FACTORS INFLUENCING FRUIT SET OF HASS AVOCADOS IN NEW ZEALAND.

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New Zealand has some of the southern most commercial avocado orchards in the world. The Bay of Plenty is the main growing region, at 37º to 38º South, with mean annual temperatures of 14.7 to 15.1ºC that appears to suggest that the climate is marginal for successful avocado crops. However, a number of orchards consistently achieve yields in excess of 20 tonnes ha^{-1}, some reaching 30 tonnes ha^{-1} in an 'on' year. Temperatures have been recorded during the main flowering and fruit set period over a number of years for more than 40 orchards throughout the major avocado growing regions of New Zealand and have been analysed with respect to the relationship of final yield to temperature. The analysis was to determine if the daily changes in temperature patterns over flowering and fruit set each year could explain the yearly fluctuations in yield from each orchard. The relationships between the patterns of daily temperatures, temperature accumulation and periods of "cold" events to yield and initial fruit set have been analysed. These relationships indicate that temperature alone is not limiting Hass avocado crops under the climatic conditions in New Zealand. Flowering and pollination appear to be sufficient for a large initial fruit set each year but the retention of the new fruit varies from year to year. Other possible limitations on Hass avocado fruit set such as water stress, nutrient availability and timing could influence alternate bearing and will be discussed along with the role of temperature on avocado flowering and fruit set.