

University of California
Division of Agricultural Sciences**Project Plan/Research Grant Proposal**Project Year 1986 Anticipated Duration of Project through 1986Project Leader J. M. Labavitch Location U.C. Davis; DurhamCooperating Personnel Kitren Weis, Joseph Connell, Henry Rae, Vito PolitoProject Title Tree and Crop Research: Almond DevelopmentKeywords Abscission, dehiscence, ethyleneCommodity(s) Almond Relevant AES/CE Project No. 3482-MH**Problem and Its Significance:**

For the last few years we have been examining aspects of almond fruit development. Our interest has focused primarily on fruit set and nut maturation. We have shown that maturation can be accelerated by exposing nuts to low concentrations of ethylene gas. This year we hope to conclude this work, emphasizing field tests of the effects of ethylene-releasing chemicals on hull split and abscission.

Objectives:

1) We have been trying to define field practices which would contribute to an efficient application of the early harvest concept. Because our small scale trials have indicated that nuts will respond favorably to ethylene "application" it is necessary to test applications on an "orchard" scale.

2) Kitren Weis will conclude her dissertation research (which is very pertinent to our field "goals") by further defining cellular processes which control hull split.

Plans and Procedures:

1) At the first sign of hull split in Nonpareil orchards we will apply a range of concentrations of an ethylene releasing chemical (ethephon) and judge the response based on hull split and abscission zone development. At least one of the trials will involve use of an orchard sprayer (rather than hand gun) in order to provide samples which can be tested for residues.

2) Samples of dehiscence zone tissue will be taken throughout the season (most taken around hull split) and subjected to analysis for a series of enzymes which 1985 studies implicated in regulation of split.

BUDGET REQUEST

Budget Year 1986-87Funding Source California Almond Board

Salaries and Benefits

Postdocs/RA's 6 Month, RA7072.00

SRA's _____

Lab/Field Assistance _____

Subtotal

Sub 2 7072.00

Employee benefits

Sub 6 135.00TOTAL 7207.00Supplies and Expenses (includes cost of purchasing treated
almonds)Sub 3 2200.00

Equipment

Sub 4 _____

Operating Expenses and Equipment Travel (Davis campus only)

Sub 5 _____

Travel

Sub 7 200.00TOTAL 9607.00Department account number 3/440382/59021/

(continued from front)

Originator's Signature

Date 1/2/86

COOPERATIVE EXTENSION

County Director _____

Date _____

Program Director _____

Date _____

AGRICULTURAL EXPERIMENT
STATIONDepartment Chair Don DwyerDate Jan 2/86

LIAISON OFFICER _____

Date _____