

weeks after seeding and continues until frost.

Where Sudangrass is used, one has to be careful to avoid prussic acid poisoning. Such a mishap has been reported very infrequently in the Northeast, but plants of Sudangrass should not be grazed if they are stunted by drought or frost or when the plants are

small. Experimental evidence indicates that there is more poison in the small leaves and young tillers.

Sometimes soybeans are seeded with Sudangrass to make excellent summer pasture or silage.

Japanese millet seeded in late May or June may also be used to provide midsummer forage.

FOR BEEF CATTLE AND OTHER STOCK

VANCE G. SPRAGUE

WHILE PASTURES for dairy animals are of prime importance in the Northeast, good pasture for other farm animals is needed. Because the forage requirements of beef cattle are not so exacting as those of dairy cows, the permanent bluegrass pastures farther away from the farm buildings are often used.

Beef cattle may gain well on herbage somewhat more mature than is desired for high-producing dairy cows, but high-quality herbage is most desirable. To maintain any particular association of grasses and legumes in a pasture, the grazing management of a beef herd is similar to that of a dairy herd.

For sheep (which lead farm animals in ability to use forage as a source of feed for growth) permanent bluegrass pastures are used extensively. Winter wheat or rye may provide late-fall and early-spring grazing; in midsummer, hay aftermath or a temporary pasture of rape may be used.

Internal parasites are a problem when many sheep graze continuously on the same pasture, but infection may be reduced by moving the flock to different pastures and by allowing at least several months between successive grazings. Recent advances in the use of phenothiazine, given in capsules or as a drench, and phenothiazine-salt mixtures during the summer grazing period have cut losses due to parasites. Sheep will reproduce regularly and maintain themselves in good flesh on

permanent pastures when the phenothiazine-salt mixtures only are used. Often sheep may feed on pastures after cattle or sometimes may be grazed with them on the more extensive grazing areas.

Mechanized farming has reduced the importance of pastures for work horses in the region, but light horses for pleasure are increasing in number. Where horses and mules are kept they usually receive most of their feed in the barn. However, turning them out to pasture at night, or during the day when they are not working, keeps the animals in good physical condition and reduces the amount of barn feed required in the evening ration. Good bluegrass pastures or other pastures not intensively managed are satisfactory.

Pastures are important in hog production, but because swine have a limited capacity for bulky feed, forage cannot supply the same proportion of the total feed requirement as it can for cattle and sheep. Often permanent pastures are used for hogs. Alfalfa and Ladino clover make good pastures, but if these pastures are used year after year internal parasites may become a serious problem. A farmer who has to graze his hogs on the same area every year should plow the field and sow it to rapid-growing annuals like rape, soybeans, rye, or Sudangrass. In grazing any pasture with hogs, an adequate supply of forage should be available to prevent close grazing and the ex-

posure of bare ground, which encourages rooting.

Permanent ranges for chickens are being used more and more. Ladino clover and Kentucky bluegrass together are suitable for a range that is to be maintained for several years. On some farms where small grains are being grown, Ladino may be used without a grass. Because Ladino alone does not form a heavy turf, it should be well managed to maintain sanitary conditions and prevent diseases. Pure Ladino ranges are sometimes used for only a year; then on some farms they are plowed and seeded to a small grain or corn or another crop.

Although forage cannot entirely replace grain and other concentrates in poultry rations, chickens raised on range do get minerals, vitamins, and high-quality protein from young herbage. We are not sure yet whether chickens must have green feed if a complete ration is fed, but if an incomplete ration is used, the herbage from a good clover-grass range will provide nutritional elements to supplement those fed in the hoppers. Any malnutrition in the flock can be prevented almost completely in this way.

Range is a good thing in the management of the flock. It does not replace the need for sanitation, but it

will reduce losses if disease occurs. Too, less labor is needed for a flock on range than for one of the same size raised in confinement.

For a turkey range, in general farming, the aftermath of a red clover-timothy field in the farm rotation is commonly used. If a permanent range is used, Kentucky bluegrass, brome-grass, or orchardgrass seeded in combination with Ladino clover is good. To control disease, birds on permanent range must be most carefully managed. Shelters and feeders must be moved almost daily to maintain clean conditions and keep a good sward. If the shelters are not moved frequently, overgrazing occurs, bare spots develop, and the danger of disease from soil contamination increases.

Permanent ranges must be carefully managed early in the season to prevent the vigorous spring growth of the grass from crowding out the Ladino clover. Because it is not advisable to put the birds on range too early, or when they are too young to consume any great quantity of green herbage, it is usually necessary to cut and remove the first crop. This young, nutritious herbage may be preserved as silage for winter feeding, as it is believed to be beneficial in the normal ration of the breeding flocks.

HAY LANDS IN THE NORTHEAST

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GRASSES and legumes grown for hay are vital in the crop rotation. Directly, they are a source of feed that may be preserved for use when fresh herbage is not available; indirectly, they improve the soil for the cultivated crops that follow.

Preserved forage is a first requirement (and often a limiting factor) in dairy enterprises in the Northeastern States. For many years hay has been grown to provide winter feed; more recently grass has been made into silage

for the same purpose. Preserved forage has value for feeding during the grazing season, also—even when cattle are on good pasture, hay may be used to advantage to supplement grazing. In midsummer, when pastures are short, grass silage and hay produced earlier in the season may be used to furnish the high-quality forage required in a balanced ration. Another benefit: Feeding home-produced forage means that less feed has to be bought. Also, legume sods fix large quantities of at-