

COMPARISON OF SINGLE AND SPLIT APPLICATION OF
SPRING FERTILIZER ON GARLIC

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ABSTRACT

Applying spring fertilizer at one time, or in two applications separated by one month, resulted in no differences in garlic performance.

This study was conducted to determine if there might be some advantage to a split vrs. a single spring fertilizer application on garlic grown for seed.

Materials and Methods

Trial with 'California Early' Garlic (Virus-Free)

Virus-free garlic used in these trials were collected as bulbs at harvest in the summer/fall of 1984, and stored in King City until treatment. Bulbs were cracked under commercial conditions and were not hot water and formaldehyde treated. Seed was obtained from Basic American Foods.

Trials with 'California Late' Garlic and virus-infected 'California Early' Garlic

Commercially cracked and hot water and formaldehyde treated seed was obtained from Vessey Company.

Virus-free 'California Early' garlic was hand-planted. Cloves were all large and were not sized. Planting was accomplished by having a standard two or four bed garlic planter make the desired two seedlines per bed without closing in the seed-

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lines. It was found, however, that seedlines were partially closed anyway by the equipment, so these were reopened by hand using garden hoes. The cloves for each individual seedline of each plot replicate were planted and covered by hand. Plots were all single bed plots, either 5 or 10 feet long, and separated by a 2-foot alley unless noted. All garlic was planted at 16 cloves per bed foot, on 40-inch beds center-to-center.

Virus-infected garlic was all machine planted. Trials were in the commercially planted areas at the field. A 4-row planter operated by Central Oregon Seeds, Madras, OR, was used to plant the general field on October 2. No attempt to control seed size or plant population was made in machine planted trials.

The field received 400 lbs/A 16-16-16 in September 1984. Either two applications of 75 lbs/A of nitrogen as ammonium nitrate were applied on April 8 and May 8; or one application of 150 lbs/A of nitrogen as ammonium nitrate was applied on April 8, 1985. Standard chemical weed control was supplemented with some hand weeding. The field was watered by solid set sprinkler irrigation. The field was irrigated somewhat more frequently than typical for commercial practices in central Oregon. For example, seven short irrigations were applied between April 18 and May 15; whereas commercial growers typically applied one to three irrigations in this period.

Results and Discussion

Fertilizer trials are summarized in Table 1. No differences between single and split application of in-season fertilizer were found. Therefore, in 1985, there was no advantage to a split nitrogen application in the spring.

TABLE 1. Fertilizer Trial: Single Split Application

<p>Location: Central Oregon Experiment Station Madras, OR</p> <p>Preplant Fertilizer: 400 lbs/A 16-16-16 in 10/85</p> <p>Varieties & Seed Source: 'Cal. Early' virus-free (Basic) 'Cal. Early' & 'Cal. Late' (Vessey) Plot Size: 1 bed x 10 ft. Bed/Row Spacing: 2 garlic rows/40" bed Seed Sized/Graded?: No How Planted?: Cal. Early virus-free by hand, others by machine</p>	<p>Seed Treatment: 'Cal. Early' virus-free (none, but seed was grown under special conditions). 'Cal. Early' & 'Cal. Late': commercially hot water and Formal- dehyde treated</p> <p>Date Planted: 'Cal. Early' virus-free 10/5/85, 'Cal. Early' & 'Late' 10/2/85</p> <p>Date of Stand Count: 4/10/85</p> <p>Date of Harvest: 'Cal. Early' & 'Cal. Early' virus-free 7/17/85, 'Cal. Late' 7/12/85A</p>
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63

LATE GARLIC

In-Season Fertilizer Treatments ^B		Stand Count (Plants/Bed.Ft.)	% Stand Harvested	No. Bulbs Harvested	Lbs/A Harvested ^A
April 8, 1985	May 8, 1985				
75 lbs N/A	75 lbs N/A	184	97	178	12,775
150 lbs N/A		188	94	173	12,598
Coefficient of Variation		14.4	10.6	3.3	1.6
LSD (.05)		NS	NS	NS	NS

EARLY GARLIC

75 lbs N/A	75 lbs N/A	81	81.7	67	9,756
150 lbs N/A		88	92.5	81	10,789
Coefficient of Variation		9.4	14.6	11.8	9.3
LSD (.05)		NS	NS	NS	NS

TABLE 1. Continued

EARLY (VIRUS-FREE) GARLIC

In-Season Fertilizer Treatments ^B		Stand Count (Plants/Bed.Ft.)	% Stand Harvested	No. Bulbs Harvested	Lbs/A Harvested ^A
April 8, 1985	May 8, 1985				
75 lbs N/A	75 lbs N/A	130	93	121	11,066
150 lbs N/A		114	92	104	10,775
Coefficient of Variation		11.2	9.2	6.7	11.6
LSD (.05) ^C		NS	NS	NS	NS

A Tops not fully dry at harvest.

B All in-season fertilizer was ammonium nitrate.

C F-test not significant at 5% level for any category.