

FLOWER QUALITY AND REPRODUCTIVE BIOLOGY IN AVOCADO

M. Librada Alcaraz¹, J.I. Hormaza¹ and J. Rodrigo²

¹Estación Experimental la Mayora – CSIC. 29750 Algarrobo-Costa, Málaga España,

²Unidad de Fruticultura. CITA de Aragón. Apdo. 727. 50080 Zaragoza. España

In avocado, only a very small fraction of flowers produced at anthesis are able to set fruits. However, information is elusive to explain why most flowers prematurely abscise while some of them remain in the tree. The term “flower quality” is used to express something inherent to the flower that has a reflection on the subsequent fruit set. In order to gain insight in the causes that produce this low fruit set in avocado, in this work we have studied different aspects of flower quality such as the influence of the nutrient reserves of the flower and several morphological flower parameters on fruit set. With this purpose, flowers from different panicles of the cultivar Hass were individually tagged, recording the date of anthesis and the position in the panicle. Each flower was collected at anthesis and histochemically processed for analysis under the microscope after staining with I₂KI for starch reserves. Starch content in individual flowers was measured with the help of an image analysis system attached to the microscope. Style length, ovary size and stigmatic surface were also measured for each flower. Differences in both starch content and morphological parameters were found among flowers at anthesis, suggesting a possible relationship among starch content of the flower, the size of the floral structures and the capacity of each flower to set a fruit. The results are discussed in terms of the possible implications of the nutritional status of the flower in the reproductive success and fruit set in avocado.