

Title Harvest prediction in ‘Algerie’ loquat
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Abstract

Plant phenology is in great measure driven by air temperature. To forecast harvest time for ‘Algerie’ loquat accurately, the growing degree days (GDD) needed from bloom to ripening were determined using data from nine seasons. The methods proposed by Zalom et al. (Zalom FG, Goodell PB, Wilson LT, Barnett WW, Bentley W, Degree-days: the calculation and use of heat units in pest management, leaflet no 21373, Division Agriculture and Natural Resources, University of California 10 pp, 1983) were compared as regards their ability to estimate heat summation based on hourly records. All the methods gave remarkably similar results for our cultivation area, although the double-sine method showed higher performance when temperatures were low. A base temperature of 3°C is proposed for ‘Algerie’ loquat because it provides a coefficient of variation in GDD among seasons of below 5%, and because of its compatibility with loquat growth. Based on these determinations, ‘Algerie’ loquat requires 1,715 GDD from bloom to harvest; under our conditions this heat is accumulated over an average of 159 days. Our procedure permits the ‘Algerie’ harvest date to be estimated with a mean error of 4.4 days (<3% for the bloom-harvest period). GDD summation did not prove superior to the use of the number of calendar days for predicting ‘Algerie’ harvest under non-limiting growing conditions. However, GDD reflects the developmental rate in water-stressed trees better than calendar days. Trees under deficit irrigation during flower development required more time and more heat to ripen their fruits.

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