UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION COUNTY OF LAKE

your Lake County HORTICULTURAL NOTES

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A RESPONSE TO CONSUMER QUESTIONS ON PRODUCE SAFETY (An Editorial)

Before he passed away, the late Art Stilwell, President of Lake County Healthy Environment and Life (H. E. A. L.) requested I write an article on IPM for the H. E. A. L. newsletter. The article was recently printed in the Lake County CWA chapter newsletter.

As pear harvest begins and our fruit enters an increasingly suspicious and volatile market place, perhaps these ideas will help growers and marketers who are directly faced with consumer questions on production practices and their relationship to food safety. Although pears were the focus of this commentary, there are also numerous examples of IPM for grapes, walnuts and other crops we grow.

Harvest is an exciting time and growers should be proud of what they have accomplished and unafraid to share the details of their production practices with the consuming public.

INTEGRATED PEST MANAGEMENT

"Recently, pesticide use and its relationship to food safety has received heightened media, and hence, public attention. Periodically, a specific incident occurs that precipitates public reaction, e.g. illness from eating watermelon contaminated by an illegal application of Temik insecticide. The most recent events were the report, "Intolerale Risk: Pesticides in our Children's Food", issued by the Natural Resource Defense Council, and the discovery of cyanide in two grapes imported from Chile. The resulting public concern has increased the level of tension between farmers and consumer/environmental groups such as Sierra Club.

Retailers have responded to public reaction in several ways, among them the adoption of private in-house residue testing, offerings of certified organic produce and ads touting "organic", "IPM-grown" and "certified pesticide-free".

As a University of California Farm Advisor working with fresh market producers, namely pear growers, perhaps I can lend a perspective on pest management the average, concerned consumer may not hear from other sources. In particular, an explanation of the phrase "Integrated Pest Management", or IPM, may be warranted, for two reasons. First, efforts to produce fruit with reduced pesticides are real and increasing. IPM is becoming less of a philosophy and more of a practical field strategy. Second, consumers reading grocery ads should realize 'IPM-grown" is not equal to "organic"; there are important differences.

Integrated pest management (IPM) is a holistic strategy in which various crop protection practices are chosen carefully to maximize harvest profits while minimizing detrimental effects on the environment. IPM is neither organic nor totally chemical-reliant. Many people mistakenly assume it is equal to biological control which is the use of natural enemies to reduce pests. While designed to enhance biological control, IPM is an approach that utilizes multiple tactics: natural enemies, resistant or tolerant crop varieties, cultural practices such as water and fertility management, cultivation and sanitation, physical methods such as burning and, yes, chemicals. Crop protection chemicals, i.e. insecticides, fungicides, bactericides, herbicies and rodenticides, have a role in IPM when used appropriately. They are applied only after careful monitoring shows economic loss will likely occur. For example, insecticides are only applied to pears once weekly insect counts show that a pre-determined economic treatment threshold has been reached. It is well-known that certain "broad-spectrum" insecticides disrupt the natural ecological balance in the orchard. Trained pest control advisors go to great efforts to minimize damage to beneficial insects.

It is important to consider that many of our food crops are not native to the United States. Likewise, their pests were also introduced and thus are free from their native natural enemies. In many cases, unless the natural enemy complex can be successfully introduced to the "new world", the pest will be a constant problem to the crop. For this reason, chemicals will always have a place, albeit an increasingly limited one, in crop productions. The goal of researchers, pest control advisors and growers, is to use only judicious amounts of very selective and safe pesticides and to rely more and more on natural enemies, tolerant varieties and cultural controls.

A potentially revolutionary example of a new IPM strategy is to restore the natural balance in pear orchards using mating disruption to control codling moth, the main pest of pears. Currently, growers rely mainly on Guthion, a broad-spectrum organophosphate insecticide, to control codling moth. While extremely effective against the target pest, its use disrupts the natural control of mites amd pear psylla. Other insecticides are then needed to control these "secondary" pests. In mating disruption, the orchard is saturated with the sexual attractant, or pheromone in the air, the males cannot find the females and

mating is prevented. Thus, no eggs are laid, no worms develop and the fruit stays clean. Since no insecticides are applied against codling moth, the natural enemies of mites and psylla build up and control those pests. In 1988, mating disruption successfully controlled codling moth in 8 acres of pears in Lake County. This year, 14 acres are under mating disruption. If all goes well, the product will be available commercially to growers for the 1990 season. Of course, some chemicals will always be used in orchards, but pear pest management will truly be built around a healthy, natural enemy complex in the orchard.

If anyone would like to learn more about IPM, or discuss any aspect of pest management, please give me a call at 263-2281. Two useful pamphlets are "What is IPM?" and "University of California Statewide IPM Project", both published by the Statewide IPM Project, IPM Implementation Group, University of California, Davis. Contact me for copies."

All of us at UC Cooperative Extension wish the pear industry a smooth and profitable harvest!

AUGUST CHECKLIST (contact me about any of these)

PEARS - HAPPY HARVEST! Begin to think about fall weed control (pre- and post-emergence)

WALNUTS - Continue monitoring husk fly traps to time sprays accurately (see previous article and July 1988 Hort Notes)

GRAPES - Potassium was on the low side in quite a few vineyards I petiole-sampled in 1988 (1989 results are not in yet). Levels were lower in Sauvignon blanc than in Cabernet sauvignon. If you suspect K deficiency, check for symptoms from mid- to late August and take a petiole sample to confirm them. Color photos and discussion are in (available at our office):

Grapevine Nutrition and Fertilization in the San Joaquin Valley

UC Publ. #4087 - 40 pp. - $5.00

NEW UC WALNUT PEST MANAGEMENT GUIDELINES AVAILABLE

Official UC recommendations have been newly revised and are available at our office for $1.00 (to cover xerox costs). Insect pests of concern included to Lake County growers are various scales, aphids, webspinning mites, European red mite, red-humped caterpillar, fall webworm, walnut husk fly and Pacific flatheaded borer. Walnut blight (a problem on early varieties) and crown gall are also covered.

NOTE: Phosphamidon 8 EC for post-egg hatch husk fly control is given in the new guidelines. The Lake County Dept. of Agriculture severely restricts its use due to negative environmental effects. It is very difficult to obtain a permit exception. It is thus very important that walnut growers time pre-egg hatch sprays carefully according to yellow, sticky trap catches.

UC recommendations for pre-egg hatch husk fly treatments are:

TREATMENT: Pesticide (commercial name)	Amount to Use** (dosage/acre)	P.H.I.+ (days)	Comments
Before Egg Hatch			
A. NU-LURE BAIT (formerly Staley's Protein Bait #7)	2 qt		Baited sprays are the preferred treatment and are aimed at killing adults before eggs are laid. Nu-Lure bait attracts flies to spray material and enhances control. If significant egg laying has occurred before treatments, however, adequate control will not be attained.
...PLUS...			
1. ETHION* 8EC	2 pt	HS	Apply in 100 gal water/acre by ground or 10 gal/acre by aircraft.
...or...			
2. MALATHION 25WP	4 lb	0	Malathion can increase mite problems. Alternate row spraying is adequate with bait.
NOTE: The following two treatments require more pesticide than baited sprays for equal effectiveness and are more disruptive to parasites and predators.			
B. ETHION* 8EC	2.5 pt	HS	Apply in 100 gal water/acre by ground or 10 gal/acre by aircraft.
C. MALATHION 25WP	6 lb	0	Malathion can increase mite problems.

#Acceptable for organically grown produce.
*Permit required from county agricultural commissioner for purchase or use.
+Preharvest interval. Do not apply within this many days of harvest.
**For dilute application use with 300 to 600 gal water per acre; for concentrate application use at least 20 gal water per acre.
HS Do not apply after husk split.

PEST MANAGEMENT GUIDELINES FOR OTHER CROPS - these are available from our office:

CROP	REVISION DATE	PRICE
ALFALFA	June 1989	$ .75
ALMONDS	June 1989	1.10
APPLES	June 1989	1.65
APRICOTS	April 1989	.95
CHERRIES	May 1989	1.25
GRAPES	October 1988	1.30
(in process of a new revision)		
PEACH/NECTARINE	May 1989	1.35
PECAN	May 1989	.20
PISTACHIO	June 1987	.40
PRUNE/PLUM	April 1989	1.90
TOMATOES	June 1989	1.10

Long-awaited guidelines for pears will be available shortly. For all crops, a new trend in the guidelines is to provide recommendations for growers who prefer to use natural or biological insecticides and control methods. These will be included as the guidelines are revised.

REMINDER - OAKVILLE GRAPE DAY
(programs available at our office)

DATE: Tuesday, August 8
TIME: 8:30 A. M. - 12:00 P. M.
PLACE: Oakville Experimental Vineyard
1/2 mile south of Oakville on Hwy. 29
west on Dwyer Road
PLEASE CARPOOL

Sincerely,

Rachel

Rachel Elkins
Farm Advisor