

INTERPLANTING COMPLEMENTARY AVOCADO VARIETIES AIDS FRUIT PRODUCTION

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Increased Fuerte production results when the Fuerte flower is cross-pollinated with a different and complementary avocado variety. Recent data (Bergh-Garber-Gustafson in press), indicates an average increase in Fuerte set of 40 percent over an eight-year period in a cross-pollination study on the John and Helen Best orchard near Rincon Springs, San Diego County. Only two years out of the eight was the "effect" not present. Production ranged from a minus 10 percent decrease to a high of 150 percent increase.

In the Best experiment three types of intermingling plantings of varieties were used: (1) A windbreak row of Topa Topa trees planted every tenth row in a Fuerte orchard; (2) individual branch grafts of Topa Topa in the tops of Fuerte trees, and (3) every other tree in the row topworked to Topa Topa.

A follow-up experiment to the eight-year study of cross-pollination on the Best orchard was begun in the spring of 1966 on the Gustafson-MacCormack orchard in Poway, San Diego County. Purpose of the experiment is to: (1) Determine the best method to plant mixed varieties, and (2) specifically determine the effectiveness of cross-pollination when two complementary varieties are planted closely together.

In "Figure 1," a Fuerte/Topa Topa is planted in the same hole with a Covocado/Topa Topa. In "Figure 2," a Fuerte/Topa Topa is planted with a Topa Topa/Topa Topa. In "Figure 3," a Fuerte/Topa Topa is planted with a Topa Topa/Duke. In "Figure 4," a nursery tree, Topa Topa/Topa Topa is planted within six inches of a two-year-old Fuerte/Topa Topa.

The total planting of this plot is as follows:

- 2 Topa Topa nursery trees on Topa Topa rootstock planted next to two-year-old Fuertes/Topa Topa.
- 3 Topa Topa nursery trees on Duke rootstock planted next to two-year-old Fuertes/Topa Topa.
- 1 Covocado variety on Topa Topa planted in the same hole with a Fuerte/Topa Topa.
- 2 Topa Topa/Duke planted in same hole with Fuerte/Topa Topa.
- 3 Topa Topa/Topa Topa planted with Fuerte/Topa Topa in the same hole.



Figure 1
Left — Covocado/Topa Topa
Right — Fuerte/Topa Topa
(5 months old)



Figure 2
Left — Fuerte/Topa Topa
Right — Topa Topa/Topa Topa
(5 months old)



Figure 3
Left — Topa Topa/Duke
Right — Fuerte/Topa Topa
(5 months old)



Figure 4
2-year-old Fuerte/Topa Topa
3-months-old Topa Topa/Topa Topa

The difference in growth habit between Fuerte and the Topa Topa and Covocado trees will necessitate regular pruning of the Topa Topa and Covocado trees. Training of the pollinator trees is important so the Fuerte will be the dominant tree. The pollinator tree need not be fully developed to effectively cross-pollinate the Fuerte. The pollinator needs only to be one fourth the size of the Fuerte as long as it is growing uniformly throughout the Fuerte tree and producing enough blossoms to affect pollination. Branches of the two varieties must be interlaced consistently. Closeness of the flowers of the two varieties to each other appears to increase the chances of cross-pollination, resulting in more fruit.