

POLLEN FLOW IN MANDARIN ORCHARDS AND CROSS-POLLINATION EFFECT ON SEED CONTENT AND FRUIT SIZE OF MANDARINS

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We used AFLP markers to determine the pollen parentages of mandarin seedlings from two orchards in California. We found that pollen of 'Minneola' tangelo was able to disperse across 94 rows of buffer trees at a distance of 521 meters to pollinate 'Afourer' mandarins in orchard near Madera, CA. We found that pollen of 'Afourer' mandarin was able to disperse up to a distance between 945 – 1,292 meters to pollinate 'Nules' Clementine mandarin in the orchard near Bakersfield, CA. The distance that compatible pollen was able to disperse, most likely by honeybees, within the mandarin orchards was much larger than anyone expected. There are different levels of compatibility among different mandarins and up to 40 seeds per fruit was found in crosses between Clementine mandarins x 'Afourer' mandarin. Cross-pollination between different mandarins also could significantly increase the fruit weight, fruit size and seed count per fruit. The implication of these findings for the seedless mandarin production in California will be discussed.