Hybrid Sorghum For Arizona

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"I wish those fellows would hurry up with hybrid sorghums; I want to get in on the high yields also" is an often heard remark among sorghum growers. Three questions usually are asked: (1) Is there a hybrid sorghum for Arizona? (2) Does anyone know what type of hybrid is best adapted to the various locations? and (3) Does the choice of the hybrid to grow require any special consideration? The answers to the three questions are: Maybe, possibly and surely.

Preliminary data from the 1956 research program of the University Agricultural Experiment Station indicate that the grower has only two groups of hybrids from which to choose. If the grower wants to produce a single long season crop, then he should select a hybrid from the medium-late maturity group which includes Texas 660, Kansas 2209, Kansas 2210, Nebraska 2, and DeKalb F-62. If a short season catch crop or double crop is desired, then he should plant a hybrid from the medium-early group such as Texas 610, Kansas 2211 and DeKalb D-50.

A point to be emphasized is DON'T JUST BUY A HYBRID—KNOW WHAT IT IS! Ask your county agent, or experiment station, and deal with a reputable seed dealer.

Four Maturity Groups

Some 20 hybrids of four maturity groups were grown with five standard varieties in replicated yield tests in 1956. These have been divided into maturity groups as follows: (1) *Early*—those using Redbine 60 as a pollinator and having similar drying characteristics, (1a) *Early*—those comparable to Combine Kafir 60 in habit. (2) *Medium-early*. Combine 7078 is the male parent in most cases and has maturity characteristics similar to Martin, (3) *Medium* which is a group similar to Midland and Redlan, and (4) *Medium-late* group which uses either Plainsman or Caprock as the pollinator.

HYBRID SORGHUM YIELDS IN ARIZONA-1956

LOCATION	Plainsman (lbs./acre)	MATURITY TYPE OF HYBRIDS (Expressed as percentage of Plainsman) Early	Early	Med-Early	Medium	Med-Late
Willcox	4467	84	89	101	110	115
Yuma	2221	103	97	112	102	137
Mesa (Test 1)	3286	79	79	88	89	95
Mesa (Test 2)	2950	108	....	105	102	114
All Location Average	3231	91	90	101	101	113

*The following should be pointed out:

1. An increase of 10% in yield is enough to be profitable.
2. Those hybrids maturing later than the medium-early type, such as those pollinated by Combine 7078, are too late for double cropping, etc.
3. When the yield of the medium early maturity group is equivalent to a standard variety as a single crop, then the hybrid has the advantage when short season crops are desired.
4. Plainsman is not equally well adapted at all locations.

The data in this table point out that there is only one group of hybrids to suggest where a single long season crop is grown. Also, when length of growing season is the factor, then the medium early group is the choice. The other groups are not suggested at present.

PROS AND CONS OF HYBRIDS

Pros

1. Hybrids have high yield potentials. This one factor alone is sufficient reason for growing them in preference to standard varieties. The table indicates that phenomenal increases cannot be expected every time and with a wrong choice the grower will lose money.

2. Hybrids will be tailor-made for given environmental conditions. Texas 660, Kansas 2209, Kansas 2210, Nebraska 2, Texas 650, and DeKalb F-62 show the greatest promise as the best group of hybrids for a single crop throughout Arizona. Those from the medium-early group (usually Combine 7078 pollinated) such as Texas 610, Kansas 2211, and DeKalb D-50 are the best choices for catch crops, double crops and possibly high altitude short season areas.

Cons

1. Hybrids are new in this state. 1956 was the first test year.

2. Hybrids differ in response in the different areas. The hybrids listed are only suggestions and tests should be made before large scale plantings are made.

3. Hybrids have mixtures present. Commercial production is relatively new and isolation has not always been sufficient. The rogues are probably more unsightly than detrimental.

4. The present hybrids were not bred for Arizona and if they produce well it is due either to the universal adaptation nature of the hybrid or good luck.

How About the Future?

What can we expect in the future for Arizona? The meager data of 1956 point to the advantage of utilizing the entire growing season. Other combinations of male steriles and pollinators have produced experimental hybrids that were tested in 1956 and these exceeded the yield of even the medium late maturing group we now have.

What to Expect

If these data have meaning, then the following can be expected:

1. There are hybrid sorghums available that should yield as much or more than the standard varieties.

2. Hybrids that utilize most of the growing season have an advantage when grown as a single crop.

3. Yield responses differ. Test plantings should be made before planting the entire acreage.

4. Improved hybrids in Arizona's future? Yes!

Six crop scientists of the UA College of Agriculture staff study hybrid sorghums at the Mesa station.