract: Cumulative lifetime (five lamb crops) lamb production and wool production of 681 ewes were evaluated in this study. Lamb production and wool production from each ewe at the end of age 2, 3, 4, 5, and 6 yr were added to the previous year's production and analyzed within age of ewe. If a ewe failed to lamb, died, or was culled, it received a zero for that year and subsequent years. Main effects in the model included ewe breed and management system. Per ewe entering the study, Finn-Dorset-Targhee (FDT) ewes had a higher (P < .01) number of lambs born (7.42 vs 5.70), number of lambs weaned (5.39 vs 4.48), and total lamb weight weaned (131.7 vs 110.5 kg) than did Targhee ewes. Targhee ewes produced more (P < .01) wool (16.1 vs 13.6 kg) than FDT ewes. Range flock ewes had a higher number of lambs born (6.74 vs 6.38; P < .05), number of lambs weaned (5.39 vs 4.48; P < .01), and total lamb weight weaned (135.8 vs 106.5 kg; P < .01) than did farm flock ewes. Farm flock ewes produced more (P < .01) wool (15.2 vs 14.5 kg). A second analysis based on only those ewes retained at the start of each subsequent breeding season showed FDT ewes had a higher (P < .01) number of lambs born (9.96 vs 8.11), number of lambs weaned (7.61 vs 6.57), and total lamb weight weaned (183.8 vs 165.7 kg) after five lamb crops. Targhee ewes produced more (P < .01) wool (22.5 vs 17.6 kg). Farm flock ewes had a higher (P < .10) number of lambs born (9.18 vs 8.89) and produced more (P < .01) wool (21.1 vs 19.0 kg) than range flock ewes. Range flock ewes weaned more (P < .05) lambs (7.27 vs 6.92) and had more (P < .01) total lamb weight weaned (184.3 vs 165.2 kg) than farm flock ewes.

323 NAL Call No.: 100-N27M
Limiting amino acid in meat and bone and poultry byproduct meals.
Descriptors: meat-and-bone-meal; poultry-offal-meal; calves; lambs; protein-sources; diet; protein-quality; rumen-digestion; protein-efficiency-ratio; liveweight-gain; limiting-amino-acids

324 NAL Call No.: HD1930.G6A42
Lowland sheep 1994: production economics and management.
Descriptors: farm-surveys; farm-results; farm-management; replacement-rate; support-measures; quotas; economic-impact; farm-income; sheep-farming; costs; profitability; marketing

325 NAL Call No.: 23-Au792
Lupin and cowpea supplements for growth, wool production, and reproduction in rams.
Descriptors: wool-production; supplements; growth; reproduction; rams; nutritive-value; cowpeas; lupins; maintenance; sheep-feeding; pancreas; gonadotropins; wool; body-condition; semen-production; nutrition; semen; quality; testes; weight; histology; LH; FSH; blood

326 NAL Call No.: QH541.5.D4J6
Mahjur areas: traditional rangeland reserves in the Dhamar Montane Plains (Yemen Arab Republic).
Descriptors: rangelands; reserved-areas; forage; range-pastures; dry-season; land-use; range-management; sheep; grazing-systems; pasture-plants; botanical-composition; nutritive-value; yemen

327 NAL Call No.: SF1.A56
Maintenance of villous height and crypt depth in piglets by providing continuous nutrition after weaning.
Descriptors: piglets; weaning; piglet-feeding; villi; small-intestine; ewe-milk; wet-feeding; dry-feeding; glutamine; intestinal-mucosa; protein-content; liveweight-gain; enzyme-activity; beta-galactosidase; sucrose-alpha-glucosidase; blood-pla s ma; metabolites
328
Making a living from goat milk. Vivre du lait de chevre.
Delorme Y Chevre. 1995, No. 206, 28-29
Descriptors: goat-milk; dairy-farms; milk-production

329 NAL Call No.: TD172.E5
Managemental practices in goat farming in Phulbani District of Orissa.
Descriptors: farming; housing; castration; management; tropics

330 NAL Call No.: 275.29-IO9PA
Managing the replacement ewe lamb.
In the subseries: Sheep Management.
Descriptors: lambs; ewes; replacement; sheep-farming; lamb-feeding; ewe-feeding; feeds; feed-requirements; animal-breeding

331
Manipulating lamb growth to regulate the supply of lamb to market.
Vipond JE; Friggens NC Stocarstvo v.50(2): p.117-126; 18 ref (1996)
Descriptors: meat; storage; parasites; meat-production; markets; growth; lambing-season; breed-differences; nutrition; parasitoses

332
Marginal productivity and production functions of goats maintained under field conditions.
Descriptors: food-intake; concentrates; labour-productivity; animal-nutrition; economics; returns; flocks; size; productivity

333
Matching sheep and beef policies to pasture supply on Northland hill country.
Descriptors: animal-husbandry; animal-production; beef-production; sheep-farming; beef-cattle; farm-management; monitoring; groups; New-Zealand-Grassland-Association

334 NAL Call No.: SF380.73.U6A54
Membership directory. ADGA membership directory.
Description based on: 1995; title from cover.
Descriptors: American-Dairy-Goat-Association-Directories; Goat-farmers-United-States-Directories

335
Methods of measuring the amount of local skin cooling and the influence of more remote effects. [A lokalis lehules nagysaganak es tavolhatasnak meresi modszerei.]
Descriptors: lambs; animal-welfare; animal-housing; skin; body-temperature

336
The Midi-Pyrenees. Midi-Pyrenees.
Caramelle Holtz E Chevre. 1995, No. 208, 17-19
Descriptors: animal-production; meat-production; dairy-farms; dairy-farming; cheeses; goat-milk; manufacture
Milk yields of East Friesland and Corriedale ewes and their crossbreeds (EFXCo) under an intensive outdoor grazing system.
Kugler WG; Nigris F de; Souza J de; Perrachon J; Sommer M; De Nigris F; De Souza J. *Sheep-Dairy-News* v.12(3): p.57-58 (1995)

Descriptors: dairy-farming; grazing-systems; ewes; lactation; milk-yield; breeding; crossbreeding; grazing; ewe-lactation; lactation-duration; crosses; east-friesian-sheep-breed; Corriedale; sheep-breeds

Mineral status of grazing sheep in the dry area of midland China.
Includes references.

Descriptors: sheep; grazing; dry-season; rainy-season; dietary-minerals; natural-grasslands; forage; mineral-content; nutrient-requirements; blood-plasma; ningxia

A model-farm approach to research on crop-livestock integration. I. Conceptual framework and methods.
Includes references.

Descriptors: awassi; sheep-farming; animal-husbandry; crop-enterprises; crop-yield; crop-management; rotations; farming-systems; natural-grasslands; carrying-capacity; research-projects; lambs; milk-production; wool; fertility; mortality; syria ; integrated-crop-and-sheep-enterprises

Abstract: For several decades better crop-livestock integration of farming systems in West Asia and North Africa has been promoted as a way to improve crop and livestock output. To achieve this integration, pasture or forage legumes are usually introduced into rotations or grown on fallow land. This paper reports the conceptual framework and methods used in a six-year on-station project which used model farms to investigate the benefits of closer crop-livestock integration and improved husbandry practices. Three farm types were compared. One consisted of a model farm, experimental sheep flock and natural pasture managed using traditional (T) practices. The second had the same enterprise combination but rotations that allowed better integration (1) of the crop and sheep enterprises which were subjected to improved management practices. The third farm type consisted of a sheep flock and natural pasture, with poor (C, control) management practices being applied to the sheep flock. The model farms and experimental flocks were managed by researchers.

A model-farm approach to research on crop-livestock integration. II. Experimental results.
Includes references.

Descriptors: sheep-farming; crop-enterprises; grain; straw; wheat; barley; crop-yield; crop-management; harvesting-losses; research-projects; models

Abstract: A six-year project was conducted to show how better crop-livestock integration and improved management increase the outputs of crops and sheep products. Three farm types were compared, consisting of different crop and sheep enterprise mixes, together with natural pastures. The conceptual framework and experimental methods used were reported in a previous paper. This paper reports the crop and sheep enterprise results. Higher yields of grain and straw from wheat and barley crops resulted from improved crop management and better varieties although the contribution of these two factors could not be ascertained. Harvest losses from all crops were substantial and represented a significant economic loss. Input of feeds harvested from the farms or purchased doubled from the poorly managed to the well-managed flock and most of them were offered during late pregnancy and early lactation. Substantial responses in ewe fertility, and offtake of cull ewes, lambs and milk were associated with improvements in feeding level.

A model-farm approach to research on crop-livestock integration. III. Benefits of crop-livestock integration and a critique of the approach.
A six year on-station research project used a model-farm approach to study the benefits of improved crop-livestock integration, achieved through the introduction of leguminous forage species into crop rotations. Previous papers reported the conceptual framework, methods and experimental results. A model farm with integrated crop-sheep enterprises had twice the output of metabolizable energy and a higher stocking rate compared to a model farm with traditional rotations. A linear programming model suggested that integration improved farm profits and stocking rates, but improving the nutritional regime of ewes reduced farm profits. The model-farm approach allows close supervision of animals but otherwise had several weaknesses, in particular the difficulty of mimicking the real farm environment on a research station. If the weaknesses are corrected, the approach could be applied with substantial benefits in national programs that have under-utilized land, animal and staffing resources.

Molecular cloning and nucleotide sequences of cDNA clones of sheep and goat adrenocortical cytochromes P450scc (CYP11A1).
Okuyama E; Okazaki T; Furukawa A; Wu RuFeng; Ichikawa Y; Wu RF Journal-of-Steroid-Biochemistry-and-Molecular-Biology v.57(3-4): p.179-185; 26 ref (1996)
Descriptors: complementary-dna; nucleotide-sequences; cloning; clones; cytochromes; DNA; biotechnology

Molecular cloning and sequencing of the gene encoding a sheep arginine vasopressin type 1a receptor.
Descriptors: cloning; arginine; vasopressin; amino-acid-sequences; receptors; nucleotide-sequences; hormones; DNA; biotechnology; G-proteins; homology

Mortality of domestic sheep in free-ranging flocks in southeastern Norway.
Includes references.
Descriptors: sheep; free-range-husbandry; lambs; ewes; mortality; age-differences; predation; ursus-arctos; growth-rate; sex-differences; mountain-grasslands
Abstract: Lamb mortality during three summer grazing seasons (1988 to 1990) among 1,399 lambs in three flocks of free-ranging domestic sheep in southeastern Norway was modeled using logistic regression. Ewe mortality during the same three seasons among the 295 ewes in one of the three flocks was also modeled. During the period, mortality among the 1,399 lambs and 295 ewes was 7.2% and 12.5%, respectively. Other work has shown predation by brown bears to be the single most important mortality factor in all three flocks, especially among ewes. Year, herd, sex, age of dam, and spring growth rate (i.e., from birth to release onto summer range) were statistically significant (P less than or equal to .05) in explaining mortality among lambs. Lamb mortality was higher in 1989 and 1990, higher in Herd(A) (the most isolated herd that grazed adjacent to the Swedish border), higher among lambs of yearlings, among male lambs, and among lambs with low spring growth rate. Ewe mortality increased with age (P = .07). Adjustment of age for weight weakened the statistical association between age and mortality, however (P = .16). The negative association between lamb mortality and age of dam and the positive association between ewe mortality and ewe age may both be related to the quality of maternal care provided by ewes of different ages. Subsequently, attempts to compensate for losses, especially those due to predation by bears, lead to a younger herd that may increase the herd's overall vulnerability.

Mother-offspring interactions in feral goats a behavioural perspective of maternal investment.
346 NAL Call No.: 60.18–J82
Mountain big sagebrush browse decreases dry matter intake, digestibility, and nutritive quality of sheep diets.
Includes references.
Descriptors: sheep; artemisia-tridentata; feed-intake; dry-matter; digestibility; hay; voluntary-intake; feces; chemical-composition; urine; nitrogen-content; nitrogen-balance; wyoming

Abstract: A metabolism study evaluated the influence of increasing quantities (0-30% dry matter basis) of mountain big sagebrush (Artemisia tridentata ssp. vaseyana Rydb. Beetle) on dry matter intake and in vivo digestibility of wether diets. Diets consisted of hand-harvested, coarse-ground and frozen current year’s growth of mountain big sagebrush leaves and twig tips mixed with chopped native grass hay. Dry matter intake decreased from 93 to 23 g dry matter day-1 kg metabolic weight-1 and in vivo dry matter digestibility from 59 to 0% with increasing levels of sagebrush in the diet. With increasing levels of sagebrush in the diet, water, lignin, and nitrogen contents increased in the diet, but decreased in the dung, while fiber components decreased in both the diet and dung. Total nitrogen intake decreased from 1.58+/-0.041 to 0.406+/-0.070 g day-1 kg metabolic weight-1, and nitrogen retention decreased from 0.80 g day-1 kg metabolic weight-1 with no sagebrush to a slight loss of nitrogen with 30% sagebrush in the diet. Mountain big sagebrush was not readily consumed by wethers when fed together with grass; as low as 10% sagebrush in the diet seems to adversely influence intake and digestibility. Therefore, when other more favorable forages are not available, sheep and other ruminants with similar physiological responses to mountain big sagebrush may not meet their nutrient requirements through increased sagebrush consumption.

347 NAL Call No.: QH541.5.D4J6
Native forage shrub species in south-eastern Spain: forage species, forage phytomass, nutritive value and carrying capacity.
Includes references.
Descriptors: shrubs; forage; biomass; plant-density; ground-cover; rangelands; carrying-capacity; goats; stocking-rate; stocking-density; nutritive-value; spain

348 NAL Call No.: QL750.A6
Neonatal survival: contributions from behavioural studies in sheep.
Descriptors: research; lambs; neonates; survival; newborn-animals; maternal-behaviour; colostrum; ewes; nutrition; pregnancy; reviews; behaviour; Merino

349 NAL Call No.: SF1.K3
Neural and neurochemical control of olfactory recognition of offspring in sheep.
Descriptors: nitric-oxide; lambs; mechanical-stimulation; neurotransmitters; animal-behaviour; olfactory-stimulation; memory; maternal-behaviour; suckling; ewes

350
The New Zealand sheep and beef farm survey 1994-95: production and financial analysis from a sample of sheep and beef farms for the season July 1st to June 30th.
Descriptors: livestock-farming; beef; wool; production; prices; profitability; returns; farm-income; fertilizers; usage; lambing-rate; calving-rate; cattle-farming; sheep-farming; farm-surveys; farm-results
A newly isolated Staphylococcus gallinarum from goat rumen and partial characterization of its harbouring plasmids.


Descriptors: cloning; hybridization; rumen; characterization; plasmid-vectors; biotechnology; genetic-engineering; rumen-bacteria; Staphylococcus-gallinarum

A novel Ti-plasmid-convertible lambda phage vector system suitable for gene isolation by genetic complementation of Arabidopsis thaliana mutants.

Fuse T; Kodama H; Hayashida N; Shinozaki K; Nishimura M; Iba K Plant-Journal v.7(5): p.849-856; 37 ref (1995)

Descriptors: complementation; mutants; mutations; genetic-engineering; vectors; biotechnology; gene-cloning

Nutrient partitioning and fetal growth in rapidly growing adolescent ewes.


Descriptors: ewes; embryo-transfer; pregnancy; dams-mothers; fetus; growth-rate; nutrition-physiology; nutrient-intake; birth-weight; survival; placenta; weight; liveweight-gain; maternal-nutrition; correlation; adolescent-animals

Nutrition during fetal life alters annual wool production and quality in young Merino sheep.


Descriptors: sheep; sheep-breeds; pregnancy; maternal-nutrition; undernutrition; progeny; young-animals; clones; birth-weight; wool-production; wool; quality

Nutritional consequences among ingredients of free-choice feeding Awassi lambs.


Descriptors: lambs; awassi; unrestricted-feeding; fattening-performance; feeding-preferences; liveweight-gain; feed-conversion; barley; wheat-bran; cottonseed-oilmeal; alfalfa-hay; feed-intake; feed-formulation; diet; energy-intake; protein-intake

Nutritional enhancement of parasite control in small ruminant production systems in developing countries of South-East Asia and the Pacific.


Descriptors: sheep; goats; animal-parasitic-nematodes; nematode-infections; haemonchus-contortus; trichostrongylus; trichostrongylus-coliubriformis; nematode-control; feed-supplements; urea; nitrogen-metabolism; protein-supplements; protein-metabolism; cottonseed-oilmeal; south-east-asia; pacific-islands; fiji; urea-molasses-block-supplements

Abstract: Nutritional insufficiency and gastrointestinal nematode parasitism are major constraints to small ruminant production in south-east Asia and the Pacific Islands. Research on the effects of low cost supplements which supply nitrogen and essential minerals on the ability of small ruminants to resist infection is summarised. In controlled pen studies in young Merino sheep offered a low quality roughage diet of oaten chaff and essential minerals, supplementation with urea reduced the effects of parasitic infection by increasing weight gain and wool production and reducing faecal egg output and parasite burden. In Fiji, field studies have shown that
supplementation with urea-molasses blocks can result in increased live-weights of lambs at weaning, increased reproduction rates in maiden ewes and reduction in faecal egg output in grazing sheep. Additional benefits were derived from the inclusion of anthelmintic in the blocks in similar groups of sheep particularly during periods of greater susceptibility to parasites. Pen studies with young goats have shown that urea supplements alone gave no production benefits, but when accompanied by 100 g/d of cotton seed meal beneficial responses were observed. It is expected that parasite control in the small ruminant production systems of developing countries in southeast Asia and the Pacific Islands will benefit from the introduction of low cost nitrogen supplements along with anthelmintic therapy delivered strategically by molasses blocks.

357

**Nutritional value of dairy products of ewes and goats milk.**

*Descriptors*: ewes; lactation; lactation-stage; seasons; ewe-feeding; goat-feeding; physiology; udders; animal-health; milk-processing; milk-products; ewe-milk; goat-milk; nutritive-value; reviews; milk-composition; products; composition

358 NAL Call No.: SF380.I52

**Nutritive evaluation of ammonia treated olive tree leaves for lactating sheep.**

Includes references.

*Descriptors*: ewes; karagouniko; olea-europaea; ammonia-treatment; leaves; ammoniated-feeds; digestibility; fiber-content; crude-protein; alfalfa-hay; wheat-straw; milk-composition; casein; fatty-acids; ewe-milk; chemical-composition; mineral-content; diet; energy-intake; nutrient-intake; milk-yield; greece

359 NAL Call No.: 44.8-J822

**Nutritive value of dried citrus pulp and its effect on milk yield and milk composition of lactating ewes.**

Includes references.

*Descriptors*: ewes; ewe-feeding; concentrates; citrus-pulp; karagouniko; wethers; digestibility; milk-yield; ewe-milk; milk-fat-percentage; feed-intake; energy-intake; milk-protein-percentage; fatty-acids; lactose; greece

*Abstract*: In a digestibility experiment, six adult wethers of the Karagouniko breed were used to determine the nutritive value of dried citrus pulp. The rations consisted of 800 g of hay and 75, 150, 225, 300, 375, and 450 g of citrus pulp. The apparent digestibilities of the DM, OM, CP, ether extract, crude fiber, and N-free extract for dried citrus pulp were 78.6, 87.2, 52.7, 82.0, 93.2, and 83.1%, respectively. Energy content was estimated to be 1.66 Mcal of NEL/kg of DM. In a second experiment, 26 lactating ewes of the Karagouniko breed were used to study the nutrient utilization of dried citrus pulp for milk yield when citrus pulp was used as a replacement for cereal grains. The ewes were divided into two groups immediately postweaning and fed daily 700 g of alfalfa hay, 300 g of wheat straw, and 580 or 550 g of concentrates with or without 30% citrus pulp, respectively. The inclusion of citrus pulp in rations for ewes had no significant effect on milk yield and composition but decreased the C4 to C10 fatty acids. Citrus pulp is a valuable, high energy by-product that can partly replace cereal grains in sheep rations without adverse effect on milk yield or composition.

360 NAL Call No.: SF380.I52

**Nutritive value of Kochia scoparia L. and ammoniated barley straw for goats.**

Includes references.

*Descriptors*: goats; barley-straw; ammonia-treatment; ammoniated-feeds; kochia-scoparia; digestibility; metabolizable-energy; chemical-composition

361 NAL Call No.: QL750.A6

**Observations of sheep foraging in familiar and unfamiliar environments: familiarity with the environment influences diet selection.**
362 NAL Call No.: 41.8-C163
Observations on the birth of goats.
Includes references.
Descriptors: goats; kidding; reproductive-physiology; reproductive-behavior; placentophagy

Abstract: The parturient behavior of 90 Murciano-Granadina goats was analyzed. Hourly frequencies of births showed a unimodal distribution with a maximum number of births between 10:00 and 18:00 h (74.45%). Twenty-four births (26.66%) took place with the goat standing, and sixty-six births (73.33%) took place with the goat recumbent. Fetuses were presented head-first (80.95%), breech (14.97%) and forelegs first (4.08%). Length of labor was 19.49 min for single birth and 30.36 min for twins (first born and second born, 14.52 and 15.84 min, respectively). Time for complete expulsion of placental tissue for goats with single and twin births was 86.58 +/- 4.93 and 106.57 +/- 4.80 min, respectively. Finally, placentophagy for goats with single or twin births

363 NAL Call No.: 44.8-J822
Odorous constituents of ovine milk in relationship to diet.
Includes references.
Descriptors: ewe-milk; volatile-compounds; pecorino-cheese; aroma; diet; gas-chromatography; sesquiterpenes; grasses; feed-grains

Abstract: The neutral volatile compounds of ovine milk from ewes fed on natural pasture, grass meadow, and on mixed grain rations were isolated by distillation under vacuum and then collected in traps that were cooled with liquid nitrogen. The distillate was extracted with dichloromethane, and the extract obtained was analyzed using high resolution gas chromatography and high resolution gas chromatography coupled to mass spectrometry. Seventy compounds were identified and quantitatively determined. The volatile compounds obtained were mainly esters, aldehydes, alcohols, ketones, nitrogen compounds, sulfur compounds, aromatic hydrocarbons, and lactones. The olfactometric indices and olfactory properties of 16 compounds were determined by gas chromatography and olfactometry. All of the substances were present in all three milk types with the exception of two sesquiterpenes, which were not detected in the milk from ewes fed the mixed grain ration. The two sesquiterpenes were absent also in ovine cheese obtained from milk from ewes fed the mixed grain ration, but the two sesquiterpenes were identified in cheese produced from milk of sheep fed on natural pasture. The presence of these constituents in the milk can be significant because of their potential role in determining milk and cheese flavor. Accordingly, cheese obtained during summer may be identified using sesquiterpenes as chemical markers of the milk used to make cheese.

364 Olfactory preferences in newborn lambs: possible influence of prenatal experience.
Descriptors: lambs; fetus; odours; olfactory-stimulation; animal-behaviour; smell; newborn-animals

365 NAL Call No.: 26-T754
On-farm reproductive performance of the West African Dwarf goat at Ganawuri in the sub-humid zone of Nigeria.
Includes references.
Descriptors: west-african-dwarf-goat-breed; animal-production; sexual-reproduction; reproductive-performance; mortality; stylosanthes-hamata; fodder; litter-size; birth-weight; growth-rate; seasonal-variation; disease-control; villages; tropics; nigeria

366 NAL Call No.: 49.9-Eu7 no.75
On-farm test of INRA portable electronic jars for automated milk recording of sheep and goats.
On social behaviour of milk goats in large groups. [Zum Sozialverhalten von Milchziegen in grossen Gruppen.]
Descriptors: behaviour; animal-husbandry; horns; animal-behaviour; dominance; social-behaviour

Optimal diet selection by a generalist grazing herbivore.
Includes references.
Descriptors: herbivores; sheep; grazing-behavior; feeding-preferences; stochastic-programming; dynamic-programming; dynamic-models; stochastic-models; lolium-perenne; trifolium-repens; mixed-pastures

The organisation of data processing and evaluation of the on-farm performance in herds of dairy cows and dairy goats in France. [L'organisation de la saisie et de la valorisation des performances en ferme dans les troupeaux de vaches laitières et de chevres en France.]
Descriptors: cows; milk; data-collection; herds; data-processing; milk-recording; computer-software; development; goat-milk; dairy-cattle; International-Committee-for-Animal-Recording

Parenteral copper and selenium supplementation of sheep on legume-grass pastures: biochemical and production responses in lambs to maternal treatment.
Includes references.
Descriptors: wethers; sheep-feeding; copper; selenium; liver; kidneys; blood; ewes; supplementary-feeding; fecundity; lambs; maternal-nutrition; survival; pregnancy; body-weight; growth-rate

Performance and blood chemistry in lambs following fasting and transport.
Includes references.
Descriptors: lambs; starvation; transport-of-animals; weight-losses; water-intake; refeeding; feed-intake; liveweight-gain; blood-sugar; blood-plasma; hydrocortisone; stress-response; compensatory-growth

Performance of and factors affecting the small-holder sheep production system in Egypt.
Includes references.
Descriptors: sheep; production-costs; small-farms; farm-income; regression-analysis; litter-size; lambing-interval; rams; egypt
The performance of West African Dwarf does and their kids at various stocking densities on stylo-based pasture in the subhumid zone of Nigeria.


Descriptors: growth; liveweight-gain; botanical-composition; birth-weight; West-African-Dwarf-goat-breed; stocking-rate; reproduction; stocking-density; pastures; female-fertility; nutrition; grazing; management; tropics

Persistence of the effects of early experience on consumption of low-quality roughage by sheep.

Includes references.

Descriptors: sheep; feeding-behavior; voluntary-intake; hay; eragrostis-curvula; avena-sativa; forage; nitrogen-retention; sorghum

Abstract: The aim of this study was to determine the effects of experience early in life with cured weeping lovegrass (Eragrostis curvula) (low-quality roughage) or fresh oats (Avena sativa) (high-quality roughage) on voluntary intake and nitrogen retention when sheep ate a low-quality roughage 9 mo after initial exposure. From 1 to 5 mo of age, experienced wethers (EW) grazed cured weeping lovegrass, whereas inexperienced wethers (IW) grazed fresh oats (initial exposure). Then both EW and IW were fed sorghum (Sorghum bicolor) hay for 45 d, fresh weeping lovegrass for 105 d, and finally alfalfa hay for 120 d. Nine months after completion of the initial exposure EW and IW were offered sorghum hay (low quality roughage), and, in addition, both groups were offered sorghum with ad libitum access simultaneously to alfalfa hay at six levels of availability. Experienced wethers ingested 15% more (P < .02) sorghum than IW. When given sorghum simultaneously with alfalfa at different levels of availability, EW ingested more (P < .10) sorghum than IW when only sorghum was freely available. Nitrogen retention was negative in both groups, but it was less negative in EW than in IW per unit of metabolic weight (P < .09) and per wether (P < .04). The results show that early dietary experience can have profound and persistent effects on consumption of foods low in nutritional quality, apparently through changes in critical physiological mechanisms.

Physical structure of twelve forage species in relation to rate of intake by sheep.

Includes references.

Descriptors: sheep; forage; feed-evaluation; feed-intake; quantitative-analysis; digestibility; trifolium-repens; medicago-sativa; onobrychis-viciifolia; desmodium-intortum; brassica-napus; spergula-arvensis; lolium-perenne; lolium-multiflorum; festuca-arundinacea; chloris-gayana; cenchrus-ciliaris; zea-mays; plant-composition; physicochemical-properties; plant-morphology

Physical structure of white clover, rape, spurrey and perennial ryegrass in relation to rate of intake by sheep, chewing activity and particle breakdown.

Includes references.

Descriptors: lolium-perenne; trifolium-repens; brassica-napus; spergula-arvensis; physicochemical-properties; plant-morphology; plant-anatomy; chemical-composition; sheep; mastication; digestibility; feed-intake; uk

Plant form selection and dietary overlap of cattle and goats on a continuously grazed rangeland.

Descriptors: botanical-composition; feeding-preferences; selection; overlap; seasonal-variation; rangelands; mountain-grasslands; woody-plants; forage; dry-season; wet-season; grasses; forest-trees; continuous-grazing

Plant preference of sheep grazing in the Mojave desert.
Phillips RL; McDougald NK; Sullins J Rangelands v.18(4): p.141-144; 6 ref (1996)
Descriptors: seasonal-variation; grasses; forbs; shrubs; diet; grazing; grasslands; deserts; selective-grazing; feeding-preferences; weeds; cultural-control; control; gopherus-agassizi; brassica-pectorum; grazing-behaviour

379 NAL Call No.: SF756.7.I57 1995
Polymorphism of domestic behaviour and its adaptive significance in sheep.
Lankin VS; Rutter SM (ed.); Rushen J (ed.); Randle HD (ed.); Eddison JC Proceedings of the 29th International Congress of the International Society for Applied
Descriptors: fearfulness; animal-behaviour

380 Possibilities and prospects for sheep breeding in Germany. [Möglichkeiten und Chancen fur die Schafhaltung in Deutschland.]
Jurkschat M; Brantsch H Neue-Landwirtschaft. 1995, No. 12, 66-69
Descriptors: ewes; lambs; housing; sheepmeat; extensive-husbandry; landscape-conservation; animal-health; flocks; nutrition; flushing; female-fertility; meat-production; management; sheep-farming; production-possibilities

381 NAL Call No.: 45.9-Sv2
Potatoes for goats?. [Potatis till getter ?!]
Descriptors: milk; lactation; concentrates; barley; oats; peas; rapeseed-oilmeal; molasses; feed-intake; cheeses; bacterial-count; feed-formulation; hay; liveweight-gain; milk-yield; goat-feeding; supplements; potatoes; milk-composition; goat-milk; tubers; nutrition

382 Potential for goat production in the oasis system: the case of Jerid. [Potentialites de l'elevage de la chevre dans le systeme oasisien, le cas du Jerid.]
Descriptors: goat-meat; goat-milk; productivity; farm-income; goat-keeping; oases; milk-production; milk-yield

383 NAL Call No.: SF380.I52
The potential of laser-induced fluorescence (LIF) spectra of sheep feces to determine diet botanical composition.
Includes references.
Descriptors: lambs; feces-composition; hilaria-mutica; hay; flourensia; fluorescence; lasers; diet; ratios; wavelengths; flourensia-cerna

384 NAL Call No.: QP1.A2
The preference for warm drinking water induces hyperhydration in heat-stressed lactating goats.
Descriptors: lactation; thirst; water-temperature; hydrocortisone; drinking-water; overhydration; heat-stress; water; water-intake; temperature; blood-composition; environmental-temperature; intake; goat-lactation

385 NAL Call No.: SF380.I52
Preferences of Angora goats for eight selections of grasses used for reclamation of Great Basin rangelands.
Includes references.
Descriptors: goats; angora; grazing-behavior; feeding-preferences; grasses; arid-regions; leymus; elymus-lanceolatus; psathyrostachys-juncea; agropyron-desertorum; maturity-stage; in-vitro-digestibility; crude-protein; selective-grazing; oregon; pseudoroegneria-spicata
**386 NAL Call No.: SF756.7.I57 1995**

**Preliminary results on the maternal and neonatal behaviour of the "Altamurana" thoroughbred sheep.**

Cagnetta P; Vonghia G; Dario C; Rutter SM (ed.); Rushen J (ed.); Randle HD (ed.); Eddison JC

*Proceedings of the 29th International Congress of the International Society for Applied*

Descriptors: lambs; maternal-behaviour; newborn-animals; sheep-breeds

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**387 NAL Call No.: HD1401.A47**

**Price expectations of sheep and goats by producers and intermediaries in Quetta market, Pakistan.**

Rodriguez, A.; Ali, I.; Afzal, M.; Shah, N. A.; Mustafa, U.


Includes references.

Descriptors: sheep; goats; producer-prices; merchants; middlemen; price-formation; farmers'-attitudes; seasonality; rain; carcass-quality; sex; age; breeds; liveweight; customary-law; economic-evaluation; mathematical-models; body-condition; pakistan; balochistan-province; pakistan; meatless-days; meat-days

**Abstract:** Analysis of producers' and intermediaries' livestock price expectations was used to describe the market in Quetta, the largest livestock market in the highlands of Balochistan Province, Pakistan, and to identify factors that determine price expectations of small ruminants. A total of 4800 expected prices for sheep and goats were collected from producers and market intermediaries at monthly intervals between January 1991 and December 1992. In addition to the expected price of the animal, liveweight, species, sex, breed, body condition (fatness), calendar day and month were recorded, and whether data were collected on a meat or meatless day. Monthly rainfall data were also collected. Models of goat and sheep price expectations were built to compare the similarity of the behaviour of producers and intermediaries. Results indicated that producers and intermediaries expected high prices from November to January and during religious holidays. They expected premiums and discounts related to animals' attributes. Liveweight and seasonality had the strongest effect on prices. Rainfall in the current and previous month was positively related to seller's expected prices suggesting that livestock are retained to take advantage of favourable grazing conditions. The models of price expectations showed that producers adjusted expected goat prices (P less than or equal to 0.10) for seasonality, liveweight, body condition, age, sex and breed, while they adjusted sheep prices for seasonality and liveweight only. High pay-offs could be expected if extension efforts focused on factors that determine sheep meat quality; however, the retail ceiling price of meat and the lack of grading are a disincentive to work in this direction. Seasonality of supply and demand is important in determining prices and this study provides baseline information for market scheduling; however, scheduling of sales of transhumant pastoralists may be difficult to achieve. Further investigation is justified to understand the gap in marketing knowledge between producers who sell in the villages and those who sell in Quetta.

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**388 NAL Call No.: SF756.7.I57 1995**

**Principal component analysis (PCA) of behavioural reactions of sheep submitted to three different fear-eliciting situations.**

Vandenheede M; Bouissou MF; Picard M; Rutter SM (ed.); Rushen J (ed.); Randle HD(ed.); Eddison JC

*Proceedings of the 29th International Congress of the International Society for Applied*

Descriptors: fearfulness; animal-behaviour; fright

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**389 NAL Call No.: SF601.I4**

**Problems of extensive sheep farming systems.**

Winter, A.


Includes references.

Descriptors: sheep-farming; large-scale-husbandry; animal-nutrition; sheep-housing; age; lambing; sheep-diseases; mortality; euthanasia; uk

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**390 NAL Call No.: SF604.P82**

**Proceedings of the 25th sheep and beef cattle seminar, New Zealand Veterinary Association, June 1995.**

Budge G

*Publication -Veterinary-Continuing-Education,-Massey-University. 1995, No. 165, 1*

Descriptors: beef-cattle; helminths; anthelmintics; drug-resistance; drug-therapy; disease-control; control-programmes; mineral-deficiencies; cobalt; toxicity; copper; selenium; tuberculosis; pneumonia; animal-husbandry; diseases; parasites; sheep-diseases; cattle-diseases; food-animals
Production by ewes rearing single or twin lambs: effects of dietary crude protein percentage and supplemental zinc methionine.

Includes references.

Abstract: Eighty Targhee ewes with single or twin lambs were used to investigate the effects of chelated zinc methionine and level of dietary CP on milk and wool production, DMI, and ewe and lamb BW change. Treatments were arranged as a 2 X 2 X 2 factorial. Dietary treatments started 30 d prepartum and continued until 42 d postpartum. Milk production was estimated at 4, 10, 18, and 28 d postpartum. During gestation, DMI by ewes receiving zinc methionine and the 14.9% CP diet was greater (P < .10) than DMI by ewes not supplemented with zinc methionine and ewes fed the 11.3% CP diet. Ewes fed the 14.9% CP diet tended (P < .14) to gain more BW from 30 d prepartum to 4 d postpartum and lose more BW from 4 to 42 d postpartum than ewes fed the 11.3% CP diet. Ewes fed zinc methionine and the 14.9% CP diet produced more (P < .10) milk on d 28 than their counterparts. Ewes rearing twins produced more (P < .05) milk on d 4, 10, and 18 than ewes rearing single lambs. However, milk production on d 28 was not affected by number of lambs reared ( P = .68). Lamb ADG at 28, 42, and 59 d postpartum was greater (P < .05) for both the zinc methionine treatment and the 14.9% CP diet. Zinc methionine (P = .11) and the 14.9% CP diet (P = .02) increased weaning weights by 6 and 9%, respectively. We conclude that both the zinc methionine supplement and the 14.9% CP diet resulted in more persistent milk production. In addition, when ewes and lambs were fed for an average of 42 d during early lactation, a 14.9% CP diet, and to a lesser degree, a chelated zinc methionine supplement, lamb weaning weights were improved.

Production of fine wool in northern China: effect of nutrition and helminth infections.


A productive relationship between tourism and livestock farming: an example of local development in the small mountain town of Metsovo (Greece). [Un rapport fecond entre le tourisme et le milieu des eleveurs: l'exemple du developpement local de la petite ville montagnarde de Metsovo (Greece).]


Productivity and cold resistance in ewes pre-lamb shorn by standard or cover comb.

Includes references.

Descriptors: ewes; lambs; shearing; lamb-production; cold-resistance; cold-stress; feed-intake; new-zealand; cover-comb-shearing; standard-comb-shearing
Productivity growth: total factor productivity on Australian broadacre farms.
Descriptors: crops; livestock; dairy-farming; beef; sheep-farming; farm-size; regions; farm-sector; productivity; trends

Profitable goat keeping: the basics.
Descriptors: goats; goat-keeping; small-farms

A questionnaire survey of the correction methods for vaginal prolapse in ewes.
Descriptors: animal-welfare; sutures; ewes; female-genitalia; surveys; vaginal-prolapse; surgery

Radon and its importance in animal husbandry. [Radon i jego zoohigieniczne znaczenie.]
Descriptors: pig-housing; cattle-housing; poultry-housing; sheep-housing; radionuclides; radon; animal-housing

Raising Angora goats.
Descriptors: angora; characterization; history; animal-husbandry; small-farms

Recommendations for sheep selection programs.
In the subseries: Sheep management.
Descriptors: sheep; sheep-farming; selection-program; record-keeping; performance-indexes; correction-factors

Reference points for goat production systems in the Ardeche. [En Ardeche des references sur les systemes caprins.]
Hanus G Chevre. 1995, No. 206, 31-33
Descriptors: professional-services; dairy-farms; animal-production; systems; models; farm-dairies; cheesemaking; goat-milk; cheeses; manufacture

Regulation of gonadotrophin-releasing hormone receptor expression in the ewe.
Descriptors: regulation; messenger-rna; cloning; GnRH; receptors; DNA; nucleotide-sequences

The relationship between cortical structure and fibre diameter in primary and secondary wool fibres of yearling Perendale sheep.
Descriptors: structure; fibre; diameter; wool; fibres; cortex; skin; histology; Perendale; New-Zealand-Society-of-Animal-Production

Relationship between rank order and productive parameters in Verata goats during milking.
*Descriptors*: goats; verata; social-dominance; goat-milk; milk-yield; milk-fat-percentage; canonical-analysis; equations; agonistic-behavior; spain

405 NAL Call No.: 60.19-B773 
**Relationship between vegetation state and bite dimensions of sheep grazing contrasting plant species and its implications for intake rate and diet selection.**
*Descriptors*: simulation-models; vegetation; dimensions; grazing; plant; species; feed-intake; diets; selection; selective-grazing; models; intake; grasses; legumes

406 NAL Call No.: SF380.I52 
**Relationships between deuterium dilution space and estimated energy balance in lactating goats.**
*Descriptors*: goats; energy-balance; pregnancy; lactation-stage; diet; fiber-content; feed-intake; goat-milk; milk-yield; feces; urine; energy-retention; deuterium-oxide

407 
Murphy MC 1995, 236 pp
*Descriptors*: farm-income; gross-margins; fixed-costs; variable-costs; yields; economies-of-scale; crops; cereals; wheat; barley; rape; beans; peas; linseed; potatoes; sugarbeet; arable-farming; dairy-farming; pig-farming; poultry-farming; livestock-farming; cattle-farming; sheep-farming; agricultural-manpower; non-farm-income; farm-surveys; farm-results; dairy-farms; economics

408 
**Reproductive efficiency and milk production: a simulation model for sheep farms.** [Efficienza riproduttiva e produzione di latte: un modello di simulazione per le aziende ovine.]
*Descriptors*: ewe-milk; milk-production; lactation-curve; milk-yield; reproduction; reproductive-performance; ewes; simulation-models; models

409 NAL Call No.: QP1.C6 
**Reproductive period affects water intake in heat-stressed dehydrated goats.**
*Descriptors*: heat-stress; lactation; pregnancy; water-intake; hydrocortisone; osmotic-pressure; drinking; dehydration; water; intake; goat-lactation

410 NAL Call No.: SF1.A56 
**Resistance to cold stress in sheep shorn by cover comb or standard comb.**
*Descriptors*: sheep; cold-stress; shearing; shearing-machines; fleece; heat-production; environmental-temperature; rain; wind; blood-plasma; fatty-acids; weight-losses; blood-sugar; liveweight-gain; new-zealand

411 NAL Call No.: SF380.I52 
**The response of lactating and dry ewes to energy intake and protein source in the diet.**
*Descriptors*: ewes; lactation; dry-period; restricted-feeding; aragonese; dietary-protein; fish-meal; soybean-
Oilmeal; barley; milk-protein-percentage; protein-concentrates; feed-intake; dry-matter; fiber-content; crude-protein; milk-yield; organic-matter; body-weight; body-condition; body-fat; body-protein; lambs; liveweight-gain; Spain

412 NAL Call No.: SF1.A56
Response of sheep to annual cycles in nutrition. 2. Effects of diet and endogenous growth hormone during replenishment.
Includes references.
Descriptors: ewes; somatotropin; refeeding; body-weight; immunization; somatoliberin; feed-supplements; protein-concentrates; barley; fish-meal; grazing; blood-plasma; insulin; prolactin; wool; liveweight-gain; insulin-like-growth-factor; skin; liver; carcass-weight; depot-fat; nutritive-ratio

413 NAL Call No.: QP141.A1N88
Response to high dietary copper and duration of feeding time on tissue copper concentration of sheep.
Includes references.
Descriptors: diet; copper; dietary-minerals; nutrient-intake; feeding; duration; mineral-content; liver; kidneys; spleen; bones; blood-serum; nutrient-reserves; mineral-supplements; reference-standards; equations; dosage-effects; bioassays; wethers; sheep

Abstract: Two experiments were conducted to study the effect of high dietary Cu and duration of feeding time on tissue mineral composition of sheep to establish a standard curve for future bioassay of supplemental Cu sources. In Experiment 1, 24 crossbred wethers were fed a basal diet (9.24 mg/kg Cu) supplemented with 15, 30 or 45 mg/kg added Cu as cupric acetate for 15 or 30 days. An additional four sheep were killed at day 0 to serve as controls. In Experiment 2, 30 crossbred wethers were injected i.v. with 50 mg ammonium tetrathiomolybdate (ATM) twice weekly for 3 weeks to reduce body Cu stores, then fed the basal diet (7.29 mg/kg Cu) or the basal plus 20, 40, 60 or 80 mg/kg added Cu as cupric acetate for 10 or 20 days. Treatment with ATM reduced liver Cu stores by 52%. In Experiment 1, liver and bone Cu concentrations were greater in sheep supplemented with Cu compared with controls, but there was no difference among sheep fed various added Cu concentrations. In Experiment 2, liver Cu concentration increased linearly in sheep fed 10 days and quadratically in sheep fed 20 days, but serum, spleen and kidney Cu concentrations were not affected by treatment. A bioassay for Cu bioavailability based on liver Cu uptake with a 10-day supplementation period appeared feasible.

414 NAL Call No.: SF1.A56
Responses in wool and live weight when different sources of dietary protein are given to pregnant and lactating ewes.
Includes references.
Descriptors: ewes; dietary-protein; pregnancy; ewe-lactation; protein-requirement; wool; body-weight; lambs; birth-weight; lupins; egg-albumen; fish-meal; urea; amino-acids; insulin; glucose-tolerance-test; lactation-stage; protected-protein; sulfur; chemical-composition

415 NAL Call No.: SF1.A56
Responses of sheep to annual cycles in nutrition. 1. Role of endogenous growth hormone during undernutrition.
Includes references.
Descriptors: ewes; underfeeding; somatotropin; blood-plasma; somatoliberin; immunization; hormone-secretion; weight-losses; wool-production; lh; fsh; insulin; ovariectomy; follicles

416
Results from the sheepmeat project. Part 3. [Resultate aus dem Projekt Lammfleisch. 3. Teil.]
417 NAL Call No.: SF371.R47
A review of Montana winter range ewe nutrition research.
Descriptors: research; reproduction; wool-production; protein-supplements; protein-sources; nutrient-requirements; winter; ewes; reviews

418
Rigotte de Condrieu cheese. [La Rigotte de Condrieu.]
Delorme Y Chevre. 1995, No. 208, 37-39
Descriptors: ancillary-enterprises; farm-enterprises; demonstration-farms; cheesemaking; cheeses; goat-milk; manufacture; farm-dairies; marketing; Rigotte-de-Condrieu-cheese

419
Role of a major scheme in the dynamic organization of a pastoral community. [Le role d'une macro-technique dans la dynamique d'organisation d'une societe pastorale.]
Choisis JP; Bouche R; Gambotti JY; Zervas NP (ed.); Hatziminaoglou J The optimal exploitation of marginal Mediterranean areas by extensive ruminant production systems. Proceedings Thessaloniki, Greece, 18-20 June 1994. 1996, 74-78; 8 ref
Descriptors: dairy-industry; breeding; ewes; ewe-milk; milk-production; artificial-insemination; technology-transfer; Corsican; dairy-farming; innovation-adopt; communication- ID: optimal-exploitation-of-marginal-Mediterranean-areas-by-extensive-ruminant-production-systems

420 NAL Call No.: S472.A357L58 1994 v.2
Descriptors: residual-effects; goat-feeding; mixed-farming; cattle-feeding; cycling; nitrogen; farming-systems; liveweight-gain; milk-yield; legumes; cereals; fertilizers; green-manures; feeding; reviews- ID: Livestock-and-sustainable-nutrient-cycling-in-mixed-farming-systems-of-sub-Saharan-Africa

421
The role of goat raising in income and employment on small farms. [Place de l'elevage caprin dans la formation du revenu et l'occupation des petites exploitations agricoles.]
Salem HB; Hamouda MB Medit v.7(3): p.31-33; 6 ref (1996)
Descriptors: marginal-land; employment; women; goat-keeping; small-farms; classification

422 NAL Call No.: SF756.7.I57 1995
The role of selection for domestic behaviour in the alteration of physiological and productive characteristics in meat-wool sheep.

423 NAL Call No.: 10-J822
Rumen-undegradable dry matter and neutral detergent fibre as ratio indicators of digestibility in sheep given cereal straw-based diets.
Includes references.
424 NAL Call No.: 60.18-J82
Seasonal diets of sheep in the steppe region of Tierra del Fuego, Argentina.
Includes references.
Descriptors: sheep; steppes; festuca; woody-plants; diet; seasonal-fluctuations; steppe-soils; tertiary-deposits; species-diversity; forage; tussock-grasslands; canopy; argentina; festuca-gracillima

Abstract: Sheep diets were determined seasonally for large flocks grazing year-round in 2 landscape types of the Magellanic steppe of Argentina. A tussock-grass steppe of Festuca gracillima Hooker f. dominates the uplands of the whole area. On acid soils (Quaternary landscape), woody variants of the steppe prevail; on neutral soils (Tertiary landscape), woody plants are almost absent and short grasses and fortes are abundant. Principal taxa consumed throughout the year

425 NAL Call No.: SF380.I52
Seasonal patterns of secondary fibre growth, moulting and hair follicle activity in Siberian and Icelandic X Scottish feral goats offered high and low levels of dietary protein.
Includes references.
Descriptors: goats; cashmere; hair-follicles; s-p-ratio; growth-rate; dietary-protein; seasonal-fluctuations; molting; breed-differences; fleece-weight

426 NAL Call No.: 10-J822
Seasonal variation in the morphology of perennial ryegrass (Lolium perenne) and cocksfoot (Dactylis glomerata) plants and populations in pastures under intensive sheep grazing.
Includes references.
Descriptors: lolium-perenne; dactylis-glomerata; tillers; stems; flowers; stolons; leaves; roots; plant-morphology; size; length; leaf-age; branching; seasonal-variation; cultivars; phenotypes; genetic-variation; crop-production; crop-yield; plant-density; biomass-production; pastures; grassland-management; sheep; grazing; intensive-husbandry; new-zealand

427 NAL Call No.: SF371.R47
Seasonality in budgeted lamb feeding returns.
Descriptors: farm-budgeting; lambs; feeding; returns; seasonal-fluctuations

428 NAL Call No.: 23-Au783
The secretion of gonadotrophins, insulin, and insulin-like growth factor 1 by Merino rams supplemented with different legume seeds.
Includes references.
Descriptors: sheep; rams; feed-supplements; lupins; cowpeas; soybeans; protein-intake; energy-intake; lh; fsh; insulin; insulin-like-growth-factor; blood-plasma; concentration; hormone-secretion; supplementary-feeding; animal-nutrition

429 NAL Call No.: SF601.T7
Sedentarisation of cattle farmers in the derived Savannah region of south-west Nigeria: results of a survey.
Includes references.
Descriptors: cattle-farming; settlement; white-fulani; crops; tribes; keteku; cattle-breeds; sheep; goats; livestock-numbers; nigeria; yoruba; wordura; muturu
430 NAL Call No.: 41.8-M463
Selected of goat meat husbandry. [Wybrane zagadnienia miesnego uzbytowania koz.]
Descriptors: animal-production; meat; composition; animal-husbandry

431
Self-service device for continuous distribution of a heated fermentable liquid. [Dispositif de libre service pour la distribution en permanence d'un liquide chaud fermentescible.]
Descriptors: calves; kids; lambs; piglets; dispensers; beverages; animal-production; young-animals; drinking; nipple-drinkers; troughs; bowl-drinkers; design; automatic-feed-dispensers; liquid-diets

432 NAL Call No.: SF380.I52
Seroepidemiological survey of Border Disease (BD) in Syrian Awassi sheep.
Includes references.
Descriptors: sheep; serological-surveys; border-disease-virus; antibody-formation; geographical-variation; epidemiology; lambs; mortality; abortion; rain; transhumance; pens; ventilation; stocking-rate; syria

433
Setting up in an Appellation d'Origine Controlee (AOC) area. [S'installer en zone AOC.]
Toussaint G Chevre. 1995, No. 206, 29-30
Descriptors: goat-milk; cheesemaking; milk-processing; quality-standards; dairy-farms; milk-production

434 NAL Call No.: QP1.P4
Sexual play behavior in lambs androgenized in utero.
Descriptors: lambs; puerperium; play; uterus; pregnancy; sexual-behaviour; progeny; androgens; testosterone; dams; effects; behavior

435
Descriptors: ewes; rams; lambs; reproduction; growth; selection; dairy-performance; animal-nutrition; Sheep-breading-in-arid-and-semi-arid-regions

436
Ben Dhia M Cahiers-Options-Mediterraneennes. 1995, 6: 9-20
Descriptors: arid-zones; sheep-farming; meat-production; animal-production; tropics; Sheep-breading-in-arid-and-semi-arid-regions

437
Sheep cloned by nuclear transfer from a cultured cell line.
Descriptors: nuclei; cell-lines; oocytes; techniques; lambing; enucleation; cloning; embryos; transfer; biotechnology; nuclear-transfer

438 NAL Call No.: 472-N21
Sheep cloned by nuclear transfer from a cultured cell line.
Includes references.
Descriptors: sheep; cloning; embryos; embryonic-development; cell-lines; embryo-transfer

Abstract: Nuclear transfer has been used in mammals as both a valuable tool in embryological studies and as a method for the multiplication of 'elite' embryos. Offspring have only been reported when early embryos, or embryo-derived cells during primary culture, were used as nuclear donors. Here we provide the first report, to our knowledge, of live mammalian offspring following nuclear transfer from an established cell line. Lambs were born after cells derived from sheep embryos, which had been cultured for 6 to 13 passages, were induced to quiesce by serum starvation before transfer of their nuclei into enucleated oocytes. Induction of quiescence in the donor cells may modify the donor chromatin structure to help nuclear reprogramming and allow development. This approach will provide the same powerful opportunities for analysis and modification of gene function in livestock species that are available in the mouse through the use of embryonic stem cells.

439 NAL Call No.: QP901.A33-v.395
The sheep endometrial oxytocin receptor.
Proceedings of a Hanseatic Endocrine Conference on Oxytocin: Cellular and Molecular Approaches in Medicine and Research, April 30-May 4, 1995, Stade, Germany.
Descriptors: ewes; endometrium; oxytocin; hormone-receptors; gene-expression; complementary-dna; clones; nucleotide-sequences; amino-acid-sequences; comparisons; protein-kinase; interferon; protein-kinase-c; trophoblast-interferon; second-messenger-systems; molecular-sequence-data

440 NAL Call No.: HD319.B8L34
Sheep grazing guidelines for managing vegetation of forest plantations in British Columbia.
Descriptors: understorey; management; sheep-farming; animal-husbandry; forest-plantations; grazing; agroforestry; weed-control; silvopastoral-systems; cultural-control; weeds; forests; forest-trees

441 Sheep husbandry.
Descriptors: wool-production; breeding; sheep-feeding; grazing; ewes; sheep-housing; meat-production; cheeses; butter; yoghurt; acidified-milk; animal-husbandry; tropics; milk-production; ewe-milk; milk-products; sheep-farming; trends; animal-production; production; sheep-breeds

442 NAL Call No.: SF371.52.F8R53--1995
Sheep husbandry in France. [L'elevage ovin en France : espaces fragiles et dynamique des systemes agricoles.]
Descriptors: Sheep-France; Animal-culture-France

443 Sheep husbandry in Poland-an outline.
Martyniuk E; Rzepecki R Cahiers-Options-Mediterraneennes. 1995, 11: 121-131; 10 ref
Descriptors: ewes; meat-production; flocks; selection; breeding; genetic-improvement; litter-size; growth; Breeding-of-sheep-and-goats

444 Sheep husbandry practices in Somadi and Malpura breeding tract.
Descriptors: ewes; stillbirths; placental-retention; abortion; oestrus; oestrous-cycle; age-at-first-lambing; age-at-
Sheep on pasture. Ewes and lambs need more than pennies. [Weidehaltung von Schafen. Mutterschafen und Lammern reichen Pfennige nicht.]


Descriptors: reproduction; growth; finishing; management; plant-height; carcass-quality; economics; pastures; nutritive-value; ewes; lambs

Sheep production by transmigrant farmers in a plantation area of North Sumatra.

Sinulinga SE; Doloksaribu M; Batubara LP; Ibrahim TM; Sihite E; Mullen BF (ed.); Shelton HM. *Integration of ruminants into plantation systems in southeast Asia: Proceedings of a workshop at Lake Toba, North Sumatra, Indonesia, 9-13 September 1994*. 1995, 55-57; ACIAR Proceedings No. 64; 4 ref

Descriptors: fodder-plants; silvopastoral-systems; plantations; fodder; research-projects; migrant-farm-workers; agroforestry-systems; Integration-of-ruminants-into-plantation-systems-in-southeast-Asia

Sheep production under conventional rubber systems in Malaysia.

Chong DaiThai; Tajuddin I; Stur WW; Chong DT; Mullen BF (ed.); Shelton HM. *Integration of ruminants into plantation systems in southeast Asia: Proceedings of a workshop at Lake Toba, North Sumatra, Indonesia, 9-13 September 1994*. 1995, 65-67; ACIAR Proceedings No. 64; 4 ref

Descriptors: weed-control; agroforestry-systems; grasses; legumes; mixtures; cover-crops; liveweight-gain; crop-yield; production; animal-production; pastures; cultural-control; rubber-plants; silvopastoral-systems; fodder-plants; farming-systems; agroforestry; responses; tropical-crops; Integration-of-ruminants-into-plantation-systems-in-southeast-Asia

Sheep under rubber: prospects and research priorities in Indonesia.

Horne PM; Pond KR; Batubara LP; Mullen BF (ed.); Shelton HM. *Integration of ruminants into plantation systems in southeast Asia: Proceedings of a workshop at Lake Toba, North Sumatra, Indonesia, 9-13 September 1994*. 1995, 58-64; ACIAR Proceedings No. 64; 25 ref

Descriptors: animal-nutrition; feeds; resources; fodder-plants; forage; genetic-improvement; feed-supplements; minerals; byproducts; plant-residues; waste-utilization; animal-breeding; animal-health; socioeconomics; silvopastoral-systems; research; rubber-plants; agroforestry-systems; farming-systems; agroforestry; Integration-of-ruminants-into-plantation-systems-in-southeast-Asia

Short-term ingestive behaviour of sheep and goats grazing grasses and legumes. 1. Comparison of bite weight, bite rate, and bite dimensions for forages at two stages of maturity.


Descriptors: feeding-behaviour; browsing; grazing; selective-grazing; intake; growth-stages; grasses; legumes; palatability

Short-term ingestive behaviour of sheep and goats grazing grasses and legumes. 2. Quantitative relationships between sets of sward and ingestive behaviour variables.


Descriptors: feeding-behaviour; browsing; grazing; plant-height; plant-density; intake; growth-stages; grasses; legumes
451

SHS annual statistics 1994-95. [Arsstatistik, SHS, 1994/95.]
Descriptors: growth; progeny-testing; feed-conversion-efficiency; fattening-performance; animal-nutrition; milk-quality; statistics; livestock-numbers; animal-health; reproduction; performance-recording; dairy-performance; milk-recording; female-fertility; performance-testing; meat-production; artificial-insemination; goat-milk; milk-recording-results; Svensk-Husdjursskotsel

452 NAL Call No.: HD1.A3

A simulation model of grazing sheep. I. Animal growth and intake.
First in a series.
Descriptors: sheep; grazing-systems; growth-models; simulation-models; energy-intake; wool; liveweight; lactation; pregnancy; animal-nutrition; new-zealand

Abstract: This paper is the first in a series that presents the development and use of a quantitative model of a sheep grazing system. The animal growth model presented here draws from a range of sources reported in the literature, and accounts for interactions between an animal's physiological state and herbage quality on diet selection and levels of feed intake. The model estimates partition of energy between maintenance, pregnancy, lactation, wool growth and fat and protein accretion. The model was tested against a range of published data and was found to be acceptable for its intended use as a research tool to evaluate animal performance and the physical and economic consequences of alternative technologies and management strategies.

453 NAL Call No.: HD1.A3

A simulation model of grazing sheep. II. Whole farm model.
Second in a series.
Descriptors: sheep; grassland-management; animal-production; reproduction; farm-management; growth-models; new-zealand; pasture-growth

Abstract: This paper presents the implementation of a farm management model of sheep grazing systems and demonstrates how the model can be used to gain incremental information about the system being investigated. The structure of the model is presented in detail, including a description of the data structures used to represent paddocks, mobs, pasture and animal production, and a flexible management component which controls the operation of the model. An experiment is presented that explores potential carrying capacities, requirements for pasture conservation, and appropriate levels of winter feeding for dryland and irrigated properties in the Canterbury Plains of New Zealand. The results of this experiment are then used as inputs to a second experiment that evaluates the effects of stocking rate on animal performance, meat and wool production and profitability.

454 NAL Call No.: SF15.S7A52

Simulation of livestock farming systems: a review of sheep models at animal, herd and farm levels. [El estudio de los sistemas ganaderos mediante simulacion: una revision de los modelos de ovino a nivel del animal individual, del rebaño y de la explotacion.]
Descriptors: farming-systems; simulation-models; extensive-production; grazing-systems; reproduction; models; production; reviews; extensive-livestock-farming; intake; simulation; sheep-farming

455

Size and number variation of adipocytes during the growth of Rasa Aragonesa lambs.
Purroy A; Mendizabal JA; Soret B; Horcada A; Lizaro G; Mendizabal FJ; Arana A Options-Mediterraneennes.-Serie-A.-Seminaires-Mediterraneens. 1995, No. 27, 179-184; 11 ref
Descriptors: Aragonese; rams; body-fat; adipocytes; nutrition; age; body-weight; slaughter; carcasses; fat; Body-condition-of-sheep-and-goats
Social dominance in adult female mountain goats.
Descriptors: female-animals; behaviour; social-dominance; wild-animals

Socioeconomic analysis of goat and sheep production in Piaui State, Brazil. [Analise socioeconomica da exploracao de caprinos e ovinos no estado do Piaui.]
Souza Neto J de; Baker GA; Sousa FB de; De Souza Neto J; De Sousa FB Pesquisa-Agropecuaria-Brasileira v.30(8): p.1017-1030; 20 ref (1995)
Descriptors: technical-progress; research; extension; credit; farm-size; education; innovation-adoptions; production; farming-systems

Some factors affecting resting behaviour of sheep in slaughterhouse lairages after transport from farms.
Descriptors: transport-of-animals; animal-welfare; animal-behaviour; rest; abattoirs

Some possible futures of cattle and sheep farms of Auvergne and Limousin.
Descriptors: cattle-farming; sheep-farming; livestock-farming; adjustment-of-production; models; Rural-realities

Spatial structure and activity in groups of Mediterranean mouflon (Ovis gmelini): a comparative study.
Includes references.
Descriptors: mouflon; ewes; lambs; animal-behavior; rams; peer-relationships; spatial-distribution; proximity

Abstract: The spatial structure of groups of Mediterranean mouflon was compared during spring/summer in a small population living on a sandy terrace in eastern Germany and within part of a large population inhabiting a low mountain in southern France. A similar comparison was also conducted throughout the year in the French population. The aim of the study was to define proximate mechanisms participating in the spatial structure of the groups. We measured the proximities in the group, distances to nearest neighbours and activity of the individuals according to their sex and age. Lambs and females were closer to each other than to the other individuals on average at both sites and throughout the year (closer in 55-57% of the couples). Lambs tended to be central to the groups and females peripheral (19 groups with central lambs vs. eight groups with peripheral lambs in Niederfinow in spring/summer, P = 0.04). Lambs, yearling males and adult males were closer to peers but some variations were found between sites and periods. The distance to the nearest neighbour was not clearly correlated with the frequency of association. The proportion of individuals behaving like their nearest neighbour was higher when the distance between them was short (Niederfinow, spring/summer: N = 8, p = -0.857; Vialais, autumn/winter N = 8, p = 0.976). This was no longer true when lambs were excluded from the analyses. Nearest neighbours were close when both were engaged in the same activity other than feeding, they kept a medium distance when both were feeding and they were more distant when only one of them was feeding. The differences between the two populations did not affect the spatial behaviour of the individuals in the groups except for a slight tendency of the animals to be closer in the German population. We propose an explanation of the spatial structure of the groups based on the behavioural characteristics of the different sex and age classes and we discuss the concordance of our results with those found in domestic species.

Specialities in the energy supply of ruminants.
Husveth F; Babinszky L Energy and protein supply and their effects on the production of monogastric and
Descriptors: cows; dairy-cattle; ewes; pregnancy; lactation; rumen-metabolism; volatile-fatty-acids; metabolic-disorders; nutritional-disorders; energy-metabolism; reviews; 4th-International-symposium-on-animal-nutrition

462
Specialized cheesemaking systems. [Des systemes fromagers specialises.]
FRECAP-CAPSUD. Chevre. 1995, No. 211, 26-29
Descriptors: goat-feeding; systems; milk-yield; cheesemaking; Provence-Alpes-Cote-d’Azur; farm-dairies; cheeses; goat-milk; manufacture

463
Specific features of products, small dairy ruminants and help in development of these sectors. [Specificite des produits, petits ruminants laitiers et aide au developpement de ces filieres.]
Descriptors: milk-products; cheeses; structure; economics; ewes; ewe-milk; goat-milk; milk-production; milk-marketing; production; marketing- ID: optimal-exploitation-of-marginal-Mediterranean-areas-by-extensive-ruminant-production-system

464 NAL Call No.: 41.8-N483
Specification of pen rail spacing and trough heights to prevent escape and enable good access to feed by sheep during sea shipments from New Zealand.
Descriptors: feeds; feeding; access; pens; spacing; transport-of-animals; feed-troughs; sea-transport; rails

465
UK, Department of Agriculture for Northern Ireland. 1995, vii + 67 pp
Descriptors: farmers’-income; agricultural-structure; employment; agricultural-manpower; poultry; livestock-numbers; crops; production; acreage; agricultural-censuses; dairy-farming; livestock-farming; arable-farming; pig-farming; poultry-farming; sheep-farming; agricultural-situation; farm-income; dairy-farms; cows

466 NAL Call No.: SF55.A78A7
Status and scope of small ruminant production in dry areas of Pakistan. Review.
Descriptors: ewes; lambs; body-weight; milk-yield; meat-production; wool-production; hides-and-skins; animal-nutrition; marketing; exports; arid-regions; management; socioeconomics; animal-production; reviews; tropics

467 NAL Call No.: SF1.A56
Steroid production and LH receptor concentrations of ovarian follicles and corpora lutea and associated rates of ova wastage in ewes given high and low levels of food intake before and after mating.
Descriptors: ewes; plane-of-nutrition; flushing; hormone-receptors; lh; hormone-secretion; follicles; corpus-luteum; granulosa-cells; thecal-cells; embryo-mortality; blood-plasma; fsh; progesterone; natural-mating; embryos; testosterone; estradiol; protein-content; wastage

468 NAL Call No.: S522.U5H37
Stocking the barnyard ark.
Descriptors: shetland-sheep-breed; rare-breeds; sheep-farming; family-farms; vermont

469
Strategies for management of suckling goats on grasslands and rangelands. [Elements pour raisonner la
Stress hormone responses of sheep to food and water deprivation at high and low ambient temperatures.
Descriptors: temperature; food-deprivation; water-deprivation; dehydration; somatotropin; osmotic-pressure; blood-plasma; animal-welfare; stress; glucocorticoids; prolactin; restricted-feeding; blood; starvation; environmental-temperature

Stridulation in the adult dung beetle Aphodius ater (Col., Aphodiidae).
Descriptors: dung-beetles; sheep-dung; sound-production; morphology; scanning-electron-microscopy; sounds; physiology; behaviour; stridulation; Aphodius-ater

Structure and viability of sheep farming in relation to socioeconomic stability in Pogoni area of Epirus-Greece.
Zioganas C; Kazakopoulos L; Koutotsolis K; Zervas NP (ed.); Hatziminaoglou J The optimal exploitation of marginal Mediterranean areas by extensive ruminant production systems. Proceedings of an international symposium organized by HSAP and EAAP and sponsored by EU(DGVI), FAO and CIHEAM, Thessaloniki, Greece, 18-20 June, 1994. 1996, 33-46; EAAP Publication No. 83; 13 ref
Descriptors: farm-size; sheep-farming; production-structure; efficiency; adjustment-of-production; optimization-ID: optimal-exploitation-of-marginal-Mediterranean-areas-by-extensive-ruminant-production-system

Studies on some behavioural aspects, body performance, wool and carcass traits of Ossimi ram lambs raised under closed stable or open shed.
Descriptors: housing; wool-production; growth; carcasses; tropics

Studies on the visual acuity of sheep using shape discrimination learning.
Descriptors: animal-experiments; animal-behaviour; vision; learning

Study of the skin follicle structure and selection methods in cashmere goats.
Descriptors: cashmere; traits; heritability; genetic-correlation; selection-index; body-weight

Study on grazing behaviour of Angora goat on the loess Plateau of China.
Descriptors: grasslands; chemical-composition; dry-matter; crude-protein; digestible-energy; selective-grazing; diets; botanical-composition; grazing; intake; forbs; nutrients; Ziziphus-jujuba; Arundinella-hirta; Lespedeza-hedysaroides

Succession status as a variable in a sheep production system of Greece: the case of Pogoni Eparchy-Epirus.
Kazakopoulos I; Alexandridis C; Zioganas C; Zervas NP (ed.); Hatziminaoglou J The optimal exploitation of
marginal Mediterranean areas by extensive ruminant production systems. Proceedings of an international symposium organized by HSAP and EAAP and sponsored by EU(DGVI), FAO and CIHEAM, Thessaloniki, Greece, 18-20 June, 1994. 1996, 54-57; EAAP Publication No. 83

Descriptors: farm-size; livestock-numbers; intensification; sheep-farming; farm-management; succession-ID: optimal-exploitation-of-marginal-Mediterranean-areas-by-extensive-ruminant-production-system

478

Suitability of aerially sown artificial baits as a technique for poisoning feral goats.
Descriptors: baits; palatability; control; poisoning; grazing; grazing-behaviour

479 NAL Call No.: 23-Au792

Supplementation of high fecundity Border Leicester X Merino ewes with a high protein
Hinch GN; Lynch JJ; Nolan JV; Leng RA; Bindon BM; Piper LR Australian-Journal-of-Experimental-Agriculture v.36(2): p.129-136; 31 ref (1996)
Descriptors: lambs; border-leicester; fecundity; ewes; protein; survival; crosses; birth-weight; protein-supplements; protein-concentrates; feed-supplements; nutrition; supplements; reproduction; lamb-production

480 NAL Call No.: SF371.R47

Supplementing ewe diets with the calcium salts of palm oil fatty acids during lactation.
Descriptors: fats; energy-sources; protected-fat; supplements; ewe-lactation; ewe-milk; composition; yields; calcium; soaps; sheep-feeding; ewes; milk-yield; milk-composition; body-weight; lambs; ewe-feeding

481 NAL Call No.: 41.8-B45

Supporting Moroccan national agricultural research on sheep production - a German development cooperation project. [Forderung der nationalen Agrarforschung Marokkos im Sektor Schafproduktion - ein Projekt der deutschen Entwicklungszusammenarbeit.]
Descriptors: agricultural-research; production; development-aid; sheep-farming; research; development-projects; animal-production

482

Systems of production in the Italian beef and sheep industry: prospects for extensive systems.
Descriptors: beef; sheepmeat; production; land-use; extensive-livestock-farming; consumption; trends; livestock-farming; farming-systems

483 NAL Call No.: SF99.A5T34--1995

Tagasaste and lucerne as fodders for breeding prime lambs or growing steers : field day notes 11th April 1995 : held at the University of Melbourne "Strathfieldsaye Estate" research farm.
Descriptors: Alfalfa-as-feed-Australia-Victoria-Conferences; Tagasaste-Australia-Victoria-Conferences; Sheep-Feeding-and-feeds-Australia-Victoria-Conferences; Sheep-Breeding-Australia-Victoria-Conferences; Beef-cattle-Feeding-and-feeds-Australia-Victoria-Conferences

484 NAL Call No.: Videocassette--no.2502

Take time? : training your dog from farm work to trialling.
Descriptors: Sheep-dogs-Training

Abstract: Glyn Jones demonstrates how a working sheep dog can become a competent trials competitor.
485 NAL Call No.: QH442.B5
Targeting gene expression to the wool follicle in transgenic sheep.
Descriptors: gene-expression; wool; gene-transfer; inheritance; skin; growth; zygotes; DNA; injection; chloramphenicol-acetyltransferase; diet; seasons; reporter-genes; follicles; keratin; promoters; transgenics; biotechnology; tissue-specificity; microinjection

486 NAL Call No.: 10-J822
The thermal response of sheep to a hot environment in different years.
Includes references.
Descriptors: sheep-farming; temperature; heat-stress; stress-response; seasonal-variation; australia

487 NAL Call No.: 23-W52J
Today's woolgrowers: a profile.
Descriptors: wool-production; sheep; animal-husbandry; western-australia

488
Top quality management of goats in the Netherlands. [Holland-Ziegenzucht mit Spitzenmanagement.]
Descriptors: lactation-duration; dairy-performance; animal-nutrition; conformation; milk-protein-percentage; milk-fat-percentage; cheesemaking; animal-production; breeds; milk-yield; management; selection; goat-milk; milk-production; milk-composition

489
Transport of sheep.
Descriptors: animal-behaviour; stress; transport-of-animals; animal-welfare; transport

490
The tropical agriculturalist: goats.
Steele M 1996, viii +152 pp.: 10 ref
Descriptors: nutrition; milk-production; meat-production; animal-production; tropics; goat-milk; production

491
Tunisia: commencement of collection and processing of goat milk by agricultural service cooperatives. [Tunisie: demarrage de la collecte et de la transformation du lait de chevre par les cooperatives de services agricoles.]
Descriptors: cheeses; marketing; tourism; dairy-farms; animal-production; development; international-cooperation; oases; goat-milk; milk-processing; milk-marketing; cheesemaking

492 NAL Call No.: 286.8-Ag3Ae
UK farmers facing less profitable year.
Agra-Europe-British-edition. 1996, No. 1688, N-3-N-4
Descriptors: dairy-farming; pig-farming; cattle-farming; sheep-farming; arable-farming; poultry-farming; mixed-farming; farm-income; trends; farm-results; profitability; dairy-farms

493 NAL Call No.: 44.8-M736
Uniform quality is also important for farmhouse cheesemaking. Second cheese test of the Association for Craft Milk Processing in Organic Farming eV. [Gleichmassige Qualitat auch fur handwerkliche Herstellung wichtig. Zweite Kaseprufung des Verbandes fur handwerkliche Milchverarbeitung im okologischen Landbau eV.]
494 NAL Call No.: SF601.T7

Use of dried poultry litter in the diet of pregnant and lactating Awassi ewes.
Includes references.
Descriptors: ewes; poultry-manure; ewe-feeding; lambing-rate; pregnancy; lactation; lambs; performance; milk-yield; body-weight; weaning-weight; ewe-milk; milk-flavor; jordan

495

Use of graded levels of rumen-protected fats in sheep feeding: effects on milk composition in Comisana ewes. [Effetto dell'impiego di livelli crescenti di grassi rumino-protetti sulla qualita del latte di pecore di razza Comisana.]
Dell' Aquila S; Sevi A; Rotunno T; Taibi L; Muscio A *Archivio-Veterinario-Italiano* v.46(2): p.38-50; 31 ref (1995)
Descriptors: fats; ewes; milk-composition; ewe-milk; milk; nutrition; lipids; ewe-feeding; protected-fat

496

Use of melatonin implants and daylength treatments to control seasonal reproduction in sheep and goats. [Emploi des implants de melatonine et des traitements photoperiodiques pour maitriser la reproduction saisonniere chez les ovins et les caprins.]
Chemineau P; Malpax B; Pelletier J; Leboeuf B; Delgadillo JA; Deletang F; Pobel T; Brice G *Productions-Animales* v.9(1): p.45-60; 41 ref (1996)
Descriptors: spermatozoa; reproduction; implantation; fertility; ewes; sexual-behaviour; photoperiodism; testes; growth; mating; artificial-insemination; rams; melatonin; effects; breeding-season; light-regime; estrus

497 NAL Call No.: QK900.J67

Use of paired plots and multivariate analysis for the determination of goat grazing preference.
Descriptors: multivariate-analysis; diets; selection; grasslands; abandoned-land; grazing; selective-grazing; grazing-behaviour; Galium-harcynicum

498 NAL Call No.: QL750.A6

The usefulness of grazing tests for studying the ability of sheep and cattle to exploit reproductive patches of pastures.
Includes references.
Descriptors: sheep; cattle; grazing-behavior; tests; feeding-preferences; pastures; growth-stages; vegetative-period; grazing-time; dactylis-glomerata

499 NAL Call No.: TD930.A32

Utilization of recovered solids from tequila industry vinasse as fodder feed.
Includes references.
Descriptors: agave-tequilana; vinasse; distillery-effluent; waste-water; pollutants; sheep; feeds; nutritive-value; digestibility; fattening-performance; waste-utilization; efficacy; fermented-solids

Abstract: Digestibility and sheep feeding trials were conducted to determine the efficacy of using fermented solids (FS) collected by centrifugation from tequila distillery wastewater. In the digestibility trial, 12 growing Pelibuey crossbred male sheep weighing 30 kg on average were randomly assigned to one of the following four dietary treatments (dry basis) in three replicates: (1) basal diet (BD); (2) DB + 15% fermented solids (FS); (3)
BD + 30% FS and (4) BD + 45% FS. Apparent digestibility of dry matter, crude protein and organic matter for these diets were determined. Apparent digestibility of dry matter and crude protein for FS were also determined. The feeding trial was conducted with 36 sheep (average initial weight 19 kg). Animals were randomly assigned to one of 12 pens (three sheep per pen). Each pen was randomly assigned to one of the four diets used in the digestibility trial, so that each dietary treatment was fed to three pens of sheep. Average daily gain and feed intake were measured over a 56 day period with subsequent calculations of the feed:gain ratio. It seems that fermented solids can be utilized successfully by sheep which consequently can contribute to feed cost savings and to solve environmental problems of the tequila industry.

500 NAL Call No.: TD930.A32
The value of cowpea husk to the goat.
Includes references.
Descriptors: cowpeas; husks; goats; goat-feeding; fattening; nutritive-value; acceptability; liveweight-gain; feed-conversion; fattening-performance

Abstract: Eight Sokoto red grower goats weighing 10-12 kg, in a randomized complete block design, were used in growth and digestion studies to determine the value of cowpea husk to the goat. The experimental diet was milled cowpea husk, providing an all-concentrate diet. The control diet was a 40:60 concentrate:grass mixture. The concentrate was made up of 3 parts of ground maize to 2 parts of soybean cake. The grass forage was Pennisetum purpureum. Parameters for assessment were dry matter feed intake, live weight changes, feed conversion and nitrogen utilization. The experiment lasted 65 days, comprising 60 days of growth study and 5 days digestion trial. The performances of the goats on cowpea husk were superior (P < 0.05) to the control, with growth rate of 110 g/day, dry matter feed intake of 4.03% BW and feed conversion of 225.2 g gain/kg feed intake. The cowpea husk was well accepted by the goats, as indicated by its dry matter intake and conversion. Nitrogen utilization tests indicated a high nutritive value of the protein from the crop waste. The energy utilization was suggested to be due to the crude fibre content of the diet. These observations indicate the suitability of cowpea husk feed properties and nutrient utilization for the goat. Cowpea husk could serve as an efficient fattening ration and dry-season feed for the ruminants.

501 NAL Call No.: 49-J82
The value of soybean hulls as a replacement for corn in beef cattle diets formulated with or without added fat.
Includes references.
Descriptors: beef-cattle; soybean-husks; steers; dietary-fat; maize; protein-supplements; maize-cobs; liveweight-gain; feed-intake; dry-matter; feed-conversion; sheep; nutritive-value; lard; energy-intake; fattening-performance; steers; fiber-content; digestibility

Abstract: One hundred twenty crossbred yearling steers (average weight = 445 +/- 32 kg) were used in an 84-d randomized complete block design experiment to determine the value of soybean hulls (SH) as a replacement for corn in concentrate diets formulated with or without added fat (lard). The steers were blocked by weight and allotted to one of eight treatments in a 4 X 2 factorial arrangement of treatments. The main factors were amount of SH (0, 20, 40, or 60% of diet DM) and amount of added fat (0 or 5% of diet DM). The basal diet without added fat or SH contained cracked corn (80%), a urea-based protein supplement (15%), and ground corn cobs (5%). Replacing corn with SH linearly (P = .03) decreased ADG, increased DMI (linear, P = .003; quadratic, P = .06), and linearly (P < .001) decreased gain efficiency. Fat addition tended (P = .08) to improve efficiency; ADG and DMI were unaffected (P > .05) by fat addition. Similar diets were fed to 16 wethers (average weight = 47 +/- 2.3 kg) in a randomized complete block design experiment to determine digestibility of NDF and dietary concentration of DE. Replacing corn with SH linearly increased DMI (P = .001) and NDF (P < .001) and linearly decreased (P < .001) the digestibility of DM. The digestibility of NDF tended to increase with increased SH. The digestibility of energy linearly (P = .0001) decreased with increased SH. The amount of fat had no effect (P > .05) on DMI or intake of NDF or digestibilities of these nutrients. The addition of fat tended (P = .07) to improve the intake of DE. For the conditions of this study, addition of fat to diets had similar effects on
performance regardless of the dietary amount of SH. The feed value of SH was estimated as 74 to 80% of that of corn. The use of SH in concentrate diets should be dictated by the cost of SH relative to cereal grains within the context of reduced gain and efficiency, particularly when SH are fed at high concentrations of diet DM.

502 NAL Call No.: SF1.L5
**Variation between Merino ewes in pasture intake. 2. Within-flock genetic parameters for intake and some production traits.**
Descriptors: ewes; genotype-nutrition-interaction; production; wool; quality; heritability; selection; feed-intake; body-weight; wool-production; genotypes; Merino

503 NAL Call No.: 389.8-B773
**The voluntary feed intake of pigs given feeds based on wheat bran, dried citrus pulp and grass meal, in relation to measurements of feed bulk.**
Descriptors: diets; composition; feeds; bulk; volume; feed-intake; grass-meal; citrus-pulp; wheat-bran; water-holding-capacity; sheep-feeding; wheat

504 NAL Call No.: SD387.M8A3
**Voluntary intake by sheep and goats of Gliricidia sepium fed in three states and at three levels of supplementation to a basal diet of Panicum maximum.**
Descriptors: dry-matter; feed-intake; voluntary-intake; feed-supplements; browse-plants; multipurpose-trees; crude-protein; nutritive-value; fodder

505 NAL Call No.: S1.M57
**Walton Farms Ltd: a marketing success.**
Descriptors: sheep; sheep-farming; sheepmeat; marketing

506 NAL Call No.: S397.M57--no.95/13
**WASP : a virtual farm with wheat and sheep pasture.**

507 NAL Call No.: SF1.S6
**Water intake and consumption in sheep differing in growth potential and adaptability.**
Includes references.
Descriptors: sheep; blackhead-persian; dorper; south-african-merino; lambs; water-intake; water-use-efficiency; liveweight-gain; feed-intake; environmental-factors; breed-differences; feeding-behavior

508 NAL Call No.: SF380.I52
**Women's tasks in the management of goats in Southern Nigeria.**
Includes references.
Descriptors: goat-keeping; rural-women; household-surveys; age; education; livestock-numbers; ownership; marketing; selling-prices; extension; nigeria

509
**Wool growth responses in Drysdale and high and low staple tenacity Romney sheep to nutrient supplementation in autumn.**
Bray AR; Merrick NC; Smith MC; Scobie DR *Proceedings-of-the-New-Zealand-Society-of-Animal-Production*. 1995, 55: 54-57; 14 ref
Descriptors: wool; growth; Drysdale; staple; Romney; autumn; energy-intake; protein-intake; fibres; diameter;
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