

Yellow and White Corn Variety Trials in Cochise County, 1993

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Abstract

Ten yellow and twelve white corn hybrids were compared in check controlled strip trials in Cochise county. The best hybrids of both types of corn yielded just over 10,000 pounds per acre. These yields were considered very good for the white hybrids.

Introduction

The most recent corn varietal evaluations in the Sulphur Springs Valley of Arizona had been on the Dunlap (1) and Johnson (2) farms north of Willcox where yields of 13,000 and 14,000 pounds per acre are commonly seen. The most recent evaluation south of Willcox, where yields run 3,000 to 4,000 lower than in the north, was done in 1989 on the Ed Curry farm (3). So, it was time to evaluate corn varieties in this southern region again. Incidentally, none of the yellow corn hybrids evaluated in this test were commercially available in 1989.

Materials and Methods

Ten yellow and twelve white corn hybrids with maturity centering around 120 days were selected to test on the Dick Kester farm in the Sunizona area of Cochise county in 1993. Plots were 8 rows wide (rows on 30 inch centers) and ran the full length of the center pivot. The varieties were not replicated but check plots were run between test varieties to remove the field variability. The yellow and white corn studies were done on separate circles with Pioneer 3162 being the field variety for the yellow corn trial and Pioneer 3281W the field variety for the white corn trial. Plots were planted with a John Deere 8-row plateless planter. The crop histories of the two fields are given below:

Crop History for Yellow Corn Trial:

Previous crop: Corn
Soil type: Sandy loam
Planting date: 24 April 1993 Rate: 32,000 seeds per acre
Fertilizer: 200 lbs/ac 11-53-0 at planting
Herbicide: Dual
Insecticide: None
Irrigation: Center pivot, ca. 40 acre inches
Harvest date: 14 October

Crop History for White Corn Trial:

Previous crop: Popcorn
Soil type: Sandy loam
Planting date: 23 April 1993 Rate: 34,800 seeds per acre
Fertilizer: 200 lbs/ac 11-53-0 at planting
Herbicide: Dual
Insecticide: None

Irrigation: Center pivot, ca. 40 acre inches
Harvest date: 12 October

At harvest time, the white corn plots were harvested and weighed in a weigh wagon with moisture and bushel weights being determined with field instruments. The weigh wagon broke down at the beginning of the yellow corn harvest so those plots were placed in bob-tailed trucks and run to a nearby elevator where plot weights, moistures and bushel weights were determined. Population and lodging counts were made in the fields immediately before harvest.

Results and Discussions

Weather has a great influence on corn yields and the best way to compare years is look at yields from one year to the next. Our best comparison is the National Corn Yield Contest sponsored by the National Corn Growers Association (4, 5). Ted Johnson was the Arizona winner the past three years with the same corn hybrid, his yields were 270.3, 256.5 and 261.4 bu/ac for years 1991, 1992 and 1993, respectively. All of these years were exceptional corn years, but we must remember that our test site does not have as favorable a climate as Ted Johnson's farm. Table 1 has the yields and other agronomic data for the yellow corn trial. The top seven varieties yielded reasonably well with yields over 10,000 pounds per acre. Pioneer 3162 came in at the bottom of the trial, which is not normally the case. It had the best bushel weight of the entire group but the lowest plant population. This latter factor is probably what decreased its yield. Different cultivars varied in their susceptibility to lodging, four of the hybrids were perfect in this regard and Pioneer 3163 seemed to have the worst problem.

Table 2 has the yield and agronomic information for the white corn trial. With a premium for white corn, the top hybrids here produced more income than any of the yellow corn hybrids. The top three or four varieties were quite competitive, but Pioneer 3281W probably had the edge because of its low moisture content at harvest. The javelina taste panel in the plots had a preference for Vineyard and secondarily for Pioneer 3428W, which also had a lodging problem.

References

1. Clark, L.J. and E. Schwennesen. 1992. Corn Hybrid Evaluations in Northern Cochise County, 1991. Forage and Grain, A College of Agriculture Report, The University of Arizona, Tucson. Series P-92, pp. 43-44.
2. Clark, L.J. and E. Schwennesen. 1991. Corn Hybrid Evaluations in Cochise and Southern Graham Counties, 1990. Forage and Grain, A College of Agriculture Report, The University of Arizona, Tucson. Series P-90, pp. 91-93.
3. Clark, L.J. and E. Schwennesen. 1990. Corn Hybrid Evaluations in Cochise County, 1989. Forage and Grain, A College of Agriculture Report, The University of Arizona, Tucson. Series P-84, pp. 94-98.
4. *1994 Corn Yield Guide*, Published by the National Corn Growers Association, St. Louis, MO 63141.
5. *1992 National Corn Yield Contest*, Published by the National Corn Growers Association, St. Louis, MO 63141.

Table 1. Yellow corn yields and other agronomic information on a variety trial planted on the Kester farm in Cochise county, 1993.

Hybrid	Yield ¹ lbs/ac	Bushel Weight	Percent Moisture	Percent lodging	Plant population
Germain 3114	10610	61.0	13.0	0.0	28373
NK 7989	10500	61.5	13.0	0.0	28373
NK 7772	10391	60.5	14.1	3.6	30555
Funks G4693	10351	60.5	15.2	8.3	26190
NK 7816	10231	62.0	13.5	7.4	29464
Cargill 9027	10205	61.5	13.8	0.0	25099
Pioneer 3163	10169	61.0	13.5	14.8	29464
ICI 8272	9672	61.5	16.2	7.4	29464
DeKalb 652	9301	59.5	14.9	8.7	25099
Pioneer 3162	8809	63.0	14.8	0.0	24008
Average	10,023.90	61.20	14.20	5.02	27,608.90

1. Yields are recorded as pounds per acre adjusted to 15% moisture.

Table 2. White corn yields and other agronomic information on a variety trial planted on the Kester farm in Cochise county, 1993.

Hybrid	Yield ¹ lbs/ac	Bushel Weight	Percent Moisture	Plant Population
ICI 8122W	10631	57.5	16.6	26190
Pioneer 3281W	10257	59.7	14.7	24008
NK 7752W	9905	58.5	15.6	25099
Asgrow RX943W	9695	59.5	17.0	34920
Conlee 117W	9105	58.0	21.2	26190
Funks 4592W	8998	57.5	17.6	21825
ICI 8320W	8950	59.0	15.4	28373
DeKalb 703W	8022	58.0	16.2	13095
Asgrow RX951W	7754	58.0	21.6	25099
Pioneer 3288W	6574	55.0	23.2	21825
Vineyard*	5985*	58.5	18.0	22916
Pioneer 3428W	5391	55.0	23.2	32738
Average	8,438.92	57.85	18.36	25,189.83
Std Dev X 2	991.5	1.11	0.76	3333.8

* This plot had much javelina damage.

1. Yields are recorded as pounds per acre adjusted to 15% moisture.