

## **ENVIRONMENTALLY SOUND PRUNE SYSTEMS (E.S.P.S.)**

Compiled by Bill Olson

### **OBJECTIVES:**

Environmentally Sound Prune Systems is a research/demonstration project all the University of California prune farm advisors are involved in to advance economically and environmentally sound approaches to prune production. The project objectives involve the reduced use of biocides, use of fertilizers and natural resources more effectively and encourages known useful cultural operations into a more sustainable farming system.

Sub-projects are being conducted on individual prune farms ranging from Tulare to Tehama County. In some cases, several objectives are being conducted at one site.

Although some objectives have been underway for a number of years, the overall project was begun just this year with support from the California Prune Board.

Future plans include establishing demonstration "split plot" orchards in several parts of the state. The objective here is to evaluate everything from economics to fertilization to pest management between the "conventional" and more "sustainable" approach to growing prunes. "Satellite Orchards" to evaluate single aspects of ESPS are established in several areas and will continue to be established.

### **PROCEDURE:**

Each participant in the ESPS project has submitted their individual reports. Following is the ESPS report on education/outreach and individual reports of progress from field projects under the ESPS umbrella:

### **EDUCATION/OUTREACH**

In addition to field projects, ESPS has sponsored several educational meetings this year including the Tri-County Prune Day held in Glenn County, a Field/Classroom I.P.M. workshop held in Butte County, a Harvest Prune Sizing meeting and a Pruning Demonstration held in Tehama County and several IPM insect pest and beneficial monitoring demonstrations. Education and outreach aspects of this program focus primarily on field based meetings designed to give growers an opportunity to get "hands on" experience with insect and disease identification, monitoring techniques and cultural practices being demonstrated. We have received the best response to field based meetings where growers have the opportunity to interact closely with Cooperative Extension personnel knowledgeable in the various aspects of prune production.

In total over 500 growers attended these meetings. Articles that contained information relevant to the ESPS project happened in 18 newsletters published in Butte, Glenn, and Tehama counties. These articles reached a combined audience of over 1000 clientele.

## **DEMONSTRATION/RESEARCH RESULTS:**

### **Predacious Mite Release & Monitoring**

Bill Olson, Nadeem Shawareb, and Carolyn Pickel

A non-replicated observational trial was established in three orchards during the 1997 growing season to gather preliminary data for a more extensive replicated trial in 1998. Augmented release of predacious mites, *Galendromus occidentalis*, were applied throughout the growing season in two orchards and the third orchard was left untreated. The orchards were monitored bi-monthly using U.C. guidelines for presence-absence monitoring of web-spinning mites in prune trees. Phytophagous mite populations in all three orchards were below the treatment threshold and predacious mites were abundant in all three orchards.

Presence-absence monitoring has been demonstrated to be an effective, economical tool for determining if and when a spray should be applied. It typically takes one person 1.5 hours to monitor a 10-15 acre orchard. In orchards of that size, between fifteen and twenty trees should be evaluated twice monthly. Additionally, data collected from these three orchards suggest that sulfur sprays used to control prune rust may have some influence in upsetting the balance between predacious and phytophagous mites.

Educational field meetings will be held in 1998 with hands-on demonstrations of the presence-absence monitoring technique. In 1998, a trial using three or more similar farms as replicates each with the following two treatments: 1) Untreated control 2) Augmented release of predacious mites. University of California guidelines for presence-absence monitoring of web-spinning mites in prune trees will be used to determine if augment release of predacious mites can: 1) significantly increase the predacious mite population and 2) significantly decrease the phytophagous mite population. Orchards will also be monitored for prune rust, sulfur spray treatment timing recommended, and presence absence monitoring will be used to determine if sulfur sprays can be antagonist to predacious mites.