

Winter drought stress can delay flowering and avoid immature fruit loss during late-season mechanical harvesting of 'valencia' oranges

J.C. Melgar, L.G. Albrigo, J.P. Syvertsen

Acta Horticulturae 965: 55-60. 2012.

Abstract

We determined if winter drought stress could delay flowering and fruit development of immature 'Valencia' sweet oranges to avoid young fruit loss during late-season mechanical harvesting. Beginning in December over three consecutive seasons (2007-2009), Tyvek, a water-resistive barrier material, was used as a rain shield groundcover under 13- to 15-year-old trees. There were three treatments: (1) drought = no irrigation and covered soil, (2) rain only = no irrigation, no cover and (3) normal irrigation with rain and no cover. Covers were removed in February or March and normal irrigation and fertilization were resumed. The drought stress did not affect fruit yield, size, percentage juice or juice quality of the current crop harvested in May and June relative to continuously irrigated trees. Drought stress delayed flowering by 2-4 weeks so that the immature fruit for next season's crop were smaller than on continuously irrigated trees during June, but fruit growth caught up by September. During mechanical harvesting, previously drought-stressed trees lost fewer young fruit than continuously irrigated trees. Thus, winter drought stress effectively delayed flowering and avoided young fruit loss during late-season mechanical harvesting without negative impacts on yield or fruit quality of 'Valencia' orange trees.