

Safflower Variety Trial in Cochise County, 1993

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Abstract

Five safflower varieties were grown on the Terry Brothers Farm in Kansas Settlement to determine their yield potential and their oil content in 1993. No statistical differences were seen between the varieties and the yields were around 3000 pounds per acre with an oil content near 40%.

Introduction

Safflower prices had been in the \$300 per ton range for a couple of years and it was being grown and processed in the lower desert in Arizona. This activity had piqued the interest of growers in Cochise county, so this trial was organized to answer growers questions about yield and oil content of various safflower varieties.

Materials and methods

Similar to the testing done on the Safford Agricultural Center (1), five varieties (two from Cal West and three from SeedTec) were obtained for testing. The soil was prepared and rowed off in 40 inch beds prior to bringing the grain drill to the field. The plots were planted four rows per bed using the growers equipment and the crop was managed using their cultural practices during the growing season. A history of the important features in the trial is included below:

Crop History:

Cooperators: Terry Brothers Farm in Kansas Settlement

Previous crop: Watermelons

Soil type: Clay loam

Planting date: 1 March 1993 Rate: 22 lbs/ac (4 lines per 40" bed)

Fertilizer: 110 lbs/ac 11-52-0 at planting, 150 lbs/ac NH₃ + 80 lbs/ac N water run.

Herbicide: Treflan

Insecticide: Dimethoate for lygus

Irrigation: Furrow, watered up and 7 irrigations (ca. 4.5 acre feet)

Harvest date: 16 August

The plots were 26.7 feet wide and 1251 feet long and were replicated three times. The plots were harvested with an International combine with an axial flow cylinder and grain from each plot was weighed in a weigh wagon. Samples were taken from each plot to determine moisture and bushel weight. Replicate samples were combined to send for oil analysis.

Results and Discussion

Yields, oil content and other agronomic measurements are included in Table 1. There were no significant differences between any of the varieties in any of the variables measured. Yields of all varieties were in the acceptable range being around a ton and a half. Historical yields in Arizona are just over one ton per acre (2). Unfortunately, the laboratory had a problem with the oil analysis on Cal West 74, so no value is given. All of the other varieties had oil content very near 40%. Bushel weights, percent moisture at harvest, plant height and plant populations varied slightly, but not in a way to give one variety an advantage over another.

References

1. Clark, L.J. and E.W. Carpenter. 1994. Safflower variety by date of planting trial, Safford Agricultural Center, 1993. In this publication.
2. Dennis, R.E. and D.D. Rubis. 1966. Safflower production in Arizona. College of Agriculture Bulletin A-47, The University of Arizona, Tucson, AZ.

Table 1. Yields and other agronomic parameters for the safflower variety trial grown on the Terry Brother's Farm in Cochise county, 1993.

Variety	Yield* lbs/ac	Percent Oil	Bushel Weight	Percent Moisture	Plant Height	Plant Population
Cal West 74	3087	--	38.5	5.25	41.0	220220
Cal West 4440	3077	39.58	37.5	5.20	35.5	214669
SeedTec 555	3043	39.36	36.0	5.20	41.5	201714
SeedTec 501	2987	39.20	37.5	6.05	39.5	218373
SeedTec 541	2875	39.64	36.0	5.60	37.5	233175
Average	3013.8	39.44	37.1	5.46	39.0	217626
LSD (05)	328.9	--	6.30	1.71	7.29	90669.3
CV (%)	5.81	--	5.31	14.35	7.83	11.19

* Yields are expressed in pounds per acre corrected to 10% moisture.