

ANNUAL REPORT

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Objectives The objective is to relate environmental variables to crop production and from this develop a method of producing early, accurate forecasts of the almond crop.

Interpretive Summary (This section is not especially relevant to my project. My only recommendations are that growers minimize tree stress near harvest and irrigate as soon as possible after harvest.)

Experimental Procedure (Procedure similar to past years except that the abnormally warm winter caused me to focus more effort on problems of cooling and dormancy.)

Results The objective is to produce good forecasts early in the year. The April 31 forecast was 255,000,000 pounds, 60,000,000 below the 1977 crop. In late June the forecast was lowered to 250,000,000 pounds, only 79 percent of the 1977 crop and about 65 percent of the potential.

Although these forecasts were considered to be fairly good or even low at the time they were both much too high. The final almond crop is only about 47-50 percent of the potential and the lowest in many years.

Discussion In December 1977 I stated that "I am encouraged by the accuracy of the 1977 forecasts. The system was able to respond to the dry winter and the unusual temperatures of February-March-April-May. It appears that the early forecast will be within three percent of the total crop and the June forecast within about one percent." Now, a year later, I am less certain about some things. While the method did pick up on a severe diminution of the 1978 crop it did not indicate a figure low enough. I am adapting the methodology but this aspect will not be tested until we have another warm winter. Early forecasts are always more accurate than others available but the June 1978

forecast was less than acceptable.

Future work should continue as in the past. Work in crop modeling has given no encouraging results in the area of crop forecasting; even with a single variety in an area of physical homogeneity the results have been poor.

Publications "Using Environmental Variables to Prepare Accurate Long Range Crop Forecasts", Population/Food Fund, Washington, February, 1978.

"Using Environmental Conditions to Forecast Crops", AAAS/WHA, Seattle, June 1978.