Grasslands in Puerto Rico

FARMING ON A TROPICAL ISLAND
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PUERTO RICO viewed from the air looms up like a big deflated balloon. The wrinkled mountainous interior of this tiny tropical island has been faulted and tilted by earthquakes, serrated and dissected by thousands of rivulets, and scarred by hurricanes—a striking contrast with the level alluvial flood plains along the coast and the rounded grass-covered hills of the arid southwestern part.

Puerto Rico, which is a little smaller than Connecticut, is about 1,200 miles north of the Equator and nearly 1,400 miles southeast of New York City. Its tropical, uniform temperature, which ranges from a mean of about 68° F. in the mountains in the winter to a mean of about 82° in the lowlands in the summer, gives it a yearlong growing season. Nearly ideal conditions exist for a heavy rainfall over most of its surface, because the moisture-laden northeast trade winds from the warm waters of the Atlantic fan the island almost all day. The annual rainfall, however, ranges from about 25 inches along the southwestern coast to more than 200 inches in the high mountains. The sudden change in rainfall is reflected so much in the native vegetation that in a distance of a few miles and a descent of a few hundred feet one may pass from the luxuriant tropical rain forest to desert shrubs.

According to El Libro de Puerto Rico, the first introduction of livestock into Puerto Rico was in 1502 when Yáñez, one of Columbus' captains, brought in a few goats and some hogs. About 10 years later Ponce de Leon brought a few head of cattle and horses from Santo Domingo. In 1534, stallions descended from Arabian stock were imported from Andalucía. Sometime during the 15th century guineagrass was introduced from Africa. This drought-resistant, nutritious grass, an exceedingly important one in Puerto Rico, is planted mostly in the more arid regions; the malojillo grass, which was imported from South America, grows in the wet sites. These palatable grasses insured an abundant, nutritious forage all year long, and the numbers of livestock increased rapidly.

The Soil Survey of Puerto Rico states that during the middle of the 18th century some of the fine horses from Yabucoa Valley were sold for $1,000 each. Most of the horses at that time were similar to the ones now used in the island. They are small, wiry, hackney-gaited, sure-footed. They are used principally for carrying large packs of bananas, charcoal, coffee, and other products down the steep, rocky,
narrow, mountain trails and slippery, muddy roads to town—to return laden with beans, fish, rice, and other articles of food for the numerous small stores along the trails and roads of the interior. Very seldom are horses used for draft purposes, although hundreds may be seen that have two large wicker baskets fastened to a harnesslike saddle. Livestock, such as pigs, chickens, and turkeys, and all kinds of crops, are transported to market in the baskets. The number of horses has declined since 1910—to 16,239 in 1940.

Cattle are the most important livestock raised. There were 299,734 head in the island in 1940. R. P. Steddom in *A Report Concerning the Cattle of Porto Rico* estimated the number at 500,000 in 1899. Since 1906 few cattle have been exported, chiefly because the island has had increasing demands for cattle from the expansion of the sugarcane industry, which requires many work oxen, and the increasing population, which needs more beef animals for food. The number of cattle produced has declined, partly because hundreds of acres of level, fertile grassland along the arid and the semi-arid southern coast formerly all in cattle ranches are now in sugarcane.

Grass still occupies most of the hills along the arid south coast, as well as many of the steep hills, which have very shallow soils. The cattle of Puerto Rico have been selected for draft purposes for such a long time that they are docile, powerful, large-boned, thick-skinned animals with short hair, wide-spreading horns, and thick polls. Practically all have horns and nearly all the oxen used on the main roads are shod. They pull heavy, two-wheeled carts, plows, and other implements. The cattle are either native or crosses of Brahman, or zebu, on native stock. Most of the ranchers have some zebu and some native stock. For draft purposes, many of the progressive ranchers recommend crosses of one-third zebu and two-thirds native stock.

**THE TYPES OF GRASSLAND FARMING**

The types of grassland agriculture in Puerto Rico are linked closely with the rainfall belts. The driest belt, the extreme southwestern part, receives from 25 to 35 inches annually of rainfall. This is about the same range of precipitation as between Nebraska City and Grand Island, Nebr. But the similarity ends there: Instead of luxuriant, level Nebraska fields, rich grass, rounded haystacks, groves, dark soil, and sectioned roads, with two or four large homes at the crossroads, there are here brown, highly calcareous soils, cacti and spiny shrub-covered hills, valleys of guineagrass pastures for the hundreds of native oxen, and a few ranch houses along oxcart roads. This is the "Great Plains" of Puerto Rico.

A typical ranch here reminds one somewhat of Arizona and New Mexico and some other Western States. It consists of a small group of ranch buildings surrounded by several thousand acres of fenced and cross-fenced, undulating, hilly grass and cactus pastures. One rancher may own 2,000 to 3,000 head of cattle and hire 30 or more hands.

The irrigated lands, with green, succulent sugarcane on all land that is not charged with alkali and saline salts, are in sharp contrast with the arid hills nearby. The soils in this area are mostly high in calcium and other plant nutrients, and the grass appears to be fairly high in phosphorus, calcium, carotene, and crude protein, as indicated by the healthy appearance of the livestock during an average season.

In this area and in the belt that gets about 10 inches more of precipitation,