

Chile Pepper Variety Trial in Greenlee County, 1993

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Abstract

A green chile variety trial was planted in the Duncan area of Greenlee county with eleven entries. Curry #9 was the top yielding variety with a yield over 15 tons per acre. Fruit of all varieties were characterized by length, width and taste qualities.

Introduction

Over the past several years neither the weather nor the prices have been favorable for cotton production in the Greenlee county area. Growers have been looking for an alternative crop that could provide a positive cash flow for their farms. The interest for chile in the Duncan valley increased greatly in 1991 when two mechanical pickers were purchased by growers in the valley. In response to growers requests for assistance, this variety trial and an associated fungicide and nematicide trials were instituted.

Materials and Methods

An area was blocked off at the bottom of one of the Lunt's chile fields south of the fairgrounds. The field had previously been rowed-off and pre-irrigated. Chile pepper varieties were planted on the tops of the beds after which the planter passed over the plots to cap the bed to preserve moisture for germinating. The following list of items characterize the experiment:

Previous crop: Cotton

Soil type: Pima clay loam

Planting date: 16 April 1993 Rate: 5 lbs/ac

Herbicide: Treflan

Fertilizer: 200 lb/ac 16-20-0 pre-plant, 15 gal/ac UN32

Insecticide: None

Irrigation: Furrow, approximately every 7 days during the peak growing season

Fungicide: None

Harvest date: 14 September

At harvest time, one or two of the better plants in the plot were picked by hand. The fruit were weighed as green marketable fruit, red marketable fruit and culls. Plant heights and linear space that the picked plants occupied were measured. Afterwards, the green fruit were counted, and measured to provide the data found in Table 1.

Results and Discussion

The experiment was far from ideal because the stand was sparse. In retrospect, the method of planting did not provide the precision depth of planting needed for a successful chile crop. An optimal plant population for chile plants would be around 14,500 plants per acre.

Yields and other agronomic measurements from the varieties are found in Table 1. The varieties are listed in order of marketable fruit. Both red and green fruit were included in the marketable category considering that a grower would have harvested earlier than we did if he had a green fruit contract. The second column, "% Grn", gives an indication of the earliness of the variety. The lower the number in this column, the earlier maturing the variety. "% Cull" indicated the percent of fruit from the entire harvest that had to be discarded because of bad spots. Most of the defects were from blossom-end rot. High values in this column show an intolerance by the variety for the conditions in the area. The next 5 columns give an indication of the average length of the fruit by variety. For fresh market, varieties with fruit 7 to 8 inches or greater are desirable, whereas packers probably prefer fruit around 6 inches in length. Fruit width is also an important consideration, and these values are shown in the third from the last column. The Curry varieties and Joe E. Parker and Sonora appear to be the widest fruit and Sandia the narrowest.

Along with the variety testing, a seed enhancement study was made. Seed from a single lot of NM 64 was split by PetoSeed into two batches. One batch was treated with an enhancement process to improve seedling emergence, the other batch was left unaltered. Even though there were no statistically significant differences between the two batches, the enhanced seed had more plants per acre and produced a higher yield, earlier. This technology should be studied further to determine if it would pay for itself in Greenlee county.

Another factor important in chile production is the heat and flavor of the fruit. Costs to have that work done in a laboratory are too high for our project, so an independent tester provided the results in Table 2. Unfortunately, the highest yielding variety, Curry #9, sample was not tested at this site. Results of the fruit characteristics from Cochise and Graham counties (References 1 and 2) indicate that Curry #9 varied from "meaty and real warm" to "mild".

Acknowledgements

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References

1. Clark, L.J., R.E. Call and N.F. Oebker. 1994. Pepper variety trial in Cochise county, 1993. Vegetable Report of the College of Agriculture, The University of Arizona, Tucson, AZ. (In this publication.)
2. Clark, Lee J. 1994. Chile pepper variety trial in Graham county, 1993. Vegetable Report of the College of Agriculture, The University of Arizona, Tucson, AZ. (In this publication.)

Table 1. Yield and other agronomic parameters for chile varieties grown on the Lunt farm in Greenlee county, 1993.

Variety	Yld T/A	% Grn	% Cull	% 8"	% 7"	% 6"	% 5"	% <5"	Fruit Wdt	Plant Ht	Plant Pop
Curry #9	15.1	100	0	50.0	50.0	0.0	0.0	0.0	1.65	26.0	13939
Sandia	11.7	100	43.8	0.0	25.0	50.0	25.0	0.0	1.30	25.0	11286
Alpha-Curry	11.4	89.2	2.5	0.0	6.7	56.3	33.9	3.1	1.50	24.0	11326
Joe E. Parker	11.1	94.0	0.0	0.0	38.3	47.5	14.2	0.0	1.58	25.0	10506
Curry AZ20	10.9	93.5	0.0	12.8	31.4	29.7	26.1	0.0	1.61	26.5	9730
NM 64 Enhanced	10.0	91.7	8.7	8.0	49.0	34.7	8.3	0.0	1.45	23.5	10205
NM 64	9.8	96.6	4.7	12.5	40.7	38.2	8.6	0.0	1.48	28.5	8279
Curry #8	9.6	97.8	0.0	8.3	46.1	40.4	2.6	2.63	1.58	24.5	9409
Curry #10	8.8	88.2	10.5	75.0	0.0	25.0	0.0	0.0	1.70	22.0	9504
R. Nacky	8.1	93.6	14.2	11.5	30.8	45.5	12.2	0.0	1.45	26.0	7477
Sonora	7.9	100	10.0	40.0	60.0	0.0	0.0	0.0	1.65	28.0	6745
Average	9.53	79.5	7.86	18.2	31.5	30.6	10.9	0.48	1.41	23.3	9034
LSD (05)	3.8	14.7	9.9	22.5	33.9	36.4	22.3	3.5	0.19	4.22	3652

Yld T/A = Yield of marketable red and green chile in tons/acre.

% Grn = Percent of marketable fruit that was green.

% Cull = Percent of the total harvest that was not marketable (mainly because of blossom-end rot).

% 8" = Percent of the green fruit that were approximately 8 inches in length.

% 7" = Percent of the green fruit that were approximately 7 inches in length.

% 6" = Percent of the green fruit that were approximately 6 inches in length.

% 5" = Percent of the green fruit that were approximately 5 inches in length.

% <5" = Percent of the green fruit that were less than 5 inches in length.

Fruit Wdt = Width of the fruit at its widest point, in inches.

Plant Ht = Plant height in inches.

Plant pop = Plant populations estimated from linear space occupied by the few harvested plants.

Table 2. Fruit taste quality of green chile grown on the Lunt farm in Greenlee county, 1993.

Variety	Heat	Flavor	Quality
Curry #9	--	--	--
Sandia	X Hot	Good	--
Alpha Curry	Hot	Good	--
Joe E. Parker	Med Hot	Good	--
Curry AZ20	X Hot	Excellent	--
NM 64 Enhanced	Mild	Excellent	--
NM 64	Mild	Excellent	--
Curry #8	X Hot	Excellent	--
Curry #10	Mild	Good	Meaty
R. Nacky	Mild	Good	Meaty
Sonora	Mild	Good	Meaty