

Oklahoma Agricultural Experiment Station,

STILLWATER, OKLAHOMA.

BULLETIN NO. 55, DECEMBER, 1902.

BERMUDA GRASS.

SUMMARY.

1. Of all the grasses tried on the station farm, Bermuda alone has shown the qualities which must be possessed by a pasture grass in Oklahoma.

2. While it is possible to eradicate Bermuda grass when well established, it should be started only on lawns or on land intended for permanent pasture and should be kept out of fields intended for cultivation. In ten years on the station farm, Bermuda grass has not spread to a troublesome extent into land where it was not wanted.

3. Bermuda grass should be given a trial on every Oklahoma farm where permanent pasture is wanted. A small start can be secured from seed which may be purchased of Southern seedsmen. This will furnish a supply of sod so that larger plantings may be made in succeeding years by covering pieces of roots in March and April, or even as late as August.

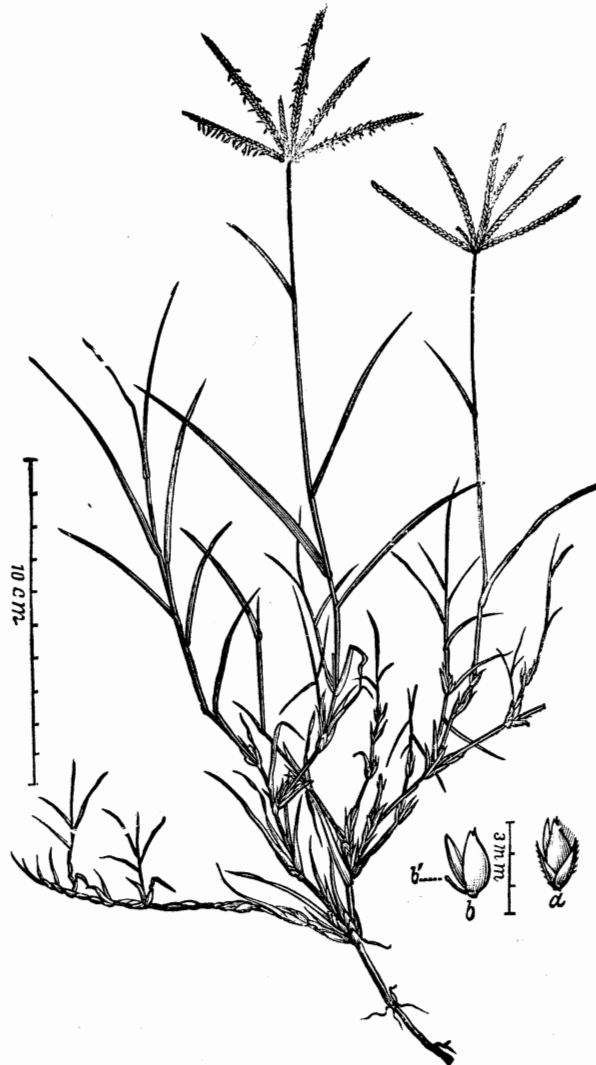
INTRODUCTION.

The question asked most frequently by correspondents of the station during the past five years has been: "What grass have you found that will do well as lawn and permanent pasture?" Until about two years ago no satisfactory answer could be given and only suggestions as to grasses worth trying could be made. During the last two years, the answer has been more definite and Bermuda grass has been recommended as worthy of trial on all sorts of soils for pasture and lawn. Experiments made

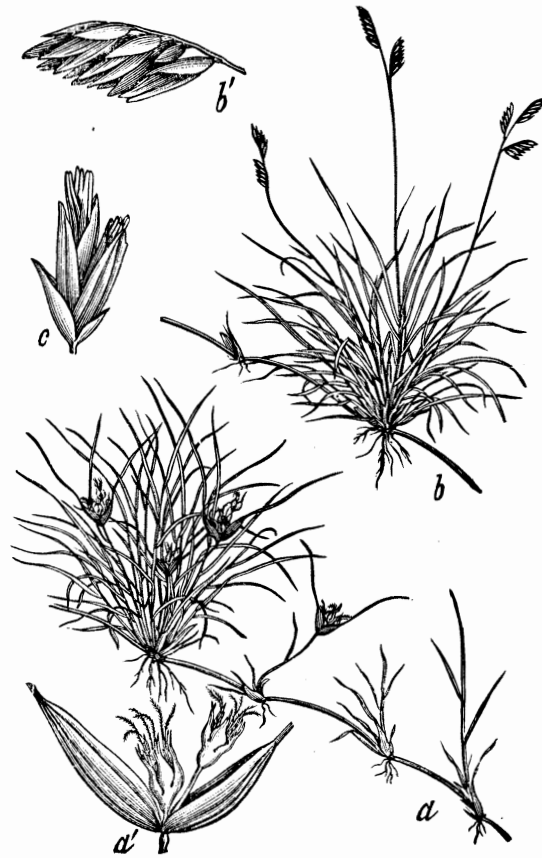
on the station farm and observations of trials made in many other localities have developed the fact that Bermuda grass will grow under a wide range of varying conditions in all parts of Oklahoma.

DESCRIPTION.

Almost everyone in Oklahoma is acquainted with the appearance and habit of growth of buffalo grass. Bermuda grass resembles buffalo grass in many respects. It takes root at the joints and spreads rapidly from runners, but is larger, coarser, and greener than buffalo grass. The accompanying illustrations show the points of resemblance and difference.



Bermuda Grass. from Lamson-Scribner, United States Department of Agriculture.



Buffalo Grass, from Lamson-Scribner, United States Department of Agriculture.

In Oklahoma, the period of growth of Bermuda grass extends from about May 1st to November 15th, the most vigorous growth taking place during July, August, and September when even the native grasses are at a standstill. It furnishes a large amount of nutritious pasturage throughout the season and when a good stand is once secured, does not appear to be harmed by close grazing.

STARTING BERMUDA GRASS.

Bermuda grass is best propagated from pieces of roots, dropped in shallow furrows and covered with soil. There is now no source of roots in Oklahoma from which a large supply may be procured and it is necessary at first to start a small patch from seed. Bermuda grass seed costs about one dollar per pound and one pound will seed a quarter of an acre. It should be sown during March or April in good, clean soil with a firm seed bed. The seed should be scattered over the surface, preferably during a light rain, and only lightly raked into the soil. When the plants first come up, they are very delicate and easily choked out

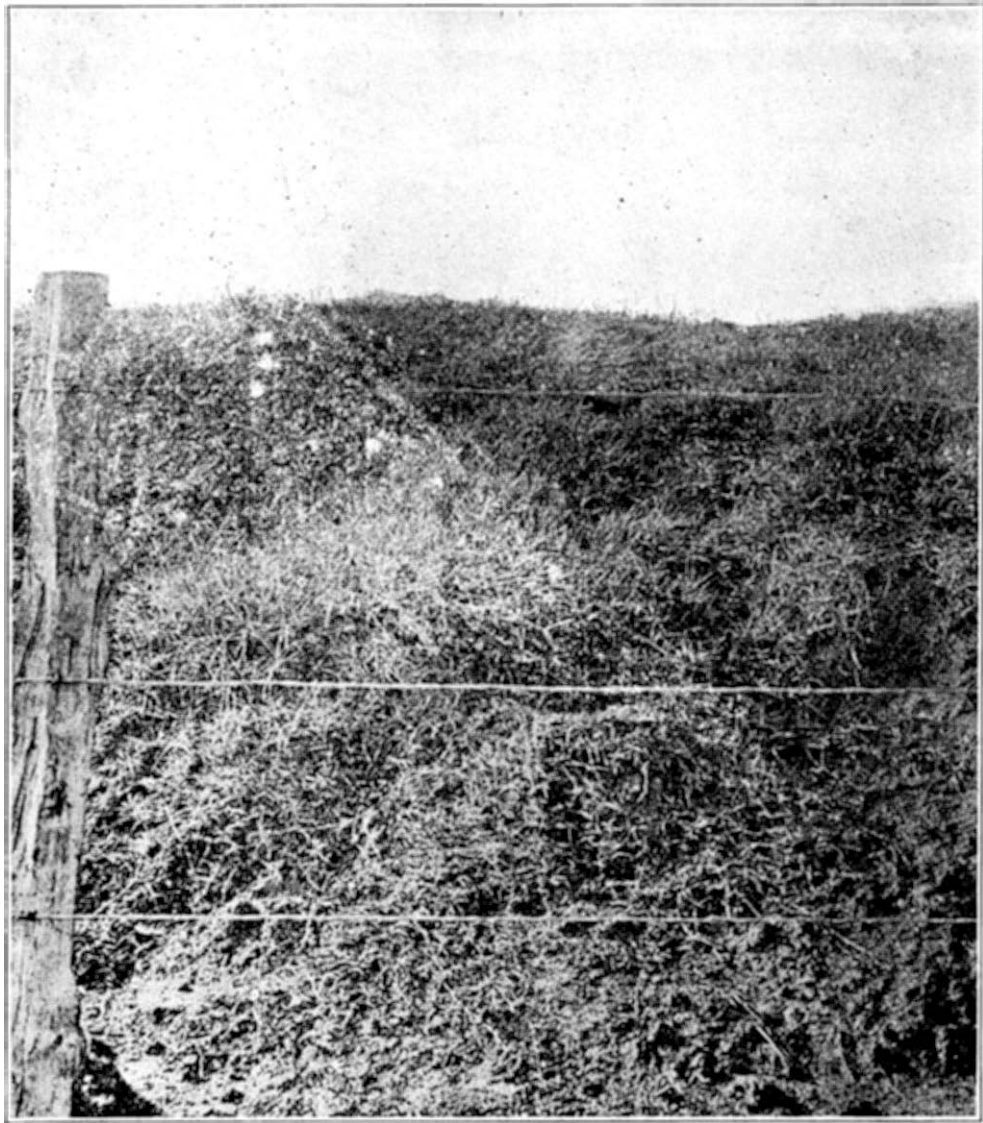
by weeds or crab grass. Hand weeding or raking is often desirable and after the Bermuda grass has become thoroughly established, it will take care of itself. Seeds and possibly roots may be obtained from any Southern seedsman. The station has none for sale or for free distribution.

ERADICATING BERMUDA GRASS.

Fortunately, the majority of Oklahoma farmers are not afraid of grass. They like to see it growing and they appreciate its value as feed for all classes of livestock. But there are some who fear anything that persists in growing and protest against Bermuda grass for this reason.

In so far as the station has been able to determine, Oklahoma grown Bermuda grass seed germinates but poorly and there is but small danger of the grass spreading from seed. With this danger so slight, Bermuda grass should be started only where it is to remain permanently and no attempt should be made to work it into a crop rotation. Its place is as a permanent pasture grass and for lawns.

Bermuda grass may be killed out by shallow plowing and harrowing during the fall and winter and by growing oats, or some other crop that completely covers the ground the following spring, to be followed by millet or cowpeas sown thickly as soon as the crop is removed. Where closely cropped, Bermuda grass is sometimes killed by hard freezes and but little trouble need be feared from its spreading where it is not wanted.



Bermuda Grass, Binding Soil of Pond Bank.

FOR STOPPING WASHES.

The accompanying illustration shows one of the uses to which Bermuda grass may be put. It shows a portion of the bank of a pond in the pasture on the station farm. This pond is fenced and furnishes water for the barns and feed lots. It was cleaned out and enlarged during the fall and winter of 1901 and in March, 1902, pieces of Bermuda sod about six inches in diameter were stuck into the pond bank, about four feet apart. The bank in October, 1902, was nearly covered with a compact sod and with another season's growth, no ordinary amount of wave action would have any serious washing effect. Bermuda grass is being used to some extent in Oklahoma for holding railway embankments of loose soil and could be utilized profitably along many roadsides for the same purpose.

EXPERIMENT STATION OPINIONS.

The following statements are taken from station publications and show a marked unanimity of opinion as to the great value of Bermuda grass for the purposes for which grass is most desired in Oklahoma, permanent pasture and stopping washing of the soil.

Alabama.—This grass will grow under the most flagrant neglect; while care and cultivation will bring out its characteristics to a marked degree and will repay the cultivator for all his expense and trouble. It is an excellent grass to prevent the washing of the land, for filling up gullies and preserving terraces. It makes one of the best lawns on account of its smooth and regular growth, and its power to withstand the heat of the sun. The Bermuda grass is not so difficult to eradicate from the field as most farmers seem to think. Close cultivation in cotton for two or three years, and thorough pulverization of the soil will destroy this plant.

Arizona.—This grass is used quite extensively in Arizona in the making of lawns, but from the creeping habit of its long, wiry stems, it becomes obnoxious in gardens and occasionally on the banks of ditches. In our climate, it seeds abundantly and there is danger that it may in time become much more harmful than it is at present.

Arkansas.—Bermuda grass is the best summer pasture grass we have for the sandy soils of south Arkansas and is one of the best hay grasses

for all parts of the state except the northwestern part. It is not generally regarded with much favor but where it has established itself and is being utilized, it is regarded with great favor. On the barren soils, it does not succeed, but it succeeds on all other soils whether wet or dry. It makes hay of superior quality that is highly relished by livestock. When the value of Bermuda for hay, pasture, and a soil renovator is appreciated and the proper methods for cultivating and controlling it are understood, it will be a highly appreciated grass. Shade is fatal to the grass and by using the harrow, then oats, then cowpeas and cotton, the grass can be subdued and eradicated. To start the grass by seed is uncertain. The cheapest and best way to start it is to turn up a Bermuda sod and harrow the roots into piles, then chop them into short pieces with a hatchet and sow them on freshly broken soil and plow them in. The roots must not get dry while out of the ground.

California.—This grass has introduced itself in a bold and uninvited manner. Its perfect adaptability to the conditions is evidenced by the thrifty growth on all kinds of soil, including strong alkali, very dry and very wet, producing, more than any other grass (without care or planting), abundant feed during nine months of the year. The objections to this useful grass are mostly founded on the prejudice of the people, which renders them blind to their own interests. Many men are wearing out their lives in poverty, trying to grow fruit on land poorly adapted to fruit growing, but eminently adapted to Bermuda grass.

Louisiana.—For winter and early spring, Texas blue grass and the clovers seem to fulfill all the requirements, followed in summer by Bermuda and crab grass, the two best grasses we have. It was impossible during the wet summer to restrict the last two to the plots allotted to them, but together, they covered the whole area of the (grass) garden, yielding several cuttings of hay for our work animals.

Maryland.—Bermuda grass was inferior to the growth in 1890, but still covered the ground well; this is of chief value as a pasture grass, and for holding hillsides and preventing gullies; it should not be tolerated near cultivated fields.

Mississippi.—This grass is the most valuable species we have in the South and is too well known to need any description. It succeeds

best on rich bottom lands and on the black prairie soil, where it will yield two cuttings in a season, making two to four tons of hay per acre. This hay is of the very best quality, being especially valuable for horses and mules. When once established in a field, it is very difficult to eradicate and this is a decided objection to its general cultivation. The best method we have found for destroying it is to plow the land very shallow as early in the fall as possible. Plow again in November and sow oats. When the oat crop is removed, sow thickly with peas which will smother the few plants which may have survived the oats.

Results of feeding experiments with cows indicate that Bermuda and timothy hay have the same milk and butter producing values.

In order to ascertain the comparative values of Bermuda and timothy hay for feeding to work animals, the six mules belonging to the station were divided into two lots. Both lots received the same amount of corn daily, and were given all the hay they would eat, the feeding being continued two months. The results showed that there was practically no difference between the rations, (Bermuda hay and corn and timothy hay and corn.)

Oregon.—This is a valuable grass for the southern states and was tried on our plats last year. It started to grow very late and made but little growth till after the other grasses had made considerable advancement towards heading. During the drouth, it seemed to flourish best. It threw out branches three feet long, making a perfect sod over the plat, but was cut back to the roots by the frost in December.

EXPERIENCE OF OKLAHOMA FARMERS.

For the purpose of ascertaining what was being done with Bermuda grass by farmers in Oklahoma, a letter of inquiry was sent to some of those to whom Bermuda grass had been recommended as worth trying. The final test of the value of a grass is its behavior under farm conditions and the station is under obligations to those who have furnished statements of their experience with Bermuda grass.

Canadian County.—(a) Bermuda grass that had good roots stood the cold weather of last winter all right. On the other hand, that which

was not well-rooted killed out. I have inquired quite a little about it and it is generally admitted that it is the lawn grass for this climate.

(b) I bought some Bermuda grass seed last spring, and sowed it in my yard on May 8th. The grass came up and began to branch out a little when the dry weather set in and I thought that it was all dead. But to my surprise, when the September rains fell, it began to green-up and at this time is nice and green.

Comanche County.—I planted a small patch last spring, about May 15th. It was too late here, the hot sun destroyed it except little patches here and there. I think it will grow here if sown from March 15th to April 15th.

Dewey County.—One of my neighbors set some Bermuda grass stems six feet apart on July 8th, and it grew and has already formed a solid sod. I regard it as the best grass I have seen for this country. The above roots were set in pure sand, where the soil had all been removed with scrapers for the basement to a house.

Garfield County.—There is a small patch of Bermuda grass near here and it looks fine. I expect to put out some in the spring as I believe it to be the grass that we need in this country. We are in great need of some grass that will furnish pasture during the dry season.

Grant County.—We tried Bermuda grass last spring on a small scale, found it to be a success, and intend seeding more of it.

Kay County.—(a) I have concluded that Bermuda grass is the best lawn and pasture grass where it is necessary to stand drouth. Some object to planting it among trees, others say that if left to seed, it blows into the gardens and is hard to get out after it is started.

(b) I have tried Bermuda grass and have found it satisfactory in every respect. I shall sow ten acres of the grass in the spring as I think that it is the best pasture and lawn grass there is for this country.

(c) I got eight pounds of Bermuda grass seed last spring; sowed seven pounds of it in my pasture, the soil of which is very sandy. It did not come up very well but I think there is enough for a stand. It was

bothered some by crab grass but as far as I can see, will do well. I gave five of my neighbors a portion of the remainder for lawn. Three out of the five lawns have grown well, two were taken entirely by crab grass. I also sowed one-eighth acre of lawn which came well and is fine. In all I am well pleased with Bermuda grass up to this time.

Kingfisher County.—(a) I planted some Bermuda grass seed near the house for lawn and am well pleased with the showing it made. It grew well all summer and though other grasses were killed by the dry weather in August, the Bermuda suffered very little. On the south side of the Cimarron river, two miles west of Dover, is a piece of Bermuda grass, probably several acres, that has done well this summer.

(b) Last spring I sowed English blue grass, orchard grass, and Bermuda grass. That which I mixed and sowed among the black jacks died out. But the same sowed on heavy land along the creek is growing. I sowed Bermuda grass around my house on ground that was packed, just raked in the seed and it did well. Shall sow only Bermuda hereafter.

Logan County.—My neighbor has a fine stand of Bermuda grass in his yard and along his hedge rows. He sowed the seed about sixteen months ago and now has a fine set and has commenced transplanting sod. I got a few sods and set them and they never wilted. We will plant three acres in the spring.

Pawnee County.—(a) I have used Bermuda grass for lawns since 1893 and consider it the only grass for this climate for that purpose. Blue grass for Kentucky but Bermuda for Oklahoma!

(b) I sowed Bermuda grass seed the last of April during a rain on stony land without plowing and I now have a fine sod and a pretty grass which has withstood the dry weather better than any other grass that I have seen.

Woods County.—(a) Bermuda grass is the best grass I know of for lawn or pasture. It stands drouth better than our native grass and

spreads faster. The only thing against it that I know of is that it winter kills in badly exposed places.

(b) On April 10, 1902, I sowed two and one-half pounds of Bermuda grass seed, part for lawn and part for pasture; met with satisfactory results, have compact sod. On April 21, I planted a quarter of an acre of roots. On account of the indifferent manner in which they were covered, I lost the greater portion of them. Those that lived made a remarkable growth, making an almost compact sod. Soil is sandy, native grass is mostly bunch grass. I believe that Bermuda is certainly the lawn and pasture grass for our soil.

JOHN FIELDS.