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Establishing Improved Pastures In the Coastal Plain of Georgia

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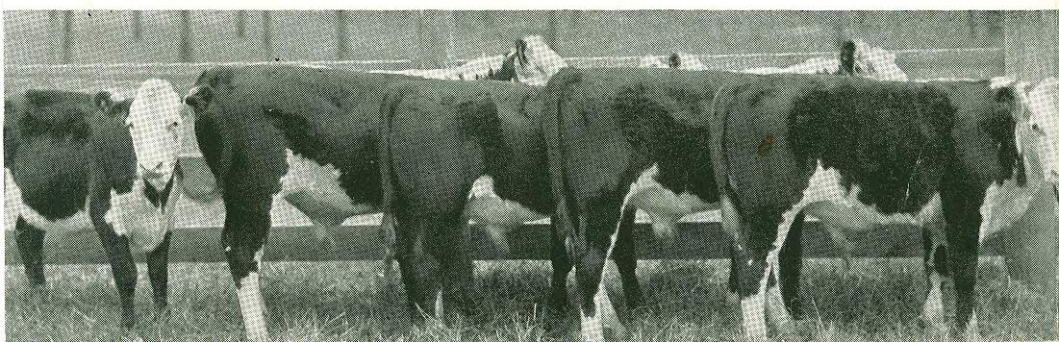


NOTE: *This publication is a preliminary circular on establishing pastures in the Coastal Plain of Georgia. A more complete discussion in bulletin form based on investigations conducted cooperatively by the Georgia Coastal Plain Experiment Station, the Division of Forage Crops and Diseases of the Bureau of Plant Industry, and the Animal Husbandry Division of the Bureau of Animal Industry, United States Department of Agriculture, will be published at a later date.*

Establishing Improved Pastures in the Coastal Plain of Georgia

A good pasture is the foundation of successful cattle production. With the number of beef cattle in Georgia doubled during the five-year period, 1929 to 1935, as shown by census figures, it is essential that improved pastures be provided to furnish cheap and abundant feed. Improved pastures must go hand in hand with improved breeds of animals if livestock production is to be developed within the State sufficient to meet its requirements.

On practically every farm in Georgia there is some waste land bringing in little or no return that could be converted into an improved pasture. In the Coastal Plain, the area lying south of Columbus, Macon and Augusta, it is estimated there are approximately ten million acres in swamps, branch bottoms, cut-over pine woods and marginal lands. Much of these lands could be utilized for pastures in conjunction with producing timber and naval stores.

The mild climate and consequent low cost of housing, the long growing seasons and wide variety of feed crops that may be grazed without injury to the sandy soils of the Coastal Plain are the natural advantages afforded. Against this are the low grazing value of native grasses and the competition of wild sedges and other native growth of no economic value. Investigations conducted cooperatively by the Georgia Coastal Plain Experiment Station, the Division of Forage Crops and Diseases of the Bureau of Plant Industry, and the Animal Husbandry Division of the Bureau of Animal Industry, U. S. Department of Agriculture, have shown that introduced grasses

Wire grass and other native growth in undeveloped cut-over pine woods often require six to 10 acres to furnish pasturage for one mature animal.

There are low swampy areas on many farms admirably adapted to pastures when drained.

and legumes can be used instead of the native grasses and that by drainage and the removal of undergrowth and trees of no commercial value a satisfactory lowland pasture can be established. On undeveloped ranges it often requires 6 to 10 acres to provide grazing for one steer, while on improved pastures one to three acres should be sufficient for each steer.

Native Grasses

The principal grasses native to the Coastal Plain are wire grass, broom sedge, tickle grass, bull grass, smut grass, and crab grass. Some of these grasses furnish grazing for a short time and then become tough and unpalatable, while others are entirely killed out by heavy grazing. All of the native grasses are low in value and do not stand up well under continuous grazing, therefore, dependence must be placed on introduced grasses and legumes for improved pastures.

Cut-over land that has been burned over. Wire grass will appear in early spring, furnish about two months' tender grazing after which it becomes tough and unpalatable.

Low swampy branch bottoms require a central ditch along the main run of the stream to drain off surface water.

Introduced Grasses and Legumes

The introduced grasses and legumes best adapted to lowland pastures in the Coastal Plain are Carpet grass, Dallis grass, Common lespedeza and White clover. For upland pastures Bermuda grass and Common lespedeza grown in combination and Kudzu grown alone furnish good pasturage.

Establishing Lowland Pastures in the Coastal Plain

The lowland area to go in pasture should be drained to remove standing water. This may be done by digging a ditch along the main run of the stream with lateral or side ditches on either side where it is necessary to cut off seepage water from the hillside slopes.

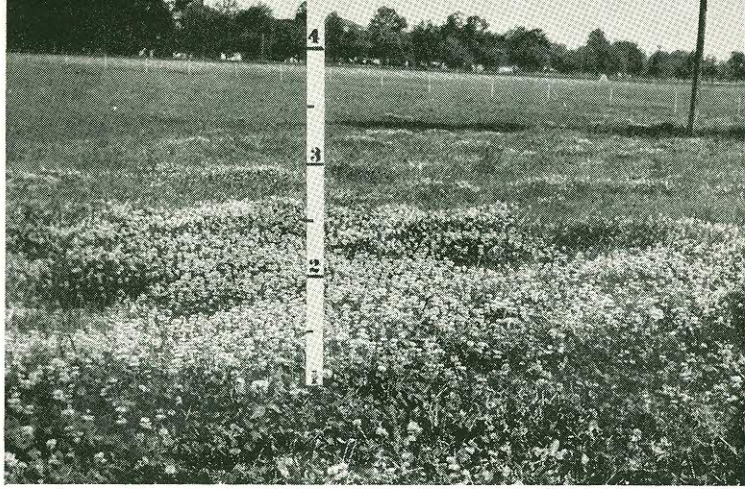
Cut out all undergrowth and remove trees that have no commercial value. Thoroughly disk the soil with a heavy disk harrow. A disk harrow is better than a turn plow where roots and stumps are present. Usually it requires several diskings to get rid of swamp sedges and eliminate competition of native grasses and weeds.

View of a central ditch at the head of a branch bottom. The area on the right of the ditch has been stumped and is ready for harrowing and seeding. Stumping is desirable but not absolutely necessary. In most cases the undesirable growth is removed and the gum and other hardwood stumps are left to rot out; this leaves only the heartwood pine stumps that remain in the pasture.

Close up view of a side or lateral ditch to cut off seepage in a lowland pasture. Without such a ditch the seepage would flow from the long hillside slope on the left toward the pines along the run of the branch on the right and come to the surface in soggy or continuous seepage areas. The soil is Plummer sand and the banks of the ditch are sloped and later sodded to avoid caving.

The grass and legume mixture should be sown broadcast in early March. It is not necessary to cover the seed. They may be tramped into the soil by cattle. However, on slopes steep enough for rains to float the seed they may be covered by a board drag, in which event they should be covered very lightly. Covering the seed deep should be avoided.

Aerial view of combination lowland pasture and pine forest. The lowland pasture mixture will stand partial shading, but it is considered best practice to seed the open spaces rather than densely shaded areas.
In making the picture the camera was pointed down stream. The trees follow the main run of the stream with pasture grasses and legumes on either side. Note the main ditch in the center of the wooded area to drain off surface water and the lateral ditches on the right to cut off seepage water from the hillside slope. Lateral ditches are also on the left of the central ditch but the view is obstructed by the trees.
Since moisture is desired in a lowland pasture no attempt has been made to drain it sufficient for cultivated field crops. The ditches are only for the purpose of removing standing water and eliminating soggy or continuous seepage areas.



White clover in the lowland pasture mixture (Carpet grass, Dallis grass, Common lespedeza and White clover). This picture was made in late winter before the grasses began to make their spring growth. It will be noted from the measuring stick the clover has reached a height of one foot. It is an excellent pasture plant to use in the lowland mixture as it affords early grazing and does not compete with the grasses for moisture and plant food. It is best adapted to swampy areas that have been well drained and are full of organic matter. White clover growth is greatly increased by a phosphorus fertilizer.

Inoculation of the seed (White clover and lespedeza) does not appear necessary and liming lowland pastures has not proved beneficial. On soils that have never been cultivated about 300 pounds of superphosphate per acre is decidedly beneficial. The phosphorus is particularly desirable in getting a good growth of white clover and lespedeza. Experimental results have shown that from 400 to 600

Improved lowland pasture of Carpet grass, Dallis grass, Common lespedeza and White clover. Before being converted into a pasture this was a dense swamp. This pasture has been fertilized and it furnishes excellent grazing for one to one and one-half steers per acre from early spring until frost. The picture was made in August and shows the growth of grasses but not the White clover which is dormant during the summer months.

A lot of steers that were on a lowland pasture of Carpet grass, Dallis grass, Common lespedeza and White clover from early spring until frost and fattened out on a field of corn and velvet beans during the winter months.

pounds of a complete fertilizer analyzing 12 per cent phosphoric acid, 6 per cent ammonia, and 6 per cent potash applied in early spring more than doubles the gain in pounds of beef per acre as compared with an area receiving no fertilizer. Where fertilization of pastures is practiced over a period of years there are indications that an 8-6-6 (phosphorus, ammonia, and potash) is a practical fertilizer formula.

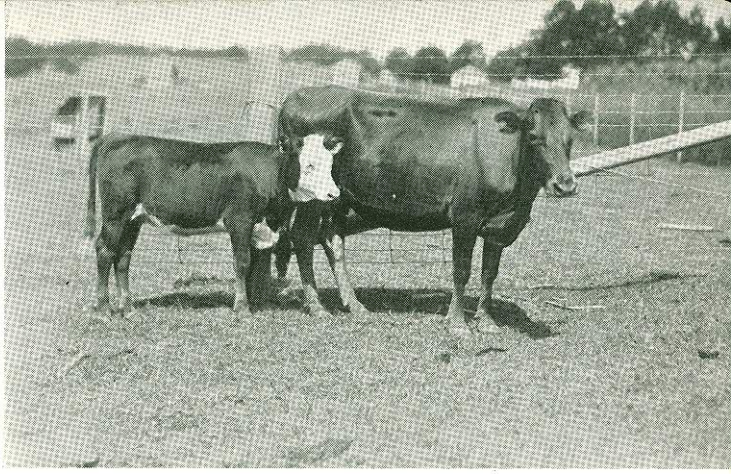
The mixture of grasses and legumes and the rate of seeding per acre that have proved satisfactory on lowlands are as follows:

10 pounds Carpet grass
8 pounds Dallis grass
12 pounds Common lespedeza
5 pounds White clover

Common lespedeza is an annual and provides grazing the first year. Carpet grass, Dallis grass and White clover are perennials that start off slowly during the first year and usually satisfactory sods are not established until the second year.

Carpet grass is hardy and well adapted to the Coastal Plain. It has a creeping habit, produces flat stems and blunt pointed leaves,

A purebred herd of Polled Herefords on lowland pasture.

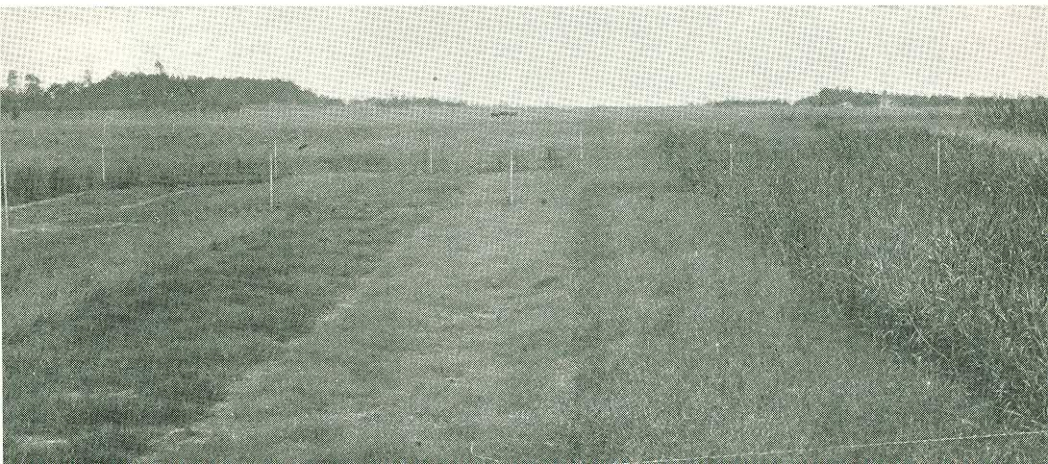


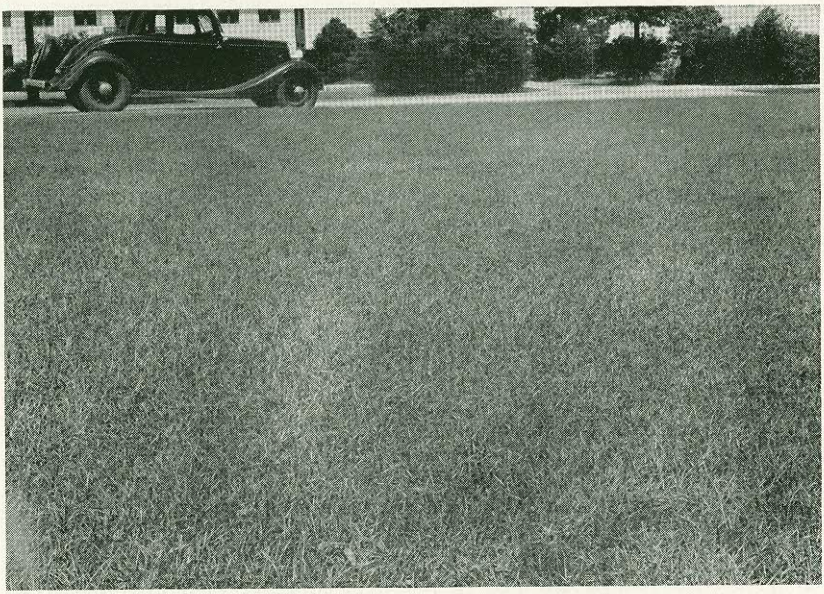
The sire of this calf was a purebred Hereford and the dam a scrub cow. The herd is carried over the winter on silage from a trench silo, and a small quantity of cottonseed meal and oat straw. The calves are dropped in February and early March and are sold as milk fed veal calves while the herd is on lowland permanent pasture.

and makes a dense sod. It is a moisture loving plant and is, therefore, well adapted to lowlands that are not soggy nor where seepage is continuous. Lands where gallberry bushes are found growing are admirably adapted to Carpet grass. It will stand some shading, but makes its best growth in open places. The grass is very palatable but is not nutritious enough to produce finished animals, therefore, the desirability of using it in a combination with legumes and other grasses. The cheapness of the seed, the ease of getting a sod established and its hardiness make it not only suitable for lowland pastures, but make it desirable for fire breaks in wooded areas. It is not as effective as clean cultivated fire breaks, but materially lessens the fire hazard.

Dallis grass is many branched, the leaves are sharp pointed and it grows in clumps or bunches. It is gaining in popularity because of its hardiness, long growing season, and the palatable and nutritious grazing it affords. The seed produced are weakened or destroyed by Ergot disease, consequently germination is low. Because of the

Each strip of grass in the picture represents a different species. Many hundreds of grasses are tried out on the experimental plots to determine whether or not they are adapted and palatable before they are tested further under actual pasture conditions.





A close up view of Carpet grass showing its habit of forming a dense sod. It is primarily a lowland pasture grass but is sometimes used for lawns where moisture is sufficient.

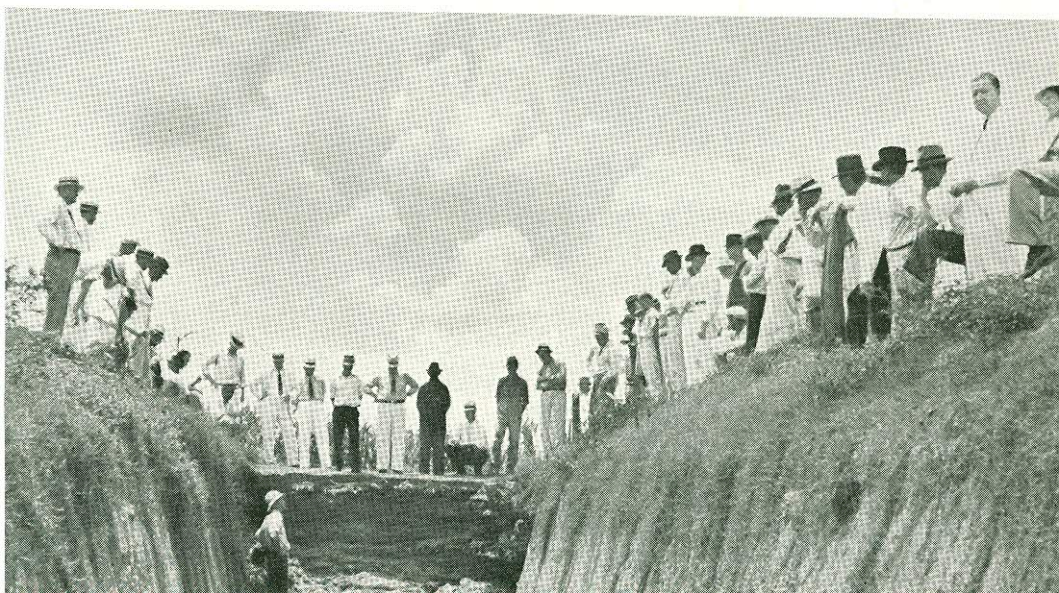
Kudzu is an excellent plant for upland grazing on the heavier types of soil. When its growth becomes established it will usually carry one mature animal per acre, but care should be taken not to over graze it.

poor quality of seed, it does not spread as rapidly as Carpet grass. Dallis grass requires a moist though not wet soil. It usually does not form a dense sod and is an excellent grass to grow in combination with Carpet grass, Common lespedeza and White clover. It is difficult to get a stand when seeded alone.

Common lespedeza is a widely adapted legume. In the latitude of Tifton it furnishes grazing by the first of July which lasts until frost. It reseeds itself well and if not grazed too close or crowded out by a thick sod of grass, it will continue to reseed itself from year to year. When seeded with grasses it will eventually be crowded out and after a few years it becomes necessary to tear up the sod slightly in order to give the lespedeza a fresh start. Other kinds of lespedeza, such as Korean, Kobe and Tennessee 76, are not as satisfactory for pasture grazing as the Common lespedeza. Lespedeza sericea, a perennial, so far has not proved satisfactory for grazing.

White clover is a legume that likes cool weather. Growth starts in early fall and continues through the winter and early spring. Normally it affords good grazing by late February or early March. It produces seed in abundance that germinate well. During the spring months it increases the quality and quantity of grazing and at the same time improves the soil. Since the main period of growth

Silage from a trench silo is excellent feed to carry over the breeding herd during the winter months when the permanent pasture is dormant. Twenty-five pounds of silage, one to two pounds of cottonseed meal and five pounds of oat straw per cow per day is a good winter feed.



comes on before the grasses, it does not compete with them for plant food or moisture. When it is seeded alone it should be planted in September or October, but good results have been obtained by planting it at the same time with the grass mixture in early spring.

Establishing Upland Pastures in the Coastal Plain

Due to the occurrence of droughts almost every year, upland pastures have not produced as good gains of beef as lowland pastures. The best mixture so far has been from Bermuda grass and Common lespedeza. Other introduced grasses are showing promise but as yet no seed are available. Bermuda grass is usually put out from cuttings and lespedeza is sown broadcast without covering at the rate of 12 pounds per acre. In order to keep Bermuda grass from becoming sod-bound it is necessary to turn it with a disk or turn plow once every two or three years. This may be done without burying the lespedeza seed too deep by turning it up on edge rather than turning the land completely.

On the heavier types of soil Kudzu furnishes excellent grazing. It may be set out in February from crowns in four foot rows and spaced approximately four to six feet in the drill and should be

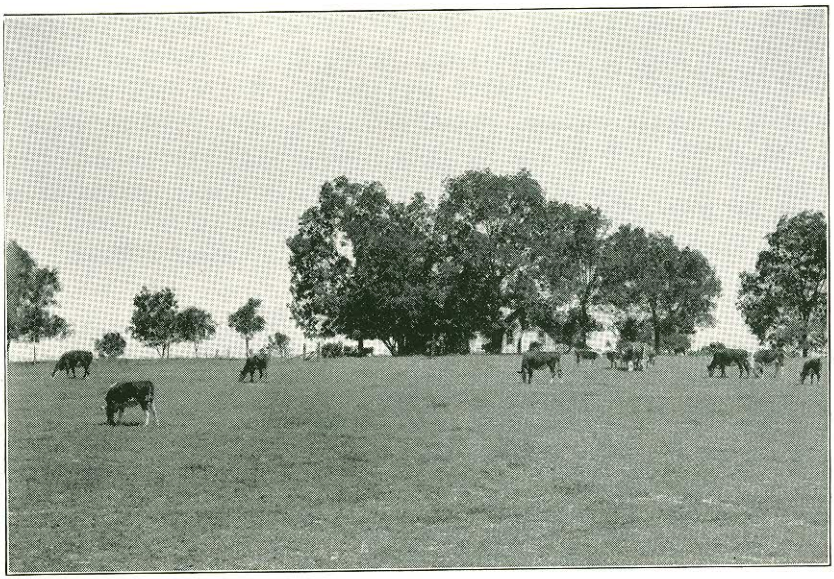
"Cyrus," the purebred Polled Hereford herd bull at the Experiment Station. Improved breeds and improved pastures are prime requisites in successful cattle production.

cultivated the first year. It does not become established sufficient for grazing until the second year. While it is an excellent grazing plant it should not be grazed too closely. One animal per acre appears to be the carrying capacity. After a few years should the Kudzu appear to be losing its vigor it may be greatly improved by applying about two tons of stable manure per acre and turning under in February with a two-horse turn plow. Under such conditions breaking the land in February resets the Kudzu plants.

Temporary Pastures

A satisfactory temporary pasture may be composed of oats seeded at the rate of two to four bushels per acre in the fall and Common lespedeza seeded in early spring at the rate of 14 to 20 pounds per acre on top of the young oat plants. The oats may be grazed beginning about February 15 and the lespedeza during the following summer and fall. Such a combination is valuable for providing grazing during the winter months when the grasses are in the dormant stage and in the fall of the year when the grasses in the permanent pasture are tough.

Farmers inspecting cattle and pastures at the Coastal Plain Experiment Station.



Cattle on upland temporary pasture of Common lespedeza. A heavy seeding of oats is made in the fall followed by a seeding of Common lespedeza in early spring. The lespedeza may be sown broadcast on top of the oat plants and worked into the soil with a peanut weeder. The oats furnish grazing in late winter when grasses in permanent pastures are dormant. The lespedeza furnishes grazing in the fall of the year when grasses are tough.