

Boysenberry Fertilization

yield, fruit size, quality improved by nitrogen but not phosphorus or potash applications in Fresno County test

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Boysenberry and youngberry plants are most likely to respond to nitrogen.

The addition of phosphate or potash will probably improve neither the growth of the plants, nor size and quality of the individual fruits.

Boysenberries and youngberries are specialty crops which require much personal attention and respond to good care. The use of commercial fertilizers has been widely accepted by berry growers, but the range in total amounts and different kinds of fertilizer elements has been wide. A recent cost of production survey conducted in Fresno County showed an annual investment range in fertilizers per acre from zero to \$150.

To demonstrate the responses which might be expected from the application of the three major fertilizer elements—nitrogen, phosphate, and potash—a demonstration plot was established in Fresno County in 1950-51. Since the tests were not conducted to investigate the most efficient use of each fertilizer element, excessive amounts of each material were used.

The plot consisted of nine rows of 59 vines each. Each row was fertilized differently and treated in its entirety. The phosphate was applied in one application during the last week of July at the rate of 600 pounds of actual phosphate per acre. It was drilled to a depth of 5", approximately 20" away from the crown of the plants on each side in a continual strip.

The potash was applied in the same manner, at the same rate, and date as the phosphate fertilizer.

The nitrogen was applied at the rate



A comparison of the size of the individual berries from rows untreated—center—as compared to those treated with nitrogen alone—left—and those treated with a fertilizer including nitrogen, phosphate and potash—right.

of 200 pounds of actual nitrogen per acre at two separate dates. The first application was made during the last week in July at the rate of 100 pounds of actual nitrogen per acre. The remaining 100 pounds was applied during the second week in February. The nitrogen was applied in the same manner as the other two elements.

The results showed rather strikingly that nitrogen is the limiting fertilizer element for full production. The addition of phosphate or potash or both did not increase the yield in this one-year trial. The row treated with nitrogen and potash produced one more crate than the row treated with nitrogen alone. This difference is not significant.

To demonstrate the effect of fertilizers upon berry size, individual berries from randomized samples were weighed twice during the picking season. The number of berries required to weigh one pound was determined.

The test showed that the addition of potash or phosphate or both to the nitro-

gen treatment did not cause the fruit to become larger.

The effect of fertilizers upon sugar content and firmness of the fresh berries was investigated. Two crates of berries from each fertilized and untreated rows were placed at room temperature for two days without any fungus and bacteria arresting treatments. At the end of this period, no difference in berry condition could be detected regardless of the fertilizer treatment.

An attempt was made to determine the effect of the fertilizer treatments upon the total soluble solids—sugar. A hydrometer reading of fruit juice was made from crushed berries selected at random. The results of the test indicated that the addition of phosphate or potash did not increase the total sugar content of the fruit juices, and that the total soluble solids was higher from vines which had smaller crops.

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Fertilizer plot in Fresno County showing the outstanding response from a treatment with large amounts of nitrogen—row marked NPK.

