Onion Variety by Date of Planting Trial, Safford Agricultural Center, 1987

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SUMMARY

Twenty onion varieties were planted on two different dates in March at the Safford Agricultural Center. Yields up to 780 50-pound sacks per acre were harvested, with the early planting generally yielding slightly more than the later planting. The earlier planting generally had more jumbo and large onions and fewer medium and small onions than the later planting.

The highest yielding onions were yellow varieties compared to the two white and one red varieties, but premiums for the non-yellow onions at harvest compensated for the lower yields. Three intermediate-day onions were included in the test; they were out-yielded by many of the long-day varieties at both planting dates. Spring-planted, long-day onions can be successfully grown in the Safford valley with yields that are economically feasible.

INTRODUCTION

Onion variety trials grown on the Safford Agricultural Center in 1985 and 1986 (1, 2), have shown that spring-planted, long-day onions can produce economic yields in the Safford valley. This trial was planted to learn more about the effect of date of planting on the yield potential for several long-day varieties, and to evaluate a few new, intermediate-day varieties.

MATERIALS AND METHODS

This variety trial was performed on the Safford Agricultural Center, at an elevation of 2,950 feet above sea level. Row lengths were 10 feet; 4 lines of onions were planted on each 40-inch bed. After stands were established, the plants were thinned to a 4-inch spacing.

Crop History:
Soil Type: Grabe clay loam
Previous Crop: Wheat
Tillage: Disced, ripped twice, disced, bedded, rolled, and shaped
Experimental Design: Randomized complete block
Planted: 5 March and 26 March 1986, watered up
Herbicide: None
Fertilizer: 100 lbs/ac urea and 200 lbs/ac 16-20 pre-plant, 100 lbs/ac urea on 13 May side-dressed
Irrigation: Approximately weekly from 6 April to 14 August
Insecticides: None
Harvest: 28 August and 14 September
Sorted and Graded: 22 September

RESULTS

Table 1. Harvest Data and Plant Populations for Onion Varieties Planted March 5th, 1987 on the Safford Agricultural Center.

Source	Variety	% S	% M	% L	% J	Yield (sx/A)	% Shrink	Plant Population (Plants/A)
Crookham	XPH 83N128	2.7	19.4	43.1	34.8	781	11.7	115003
Asgrow	Inca	2.3	27.9	58.0	11.9	694	10.4	115003
Crookham	Dai Maru	0.7	21.6	53.4	24.4	689	8.2	96053
Crookham	Ringmaker	1.9	15.6	50.6	31.9	687	12.4	94746
Asgrow	Armada	2.3	19.4	59.8	18.5	686	12.1	119359
Crookham	Sweet Amber	4.1	28.7	56.2	10.9	678	12.2	135041
Crookham	Big Mac	1.8	35.2	60.2	2.7	650	11.8	130358
Sunseeds	Avalanche	5.6	32.7	54.8	6.8	636	13.2	134170
Crookham	Celebrity	5.5	34.1	53.6	6.8	616	14.8	141793
Sunseeds	Sunex	2.8	28.8	65.3	3.1	568	14.1	111082
Crookham	Atmn Beauty	6.3	42.7	48.6	2.4	563	13.2	132645
Sunseeds	Merit	3.1	30.7	48.0	18.2	552	7.7	100301
Sunseeds	Valdez	3.2	26.4	56.9	14.3	533	13.6	89519
Crookham	ErlyShippr	13.1	52.2	34.7	0.0	513	16.8	178711
Sunseeds	Midstar	1.7	31.0	58.8	8.5	512	6.3	101934
Asgrow	Peckham	1.6	26.5	58.8	13.1	497	16.0	81025
Sunseeds	Durango	4.9	32.1	33.9	29.0	480	14.3	97578
Sunseeds	Magnum	1.2	20.8	49.5	28.4	432	15.1	61422
Sunseeds	Cimarron	0.0	33.6	54.7	11.6	427	0.0	71223
Sunseeds	Tango	5.3	51.0	43.7	0.0	394	16.6	113696
	Average	3.5	30.5	52.1	13.9	579	12.0	111033

% S = percentage of the onions smaller then 1 3/4" in diameter.
% M = % of onions between 1 3/4" and 2 1/2" in diameter.
% L = % of onions between 2 1/2" and 3 1/4" in diameter.
% J = % of onions larger than 3 1/4" inches in diameter.
Yield is the number of 50 pound sacks per acre.
% Shrink is the loss in weight between harvest and sorting.
Plant population was determined by counting the number of onions harvested per plot and adjusting that to an acre basis.

Table 2. Harvest Data and Plant Populations for Onion Varieties Planted March 26th, 1987 on the Safford Agricultural Center.

Source	Variety	% S	% M	% L	% J	Yield (sx/A)	% Shrink	Plant Population (Plants/A)
Asgrow	Armada	6.4	39.0	48.1	6.5	684	4.1	158782
Sunseeds	Valdez	5.8	33.0	56.3	4.9	678	5.3	155188
Crookham	Dai Maru	5.1	32.8	59.1	3.0	672	3.9	189833
Asgrow	Inca	5.7	37.7	50.8	5.8	626	4.7	143318
Crookham	XPH 83N128	3.5	26.5	50.3	19.7	613	16.7	122190
Crookham	Sweet Amber	6.4	38.5	52.3	2.8	607	4.6	147347
Sunseeds	Durango	7.7	38.0	49.9	4.4	597	4.7	151594
Crookham	Ringmaker	7.1	36.5	52.4	3.9	586	5.4	142446
Sunseeds	Merit	8.6	43.0	46.2	2.3	578	5.3	147674
Sunseeds	Magnum	7.8	41.6	49.3	1.4	573	4.9	131338
Sunseeds	Sunex	8.6	43.2	46.7	1.5	570	4.0	133298
Sunseeds	Avalanche	13.3	49.6	37.1	0.0	546	5.5	170870
Crookham	Celebrity	9.3	43.9	44.3	2.4	533	5.3	141140
Crookham	Big Mac	8.7	42.4	47.3	1.6	533	6.1	150288
Crookham	Atmn Beauty	9.8	54.2	33.3	2.7	506	4.9	142773
Sunseeds	Cimarron	8.8	56.0	35.2	0.0	506	0.0	143100
Crookham	ErlyShippr	13.2	39.8	45.3	1.6	498	6.2	153555
Sunseeds	Midstar	6.0	43.1	48.2	2.6	444	0.0	108142
Asgrow	Peckham	6.5	27.7	51.0	14.8	420	5.4	80044
Sunseeds	Tango	10.4	69.8	19.8	0.0	277	9.43	102588
	Average	7.9	41.8	46.1	4.1	552	5.3	138275

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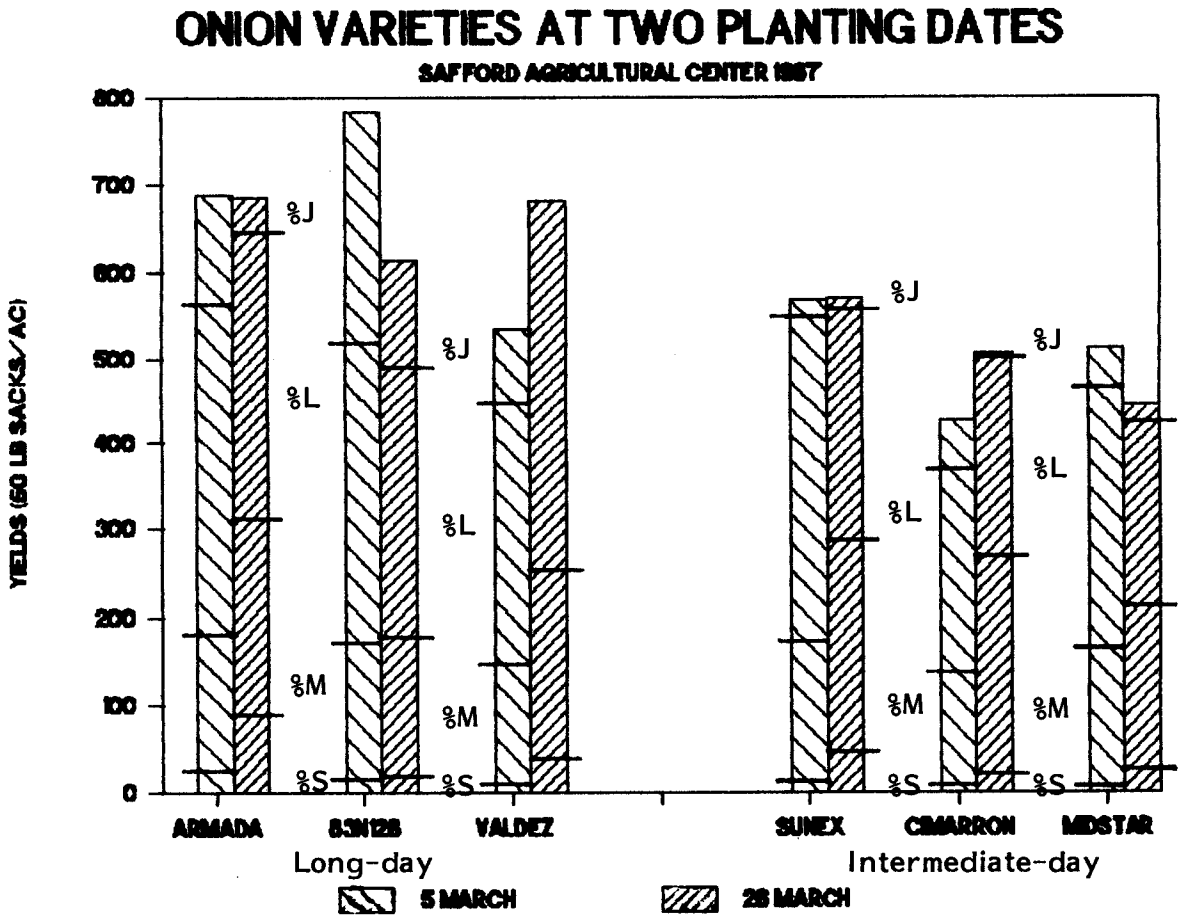

Figure 1. Yield Data on Several Long- and Intermediate-day Onion Varieties Planted at Two Dates in March on the Safford Agricultural Center.

DISCUSSION

The average yield from the earlier planting was 27 sacks higher than from the later planting; at 15 cents per pound, the early planting would translate into an increase of $200 per acre. Figure 1. shows that the picture is not that simple. Armada yielded about the same with either planting date; however, XPH 83N128 decreased 168 sacks and Valdez increased 145 sacks from early to late planting date. The intermediate-day varieties, Sunex, Cimarron and Midstar varied, in a similar way.

The final plant populations of most of the varieties were higher for the later planting date. Weather conditions were harsher in early March, and it was difficult to get a good stand with most of the varieties. As would be expected, the varieties with the lower plant populations generally had a larger percentage of large and jumbo sized onions.

The percent shrinkage was much higher on the early planting because of timing. The early planting onions were stored 25 days before sorting, but the late planting onion harvest was stored only 8 days . The yields were not as high as the 956 sacks reported in 1986 (1), but they are still respectable yields.

Total income per acre depends on the price of the product, as well as the grade and quantity. At the time of harvest, the wholesale price for medium to large onions was 15 cents per pound for yellow, 20 cents per pound for white, and 33 cents per pound for red onions. Avalanche and Midstar are white onions; Tango is a red onion; and all the rest of the varieties are yellow. These premiums for the non-yellow onions compensate for their yields being well below the leading yellow varieties. In a taste test, the white Midstar was judged the sweetest, mildest onion.

REFERENCES

1. Clark, Lee J., Fred Harper and L. Max Thatcher. 1986. Onion Variety Trial, Safford Agricultural Center. 1986 Vegetable Report, College of Agriculture, University of Arizona, Tucson, AZ. pp.76-80.

2. Clark, Lee J., Fred Harper and L. Max Thatcher. 1987. Onion Variety Trial, Safford Agricultural Center 1986. 1987 Vegetable Report, College of Agriculture, University of Arizona, Tucson, AZ. pp.30-31.