

AGRICULTURAL EXPERIMENT STATION of The Alabama Polytechnic Institute, Auburn, Ala.

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GRAIN SORGHUM PRODUCTION in ALABAMA**

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Grain sorghum has been grown extensively in the semi-arid West for a number of years. Results from recent experiments show that it may have an important place as a grain and forage crop in Alabama. Alabama farmers are greatly in need of a drought-resistant crop that will produce large yields of grain and forage. Grain sorghum appears to be such a crop.

USES of the CROP

The chief use of grain sorghum is as a grain crop for feed. The grain may be fed to any class of livestock. It may be considered about equal to corn as a grain feed, either whole or ground. Likewise, it is about equal to corn as fodder (entire stalks and heads), since the stalks have approximately the same feed values. Mature grain sorghum may be hogged-off or grazed with cattle and hogs. The seed are readily eaten by such game birds as dove and quail, and are especially attractive to the dove.

Grain sorghum may be used while green as a temporary grazing crop or as a crop for cutting and feeding green. It also may be used for silage, but it makes a smaller yield than the late-maturing varieties of sweet sorghum, such as Texas seeded ribbon cane.

The heads may be cut or the grain combined when the seed are mature, and the stalks and leaves may then be grazed off with cattle.

PLACE of GRAIN SORGHUM in ALABAMA

Grain sorghum is much more likely to produce a successful crop than is corn when planted after June 1. It is drought-resistant and quick maturing. Where adapted, grain sorghum should be grown in addition to corn

and not as a substitute for corn. When planting can be done before June 1, corn should be grown. After that date grain sorghum should be planted. Both crops have a place on Alabama farms. It is pointed out, however, that yields of grain sorghum have not been as high in southern Alabama as in the northern part of the State.

Better use can be made of available labor when grain sorghum is included in a cropping system. Planting and cultivation of this grain crop comes after the peak labor load for cotton, corn, and peanuts. It fits in well after small grains or legumes harvested for seed, or on land that is not planted to earlier crops.

Grain sorghum grown in a rotation with manganese bur clover has averaged about 50 bushels of grain per acre during the last 6 years (1941-46) at the Main Station, Auburn. In this case the grain sorghum is planted each year after the manganese bur clover makes seed, or about June 15. The manganese bur volunteers in September and grows during the winter and early spring. Caley peas, some of the vetches, and a hard seeded strain of crimson clover have also been used successfully in similar rotations.

VARIETIES

The Alabama Agricultural Experiment Station has tested a large number of varieties of grain sorghum at 14 locations in the State. Results from these experiments

* Formerly Mimeograph Series.

**Experiments at the Substations and Experiment Fields were conducted in cooperation with Otto Brown, W. W. Cotney, S. E. Gissendanner, E. L. Mayton, Fred Stewart, J. P. Wilson, J. T. Williamson, P. B. Gibson, H. R. Benford (resigned), F. E. Bertram, and J. W. Richardson of the Agricultural Experiment Station staff.

are presented in Tables 1, 2, 3, 4, 5, and 6. On the basis of these tests the following varieties are recommended for use in Alabama: (1) for harvesting with a combine, Martin's Combine, Caprock, Plainsman, Midland, and Early Hegari; (2) for cutting and feeding green or mature, Hegari and Sagrain; (3) for harvesting heads by hand, Hegari, Sagrain, Early Hegari, and Caprock.

Varieties Recommended

Martin's Combine, Caprock, and Plainsman are similar in many characteristics. They mature in about 17 to 18 weeks. The stalks grow from 3½ to 4 feet high and the grain can be harvested easily with a combine. All three varieties have open heads. However, Caprock produces heads slightly larger and more compact than the other two. The seed are brown in color. In variety tests the stalks of Martin's Combine remained erect in the field and the seed were sound longer than those of any other varieties tested except Midland. At most of the locations, all of these varieties produced good yields of grain, but rather low yields of stover. The heads of Martin's Combine extend above the top leaf sheath more than those of Caprock or Plainsman. Therefore, less leaves pass through the combine when this variety is harvested than in the case of other varieties.

Early Hegari, quite similar to Hegari, matures in about the same time as Martin's Combine, Caprock, and Plainsman. It can be grown successfully in any part of the State. Early Hegari is about 1 foot shorter than Hegari and may be harvested with a combine. This variety produces as much or more grain than Hegari, but does not produce as much stover. Early Hegari is probably the outstanding variety from the standpoint of yield of grain and forage. Its chief weakness is its tendency to lodge, or fall over. Especially is this the case when planted thick and on fertile soil. Lodging makes combining difficult and results in lower harvested yield. Early Hegari lodges less than Sagrain or Hegari.

Midland is a new variety introduced in 1945, which grows 3½ to 4 feet high. It is very resistant to lodging and has semi-loose heads with reddish brown seed. It matures in about the same length of time as Martin's Combine, but it yields somewhat less. It

remains standing longer and better than any of the other varieties tested to date. The stalk is juicy and gives some trouble in combining. It is more palatable than other recommended varieties.

Hegari (commonly called Hi-gear) grows 5 to 6 feet in height, and has large, leafy, juicy stalks and large semi-loose heads with white grains. It matures 10 days to 2 weeks later than Early Hegari. In the northern part of the State, this variety if not planted before July may be killed by frost before it fully matures. While Hegari may be cut with a combine, it is very difficult because of its height and tendency to lodge. This is an excellent variety for use where the heads or the stalks and heads are cut for feed, or where it is grazed by livestock.

Sagrain (also known as Schrock or Schrock Kafir) is a good variety to grow when entire plant is to be harvested. It varies in height from 5 to 6 feet and the stalks are weak, tending to break over soon after the grain is mature. Due to its height and weakness of the stalk, Sagrain cannot be easily harvested with a combine. Yellowish-brown seed are produced on large open heads. This variety matures too late to be grown with safety in the northern part of the State. Sagrain usually equals or exceeds Hegari in the production of stover.

Varieties of Limited Recommendations

Early Kalo is recommended only where very early maturity is desired. This variety matures about 10 days earlier than Early Hegari. Early Kalo grows 4 to 4½ feet high and produces semi-loose heads with reddish yellow seed. The stalks have very few leaves and the yield of stover is low. However, the yield of grain is usually very good, but is not equal to that of some other varieties. Early Kalo is very susceptible to lodging; therefore, it should be harvested as soon as the seed are mature. This variety has been replaced by Midland and seed are not readily available.

Imperial Kafir is a new variety that has been tested only 2 years. The stalks are about 5 feet in height and are more leafy than any variety tested. It might be valuable where the entire stalk is used. The heads are large and compact, and have large

white grains. This variety is difficult to combine because of tight head and extreme leafiness of stalks. The grain decays readily in the field after maturity; therefore, it cannot be left standing long after it is ready to harvest.

Varieties Not Recommended

For one of several reasons, certain varieties tested have been found unsuited for planting in Alabama. They are not recommended because they are poor yielders, lodge badly, or are subject to disease and insect injury. Farmers are warned against planting the following varieties:

Feterita is too tall to be combined satisfactorily. The heads are so compact that the seed are frequently damaged by insects and diseases.

Grohoma is a fair yielder, but the head does not come completely out of the leaf sheath. Consequently, during wet seasons many of the seed rot.

Shallu, also known as Egyptian wheat and chicken corn, grows to 7 to 9 feet high. The slender, weak stalks often lodge before the seed are mature.

Darso has not yielded satisfactorily under Alabama conditions, probably due to its susceptibility to disease.

A number of kafirs, such as **White Kafir**, **Pink Kafir**, **Red Kafir**, **Coes Improved Kafir**, **Club Kafir**, and **Highland Kafir**, have been included in the variety tests. None of these has given satisfactory results. Yields were low; their semi-tight heads make them subject to injury by insects and diseases.

Dwarf Yellow Milo, **Sooner Milo**, and **Double Dwarf Milo** likewise have not given satisfactory results in all tests. The heads of **Double Dwarf Milo** are so goose-necked or pendent that they frequently touch the ground. The neck of the seed head breaks very easily and the heads fall to the ground, thus causing a large loss.

Bonita is also known as **Dwarf Hegari**. However, it is not a true dwarf-type grain sorghum, being almost as tall as **Early**

Hegari. Seed of **Bonita** are very similar to those of **Hegari**, but the head is much more compact. Due to this tightness, insects and diseases have caused much greater losses of grain than in varieties with a more open head. Although the quality of the grain was usually poor, **Bonita** produced a large yield of grain in the tests in Alabama. **Westland** in the tests lodged badly, and yields have not been as large as those of more desirable varieties.

PRODUCTION METHODS RECOMMENDED

Seedbed Preparation

Two different methods are used in preparing the seedbed for grain sorghum:

(1) Land not in a winter legume is broken and harrowed into a good seedbed before planting.

(2) If the grain sorghum is to follow a winter legume that has been allowed to produce seed for a volunteer crop, the land is thoroughly disked, so that the winter legume seed are not covered too deeply.

In either case the seedbed should be free from weeds and grass. The rows are opened, and the grain sorghum seed are planted in a shallow furrow and covered 1 to 2 inches deep.

Time of Planting

It is recommended that grain sorghum be planted from June 1 to July 1 in northern and central Alabama, and from June 1 to July 15 in southern Alabama. Grain sorghum can be planted just as soon as the soil gets warm in the spring. However, early plantings do not produce any larger yields than early-planted corn. On the other hand, late-seeded grain sorghum does outyield late-planted corn. (See Tables 7 and 8.)

Seeding Rate and Spacing

Grain sorghum is planted in 3- to 3½-foot rows with 1 to 3 plants per hill, spaced 4 to 16 inches apart in the row. Wide spacing in the row is used when the heads are to be cut by hand. If the grain is to be combined close spacing is used. Low-growing varieties like **Martin's Combine** are spaced closer in the row than such taller varieties as

Hegari. When the tall varieties are spaced closely, they lodge very badly, particularly on fertile land during a wet season.

The seeding rate will vary from 3 to 8 pounds per acre, depending upon the spacing and variety. For close spacing a low-growing variety, 8 pounds of seed will be needed; for wide spacing of a tall-growing variety, 3 pounds will be enough.

Seed Treatment

The seed should be treated with a dust fungicide, such as Spergon or New Improved Ceresan to control smut and seedling diseases. The dust should be used at the rate recommended on the container for sorghum. Spergon is not poisonous and makes the seed work easily in a planter. *Treated seed should not be used for feed.*

Fertilizers

Grain sorghum has about the same fertilizer needs as corn. An application of 200 to 300 pounds per acre of 4-10-7 is made at or before planting time. A side-dressing of 200 pounds per acre of nitrate of soda or its equivalent (150 pounds of sulfate of ammonia or 100 pounds of ammonium nitrate) is made as soon as the sorghum is cultivated.

When grain sorghum follows a winter legume that is harvested for seed and the plants are left on the ground, an application of 200 to 300 pounds per acre of 0-14-10 or 4-10-7 is made at or before planting the sorghum. No fertilizer application is necessary if the grain sorghum follows a good growth of winter legume that is turned.

Harvesting and Storing

Silage. Grain sorghum for silage is harvested when the seed are in the late dough stage; it will not be necessary to add water to the silage. At this stage the seed will be more completely digested by cattle.

Fodder. Grain sorghum for fodder is cut when the seed are hard, but before they have dried enough to be harvested for grain. The stalks may be cut and shocked. The bundles if tied are bound loosely to permit air circulation. They may be stacked

in round shocks of 10 to 12 bundles, or stacked against a fence 2 bundles deep on each side. The bundles should remain in the field until dry enough (30 to 40 per cent moisture) to store in the barn or to stack near where fodder is to be fed. It usually requires 4 to 6 weeks to become dry enough to store. If stored outside the bundles are placed in a round stack with the heads turned in. The stack is capped with hay or straw. Feeding may be done from the field until December. Usually it rains enough in December to cause serious damage to the sorghum if it is left exposed.

The fodder may be fed in bundles or it may be run through an ensilage cutter before feeding. Since grain sorghum will heat, it should not be chopped too long before feeding, particularly if it is piled over 3 to 4 feet deep. Heating is likely to occur if it is run through a hammer mill.

For grain. The grain may be harvested after it is fully matured by (1) cutting the heads by hand, or (2) combining. In the latter case, the combine is set to cut the heads, leaving as much of the stalk standing in the field as possible. If the combine is not set high enough, too much stalk remains on the heads which will choke the machine. The reel of the combine should be equipped with metal shields to prevent throw-out of the sorghum heads.

If harvested by hand, the heads are cut and stored when the grain contains not over 15 to 20 per cent moisture. Usually it is best to leave the crop standing in the field as long as possible without damage from weather and birds.

For harvesting with a combine, the grain should be dry enough to rub out easily by hand (contain not more than 15 per cent moisture). The threshed grain must be stored temporarily in an open shed or barn until it dries out to a 12 per cent moisture content. At this point it can be stored in a bin.

It is important to inspect the grain at regular intervals. If heating begins it should be stirred and aired to permit cooling. A good way to tell if the grain is heating is to insert an iron rod, such as a wagon rod, into the stored grain. The rod

is removed twice a day. If it is warm, the grain should be stirred.

For grazing. For best results from grazing grain sorghum, the hogs or cows are turned on the crop when the grain is in the late dough stage. It is better to use both cows and hogs for grazing because the hogs eat the shattered grain which otherwise would be lost.

GRAIN SORGHUM HAZARDS

Diseases. The principal diseases are smut and those that attack the germinating seed. These may be controlled by seed treatments, as previously explained.

Insects. Most of the insects that attack corn also attack grain sorghum. Corn earworm, stalk borers, white grubs, bud worms, grass worms, and army worms attack the stalks and heads. However, grain sorghum appears to withstand such attacks much better than corn. The damage to the grains is much less in the open and semi-open heads than in the very compact heads. In Alabama varieties with very compact heads are not recommended.

Weevils and grain moths that attack stored grains, such as corn and wheat, also attack grain sorghum. They are controlled by treating with fumigants. (See Alabama Agricultural Experiment Station Leaflet No. 8 for details of control.)

One of the most destructive pests on grain sorghum is sorghum midge. This insect attacks all sorghums including Johnson grass and Sudan grass and such wild grasses

as tall redtop. The most serious infestations occur in areas where large amounts of Johnson grass are left standing. Early-planted sorghum is damaged more than late plantings. No serious infestation of midge has occurred during the last 12 years (1935-1946) at the Main Station on grain sorghum planted after June 1.

The best control is to plant after June 1, and to eliminate all sources from which the midge may spread. In Alabama this means keeping Johnson grass cut before blooming, in order to prevent it from growing seed near a field of grain sorghum.

Birds. Grain sorghums are attacked by many kinds of small birds, such as black birds, sparrows, canary birds, and rice birds. Some birds destroy the grains in the milk stage by mashing the seed and eating the milky juice. Others eat the mature seed. It has been claimed that some varieties are resistant to birds. However, in experiments at Auburn no such varieties have been found. Birds do not seem to have any consistent favorites. Some birds in a season may feed principally on the white-seeded varieties, while the next year they may feed on yellow or brown-seeded varieties. The only satisfactory method is to plant an acreage large enough, so that the birds will destroy only a small portion of the entire crop.

FEED for GAME BIRDS

Grain sorghum seed are readily eaten by such game birds as dove and quail. The seed are especially attractive to doves. If the crop is hogged-off or the grain is combined, doves eat the scattered seeds.

TABLE I. YIELDS OF 17 VARIETIES OF GRAIN SORGHUM IN TFSTS AT FOUR LOCATIONS IN NORTHERN ALABAMA

VARIETY	YIELD OF GRAIN PER ACRE IN BUSHELS ¹											
	BELLE MINA					ALEXANDRIA				CROSS-VILLE	WIN-FIELD	AVERAGE ALL TESTS
	1943	1944	1945	1946	AVERAGE 1945-46	1944	1945	1946	AVERAGE 1945-46	1946	1946	1946
Early Hegari	2	73.0	54.5	45.0	49.8	34.6	46.9	32.5	39.7	56.0	22.5	39.0
Hegari	2	--	50.2	55.3	52.8	33.3	31.4	32.2	31.8	47.5	29.8	41.2
Sagrain	2	--	56.3	38.2	47.3	26.8	37.8	35.9	36.9	79.3	36.0	47.4
Martin's Combine	--	67.0	48.4	59.6	54.0	--	29.4	32.4	30.9	59.4	33.7	46.3
Plainsman	--	70.0	48.4	47.7	48.1	--	36.8	32.8	34.8	59.9	31.6	43.0
Bonita	--	41.0 ³	63.4	41.0	52.2	30.6	43.0	35.0	39.0	52.6	21.2	37.5
Caprock	--	45.9	53.2	54.1	53.7	--	37.7	26.8	32.3	62.8	38.0	45.4
Imperial Kafir	--	--	55.3	40.2	47.8	--	41.7	28.6	35.2	51.7	33.2	38.4
Westland	--	46.0	50.2	53.9	52.1	--	24.4	29.0	26.7	50.3	32.1	41.3
Midland	--	--	39.4	37.1	38.3	--	39.4	28.1	33.8	54.4	21.9	35.4
Colby	--	--	--	53.7	--	--	--	17.6	--	35.4	24.0	32.7
Early Kalo	13.6 ³	27.0 ³	50.2	--	--	23.7	33.0	--	--	--	--	--
Double Dwarf Milo	--	42.0 ³	53.3	--	--	--	39.2	--	--	--	--	--
White Kafir	2	--	--	--	--	--	--	--	--	--	--	--
Dwarf Milo	11.9 ³	--	--	--	--	--	--	--	--	--	--	--
Sooner Milo	11.8 ³	--	--	--	--	--	--	--	--	--	--	--
Feterita	2	--	--	--	--	21.1	--	--	--	--	--	--
DATE PLANTED	JULY 1	JUNE 20	JUNE 20	JUNE 13		JUNE 20	JUNE 25	JUNE 11		JUNE 22	JULY 15	

¹Fifty-six pounds per bushel.
²Failed to mature due to early frost.
³Poor stand.

TABLE 2. YIELDS OF 15 VARIETIES OF GRAIN SORGHUM IN TESTS AT FIVE LOCATIONS IN CENTRAL ALABAMA

VARIETY	YIELD OF GRAIN PER ACRE IN BUSHELS ¹													AVERAGE ALL TESTS ² 1946
	LAFAYETTE			TUSKEGEE				PRATTVILLE				CAMP HILL	ALICE VILLE	
	1945	1946	AVERAGE 1945-46	1944	1945	1946	AVERAGE 1945-46	1944	1945	1946	AVERAGE 1945-46	1946	1946	
Early Hegari	35.7	25.7	30.7	23.0	10.9	24.4	17.7	25.2	30.9	32.1	31.5	51.6	28.0	32.4
Hegari	30.4	13.1	21.8	21.6	14.4	17.3	15.9	27.8	15.2	30.2	22.7	38.7	22.4	22.9
Sagrain	36.4	36.3	36.4	20.0	18.0	36.3	27.2	22.7	40.4	31.9	36.2	33.4	31.9	34.5
Martin's Combine	33.0	23.5	28.3	--	10.3	24.0	17.2	--	13.8	3	--	25.7	24.6	25.7
Plainsman	32.6	22.1	27.3	--	11.6	15.4	13.5	16.2	12.8	3	--	30.9	20.6	22.3
Bonita	26.8	26.3	26.6	24.5	20.2	31.4	25.8	17.1	13.6	10.9	12.3	31.4	18.4	26.9
Caprock	41.7	18.2	30.0	--	5.7	11.0	8.4	--	15.4	3	--	24.3	16.3	17.5
Imperial Kafir	27.2	11.8	19.5	--	14.2	16.4	15.3	--	24.6	32.2	28.4	43.8	22.2	23.6
Westland	32.5	21.3	26.9	--	17.1	23.0	20.1	--	8.2	3	--	24.8	18.1	23.2
Colby	--	18.4	--	--	--	17.2	--	--	--	3	--	24.4	21.6	20.4
Early Kalo	23.8	--	--	16.8	7.1	--	--	15.5	9.6	--	--	--	--	--
Double Dwarf Milo	32.7	--	--	--	5.1	--	--	--	23.7	--	--	--	--	--
White Kafir	--	--	--	--	--	--	--	11.3	--	--	--	--	--	--
Feterita	--	--	--	16.3	--	--	--	--	--	--	--	--	--	--
Midland	21.0	26.8	23.9	--	6.6	19.2	--	--	6.2	3	--	22.1	23.1	--
DATE PLANTED	JUNE 21	JUNE 26		JUNE 14	JUNE 21	JUNE 13		JUNE 20	JUNE 23	JUNE 25		JULY 8	JUNE 27	

¹Fifty-six pounds per bushel

²Prattville excluded.

³Destroyed by birds.

(7)

TABLE 3. YIELDS OF 28 VARIETIES OF GRAIN SORGHUM IN TESTS AT MAIN STATION, 1941-46

VARIETY	YIELD OF GRAIN PER ACRE IN BUSHELS ¹					
	1941	1942	1943	1944	1945	1946
Hegari	24.1	38.7	52.9	50.4	28.2	49.6
Sagrain	18.3	32.5	36.2	35.9	39.1	52.9
Feterita	19.8	29.1	37.4	28.1	--	--
White Kafir	15.5	29.1	19.1	38.9	--	--
Early Kalo	11.8	14.3	8.2	34.3	29.4	--
Midland	--	--	--	--	36.1	41.6
Grohoma	20.5	24.9	35.9	--	--	--
Shallu	10.8	26.1	23.1	--	--	--
Sooner Milo	17.5	23.3	14.9	--	--	--
Dwarf Milo	--	34.2	19.5	34.7	--	--
Early Hegari	--	--	56.5	51.4	37.5	52.0
Martin's Combine	--	--	14.6	36.6	33.3	44.3
Caprock	--	--	23.4	34.8	33.5	41.5
Plainsman	--	--	24.0	34.4	29.9	35.1
Bonita	--	--	32.8	35.9	41.9	46.2
Coe's Improved Kafir	9.3	4.8	--	--	--	--
Imperial Kafir	--	--	--	--	33.8	42.4
Colby	--	--	--	--	--	33.0
Club Kafir	--	22.8	--	--	--	--
Highland Kafir	--	10.2	--	--	--	--
Pink Kafir	--	19.0	--	--	--	--
Red Kafir	--	24.5	--	--	--	--
Darso	--	--	27.0	--	--	--
Double Dwarf Milo	--	--	--	30.8	35.0	--
Westland	--	--	--	26.8	30.6	30.2
Atlas Sargo (sweet sorghum)	9.6	--	--	--	--	--
Norkan (sweet sorghum)	--	18.6	--	--	--	--
Waconia (sweet sorghum)	--	--	4.3	--	--	--
Corn	11.1	40.0	9.9	13.6	15.2	39.2
Date of planting	June 15	June 15	June 15	June 15	June 20	June 17

¹ Fifty-six pounds per bushel.

TABLE 4. YIELDS OF 18 VARIETIES OF GRAIN SORGHUM IN TESTS AT FOUR LOCATIONS IN SOUTHERN ALABAMA¹

VARIETY	YIELD OF GRAIN PER ACRE IN BUSHELS ²													AVERAGE ALL TESTS 1946
	HEADLAND						BREWTON			MONROEVILLE			FAIRHOPE	
	1941	1942	1944	1945	1946	AVERAGE 1945-46	1945	1946	AVERAGE 1945-46	1945	1946	AVERAGE 1945-46	1945	
Early Hegari	--	--	9.3	45.3	44.7	45.0	9.0	11.0	10.0	21.4	9.2	15.3	25.3	21.6
Hegari	13.2	18.8	8.9	35.1	49.8	42.5	7.7	--	--	9.1	--	--	12.8	--
Sagrain	--	--	15.7	45.4	40.7	43.1	8.7	--	--	17.4	--	--	33.0	--
Martin's Combine	--	--	--	39.8	36.2	38.0	2.1	4.0	3.1	10.7	5.5	8.1	--	17.0
Plainsman	--	--	--	25.9	36.4	31.2	4.7	--	--	13.1	--	--	--	--
Bonita	--	--	10.5	31.1	43.8	37.5	7.1	--	--	16.2	--	--	--	--
Caprock	--	--	--	42.9	31.7	37.3	3.6	6.4	5.0	11.8	5.0	8.4	--	14.4
Imperial Kafir	--	--	--	24.3	34.6	29.5	--	3.1	--	--	4.5	--	--	14.1
Westland	--	--	--	28.8	24.7	26.8	--	--	--	--	--	--	--	--
Colby	--	--	--	--	16.5	--	--	5.3	--	--	6.3	--	--	9.4
Midland	--	--	--	27.0	9.5	18.3	3.3	2.2	2.8	7.3	4.1	5.7	--	7.0
Early Kalo	23.6	23.2	10.9	37.2	--	--	--	--	--	--	--	--	10.1	--
Double Dwarf Milo	--	--	5.9	37.0	--	--	--	--	--	--	--	--	29.5	--
Feterita	20.0	24.7	10.7	--	--	--	--	--	--	--	--	--	13.8	--
Grohoma	16.7	30.3	--	--	--	--	--	--	--	--	--	--	30.3	--
Shallu	28.7	29.3	--	--	--	--	--	--	--	--	--	--	9.3	--
Atlas Sorgo	8.4	--	--	--	--	--	--	--	--	--	--	--	--	--
White Kafir	--	21.0	--	--	--	--	--	--	--	--	--	--	13.1	--
DATE OF PLANTING	JUNE 16	JUNE 13	JUNE 12		JUNE 29		JUNE 18	JUNE 17		JUNE 20	JUNE 19			

¹Tests at Fairhope (Gulf Coast Substation) in 1944 and 1946 were damaged by birds and no yields were obtained.

²Fifty-six pounds per bushel.

(9)

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TABLE 5. YIELD OF GRAIN AND OF FODDER (STALKS AND HEADS) OF VARIETIES OF GRAIN SCRGHUM, MAIN STATION, 1944

VARIETY	YIELD ¹ PER ACRE		
	GRAIN <i>Bushels</i>	STALKS <i>Pounds</i>	TOTAL STALKS AND GRAIN <i>Pounds</i>
Hegari	50.4	13,228	16,050
White Kafir	38.9	10,732	12,910
Sagrain	35.9	10,665	12,675
Early Hegari	51.4	9,302	12,180
Dwarf Milo	34.7	7,859	9,802
Feterita	28.1	7,219	8,793
Caprock	34.8	5,604	7,553
Martin's Combine	36.6	5,393	7,443
Early Kalo	34.3	5,452	7,373
Bonita	41.9	4,654	7,000
Double Dwarf Milo	30.8	4,897	6,622
Westland	26.8	3,628	5,129

¹ Air dry.

TABLE 6. THRESHING PERCENTAGE OF GRAIN SORGHUM VARIETIES AT SIX LOCATIONS IN ALABAMA

VARIETY	THRESHING PERCENTAGE ¹							AVERAGE
	AUBURN	ALEXANDRIA	TUSKEGEE		PRATTVILLE	LAFAYETTE	HEADLAND	
	1944	1944	1946	1944	1944	1946	1944	
Hegari	78.3	79.8	65.5	77.7	68.1	51.0	69.7	70.0
Early Hegari	75.1	75.9	67.6	73.1	65.0	54.1	60.0	67.3
Sagrain	72.7	65.1	69.1	70.3	67.2	68.6	62.2	67.9
Early Kalo	74.4	72.3	--	68.0	63.4	--	70.7	69.8
Feterita	78.4	68.5	--	64.4	52.2	--	66.3	66.0
Bonita	76.7	78.2	71.1	72.1	--	65.6	64.3	71.3
White Kafir	71.7	--	--	--	55.3	--	--	63.5
Plainsman	68.6	--	69.0	--	57.2	46.9	--	60.4
Double Dwarf Milo	66.9	--	--	--	--	--	54.3	60.6
Martin's Combine	70.9	--	76.7	--	--	53.0	--	66.9
Caprock	68.1	--	59.0	--	--	41.0	--	56.0
Dwarf Milo	69.4	--	--	--	--	--	--	69.4
Westland	66.3	--	67.8	--	--	46.7	--	60.3
Imperial Kafir	--	--	55.7	--	--	24.9	--	40.3
Midland	--	--	65.7	--	--	55.0	--	60.4
Colby	--	--	73.2	--	--	44.8	--	59.0

¹Threshing percentage was obtained by dividing the weight of the grain by the weight of the heads. This percentage will vary depending on the length of the stalk left attached to the head. In the above cases, from 2 to 4 inches of stalk was left on the heads.

TABLE 7. COMPARATIVE YIELDS OF GRAIN SORGHUM AND CORN WHEN PLANTED AT DIFFERENT DATES, MAIN STATION

VARIETY	YIELD OF GRAIN PER ACRE ¹ WHEN PLANTED EARLY, BUSHELS			
	DATE PLANTED			
	MAY 4, 1926	APRIL 26, 1927	MAY 31, 1929	AVERAGE
Sagrain	19.3	19.8	23.1	20.7
Darso	10.2	15.9	22.7	16.3
Corn	36.2	19.4	21.3	25.6

VARIETY	YIELD OF GRAIN PER ACRE ¹ WHEN PLANTED LATE, BUSHELS						
	DATE PLANTED						
	JUNE 15 1941	JUNE 15 1942	JUNE 15 1943	JUNE 15 1944	JUNE 20 1945	JUNE 17 1946	AVERAGE
Sagrain	18.3	32.5	36.2	35.9	39.1	52.9	35.8
Hegari	24.1	38.7	52.9	50.4	28.2	49.6	40.7
Corn	11.1	40.0	9.9	13.6	15.2	39.2	21.5

¹Fifty-six pounds per bushel.

TABLE 8. YIELD OF GRAIN SORGHUM VARIETIES PLANTED ON DIFFERENT DATES, MAIN STATION, 1946

VARIETY	PLANTED JUNE 18		PLANTED JULY 5		PLANTED JULY 15	
	BUSHELS PER ACRE	DATE HARVESTED	BUSHELS PER ACRE	DATE HARVESTED	BUSHELS PER ACRE	DATE HARVESTED
Hegari	56.4	Oct. 16	40.3	Oct. 24	22.3	Nov. 12
Imperial Kafir	41.1	Oct. 16	29.0	Oct. 31	13.5	Nov. 12
Early Hegari	50.6	Oct. 1	45.5	Oct. 16	33.1	Oct. 31
Caprock	38.4	Oct. 11	27.4	Oct. 31	26.6	Nov. 12
Martin's Combine	44.4	Oct. 1	36.3	Oct. 24	27.3	Nov. 12
Plainsman	32.3	Oct. 1	22.5	Oct. 16	18.5	Nov. 12
Westland	31.7	Oct. 1	25.3	Oct. 16	13.6	Nov. 12
Midland	46.6	Oct. 1	28.9	Oct. 24	15.6	Nov. 12
Colby	36.9	Oct. 1	25.9	Oct. 1	15.5	Oct. 16