FLORAL ORGANS REMOVAL IN AVOCADO: OPENING AND CLOSING CONTROL

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Avocado flower opens twice: first as functional female, second acting as male. These phases of flower opening and closing control the orderly exposure of mature female and male organs to pollinators. Disorders of this flower behavior, as partial and single flower aperture, have been previously documented. However, little is known about the factors controlling movements of tepals and the consequences of their malfunctioning on the function of pistil and stamens. By selective removal of tepals, stamens, nectaries, staminodes, and pistil, we explored organ-control of the avocado flower cycle. Nectary and staminode removal did not change the flower cycle. Early pistil removal advanced first closing, but no other changes were noticed later. Pistil removal during the male phase did not alter the flower cycle. Removal of tepals during the female phase conspicuously modified the angle of the corresponding stamen beyond horizontal and consequently delayed or made retraction incomplete during first closing. Lesser changes were detected when tepals removal was performed during the male phase. Stamen removal also modified movement of tepals. In a few cases when the stamen was cut in the female phase, the tepals did not open in the male phase. If the stamen was eliminated during the second opening, the tepals closing was advanced. These modifications suggest that female and male reproductive organs control the corresponding flower opening, whereas closure is mostly lead by tepals. Our observations also suggest that endogenous factors related to reproductive organ maturation rather than environmental cues control avocado flower cycle.