

(graph 1-A). Petiole cultures were negative except for about 2% of late infected plants, which appeared in one replication. Despite freedom from wilt, early season plant growth showed severe "fumigation induced" stunting. Upon recovery, plants grew luxuriantly and failed to mature. Yields consequently were depressed by an average of more than 200 lbs of lint per acre. Checks showed 10% of early season infection, 10% of early season infected plants that subsequently recovered, and from 30 to 40% of late season infected plants. Approximately 50% of the plants were wilt-free.

Second year

During the second year, the stunting disappeared from the fumigated plots and plants showed significant increased growth, (photo)—and an average yield increase of 200 lbs of lint per acre, based on two pickings. Seedling counts in 16 random 25-ft blocks showed that plant density—due to greater seedling emergence—ranged from 31,000 to 40,000 per acre in the fumigated plots, as compared with 15,000 to 29,000 in the checks. Early season infection in the fumigation plots was about 2%; late season infection ranged from 4 to 32% (graph 1-B). Crowding of plants in the fumigation plots and their lush growth may have adversely affected the yield.

Yields of individual plants of the four disease classes, and of entire plots were compared, (table). Healthy plants, despite crowding, produced an average of 50 gms of seed cotton per plant—a good 2.5-bale yield. Plants infected late (August 10 to October 10, which did not show late season collapse) produced yields equal to noninfected plants. Plants infected before July 14, and which did not recover, produced low yields of about 12 gms of seed cotton per plant—0.5 bales per acre. Occasional plants that recovered produced reasonably good yields, (graph 2).

On an individual-boll-weight basis (graph 2-inset), plants infected early in the season produced bolls which weighed an average of approximately 6 gms. The average weight of bolls on noninfected plants was 8 gms.

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Onion Production Of Dehydrator and For the West Side

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THERE has been considerable increase in the commercial production of onions on the West Side. In this study, both dehydrator and market onions were evaluated for variety differences, optimum planting times, bulb size, pungency, and length of harvest season at the West

Side Field Station near Five Points in 1971.

Market and dehydrator onions were planted on the following dates: January 12, March 5, March 25, April 27, and June 8. These trials did not show any significant differences in onion yields between plantings made from January 12 through March 25. Yield dropped considerably in the April planting; and the June planting was nearly all scallions (tables 1 and 2).

Location

These trials were conducted at a latitude of 36°N where many varieties of both short and long-day types do well. However, very few short-day types of onion were expected to do well at this particular location. All of the onions tested produced very acceptable bulbs with the exception of Crystal Wax.

Optimum times of planting and harvesting can be quite closely pinpointed with the dehydrator types of onion. The three highest yielding varieties were Sweet Spanish, San Joaquin, and Early Texas Grano, which were long-, medium-, and short-day types respectively.

In the dehydrator group the Asgrow strain of Southport White Globe (SPWG) and Seco (Asgrow) were significantly higher yielding in fresh weight. There were no significant differences between the strains of Niagara or Rogers. Other dehydrator varieties were insufficiently tested for valid comparisons to be made, but were lower yielding than the above-mentioned strains. Ferry Morse's strain of Southport White Globe did very well when planted in October and is well adapted to this area.

The dry weight varied considerably among the dehydrator varieties. In table

TABLE 1. EFFECTS OF DIFFERENT PLANTING DATES ON YIELDS OF DIFFERENT VARIETIES OF DEHYDRATOR ONIONS*

	Planting dates				Avg of first
	1/12	3/5	3/25	4/27	3 Dates
	Relative yields in tons per acre†				
SPWG—Asgrow	7.4	10.2	8.6	2.2	8.7
Seco	7.3	7.6	8.6	2.3	7.8
SPWG—Niagara	6.5	7.2	6.8	2.6	6.8
SPWG—Rogers	6.4	6.6	7.4	4.1	6.8
Avg. of Dehydrators	6.9	7.9	7.9	2.8	

* Planted on 30" beds, two rows per bed and thinned to 4" apart in rows.

† These yields must be considered to be 1/4 to 1/2 of yields expected under commercial conditions where multiple rows per bed are used.

TABLE 2. EFFECT OF DIFFERENT PLANTING DATES ON YIELDS OF DIFFERENT VARIETIES OF MARKET TYPE ONIONS

Variety	Planting Dates			
	1/12	3/5	3/25	4/27
	Yield in 50# sacks per acre			
Short Day				
Crystal Wax	228	307	277	134
Early Texas Grano	448	475	516	206
Medium Day				
San Felipe	449	425	508	215
San Joaquin	468	628	624	326
Long Day				
Australian Brown	411	349	270	203
Autumn Spice	200	316	232	183
Sweet Spanish	700	733	402	359
Avg. of Markets	415	462	404	232

TABLE 3. DEHYDRATOR ONIONS—RELATIVE YIELD AND DRY WEIGHT

	Average 3 Plantings (Jan.-March)	Average Dry Matter	Dry Matter Per Acre
	tons	%	tons
SPWG—Asgrow	8.7	14.1	1.23
Seco	7.8	20.5	1.60
SPWG—Niagara	6.8	20.6	1.40
SPWG—Rogers	6.8	19.5	1.33

Comparisons Market Types

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3 the average yield is multiplied by the average dry matter to give tons of dry matter per acre. The Asgrow strain drops from first to fourth place between fresh to dry weight per acre. Seco had the highest dry weight in tons per acre.

Bulb size was the same, on the average, from crops planted on January 12, March 5, and March 25, but there were more large and more small bulbs in the earlier planting. Pungency increased with dry matter for all varieties and did not change between early and late harvest for a variety.

Harvest dates for dehydrator types commenced around July 1 and continued until mid August. Field storage (by non-digging) could extend delivery until mid November. For the market types evaluated, mature bulbs could be harvested from mid June through mid August, but field storage was not suitable because of the danger of sunburn. Storage losses in a shed were mainly from weight loss and from a small amount of black mildew. Soft rot was practically non-existent.

October plantings mature only a few days earlier when planted in January. The value of obtaining larger bulbs must be weighed against the risk of more seeders and a 2 to 3 month longer growing season. November plantings had fewer seeders than October plantings. Short day types were preferred for November plantings.

Dry weight and soluble solids of dehydrator onions are shown in table 4. The Southport strains of Niagara and Rogers had dry matter ranging between 19 and 21%. Creoso, Dehydrator #14, and the Southport Desert strain had dry



General view of the onion variety trial at the West Side Field Station.

matter of 17%. The Southport strain of Asgrow ranged from 13 to 14%.

There was excellent correlation between dry weight and soluble solids for each harvest. The varieties have been plotted in the graph to show their relative position. The curve was equally efficient for both dehydrator and market onions.

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This summary was taken from the report, Dry Onion Quality and Planting Date, Dehydration, and Market Types, for the Western San Joaquin Valley (40 pp.) by the same authors. The complete report is available from the West Side Field Station, from the Kings County Extension Office, and from the Department of Vegetable Crops, U.C., Davis.

TABLE 4. DRY WEIGHT AND SOLUBLE SOLIDS OF DEHYDRATOR TYPE ONIONS

Dates planted Dates harvested	1/12 7/10	3/5 7/20	3/25 8/8	4/27 8/20
Variety and source† Analysis by replicate, except X‡				
Dry weight—per cent				
SPWG—Niagara	20.4a*	21.1a	20.3a	19.7b
SPWG, Asgrow	15.4b	13.2b	13.7b	14.8c
SPWG, Rogers	19.8a	—	19.1X	18.7X
Seco, Asgrow	—	—	20.5a	20.5a
Analysis from composite				
SPWG, Ferry Morse	—	—	—	—
SPWG, Desert	—	—	—	17.0
Dehy 14, Desert	16.1	—	17.8	18.2
Dehy 8, Desert	—	—	—	19.9
Creoso, Desert	20.5	—	21.4	—
Soluble solids—per cent				
Analysis by replicate, except X				
SPWG, Niagara	19.0c	19.8a	19.7a	18.5a
SPWG, Asgrow	14.3a	12.9b	12.8b	13.6b
SPWG, Rogers	18.0b	—	19.2X	17.6X
Seco, Asgrow	—	—	19.2a	18.9a
Analysis from composite				
SPWG, Ferry Morse	—	—	—	—
SPWG, Desert	—	—	—	16.2
Dehy 14, Desert	14.7	—	17.3	16.5
Dehy 8, Desert	—	—	—	18.6
Creoso, Desert	19.4	—	20.8	—

* For each column significant differences exist between values of different letter affixes.

† SPWG = Southport White Globe.

‡ Values marked with X were composite samples.