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LAWNS, PASTURES AND HAY.

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LAWNS, PASTURES AND HAY.

So many inquiries have reached the Station during the past year from people in Alabama, concerning the methods for grass cultivation, and the grasses best suited for lawns and pastures, the author has deemed it wise to issue this bulletin conveying the information desired.

There is a bright outlook for the future when the farmers are seeking for instructions how to make pastures and cure hay. It is an indication that more milk and butter of a superior quality, and finer grades of beef, will soon be placed on the markets of the State by a larger number of farmers. The climate and soil of Alabama are so well adapted to grass cultivation, there is no excuse for any farmer buying hay from other sections of the country. If he will raise his own hay and keep in good condition a first-class pasture, there will be but little chance for introducing into his lands the seeds of injurious weeds, so often to be found in bales of hay shipped from distant sections of the United States. For instance, such an obnoxious plant as the Russian thistle has no doubt been scattered in many portions of the country through the forage purchased by farmers who have failed to produce on their own lands a sufficient amount of hay to supply the necessary food for their cattle.

Now that the serious problem is presenting itself to the consideration of the people: What can be done to induce the farmers to plant less 5-cent cotton, and to so diversify their crops as to make the farms self-sustaining? may not one solution be in the raising of cattle, which will result in turning much of the land into grass for pasturage and hay? This bulletin is, therefore, written with the hope that an impetus will be given in that direction, so that in the

raising of fine breeds of cattle all over the State, the farms may be turned into paying institutions.

THE LAWN.

A lawn cannot be successfully developed in one season, but it requires care in the selection of seed or sod and judicious labor in the preparation of the land. The first year is required to give the grass a firm hold on the soil, and even much of the second year is at times necessary to permit a uniform covering of the surface, particularly in those instances where the grass has been drilled or the sod set out in bunches.

The first matter of importance for consideration is the thorough preparation of the land. The character of soil best suited for the cultivation of grass is a sandy loam with a clay subsoil. The land should be well drained to prevent a too wet condition, which will result in sourness. Plow deep in the fall, after broadcasting an ample supply of stable manure or ground bone and cottonseed meal. If the land is not situated in a limestone region, and there is a deficiency of lime, this substance must also be broadcast before plowing. A liberal application of air-slaked lime, or land-plaster, should be made—at least, ten to twenty bushels per acre, where there is a deficiency. No definite rules, however, can be given as to the amount of lime required. The question depends entirely upon the character of the soil. In those portions of Alabama where marls are common the land for grass cultivation will be greatly improved by broadcasting the marl and ploughing in. In this case the application of lime will not be necessary, since this substance is one of the chief ingredients in the marl.

After plowing deep so that the soil will be thoroughly loosened, the harrow must be run over several times until the clods are broken, the earth finely pulverized, and the surface is rendered level. If the land is poor in humus or organic matter, and there is not a sufficient supply of stable manure available, it will be wise to first sow in peas, and turn them under before attempting to grow grass. When

the grass has become well established it will be greatly improved by an occasional top-dressing with nitrate of soda and cottonseed meal. On small lawns old plastering from the walls of buildings, when well pulverized, makes an excellent top-dressing, when applied in December or January. The winter rains will soon beat the plaster into the soil around the roots of the plants. Wood ashes are also excellent fertilizers.

Immediately after the grass seeds are sown, the roller must be run over the lawn, so that the soil will be packed around the small seeds to insure germination. Care must be exercised, however, not to cover deeper than one eighth to one-quarter of an inch; otherwise the vitality will be exhausted before the young plants reach the surface of the ground. The roller is the best and most satisfactory way of covering the seeds. During the growing season, and just after the mowing, it will improve the lawn to run the roller over the grass occasionally. Early in the fall the mowing must be discontinued, so that the grass will recuperate for the winter's cold.

SELECTION OF SEED AND THE TIME FOR SOWING.

The heat of the summer's sun is so great and long-continued in many sections of the South, most of the grasses so popular in the northern portions of the country are destroyed, and their cultivation, except in shaded yards, becomes almost impossible. The summer months are also so often deficient in rainfall, it is important that provision should be made for the frequent watering of the lawn, if a green, vigorous condition is to be preserved. For these reasons it becomes necessary to select those grasses which will best stand the heat of the Southern sun, and will also live through the dry seasons. Among the number of the best lawn grasses suited to Alabama soils and climate may be mentioned the following. Only five species and one variety are given, because, in the opinion of the author, these are sufficient for general demands. The list will produce lawns of even texture, uniform sward and permanency :

BERMUDA GRASS (*Cynodon dactylon*, Pers).—This is purely a Southern grass in its habits and adaptability. It is, however, an introduced species, and does not mature its seeds except in the extreme South. It thrives best in the sun, and in a rich soil will grow rapidly, resulting in a beautiful, green sward. The growth is by underground stems, and after once obtaining hold in the land it will require but little care and attention, except the occasional fertilizing to keep the soil in a healthy condition for growth, and the regular sprinkling when the dryness of the atmosphere demands the application of water.

Bermuda grass is propagated by cutting into short pieces the underground stems and sowing them over the well-prepared soil and harrowing in; or by breaking up the turfs into small bunches and dropping them into holes made by means of a hoe, and covering them with earth. Where there is a large supply of the grass available, sodding may be resorted to, and this will insure a completed lawn in a much shorter period of time than secured by either one of the other methods. After the grass has been growing for some time, and weeds and other foreign, undesirable plants begin to show themselves, hand weeding must be resorted to. This will be quite laborious at first, but the beautiful and regular lawn resulting will more than repay the time and attention expended in eradicating the weeds.

ST. LUCIE GRASS.—This is a variety of the Bermuda, and is very popular in many portions of Florida. A small plot has been cultivated for two years in the botanic garden of the Alabama Experiment Station, and it is proving to be an excellent grass for this latitude. It is not so tenacious in its hold on the soil as is the case with the Bermuda, and it can therefore be more easily eradicated if it is desirable to use the land for other crops. The blades are of a lighter tint of green, but in other respects it closely resembles Bermuda.

CARPET GRASS (*Paspalum compressum*, (Sw.) Nees).—A creeping plant which throws up a slender flower branch and delights in a moist soil. As its name indicates, it covers the ground like a green carpet, and is exceptionally uniform in the sward it produces. It is a fine grass for low lands, and will even produce good results in rich uplands where moisture is not so abundant. It is growing successfully in a sandy soil on the grounds of the botanic garden, where other grasses have failed to yield good results. This grass is particularly well adapted to nearly all sections of South Alabama, and

will grow with more or less success in most parts of the State. It can now be called one of the wild species of Alabama, since it is growing at will in Middle and Southern Alabama.

KENTUCKY BLUE GRASS (*Poa pratensis*, Linn).—It is a waste of time and money to place this grass in soils which are exposed to hot summer suns, because it can not stand successfully the continued heat. But in yards where there is ample shade produced by oaks, elms and other trees, excepting pines and cedars, it will thrive well and will produce a lawn not to be surpassed in beauty of color and texture by any other grasses. An advantage it has, that is one of special merit, is the green color it retains through most of the winter and the early, vigorous growth it puts on in the early spring before any other grasses are showing any life.

ST. AUGUSTINE GRASS (*Stenotaphrum dimidiatum*, Linn. Brongn).—In Charleston, S. C., and also in portions of Florida this grass is favorably thought of for lawns. It produces a larger blade than the preceding grasses. It readily takes root at the joints of the creeping stems and soon covers the surface with an even sward. This grass prefers the climate near the coast and will grow well in sandy soils. No experiments have been made with the St. Augustine grass at the Alabama Experiment Station, but the reports made to the author by reliable parties living in Jacksonville, Fla., and Charleston, S. C., satisfactorily established the plant as a desirable lawn grass for the coast region. It can be propagated by sets or cuttings by sowing the seeds in drills from which, after the first season, the sets may be taken and placed in the soil where the lawn is to be made.

The best time for sowing the seed of grass or planting the sod is in the late fall or in December. Favorable results, however, may be obtained sometimes by seeding in the early spring, provided the following summer is not too dry. The difficulty in spring planting consists in the inability of the young and tender plant to withstand the late spring and early summer heat before the roots have had time to penetrate deep into the soil and supply the needed moisture. On the other hand, when the seeding takes place in the fall or early winter the growth obtained by the plants gives them sufficient strength to withstand the heat of spring and summer,

and the chances of surviving the first year's trials are decidedly greater than when the planting is postponed until spring.

PASTURES AND GRASSES SUITABLE FOR MAKING HAY.

The preparation of the land for the establishment of a first-class pasture must be accomplished in the same manner as that given for making a lawn. Plow deep and thoroughly, fertilize with stable manure or ground bone, cottonseed meal and nitrate of soda. A good formula is as follows :

	PER ACRE.
Ground bone.....	300 to 400 lbs.
Cottonseed meal....	100 lbs.
Nitrate of soda.....	50 to 100 lbs.

The harrow must be run over the land in order to reduce the soil to an even condition and completely pulverize it. Sow the seed at the rate of 50 to 60 pounds per acre, and sow on a day when the air is in least commotion, so that there may be a uniform scattering of the seeds; otherwise the grass will come up in thick and thin patches, making an unsightly pasture. After the seed has been properly scattered run the roller over the land, or if a roller is not available, brush drawn over the field several times will cover the the seed. It is best to sow just before a rain, to insure germination.

In order to produce a pasture throughout most of the year, the species of grasses may be mixed which mature their seeds at different seasons of the year. For instance, barnyard grass is a summer species, and rescue grass gives a green sward late in the fall. Texas blue grass is a so-called winter grass, although it also produces one of the best grasses for summer grazing and for making hay. Mixing these grasses in proportions to furnish 50 to 60 pounds of seed per acre will give continued pasturage throughout most of the year. There is nothing better, however, than a field occupied alone by Texas blue grass or by Bermuda, to be used for either pasturing cattle or to be allowed to grow and cut for hay.

The following list of grasses contains the species which will be found amply sufficient for the demands of the cattle raiser and farmer in Alabama, both for pasturage and for making hay :

BERMUDA GRASS (*Cynodon dactylon*).

TEXAS BLUE GRASS (*Poa arachnifera*, Torr).—This grass is propagated by cuttings, or by seeds, or by sods. It stands the drought well, and will grow on any good soil which is in a well-drained condition. The name was given to this grass because it originated in Texas, but it is now well known in most sections of the South, and is becoming more and more popular as rapidly as its fine properties are understood. It is not incorrect to call it a winter grass, since it makes most of its growth in the winter months. When growing in a strong soil which has been thoroughly prepared this grass furnishes an excellent hay and will stand the trampling of cattle better probably than any other grass.

RESCUE GRASS (*Bromus unioloides*, Willd).—This may be also called a winter grass, since it obtains most of its growth in the winter months. If it is cut regularly and not allowed to go to seed it will continue green a considerable portion of the year, and will supply a fairly good pasture after most of the other grasses have died down.

ORCHARD GRASS (*Dactylis glomerata*, Linn).—For the extreme south this grass will be found not so sure as the others mentioned in this list. It will produce, however, in the middle and northern portions of Alabama, in good soil, from three to four tons of hay per acre.

BARNYARD GRASS (*Panicum crus-galli*, Linn).—This grass is so common, it will require no special mention in this connection. The farmers of this State are quite familiar with it. Barnyard grass is more suitable for feeding green to cattle than for making hay, because of its moist, succulent stems, which render it difficult to cure for hay.

TALL OR MEADOW FESCUE (*Festuca elatior*, Linn).—This is excellent for either pasture or for making hay, and will give a luxuriant growth on well-prepared rich soils.

