

HISTORY OF ARIZONA HIGH SUGAR YIELD  
AWARD WINNERS

Robert Dennis, University of Arizona  
and  
Kay Allen, Amstar Corporation  
Spreckels Sugar Division

Each year at the membership banquet, the Arizona Sugarbeet Growers Association and the University of Arizona present an award plaque to the grower in each beet-growing area that produced the highest yield of sugar per acre during the previous growing season. For the period 1972-1975, each individual contract was considered as an entry. Beets grown and delivered on that contract served as the basis for determining the winning grower. For the crops harvested in 1976 and thereafter, all of a given grower's beets in the production area are included in the determination of that grower's average per acre sugar yield.

Table 1. High Sugar Yield Award Winners in Arizona, 1972-1978

Area	Year	Growers	Sugar Yield (lbs/A)
Yuma	1973	Archie Mellon	10,465
	1974	Archie Mellon	12,965
	1975	Lee A. Consaul Co. Inc.	10,390
	1976	Barkley Co. of Arizona	8,910
	1977	Lee A. Consaul Co. Inc.	9,590
	1978	Clarence Phillips Farms, Inc.	11,010
Buckeye	1972	Milo R. Smith	9,090
	1973	W.A. Heiden and Son	9,215
	1974	W.A. Heiden and Son	11,775
	1975	John E. Fornes	9,875
	1976	W.A. Heiden and Son	11,995
	1977	Hayden Farms, Inc.	9,715
	1978	W.A. Heiden and Son	9,880
West Maricopa	1972	Wilbur Bushong	8,050
	1973	F.C. Layton and Sons	7,765
	1974	C.P. Gould	10,250
	1975	C.P. Gould	8,075
	1976	F.C. Layton and Sons	11,825
	1977	Abel Brothers	10,315
	1978	F.C. Layton and Sons	10,930
East Maricopa	1972	Joe C. Cooper	9,540
	1973	James Sossaman and Son	9,735
	1974	Layton Farms	12,090
	1975	Richard E. Evans	10,095
	1976	Hoopes and Co.	10,665
	1977	Finley Ranches	9,705
	1978	Valley Stake Welfare Farm	8,420
Pinal	1972	Carlotta Gilbert	7,210
	1973	Howard Holland	8,145
	1974	Philip C. Hanson	8,380
	1975	Glenn Lane	9,180
	1976	Glenn Lane	8,025
	1977	Signal Park Farms	8,270
	1978	Empire Farms Corporation	7,268

Willcox	1972	P.W. Brown	9,360
	1973	Earl Moser	8,255
	1974	H.W. Peterson	7,615
	1975	Alvie L. Holmes	9,115
	1976	Alvie L. Holmes	7,895
	1977	H.W. Peterson	8,230

### Sugarbeet Variety Tests at the Mesa Farm

John M. Nelson  
University of Arizona

Sugarbeet variety improvement in the United States is a cooperative undertaking of the sugarbeet industry, the U. S. Department of Agriculture and state agricultural experiment stations. In Arizona, the Agricultural Experiment Station does not conduct breeding work on sugarbeets. However, the University of Arizona does cooperate with Spreckels Sugar Division of Amstar Corporation and other sugar companies in testing lines and hybrids that may have potential for central Arizona.

Progress has been made by plant breeders and geneticists in developing varieties resistant to many of the diseases affecting sugarbeets. In Arizona, one of the most serious diseases has been virus yellows. A breeding program initiated in 1955 led to the development of US H9, a hybrid with moderate yellows resistance that has been used extensively in Arizona. Another disease of some importance in Arizona that has received the attention of breeders is the soft rot caused by Erwinia. Both Amstar Spreckels and the U. S. Department of Agriculture have developed lines with some resistance to this rot.

One objective of Amstar Spreckels' breeding program that is of special interest to Arizona growers is the improvement of bolting resistance. Varieties for use in central Arizona must have a higher level of bolting resistance than those for most other growing areas because of the winter growing season. US H9B, an excellent yielding variety does not have sufficient bolting resistance for early September plantings. Amstar Spreckels' efforts have led to the development of S-445H, a variety with bolting resistance superior to that of US H9B.

A variety testing program was initiated at the Mesa Farm in 1968. The entries in this years tests are limited to Amstar Spreckels' lines and hybrids because of lack of interest by other sugar and seed companies. Tests were planted on two dates, September 15 and October 13, 1978, and were harvested in late June. Ten experimental lines and hybrids were evaluated in each test. The source and characteristics of each entry are given in Table 1.

### Results

Sugar yields, root yields, sucrose percentages and bolting percentages for entries in the tests are shown in Tables 2 and 3. When planting was in September, the experimental lines H75255 and H76316 produced statistically higher sugar yields than S-445H. There were no significant differences among the entries in root yield or sucrose percentages in the September test. The lines H75255 and H76316 appeared to have bolting resistance similar to S-445H and superior to US H9B1.

In the October planted test, H75255 produced higher root and sugar yields than either US H9B1 or S-445H. There were no significant differences among entries in sucrose percentages. US H9B1 and the other lines and hybrids tested have adequate bolting resistance for use in October plantings.

A comparison of the average yields and sucrose percentages of the commercial hybrids and experimental lines, H75255 and H76316, for the 1977-78 and 1978-79 seasons, is shown in Table 4. The two experimental lines have produced high root and sugar yields and appear to have bolting resistance similar to S-445H. Root and sugar yields of US H9B1 and S-445H have been similar in five years of testing.