

by T.L. Jackson  
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### The Effect of Lime on Yield of Dill

Dill should be added to the list of crops needing lime when produced on many Willamette Valley soils.

A lime experiment was established for garlic production on the Wayne Chambers farm in the Dever-Conner area north of Albany in 1972. The lime treatments corrected the problem of low soluble solids on garlic that was causing garlic companies to consider moving their acreage from the Willamette Valley. The area receiving lime treatments in 1972 was planted to dill in 1974.

Rates of lime applied were 0, 2.5, and 5 tons per acre. These treatments increased the soil pH from 5.0 to 5.4 and 5.8.

Samples of dill hay were harvested from the three lime treatments and distilled the following day with the experimental still used for peppermint. The temperature of the oil-water mixture coming from the condensers was maintained at 105 to 110<sup>o</sup>F. Samples were steam distilled for about 45 minutes.

Table number 1 shows the effect of the lime treatments on yield of dill hay and oil.

Table 1. The effect of lime on yield of dill.

| Lime Treatment | Soil pH | Hay Yield T/A | Oil Yield  |
|----------------|---------|---------------|------------|
| 0              | 5.0     | 5.99          | 3.83 gal/A |
| 2.5            | 5.4     | 11.44         | 6.84       |
| 5.0            | 5.8     | 12.91         | 8.51       |

# The effect of lime on production of Dill oil.

| Treatments.        | <sup>green wt</sup><br>hay yield<br>lbs/plot | T/A                        | oil yield<br>ml./plot | Liters x.75                                 |
|--------------------|--|----------------------------|-----------------------|---|
| L <sub>0</sub> R1A | 2.0  | 4.84                       | 1.8                   | 8.71  |
| R1B                | 2.7  | 6.53                       | 3.4                   | 16.46                                       |
| R2A                | 4.2  | 10.16                      | <del>4.9</del> 5.5    | 26.62                                       |
| R2B                | 4.0  | 9.68                       | <del>6.4</del> 5.8    | 28.07                                       |
| R3A                | 3.3  | 7.99                       | 3.4                   | 16.46                                       |
| R3B                | 3.6  | 8.71                       | 4.1                   | 19.84                                       |
|                    |  | 47.91 / 7.99 x 1.75 = 5.99 |                       | 116.16 / 19.36 = 14.52<br>3.83 gal<br>(5.1) |
| L <sub>1</sub> R1A | 6.0  | 14.52                      | 6.4                   | 30.98                                       |
| 1B                 | 6.3  | 15.25                      | 6.9                   | 33.40                                       |
| 2A                 | 6.0  | 14.52                      | 7.9                   | 38.24                                       |
| 2B                 | 6.3  | 15.25                      | 8.3                   | 40.17                                       |
| 3A                 | 6.4  | 15.49                      | 6.6                   | 31.94                                       |
| 3B                 | 6.8  | 16.46                      | 6.7                   | 32.43                                       |
|                    |  | 91.49 / 15.25 = 11.44      |                       | 207.16 / 34.53 = 9.11<br>25.90<br>6.84 gal  |
| L <sub>2</sub> R1A | 6.1  | 14.76                      | 7.7                   | 37.27                                       |
| 1B                 | 6.4  | 15.49                      | 7.8                   | 37.75                                       |
| 2A                 | 7.6  | 18.39                      | 11.1                  | 53.72                                       |
| 2B                 | 8.4  | 20.33                      | 11.3                  | 54.69                                       |
| 3A                 | 6.8  | 16.46                      | 5.0                   | 37.27                                       |
| 3B                 | 9.4  | 17.91                      | 6.5                   | 37.27                                       |
|                    |  | 103.34 / 17.22 = 12.91     |                       | 257.97 / 43.00 = 11.3<br>32.25<br>8.51 gal  |

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D:11

9.4<sup>2</sup>  
9 | 43560  
4840  
2.42

3630

| Sample  | mls            |      |
|---------|----------------|------|
| R1 - L0 | 3.4            |      |
| R1 - L0 | 1.8            |      |
| R1 - L1 | 4.9            | 6.9  |
| "       | 4.0            |      |
| "       | 4.4            | 6.4  |
| R1 - L2 | 7.7            |      |
| R1 - L2 | 8.7            |      |
| R2 - L0 | 5.5            |      |
| R2 - L0 | 5.8            |      |
| R2 - L1 | 7.9            |      |
| R2 - L1 | 8.3            |      |
| R2 - L2 | 7.9            | 11.3 |
| "       | 9.1            | 11.1 |
| "       | <del>5.4</del> |      |
| R3 - L0 | 3.4            |      |
| R3 - L0 | 4.1            |      |
| R3 - L1 | 3.8            |      |
| "       | 4.8            | 6.7  |
| "       | 4.7            | 6.6  |
| R3 - L2 | 5.0            |      |
| R3 - L2 | 6.5            |      |

Yield data from Dill (1973 Garlic Lime exp.) -

L0 R1 2.0  
2.7

R2 4.2  
4.0

R3. 3.3  
3.6

L1 R1 6.0  
6.3

R2 6.0  
6.3

R3 6.4  
6.8

L2 R1 6.1  
6.4

R2 7.6  
8.4

R3 6.8  
7.4

Vegetative yield. - 2 row samples ea 6 ft.