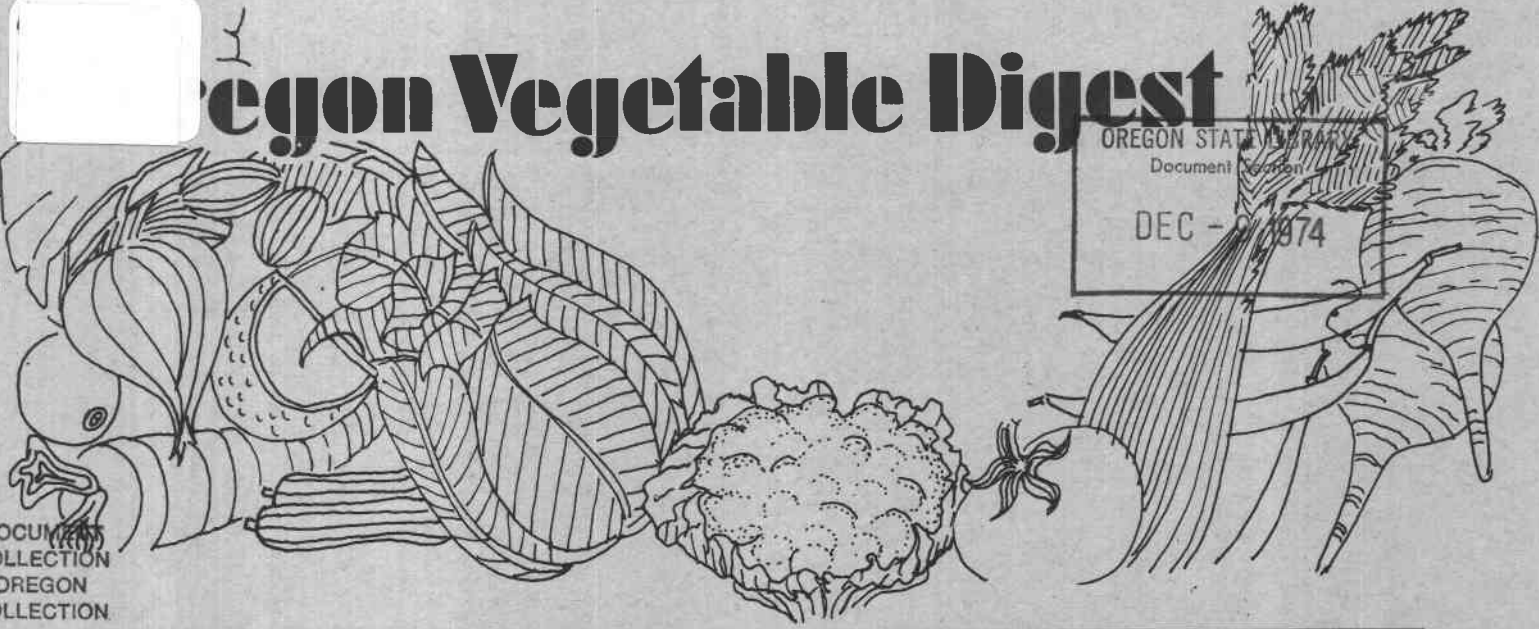


# Oregon Vegetable Digest

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## Tomato varieties tested at Corvallis

In 1974, a replicated variety trial was established at the Oregon State University Vegetable Research Farm, including varieties which have been recommended for several years on the basis of observation plots.

The trial included four varieties previously observed here and commercially available. The fifth, designated as 'Allen', is a variety developed by C. H. Allen of Vancouver, Washington, and is reported to be finding widespread favor among home gardeners there. All the varieties are of determinate habit with medium, compact plants and early to medium fruiting. This is considered to be the best type of variety for a main crop in the Willamette Valley.

Seed was planted April 1 in a heated greenhouse; transplants were set in the field May 9 in rows six feet apart. Each plot consisted of ten plants spaced two feet apart. There were four replications arranged in randomized blocks

with border plantings on all sides. Approximately 600 pounds of 8-24-8 fertilizer were banded prior to transplanting, half in the row and half in a blank row between the plant rows. No additional fertilizer was applied. Water was provided as needed, but was limited to one irrigation about every two weeks after the plants were established. About September 1, irrigation was discontinued though dry weather prevailed until the end of the trial.

Once or twice weekly, all fruits which were pink or more mature were harvested. Figure 1 shows weekly yields from August 14 until October 9 when picking was discontinued following a light frost. On the last picking, green fruits were picked and are included in potential yield, Table 1. Cracked fruits were counted but included with usable fruit in the yield data. Because of dry conditions during most of the harvest period, little cracking occurred except in the case of 'Allen'.

'Spring Giant' was the most productive variety, yielding significantly more than 'Heinz 1350' and 'Willamette E'. However, Figure 1 shows that 'Spring Giant' was nearly as late as 'Heinz 1350', the latest variety to come into production. 'Springset' was the earliest in yield pattern but tended to peak

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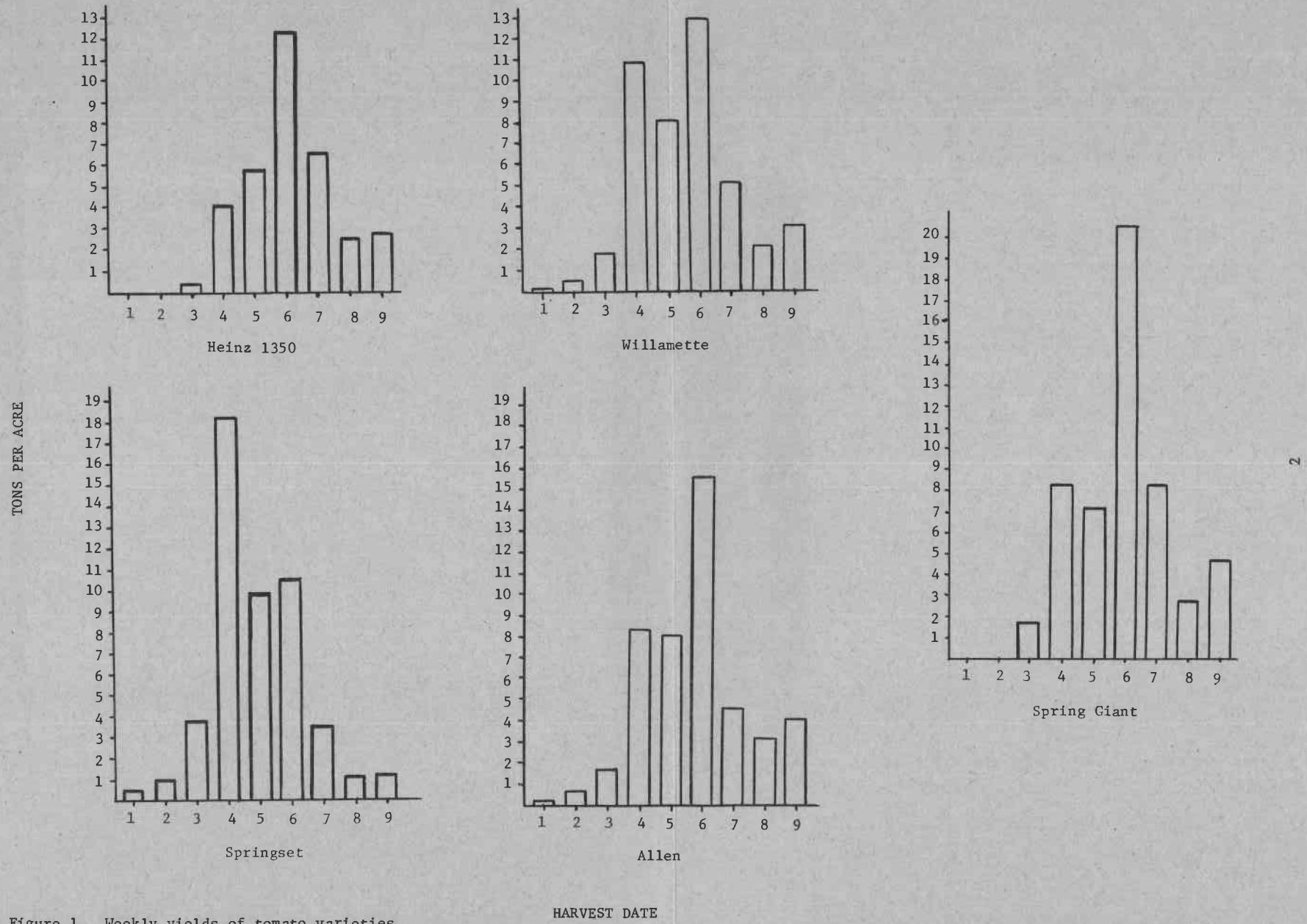


Figure 1. Weekly yields of tomato varieties.

Table 1. Yields of tomato varieties, Corvallis, Oregon, 1974<sup>1</sup>

Variety	Usable <sup>2</sup> yield	Green <sup>3</sup> fruit	Potential <sup>4</sup> yield	% cracked	Wt. culls	No. fruit/acre	Av. fruit wt. lbs.
Spring Giant	54.2	11.6	65.9	0.2	6.1	281,325	0.39
Springset	50.4	4.0	54.4	1.0	6.9	348,563	0.29
Allen	46.7	11.0	57.7	20.4	2.2	223,080	0.42
Heinz 1350	35.1	9.0	44.1	0.6	4.7	241,890	0.29
Willamette E	44.7	5.8	50.5	0.1	6.4	302,528	0.30

<sup>1</sup>Fruits were picked once or twice each week in pink to ripe stages. Usable yields include cracked fruit but not culls (small or misshapen). All data are means of four replications. Yields are in tons/acre.

<sup>2</sup>F-value for usable yield: 6.7 - significant at 1% level. LSD at 5% = 8.5 tons/acre; at 1% = 12 tons/acre.

<sup>3</sup>Balance of usable size, green fruit remaining on 10-9-74.

<sup>4</sup>Usable yield plus green fruit on last picking.

strongly with less seasonal spread than 'Willamette E' or 'Allen'. The largest fruits were produced by 'Allen' (Table 1 and 2). Cracking susceptibility was not adequately expressed in this trial because there was little rain or irrigation during the picking season. Results suggest, however, that cracking may be a serious problem in 'Allen' in wet weather.

Quality of the varieties was similar and generally good. All had good internal solidity. 'Heinz 1350' had the most acid flavor with the rest very non-acid, especially 'Willamette E' which is perhaps too bland. 'Spring Giant' was rated low and 'Allen' was variable for fruit smoothness.

This test confirms that all the varieties tested are acceptable in quality, and all are adapted for Willamette Valley use by gardeners. However, 'Heinz 1350' appears to be sensitive to cool season conditions and probably should be recommended with reservation. In this trial, the F<sub>1</sub> hybrids yielded more than the open-pollinated varieties though some of the yield differences observed were not statistically significant and should be confirmed by further tests.

--J. R. Baggett and N. S. Mansour  
Horticulture Department

Table 2. Fruit weight of tomato varieties at weekly harvest dates

Variety	Harvest date <sup>1</sup>									Average
	8-14	8-21	8-28	9-5	9-11	9-18	9-25	10-2	10-9	
Spring Giant	--	--	0.31	0.42	0.39	0.45	0.33	0.34	0.31	0.39
Springset	0.24	0.25	0.30	0.34	0.28	0.25	0.26	0.26	0.23	0.29
Allen	0.24	0.35	0.41	0.50	0.42	0.46	0.37	0.36	0.33	0.42
Heinz 1350	--	--	0.28	0.32	0.29	0.31	0.28	0.27	0.23	0.29
Willamette E	0.20	0.29	0.34	0.33	0.32	0.27	0.26	0.25	0.23	0.30

<sup>1</sup>The midweek date is shown, even though harvests were made twice weekly during the main part of the season.

## Tomato varieties tested at Aurora

In 1974, 24 tomato varieties were tested at the North Willamette Experiment Station for their adaptability to the Northern Willamette Valley. Seed was planted in the greenhouse in late March and field-transplanted May 23. Prior to transplanting, 600 lbs./A 10-20-10 fertilizer and 2.0 lbs. aia of Paarlán were broadcast and incorporated during the bed-shaping operation. The area was listed in October and rough ridges left over winter. Prepared with a Marvin Landplane Row-Master, beds were six inches high with tops 22 inches wide and 40 inches between bed centers.

Beds were covered with 1.5 mil x 48" clear plastic. Three plants of each variety were set four feet apart on bed centers. For irrigation, a porous wall tube ("Viaflo" by DuPont) was placed beneath the plastic mulch on the bed surface near

the plants. A hole cut in the mulch permitted plants to be set.

Plants were tied to a trellis of woven wire fencing 42 inches high which was installed soon after planting.

Daily average temperature beneath the clear plastic was about 28 degrees higher than surface temperature on bare soil.

'Tanana', 'Springset', 'New Yorker', 'Cold Set', 'Vigor Boy', and 'Campbell 1327' were the earliest maturing varieties. Approximately 33 percent of their total crop had been harvested by September 3. 'Red Glow' and 'Market King' produced over 70 tons/A. 'Supersonic' and 'Big Early Hybrid' had the largest fruits. Quality based on smoothness, color, uniformity of shape and flavor was acceptable for all varieties. No difference

between varieties was observed relative to fruit cracking, since no rain occurred during the harvest season and water requirements were met using trickle irrigation, which applied water directly on the soil surface.

--W. A. Sheets  
North Willamette Experiment Station

Table 1. Yield data on tomato varieties, Aurora, Oregon, 1974

Variety	Source	Percent of total crop on picking date						T/A	
		8/20	8/27	9/3	9/10	9/17	9/24		10/1
Campbell 1327	Twilley		2	30	42	12	6	8	51
Wonder Boy Hybrid	"		1	2	25	41	14	18	60
Early Big Hybrid	"		1	4	34	46	12	4	57
Early Giant Hybrid	"	1	1	6	35	29	16	13	72
Red Glow Hybrid	"			2	29	40	18	11	71
Market King Hybrid	"		1	1	28	43	16	12	65
Cold Set	Gurney	1	2	32	45	16	4	1	58
Rushmore Hybrid	"	1	2	17	33	31	12	4	53
Vigor Boy Hybrid	"	2	2	29	51	14	1	1	56
Willamette	OSU	1	1	29	32	26	9	2	65
Set Star Hybrid	Harris	1	1	14	41	27	9	7	52
Cardinal Hybrid	"		1	9	40	26	16	8	66
Fantastic Hybrid	"			18	23	46	9	4	25
Spring Set Hybrid	"	1	4	29	44	11	5	6	46
Moreton Hybrid	"		2	8	13	44	19	14	47
Supersonic Hybrid	"		1	11	26	52	10		34
Setmore Hybrid	"		1	19	43	28	5	4	45
Glamour	Twilley		1	6	9	41	29	15	44
New Yorker	"	1	6	41	41	7	1	2	64
V F Hybrid	Burpee	1	0	8	37	31	13	11	58
Globemaster	"	1	1	9	28	35	19	8	51
Big Early	"			10	50	24	9	7	68
Tanana	OSU	7	13		55	19	6		30
Spring Giant	"	1	2	19	49	20	6	3	54

Table 2. Average fruit size by harvest date

Variety	Pounds per picking date						Lbs ave	Oz ave	
	8/20	8/27	9/3	9/10	9/17	9/24			10/1
Campbell 1327		.35	.40	.32	.36	.33	.37	.36	5.8
Wonder Boy Hybrid		.20	.40	.46	.50	.44	.38	.40	6.4
Early Big Hybrid		.10	.28	.35	.44	.29	.35	.30	4.8
Early Giant Hybrid	.30	.30	.41	.46	.38	.35	.33	.36	5.8
Red Glow Hybrid			.42	.43	.49	.37	.33	.41	6.6
Market King Hybrid		.40	.35	.39	.51	.46	.39	.42	6.7
Cold Set	.25	.14	.24	.27	.23	.15	.15	.20	3.2
Rushmore Hybrid	.18	.32	.41	.45	.36	.30	.36	.34	5.4
Vigor Boy Hybrid	.18	.19	.31	.36	.25	.17	.28	.25	4.0
Willamette	.20	.20	.10	.34	.30	.23	.20	.22	3.5
Set Star Hybrid	.20	.28	.36	.45	.37	.34	.28	.33	5.3
Cardinal Hybrid		.26	.43	.57	.45	.37	.36	.41	6.6
Fantastic Hybrid			.34	.40	.38	.37	.28	.35	5.6
Spring Set Hybrid	.14	.24	.28	.30	.25	.26	.27	.25	4.0
Moreton Hybrid		.18	.38	.42	.40	.30	.29	.33	5.3
Supersonic Hybrid		.60	.41	.44	.43	.32		.44	7.0
Setmore Hybrid		.23	.42	.47	.41	.29	.31	.36	5.8
Glamour		.20	.29	.37	.40	.36	.29	.32	5.1
New Yorker	.16	.22	.25	.31	.25	.25	.22	.24	3.8
V F Hybrid	.30		.34	.49	.41	.36	.32	.37	5.9
Globemaster	.20	.13	.33	.37	.33	.35	.27	.28	4.5
Big Early			.49	.51	.44	.41	.36	.44	7.0
Tanana	.07	.09		.09	.04	.04		.07	1.1
Spring Giant	.30	.30	.29	.35	.31	.23	.33	.30	4.8

# Tomato varieties tested in Southern Oregon

The Rogue River Valley of Southern Oregon is well adapted for the production of tomatoes. This crop is important to home gardeners and a limited number of commercial growers. Although the varieties 'Medford' and 'Ace' are well established in the area, increased earliness and more resistance to foliage diseases, such as early blight (*Alternaria*), would be beneficial. The variety 'Ace', though productive and of good quality, is often quite late in maturity. In 1973, ten varieties were tested at the Southern Oregon Experiment Station at Medford.

Ten plants of each variety were started in the greenhouse and transplanted to a Central Point sandy loam soil May 18. Row spacing was six feet with plants spaced three feet apart in the row.

Treflan was tilled into the seedbed at 3/4 pound per acre prior to setting the plants. Roundleaf mallow was the only weed of any consequence. Fertilizer was broadcast June 11 around each plant to apply 80 N, 80 P<sub>2</sub>O<sub>5</sub>, 80 K<sub>2</sub>O, and 140 S. Sprinkler irrigation was used to apply about 20" of water during the season.

The first of ten harvests was made August 22 although only 'Florida MH-1' and VF 145-21-4P had any ripe fruits. Ripening in volume started later than in previous years, probably because of cool nights and some irrigation water reaching the tomatoes from an adjacent onion trial. There was some foliar disease, principally anthracnose, in the planting early in the ripening season, but it did not seriously injure the plants.

Tables 1 and 2 summarize observations and yield data from the trial, based on ungraded field run fruits.

'Peto 657' (Setmore) was outstanding in yield, quality, and in the seasonal spread of production suitable for fresh market. 'VFN 58' had large fruits although they were slightly rough. 'Willamette' was quite productive although most of its late season production was of small sizes.

'Medford', very popular with home gardeners, had excellent fruits, but it was much later in ripening than usual.

--John A. Youngen  
Southern Oregon Experiment Station

Table 1. Observational data on the tomato vines and fruits, 1973 season

Variety	Observations
Peto 657 (Setmore)	Medium large, slightly spreading vine; fruits round, of excellent quality; productive; ring cracks developed after frost.
VFN 58	Medium large vine; fairly late maturing; large fruits of good quality.
Willamette 6-8 <sup>1</sup>	Medium large vine; round, firm fruits of medium size; late ripening fruits small in size.
Heinz 1350	Medium size vine; fruits round and of medium size.
Florida MH-1	Medium vine; some foliar disease present; fruits firm and of medium size.
VF 145-21-4P	Medium small vine; not competitive against weeds; fruits of good quality with a small tip point.
Medford	Medium size, leafy vine; excellent fruits of medium large size to the end of the season.
Willamette	Medium size vine; fruits very round and firm; size declines as season progresses.
Cal Ace	Large vine; late in maturity; large fruits.
Ace	Large vine; late in maturity; fruits large and of good quality.

<sup>1</sup>A selection from Willamette

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Table 2. Tomato yields in tons per acre by harvests, and fruit size in pounds per fruit

Variety	August		September				October				Total	
	22	31	6	14	21	28	5	12	19	26	T/A	Lbs/fruit
Peto 657 (Setmore)	0.99		0.99	5.43	9.38	7.90	4.39	4.74	3.70	1.86	39.38	0.35
VFN 58	0.07		0.07	2.36	6.92	6.28	5.38	3.96	3.59	2.92	31.55	0.52
Willamette 6-8	0.16		0.23	1.78	6.65	5.77	4.44	4.10	4.10	4.33	30.56	0.31
Heinz 1350	0.08		0.34	2.49	5.32	5.14	3.61	4.19	4.66	4.76	30.59	0.32
Florida MH-1	0.12	0.38	1.17	5.71	7.49	4.37	2.75	2.69	1.69	0.57	26.94	0.30
VF 145-21-4P	0.21	0.83	1.29	4.33	5.74	6.70	3.44	2.00	1.59	0.41	25.54	0.28
Medford				3.34	6.81	4.74	3.64	3.59	2.31	0.86	25.29	0.38
Willamette		0.07	0.10	2.80	6.54	5.07	3.12	2.77	2.27	1.11	23.85	0.25
Cal Ace				0.23	2.46	3.41	2.30	3.02	4.26	5.32	21.00	0.51
Ace					0.08	0.42	0.82	0.36	1.67	2.96	6.31	0.48
											Mean	27.10
											LSD, 5%	14.45
											C.V.	24.4%

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