

Double Cropping Sorghums

in the Salt River Valley

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Sorghums can be grown successfully almost anywhere in Arizona. Sorghums are now grown on more than 180,000 acres in the state and double cropping (often called ratooning) may move sorghums another step forward in economic competition with other crops in the lower elevations of Arizona.

Double cropping should be attempted only at elevations under 2,000 feet. The second crop has added a ton of grain per acre to the annual yield; and 6,000 pounds total yearly grain yield of Double Dwarf 38 milo per acre is the usual thing at the University experimental farm near Mesa.

Three Alternatives

A grower who follows a double-cropping system in producing grain sorghums has three alternatives: (1) to produce two crops that are suitable for seed, or for feed, or for either if the season is favorable, (2) with a less-favorable season, produce two crops with one seed and one feed crop or one seed and one silage crop, (3) two silage crops.

Usually 70 percent of the yield is from the first cutting; however, not all varieties respond the same as Double Dwarf 38. D. D. Yellow Sooner, CBR Milo, and regular Hegari have given high grain yields.

Hegari is the only variety that can be grown satisfactorily as a combination silage and grain crop, or for a double cropping of silage. The other varieties shown in the table are grain varieties not suited for silage production. Caprock

Yield of Double-Cropped (Ratooned) Sorghums Grown at the University Experimental Farm, Mesa, Arizona, 1950-55

Variety	Percentage harvested 1st cut	Average grain yield as per cent of DD 38 (6404 lbs. acre)
Double Dwarf 38 Milo	73	100
D. D. Yellow Sooner	64	109
CBR Milo	67	121
Hegari (regular)	60	104
Plainsman	83	96
Martin	74	90

and Plainsman are good producers for a single crop but are slow to mature and dry out—making a second crop doubtful. Martin is a low producer and should not be considered in this program.

The crop can be removed and safely stored when the moisture level has reached 15 percent. It is essential that the first crop be matured and harvested in early August so that regrowth for the second crop can be started. Data on the type of heads produced on ratooned plants show that 6- to 8-inch stubble produces heads of fair size and yield. Heads on plants of combine stubble (18-24 inches) are produced more quickly than those from the low-cut stubble, are more numerous, but are usually rather small.

The Payoff

The payoff of the double cropping of sorghums is in the pounds of grain per acre. The longer the growing season (240-day minimum) the greater the opportunity for high production under double cropping. The crop, therefore, should be planted when the soil temperature is 65° or more and before April 1, because of the length of time required to mature the first crop and dry the seed to 15 per cent moisture. The April 1 planting should permit an early August harvest and allow time for a second crop before frost time.



Row width and planting rates are also not to be overlooked. Varieties, such as D. D. Yellow Sooner, that tiller little can be planted in 18- to 20-inch rows at approximately 8 pounds of seed per acre. Do not have the planting rate too heavy as the stalks would be small and weak and breakage could be detrimental during the summer rainfall period. Profusely tillering varieties such as Hegari should be planted in 36- to 40-inch rows at the rate of 6 pounds per acre.

Although sorghums are traditionally drouth resistant, *never let the crop suffer for water*. Shortage of water during the blooming stage may cause blasting of the heads. Excess water at maturity will encourage branching and tillering which will interfere with harvesting operations of a grain crop and prevent the heads from drying properly. Branching and tillering are to be encouraged if the crop is for silage.

Double Use Takes Skill

Double use of the land requires considerable production skill. In 1955, about 800 pounds of grain paid for the additional expense at the University Farm. To expect an extra ton of grain or its silage equivalent is entirely reasonable if a grower will:

- (1) Plant as early as possible (before April 1) with high-quality, treated seed.
- (2) Fertilize according to soil fertility—and always apply at least 100 pounds of nitrogen to the first and 50 pounds to the second crop.
- (3) Never let the crop suffer for lack of water.
- (4) Harvest the first crop as soon as the grain moisture is 15 percent.
- (5) Plant non-tillering varieties in 18- to 20-inch rows at approximately 8 pounds of seed per acre. Tillering varieties should be grown in 36- to 40-inch rows planted at the rate of 6 pounds per acre.

Sorghums respond to applications of nitrogen of 100 pounds per acre applied at or before planting time. A second application of at least 50 pounds of nitrogen fertilizer at the start of the second crop in August will usually be profitable with most varieties. Fertilizer application rates above the amounts recommended brought profitable returns at the Mesa Farm in 1955.