

your *North Coast* Orchard Notes

University of California Cooperative Extension
883 Lakeport Blvd., Lakeport, CA 95453

JUNE 2002

Vol. 5, No. 2

!! MARK CALENDARS !!

JULY 12 **LAKE COUNTY WALNUT SUMMER FIELD DAY**
Steve Jones Orchard and Alex Suchan Nursery, Upper Lake
See agenda, Page 8

JULY 17 **UC NORTH COAST PEAR FIELD DAY (2 sessions)**
Yoxagoi Cookson Orchard, Kelseyville
See agenda, Page 9

English Session: 8:30 a.m. – 12:00 noon

Spanish Session: 1:00 – 3:00 p.m.

2002 PEAR COST STUDIES COMPARE STANDARD VERSUS MATING DISRUPTION CODLING MOTH CONTROL PROGRAMS

Two new cost and return studies are now available. Both were prepared with Extension Specialist Karen Klonsky and her associate Rich DeMoura of the Dept. of Agricultural and Resource Economics at UC Davis. Extensive input was provided by local growers, pest control advisers, bankers, and others involved in the North Coast pear industry; contributing individuals are acknowledged in the studies. **IMPORTANT: THESE SHOULD BE CONSIDERED AS GUIDES**; practices described are based on practices considered typical for the crop and area, but individual costs will certainly differ.

1. 2002 Sample Costs to Establish and Produce Pears; Green Bartlett, North Coast Region

This study supercedes those produced in 1994, 1997 and 2000. It details production costs for 75 acres using a standard organophosphate codling moth program. Net returns are estimated for an orchard producing 20 tons per acre, of which 8-10 tons are sold fresh, 8 tons processed, and 2-3.6 tons off grade. Assumptions are made about farm size, soil type, rootstock, irrigation and frost protection systems, annual cultural practices, and harvest. Sample packing costs are also given, and again, actual grower costs will vary. Tables of annual per acre yield, tonnage, and packout are given for Lake and Mendocino Counties from 1997 to 2001.

How have costs and returns changed since 1994?

Cost Study Year	Total cost per ton	Net \$ return per acre above *		
		Operating	Cash	Total costs
1994	211	1,116	804	- 62
1997	269	1,670	1,325	- 461
2000	288	- 719	- 1,124	- 2,903
2002	275 [•]	73	- 264	- 1,816

* based on FOB prices received the previous season
[•] costs were lower mainly due to the interest rate decrease from 10% to 7.4%

While one can easily see a steady increase in costs, returns plunged between 1997 and 2000. A major reason for this was, as growers are well aware, large declines in fresh market returns. Benchmark FOB's used in the studies were \$550 in 1994, \$686 in 1997, \$492 in 2000, and \$592 in 2002. Processed returns on the other hand, held relatively steady at \$215 (1994), \$255 (1997), \$220 (2000), and \$220 (2002). Off-grade returns also contributed to declines: \$60 in 1994 and \$80 in 1997, but only \$20 in 2000 and 2002.

While UC studies are only intended as examples, they document the contrast between steadily rising costs uncompensated by the marketplace. Signs of weakness were evident even in the 1994 study, which showed negative returns after cash and non-cash overhead (including establishment) costs were included. In subsequent years, even cash and operating costs went unrecovered, ultimately leading to the acreage pulls and loss of grower base so apparent today.

What will the next cost study show? It will be likely that costs will continue to climb steadily, though interest rates appear to be steady or even declining somewhat. The largest **non-packing** cultural costs in 2002 were: 1) harvest (\$1,094/acre for two picks and hauling), 2) pest control (\$894 including \$108 for weed control), 3) pruning/training (\$819), and 4) irrigation/frost protection (\$188). These are the costs that will eventually need to be lowered to achieve required savings, unless prices received for pears increase dramatically. **CAN THIS BE DONE?** The second cost study shows that one area in which savings have been achieved is pest control, namely insect control.

2. 2002 Sample Costs of Production Using Mating Disruption; Pears, Green Bartlett, North Coast – Lake County – Transition and production costs using aerosol mating disruption (puffers) for codling moth control (pardon the long title!)

Pest control, minus weed control, accounted for \$786, or 22% of total operating costs per acre in the 2002 standard organophosphate (OP) program study. This second study documented transitioning from an OP to a codling moth mating disruption program using puffer pheromone dispensers. Puffers, for those unacquainted, are widely-spaced units which emit pheromone at preset levels and time intervals. The dispensers in the study were developed by the late Dr. Harry Shorey of UC Riverside, subsequently commercialized by Paramount Farming Co. of Bakersfield, and now sold by Suterra. Pesticide data for transition years 1, 2 and 5 were taken from monthly use reports submitted by growers participating in the Lake County Codling Moth

Areawide ‘Puffer’ Project from 1996-2000. The project was sponsored by the following entities: Pear Pest Management Research Fund (1996-1998), USDA/ARS Codling Moth Areawide Management Project (CAMP) (1999), California Department of Pesticide regulation (CalDPR) Pest Management Demonstration Grant (2000-2001), and the CalDPR/California Pear Advisory Board Pear Pest Management Alliance (2000-2001). The study represents 16 first and second year orchards respectively, and five 5th year blocks, totaling 37 blocks on 820 acres. (The project ran through 2001 with a total of 56 blocks on 1,320 acres; no growers have dropped out and more were added in 2002, though the project is officially completed).

How much did growers save? The study documented a \$2 per ton increase in total operating costs in year 1 of using puffers (\$40/acre). They then decreased \$9 (\$180/acre) in year 2 and another \$2 (\$220/acre) by year 5, for a \$180/acre net decrease. Initial cost increases were due to the need to treat OBLR, higher monitoring and trap fees, and purchasing and hanging puffer cabinets, aerosol cans and programmer. Pear psylla and mite treatment costs, however, decreased immediately, and by year 5 had gone from \$267 to \$83 per acre. Codling moth OP sprays were eliminated completely. Savings were even greater, \$14/ton or \$280/acre, when non-cash overhead costs were accounted for, despite the investment in 1.5 puffer cabinets per acre. This was because spray equipment was parked more of the time.

Do these savings make a difference? Using the same fresh, processed and off-grade prices as in the standard OP program:

CM Control Program	Net \$ return per acre above		
	Operating	Cash	Total costs
Organophosphate	73	- 264	- 1,816
Mating Disruption (puffer, year 5)	750	- 93	- 1,622
Net difference	\$677 gain	\$171 gain	\$194 gain

The puffer program resulted in a nearly \$700 savings in operating costs and nearly \$200 savings in total costs per acre. Use of puffers, of course, cannot change the bottom line of growing pears in today’s difficult world market, as negative return after cash and total costs show. Savings will also vary with yield, i.e. lower per acre yields reduce the benefit and higher yields increase it.

Are these savings sustainable? Time will tell if and for how long pheromone confusion can be used successfully without supplemental OP’s. Growers should expect that some years and situations will require one or more CM treatments. This may, in turn, cause pear psylla and/or mite flare-ups. The increase in OBLR seen in MD orchards may be followed by other pests (remember the box elder and stink bug “outbreak” of 2001?). It will be up to everyone involved to remain vigilant and resist the temptation to “cut corners” on seemingly expensive necessities, particularly monitoring. The 2002 puffer study showed that despite higher monitoring fees, money was saved and cash costs reduced; this ultimately is what growers, and bankers, very much want to see.

Finally, is this study adaptable to other MD dispensers? The answer is likely yes, **if** 1) damage levels are comparable (i.e. no economic CM damage is experienced relative to a standard

program, and 2) costs of materials, labor and monitoring are recorded accurately so costs and returns truly reflect the entire program.

The 2002 cost study shows that savings are possible. The pear industry, along with many public agencies and others, has invested heavily in making this possible. Can similar results be achieved for the other “high ticket” operations of harvest, pruning, and irrigation? Only time, and industry determination, will tell.

Copies of both studies, as well as others, are available at our office, or can be downloaded from the website <http://coststudies.ucdavis.edu>.

EFFECTS OF A COOL SPRING ON CODLING MOTH ACTIVITY

Mother Nature took North Coast growers on a spring roller coaster ride of high and low temperatures this spring. This affected local tree crops and presented decision-making dilemmas for growers and PCA's.

Cold March weather was followed by the sudden onset of warm weather which stimulated a beautiful but **very** short pear bloom period. Conditions for parthenocarpic set were ideal and growers immediately worried about the large number of evenly-sized fruit throughout the trees. Codling moths were caught in some traps, largely in non-mating disrupted orchards, on April 1. The weather, however, cooled April 4, followed by only 8 days of above 70°F maximums recorded at the Kelseyville PestCast station. CM mating is generally associated with 70°F maximums, thus it can be assumed mating opportunities were few in April, likely limited to April 1-3, **possibly** April 7-8, April 12-13 and April 21-23 (moths were first caught in UCCE traps April 24, though some PCA's reported earlier flight).

May temperatures were more favorable, though maximum temperatures were below 75°F six out of ten days through May 10. Newly laid to early red ring eggs were **finally** found on May 7, likely laid May 4-6. The fact that later egg stages and hatched larvae were not seen as well adds to speculation that little activity took place in Lake County prior to late April.

So, what does this mean for CM management? Setting biofix was very difficult and in this situation, orchard CM history and microclimate becomes critical in timing sprays. Argument could be made to set biofix from April 1 to 24, depending on previous CM pressure, emergence pattern, and locale. First cover (where applied) occurred the weeks of May 6 or 13, depending on chosen biofix. Residue should have lasted until May 20-30, depending on choice of material.

The final days of May finally brought days of consistently warm weather conducive to major insect activity. Hatched eggs (but no new ones) were found in untreated trees May 29-30. What will June bring? Only Mother Nature knows for sure but this year points out the importance of careful monitoring to assess management options.

WINTER AND SPRING MEETING HANDOUTS AVAILABLE

Contact us for handouts from the following UCCE meetings held during the winter and spring for olive, pear and other perennial crops:

Lake and Mendocino Olive Tree Growers Forum (April 23)

- Site considerations and basics of tree care
- Growing olives for oil: does it pay?
- Olive oil: a balanced world market
- Bionomics of the olive fruit fly *Bactrocera* (*Dacus*) *Oleae*
- Olive fruit fly control; GF-120 fruit fly bait; Naturalyte[®] insect control

Lake County Fruit Frost Meeting (February 11)

- An explanation of dewpoint
- Understanding and utilizing water for frost protection
- Frost protection: when to turn sprinklers on and off
- The Lake County Pear and Grape PestCast Network

Managing Water in North Coast Orchards (February 14)

- Irrigation scheduling; when and how much to irrigate
- Maintenance of drip systems
- EQIP: USDA Environmental Quality Incentives Program

2002 North Coast Pear Research Meeting (February 20)

2001 California Pear Research Report (available in book and/or CD format)

NEW UC CATALOGUE (available free from our office)

The 2002-2003 *UC Agriculture and Natural Resources (ANR) Catalogue* is now available. It contains publications, slide sets, and videos from U.C. Cooperative Extension, as well as other agriculture-related programs such as the Agricultural Issues Center, Center for Cooperatives, Giannini Foundation, and the Sustainable Agriculture Research and Extension Program (SAREP). Both priced and free publications are listed and there are many Spanish language materials. Purchasing items through our office assures a portion of the revenues will be retained locally; your business is greatly appreciated.

NEW UC MATERIALS OF INTEREST TO ORCHARDISTS (order from our office):

- Aquatic Pest Control, #3337, \$25.00
- Chemigation in Tree and Vine Microirrigation Systems, #21599, \$5.00
- Costs of Pressurized Irrigation Systems for Tree Crops, #21585, \$5.00
- IPM in Practice: Principles and Methods of Pest Management, #3418, \$30.00
- The UC Interactive Tutorial for Biological Control of Insects and Mites, #3412, \$30.00
- Postharvest Technology of Horticultural Crops, 3rd Edition, #3311, \$65.00

JUNE CHECK LIST (contact us for details or assistance)

Apples and pears – Rainfall May 19-21 (from 0.40 to over 1 inch depending on location), may have resulted in new fire blight and scab infections visible 7 to 14 days after the event, depending on weather. The lack of significant inoculum thus far will likely limit new infection to sites of higher initial inoculum levels or previous disease, although all orchards should be monitored carefully (fortunately, most rat tail bloom has cycled out).

Kiwifruit – Copies of the federal marketing order referendum announcement are available at our office. Ballots are due between June 2 – 21.

Olives – Bloom is underway for many varieties; growers with young trees should have a tree training program in mind. Pruning should be done in dry weather.

Walnuts – The late May 19-21 storm coincided with a delayed leafout and bloom period. Enough rain fell for walnut blight to occur on pistillate bloom and young newly-forming nuts. Copper was applied to some blocks. Symptoms were likely visible 7-14 days later (sooner in warm weather). Contact our office for pest management guidelines that explain the disease and describe symptoms.

Choose and train one strong shoot as the leader in new trees. Keep competing laterals pinched back. Remove suckers below the graft.

All Young Trees and Vines – CONTROL WEEDS AND GOPHERS; apply nitrogen frequently but in small amounts (1 oz. per year of growth several times through the summer is fine). Water should also be applied lightly but frequently when irrigation season starts after the latest storm. Contact us for a table showing how much water young trees use for different months.

I HOPE TO SEE ALL PEAR AND WALNUT GROWERS AT THE SUMMER FIELD MEETINGS!

Sincerely,

Rachel Elkins
Pomology Farm Advisor

**SEE IMPORTANT MESSAGE TO NON-FARMING NEIGHBORS ON PAGE 7
PLEASE MAKE COPIES AND GIVE TO ALL YOUR NON-FARMING FRIENDS!**

LOCAL PEAR FARMERS REQUEST HELP FROM BACKYARD OWNERS OF APPLE AND PEAR TREES

The Lake and Mendocino County Departments of Agriculture and U.C. Cooperative Extension would like to ask the cooperation of all local county residents who have backyard apple and pear trees to help in containing a serious pest to commercial orchardists, the codling moth.

Codling moths begin to fly in the spring about the time when the apple and pear trees bloom. They lay eggs, which hatch into small worms. These then burrow into the young fruit and feed. There are two or three broods of the pest, which cause the typical “wormy” fruit most people are familiar with. The codling moth can cause great damage; growers can lose 50-100% of the fruit if it is not controlled.

Many local residents are familiar with the big spray rigs used to apply insecticides for the codling moth. As agricultural practices continue to evolve, more and more pest control is being managed with fewer pesticides that have a greatly reduced toxicity. Pear farmers are also using a non-chemical means of control called “pheromone confusion”. Dispensers are hung in the orchard that give out large quantities of the chemical the female codling moths emit to attract males. The chemical usually makes a trail that the male follows. If the orchard air fills with pheromone, the moths cannot find each other and so they don’t mate and lay eggs that produce the worms.

This method has been very successful and has greatly lessened the amount of insecticides used in pear orchards. However, this creates an environment that is much more sensitive to invasion by pests which can be harbored in abandoned or other apple and pear trees which do not receive treatment for pests.

The pear growers of Lake and Mendocino Counties are trying very hard to reduce pesticide use. It would be a great service to the agricultural community if all owners of fruit trees would control codling moth or remove and destroy wormy fruit.

Backyard apple and pear tree owners can obtain a free leaflet from the University of California Cooperative Extension office on how to control codling moth in backyard trees. The UC Master Gardeners can also assist with this. Please call the U.C. Cooperative Extension office at 263-6838 to obtain more information. Thank you very much for helping the North Coast pear industry reduce pesticide use.

LAKE COUNTY WALNUT SUMMER FIELD DAY
Friday, July 12, 2002

Steve Jones' Kusalow Ranch
915 Clover Valley Road, Upper Lake



(Hwy. 20 to Government Street, right on Second Street, left on Clover Valley Road)

Sponsored by:

University of California Cooperative Extension

AGENDA

- 8:30 a.m.** Registration
- 9:00** Welcome and introductions; 2002 season update and using the PestCast weather network
*Rachel Elkins, Pomology Farm Advisor,
UC Cooperative Extension, Lake & Mendocino Counties
Steve Hajik, Agricultural Commissioner, Lake County*
- 9:15** New Chandler planting: orchard establishment and young tree care; are walnuts a viable crop for Lake County?
*Steve Jones, grower, Upper Lake
Alex Suchan and Rafael Valadez, growers, Upper Lake
Rachel Elkins*
- 9:45** LEAVE FOR SUCHAN/VALADEZ RANCH TOUR (carpool)
(10005 Elk Mountain Road; parking will be directed)
refreshments will be served on the Suchan lawn
- 10:00** Walnut husk fly control options
Bob Van Steenwyk, Extension Entomologist, UC Berkeley
- 10:30** New walnut varieties
Gale McGranahan, Dept. of Pomology, UC Davis
- 11:00** Progress of Paradox seedlings in nursery
9 year old Chandler "hedgerow"
- 12:00** ADJOURN

UC NORTH COAST PEAR FIELD DAY
Wednesday, July 17, 2002

Yoxagoi Cookson Orchard, 3545 Soda Bay Road, Kelseyville
(enter just east of California Packing Road – signs will be posted)



Sponsored by:

University of California Cooperative Extension
California Pear Advisory Board
Pear Pest Management Research Fund
Gerber Products, Inc.

AGENDA

(2 hours continuing education credits applied for)

- 8:30 a.m.** Registration and refreshments
- 9:00** 2002 season update and using the PestCast weather station network
Rachel Elkins, Pomology Farm Advisor
UC Cooperative Extension, Lake, Mendocino, Sutter/Yuba Counties
- 9:15** Mating disruption program status and monitoring
Lake and Mendocino Pest Control Advisers
- 9:45** Organic codling moth control using Surround[®], oil, Pyganic[®], and spinosad
Rachel Elkins
- 10:15** Boxelder bug and stink bug monitoring and control
Lucia Varela, North Coast Area IPM Advisor, U.C. Cooperative Extension
Rachel Elkins
- 10:45** Variety trial update
Rachel Elkins
- 11:00** Root blasting to mitigate oak root fungus infections
Rachel Elkins
- 12:00** ADJOURN

SPANISH FIELD MEETING

Same location, 1:00 – 3:00 p.m.

Emphasis will be on hands-on training and mating disruption methods

ATTENDEES SHOULD BRING A HAND LENS OR ONE WILL BE PROVIDED