

The Bee Line

NEWSLETTER OF

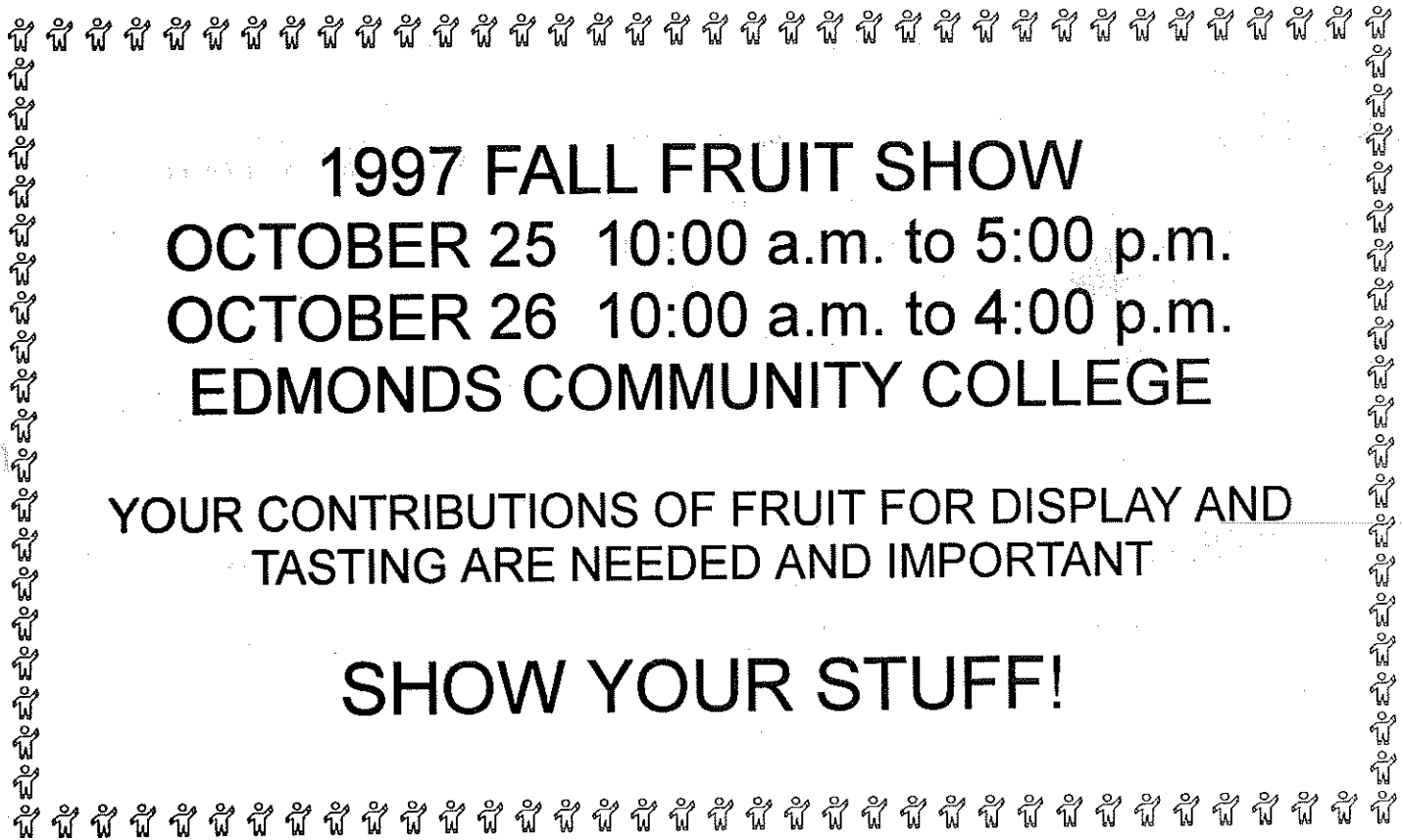
WESTERN CASCADE FRUIT SOCIETY

A NON-PROFIT EDUCATIONAL ORGANIZATION

Volume 18 Number 4

Fall 1997

Apples Pears Figs Grapes Kiwis Cherries Nectarines Peaches Plums Blackberries Raspberries Strawberries Blueberries Currents Huckleberries Gooseberries Nuts



1997 FALL FRUIT SHOW
OCTOBER 25 10:00 a.m. to 5:00 p.m.
OCTOBER 26 10:00 a.m. to 4:00 p.m.
EDMONDS COMMUNITY COLLEGE

YOUR CONTRIBUTIONS OF FRUIT FOR DISPLAY AND TASTING ARE NEEDED AND IMPORTANT

SHOW YOUR STUFF!

DATES TO REMEMBER

- | | |
|----------------------|--|
| October 11 | WWTFRF Mt. Vernon Open House/Field Day/Harvest Day: pears and late apple |
| October 18 | Peninsula Fruit Club Chapter Fruit Show |
| October 18-19 | The UBC Apple Festival, UBC Botanical Garden, Vancouver B.C. |
| October 25-26 | WCFS FALL FRUIT SHOW |
| November 1 | North Olympic Fruit Club Chapter Olympic Fruit Festival |
| November 9 | Annual Fruit Tasting Festival, Victoria B.C. |
| Feb 4-8, 1998 | Northwest Flower & Garden Show |

1997 FALL FRUIT SHOW INFORMATION

DIRECTIONS TO EDMONDS COMMUNITY COLLEGE

Southbound on I-5:

Take exit 181 (196th St SW). Go west (right) on 196th to 68th Ave W, then south on 68th Ave W to 200th. right onto college campus

Northbound on I-5:

Take exit 170 (220th SW). go west, cross over freeway, to Hwy 99. Go north to 200th St SW, turn left onto college campus.

Now that you're here, you can enjoy the lectures, taste the fruit, have that unknown apple identified, stop by the snack bar for a bite to eat and a cup of tea or coffee, look at the commercial exhibits, talk to WCFS home orchardists who have their fruit displayed, check out Orel Vallen's apple maggot display and materials, chat with the master gardeners, renew your membership at the membership table, get a copy of the Fruit, Berry and Nut Inventory (they'll be available at a special price to members of \$14.00, buy one of the last four "The Book of Apples", investigate the pamphlets at the education table, all this for only \$3.00. WHAT AN OPPORTUNITY!

And better yet, if you volunteer you can gain entry FREE. Take your pick:

Friday set up or

Sunday take down-call Ben Van Deren (425)778-3428

Tasting table-call Bill Davis, 771-8978

Education table-call Dick Tilbury, 723-9009

Membership table-call Evelyn Troughton, 282-6191

Selling raffle tickets-call Marlene Falkenbury, 522-2273

Selling tickets at the door-call Evelyn Troughton

DISPLAYING YOUR FRUIT

For a uniform look throughout the display area, these procedures are recommended:

On a 3" x 5" card for each sample of three to five fruits state the variety name and other information you may want to list. This could be the harvest date or any other information you think relevant. If you are submitting more than one kind, they can be arranged alphabetically.

Prepare a larger sign with your name and the geographical growing area. Plates, which hold three to five specimen, will be provided.

IDENTIFYING THAT MYSTERY APPLE

The apple identification experts have asked that the fruit you bring in is typical in color, size and shape for the tree you are trying to identify. To assist them, bring four to six specimen, with stems and free from blemishes. If you don't have that many, bring what you can. DO NOT WASH OR POLISH the samples. You may be asked the following questions:

When was the fruit picked?

Is it from a single tree or a row of trees?

Is it from an old orchard or a new planting?

When is the fruit ripe and how long does it keep?

Is the tree upright, spreading or willowy?

Does it bear on the shoot tips?

Is it damaged by scab or mildew?

Is it good fresh?

Is it good cooked?

THE SCHEDULE

SATURDAY 9:30 a.m. to 5:00 p.m.

10:30 a.m. Ornamental Crab Apples

1:00 p.m. Establishing & Evolving a Home Orchard

2:30 p.m. Gourmet Cooking With Fruit

Scott Connor

KOMO Radio Garden Talk Show Host

T.K. Panni

Home Orchardist, WCFS Member

Francois Kissel

Maximilien-In-The-Market Chef/Owner, WCFS Member

SUNDAY 10:00 a.m. to 4:00 p.m.

10:30 a.m. Edible Landscaping

1:00 p.m. Controlling Tree Fruit Diseases

2:30 p.m. Ask Cisco-Answers to Your Fruit Questions

3:45 p.m. Raffle Drawings

Kristan Johnson

Landscape Architect, WCFS Member

George Pinyuh

King County Extension Agent, Retired

Cisco Morris

KIRO Radio and TV, Master Gardener, WCFS Member

CONTINUOUS BOTH DAYS

FRUIT TASTING

APPLE IDENTIFICATION
COMMERCIAL EXHIBITS

MASTER GARDENERS
APPLE MAGGOT DISPLAY

MEMBERS FRUIT EXHIBITS
SNACK BAR

1997 FALL FRUIT SHOW INFORMATION

WESTERN CASCADE FRUIT SOCIETY

YOUR NAME HERE

CHAPTER NAME HERE (IF YOU WISH)

As reported in the Fall 1996 edition of the Bee Line, your board voted to purchase equipment to make name tags for the membership. It has now been purchased and Larry is ready to start production. Above is a scale drawing (outside dimensions), there are options for font style and size. Font used in sample is Brooklyn.

Sign up for your name tag at the membership table. Let the world know that you are a member of WCFS when you are volunteering or attending any of our events.

Board members will be wearing one so you can see what the finished product will look like, and Larry will be at the show so you may talk to him in person.

Chapters, you can order name tags for your members by writing to: Larry Mowrer-7323 71st Ave Ct SW-Tacoma, WA 98499. He needs the correct spelling of names and whether or not you want the chapter name included.

DON'T MISS THIS DISPLAY- DEMONSTRATION

New this year will be an exhibit of one and two year pineapple plants rooted from "store bought" pineapple tops. The two year old plants have a pineapple growing on top of the one year plant.

Chuck Parkman will demonstrate the Hawaiian method of preparing a pineapple for eating, and show how to prepare and root the tops which have been cut off.

Look for his display which will show the times he will demonstrate



RAFFLE NEWS RAFFLE NEWS RAFFLE NEWS

Your Board is working diligently to make this an exciting event. In addition to the Corel cider press there will be other items to be raffled. Can't say what they may be at this time. Come to the Fall Fruit Show to see them.

And yes, buying raffle tickets will increase your chances of winning at least 100%!

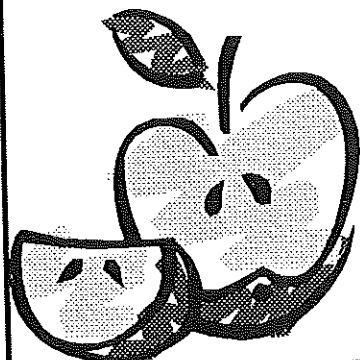
SNACK BAR

Featured at the snack bar this year will be bagels with cream cheese, muffins, and sweet rolls. To quench your thirst you have a choice of apple juice, coffee or tea.



APPLE MAGGOT DISPLAY

Orel Vallen will again be displaying the apple maggot information. He will have sample traps and materials to make the apple maggot traps with complete instructions. This is one exhibit you won't want to miss.



PREPARING YOUR FRUIT FOR TASTING TABLE

Your contribution of fruit for the tasting table is needed, and the procedure for preparing it for public tasting is very important. For maximum protection it should be sanitized, a very simple procedure. The Snohomish Health Department recommends the following method: To prepare the sanitizing solution, use only **ONE TEASPOON** of chlorine bleach to **ONE GALLON** of cool water. Nothing more is necessary, nor should anything else be added to the water. Immerse your fruit in the solution, paper towel dry and store the fruit in the refrigerator.

If you will call Bill Davis — (425) 771-8978 — and tell him what varieties you are bringing he will prepare signs for them. Bring your fruit to the site on Friday evening, if you can, so there is time to evaluate what is available.

Set up will start at 5:00 p.m.

FROM THE BOARD ROOM

The Board met August 9 at the Federal Way Regional Library and on September 27 at the University Branch Library in Seattle. At these two meetings the following actions were taken:

The approval of a \$2500.00 donation to WWTFRF for research in western Washington. This amount was sent to them plus \$302.00 of individual contributions from YOU.

A donation of \$500.00 to the Master Gardener Foundation of Pierce County for rare tree fruit planting and \$500.00 for the demonstration orchard at Mount Vernon. Read more about these activities in this newsletter.

A nominating committee was named—Orel Vallen, chair and T.K Panni, Chuck Holland and Marlene Falkenbury.

Each board member reported on his/her responsibility for the success of the Fall Fruit Show.

Lyle McKnight reported on costs for a WCFS web site and will get more details and report at the next board meeting.

Possibilities for additional raffle prizes were discussed and the raffle prize committee is looking into it.

NEXT MEETING NOVEMBER 15
FEDERAL WAY REGIONAL LIBRARY
34200 1ST WAY S

Exit I-5 at Hwy 18/Federal Way/Puyallup exit; west on 348th to 1st Ave S; turn right onto 1st and go 6 blocks—library is on right.

Your presence and input are welcome and important.

OFFICERS AND BOARD FOR 1998

Three positions will be open for election or reelection at the Annual Spring Meeting scheduled for March 1, 1998.

Orel Vallen, nominating committee chair and his committee - T.K. Panni, Chuck Holland and Marlene Falkenbury will be calling to select nominees for the three year terms that need to be filled. Steve Jackson, T.K. Panni and Chuck Holland's terms are expiring.

Joe Zeppa, president for the past three years, has announced that he will not accept the nomination again.

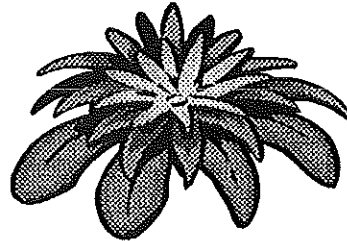
WCFS AT THE 1997 PUYALLUP FAIR

We did it again! a VERY successful display at the fair, thanks to the members of Tahoma Chapter. Ed Jones, pres-ident, was given the certificate printed below (in 50% scale), with this personal note from Gale: "Ed, Your booth was very becoming and attractive and drew a lot of interest. I want to thank you and your group for coming and being a part of our building".

Included in the display were home grown fruits: apples, figs, grapes-red and white, I can't remember all of them. Also displayed were home canned jams and chutneys. There were trees in pots: cherry, apple, citrus. The fresh fruits were changed daily as needed so everything always looked good enough to eat! About 1800 WCFS Fall Fruit Show flyers were given to those who expressed an interest. Many interesting questions were asked—and answered, many compliments received.

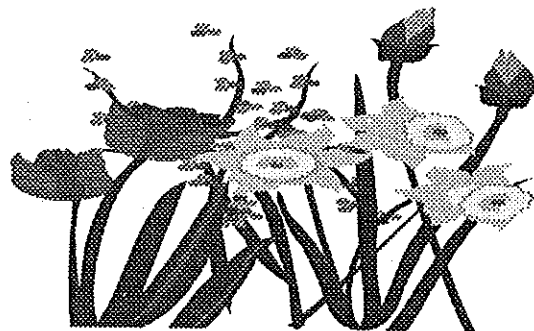
This display is excellent publicity for WCFS. Many of the people who stop by are from western Washington areas, join our organization and affiliate with chapters other than Tahoma.

At the board meeting of September 27, Ed stated that there were 160 time slots to fill, fewer than 30 filled them. Only four WCFS members who were not Tahoma chapter members helped. He had neighbors volunteering to help, but the majority of the hours were filled by the few.



WCFS AT THE FLOWER & GARDEN SHOW

We will be at the 1998 Northwest Flower and Garden show February 4 to 8. Marlene Falkenbury, president of Seattle Tree Fruit Society will be scheduling volunteers to man the booth. If you would like to help out she would appreciate a call. Volunteers get free entry to the show, and there is time for you to see all the exhibits. More details in the January newsletter.



BAMBOO SHOWS BIG POTENTIAL FOR SMALL ACREAGE

by Jerry Rhodes for the Capital Press

HOCKINSON, Wash.— When Ken Long bought a 15-acre parcel in southwest Washington 4 years ago, he began searching for a crop that not only is profitable, but likes water.

"In the wintertime, this is just saturated," Long said of the property. "It's like pudding, It's almost a wetland."

Down the road, Long's neighbors grow hay and ginseng successfully. But Long didn't want to invest in the equipment needed to grow and harvest these crops.

"I was looking for plants that would grow on wet soils," he said. "Being an accountant and a landlord and not knowing anything about horticulture, I was willing to try anything."

Long's alternative crop came to him in a flash of gastronomic inspiration. "My wife, Meredith, and I love Chinese food," he said. "We thought that fresh bamboo shoots would be nice."

So the Longs established their farm, "Bamboo Ponds," two years ago to supply themselves and area grocery stores with fresh bamboo shoots and retail nurseries with bamboo plants and canes.

Bamboo is an up and coming crop for the rainy side of the Cascades, said Charles Brun, a small crop specialist for the Washington State University Cooperative Extension in nearby Brush Prairie. "It won't be the next ginseng probably, but it will have a niche, I think, in Northwest horticulture," Brun said.

Long said, "This year we started eating bamboo shoots. But we're not up to selling them yet." Even so, one corner of the once-grassy lot is taking on a decidedly different look as a bamboo forest takes over from the native grass.

It's been a learning experience, Long said. While the plants grow to a sun-blocking, tree-like height, they are still grasses and propagate that way.

From rhizomes—long, stem-like horizontal members that extend out from the plant just under the surface of the ground—vertical culms rise up in the spring in the familiar round, woody stem topped with long, fingerlike leaves. Each year, more culms spring up.

The young culms are harvested as edible bamboo shoots. Few bamboo species are not edible.

Even the huge stems, 4-inch in diameter and larger, used in Asia as scaffolding and construction, are edible. In fact, big stems, cut down to size, are what you're likely to buy canned in the store.

Wholesale, the Longs can sell shoots for \$1.75 to \$2.25 per pound, perhaps more if they go into the specialty

grocery stores. They may be able to produce as much as 5 to 10 tons per acre, as others in the Northwest have. They can also sell the stems as timber, for about \$10.00 per stem.

The Oregon Bamboo Co. in Medford, Oregon, has been a leader in encouraging the bamboo crop in the United States. Owner Tim Ogden estimates the cost of establishing a one acre grove at \$2000.00.

"It doesn't take a lot of capital to get started," Long said. "That's one of the good things about it. You also don't have to spray it. If you don't have mites and don't get them from someone else, there aren't any diseases. You don't have to have expensive spray equipment."

And it's not a tremendous amount of work, Long said. Despite popular perception of bamboo as a tropical plant, there are hardy varieties that will survive sub-freezing temperature.

Near the front of his property, Long shows off a plant that has successfully competed against native grasses for a summer with no irrigation at all.

The farm is still experimental. There are lots of varieties, ranging from some that grow a foot high, with stems that will never surpass a half-inch, planted right next to healthy young giants 24 feet high and 2 inches in diameter in only their second year.

"I'm just trying anything that will grow in this climate because there aren't a lot that will grow in heavy soils," Long said.

Long doesn't expect to be selling off his rental properties and lining off bamboo earnings any time soon. But as a way to make a good, profitable use of a small, wet corner, this will do just fine.



QUESTION and ANSWERS

By You and For You

One of the suggestions sent in on the survey sheet above the membership renewal form was a question and answer column. I invited the member who made the suggestion to submit some questions, so here goes. Please send your answers to Editor, WCFS Newsletter-2625 13th Ave W Unit 306, Seattle, WA 98119 for publication in the next issue. There may be others wondering about the same situation, and your answer will help all.

QUESTION: My mini-farm is located at 300 feet elevation between Snohomish and Everett. Typical mid day summertime temperatures are about 3° to 5° F cooler than the valley floor. About 28 years ago I planted a Concord grape on the south side of my barn right under the eaves. That hot location has been great and it has produced well. Fifteen years ago I planted an Interlaken grape next to it about 4 feet out from the barn; then to the west along the barn side I planted an unidentified grape, given by a friend, under the eaves and a Canadice grape out 4 feet from the barn. All of these grapes have flourished. All have produced well except for the Interlaken. It blooms well but very few grapes develop. Last year I called the company where I purchased the Interlaken. The representative suggested I not prune it so severely this year. So I left a long lateral to the west with about 50 buds for all laterals. This has resulted in a moderately good production of grapes along that part of the lateral which is away from the Concord. The Concord is trained along the eaves so that its laterals are about 4 feet above and 3 feet to the side of the Interlaken laterals. **Could the Concord pollen be interfering with proper pollination of the Interlaken?**

QUESTION: Fifteen years ago I planted 3 "American" persimmon trees. The largest is about 20 feet high with fifteen feet spread, another 12 feet high with a 10 foot spread, and the third is on 6 x 6. I have never seen a blossom let alone a fruit on any of these. **What can I do to stimulate some fruit production?**

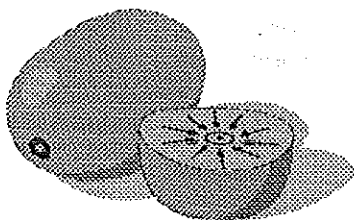
QUESTION: Nine years ago I planted a female and a male hardy Kiwi (*Actinidia arguta*). Last year was my first fairly good crop, but still amounted to only about 50 fruit. This year there were very few blossoms and only about a dozen fruit set. The plants look good. **Are my plants lacking something?**

Editor's note: I know that there are members who can answer each of these questions. Lets hear from you.



VISUALIZE

PERSIMMON



BROOKS AND OLMO'S FRUIT VARIETIES REGISTER REVISED

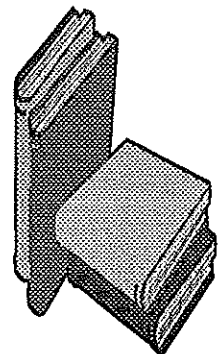
Many fruit growers and horticultural students are familiar with the text book "Register of New Fruit and Nut Varieties" by Brooks and Olmo. This book is a valuable resource for accurate information on varietal names origins and fruit descriptions. The original edition was first published in the late forties. The 2nd edition was published in 1970. It is now revised as "3rd edition" and is considered an indispensable handbook for anyone dealing with fruit varieties. The book is published by the *American Society for Horticultural Science*. Text is very complete with its coverage of 80 different fruits and nuts—several of which many people have never heard of, such as Carambola, Citrumelo, and Loquats.

A group of 35 specialists from around the world collaborated in reviewing and adding new varieties. Among these people were PNWFTA members, Bob Norton, Jim Cummins, Duane Greene, Curt Rom, Bob Stebbins and Roger Way. The apple section alone has over one thousand entries, including 59 apple rootstocks.

Bob Norton says, "All in all this newly revised edition is a much needed update for the fruit breeder, the variety developer, the hobbyist, the nurseryman, and the commercial grower."

THE REGISTER OF FRUIT AND NUT VARIETIES, a large 744 page book, is available for \$150.00 US (plus shipping). WCFS members can get a discount as a group purchase. Between 5 and 10 copies \$135.00, 10 to 25 copies \$128.00, plus shipping.

To place your order send your name and address **only** to the newsletter editor by November 10, and state that you want to order this book, or sign up at the Fall Fruit Show. When all orders are placed we will then know which discount category will apply, and you will be notified what the cost will be, including shipping from the publisher to me and then to you. It may be that the publisher will ship to each buyer, but that is not generally the case in group purchases, but I will check it out.



Thanks to Chuck Parkman for arranging this discount. 😊

RARE TREES AND MASTER GARDENERS IN PIERCE COUNTY

As noted in the Board news on page 4, a \$500.00 donation was made to the Master Gardener Foundation of Pierce County to enhance their program of planting rare fruit trees that can be successfully grown in western Washington. This too was felt to be an opportunity to expand educational benefits to members and non members.

MOUNT VERNON DISPLAY GARDENS

Plans for the WWTFRF Demonstration Fruit Garden are going forward, and a prospective outline by Kristan Johnson, approved at the March meeting, was presented to the "umbrella group" that coordinates the efforts of the different garden groups at a meeting at the station on August 8. Kristan will have the updated plan ready to look over at the Open House on October 11, and the time from 10:00 a.m. to 11:00 a.m. will be set aside for members to examine the design, ask question, and decide on the best way to get the Demonstration Garden started this year. Everyone who is interested in the garden's future is invited to take part.

Kristan reports that he has worked with four other groups in planning the overall design. They are the Master Gardeners of Skagit County who are working on the "Discovery Garden", the Native Plant Society, Rose Society and local historical society that collects antique farm implements.

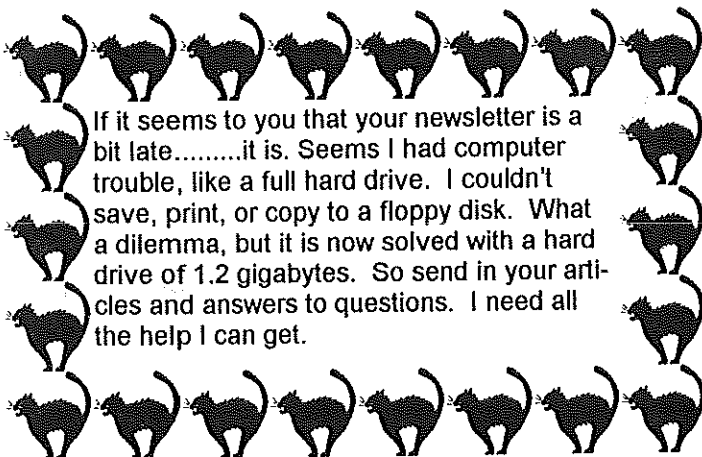
Kristan explained that the infrastructure including parking, roads, irrigation and drainage has been designed and the basic plan adopted by the groups. He added that "ground will be broken by September 15" when five of the eleven acres that are in the "central oval" will be seeded to a cover crop. Kristan said this area will become a picnic area and wildflower field. He expects that one of our first projects will be the selection and the planting of nursery stock of antique apple varieties on a large growing rootstock. These trees will define the perimeter of the oval. He said that large fruit trees, transplanted from other plantings at the station would become part of the garden.

While the overall outline is in place, the specifics need to be filled in and that is where any WWTFRF member can become involved in the process.

This information is from the WWTFRF September newsletter, Sam Benowitz, editor.

WCFS AT MOUNT VERNON

As reported in WCFS Board news (page 4), \$500.00 was donated to this project. The board members felt that it has educational value for those who visit the site, non members as well as members. Member are encouraged to volunteer in any way possible to help in this project.



If it seems to you that your newsletter is a bit late.....it is. Seems I had computer trouble, like a full hard drive. I couldn't save, print, or copy to a floppy disk. What a dilemma, but it is now solved with a hard drive of 1.2 gigabytes. So send in your articles and answers to questions. I need all the help I can get.

The British Columbia Fruit Testers Association is now "on the net". As reported in the summer issue of Fresh From the Cider Press, it was created to enhance the stature of the BCFTA, as an organization of people who are interested in the science and cultivation of all types of fruit. They are hopeful that the web site will encourage fruit enthusiasts who are "browsing" the 'net" to become a member of BCFTA and to enhance and expand the resources that available to the BCFTA membership.

It is designed so that it consists of two major parts: a **non-restricted** part that can be viewed by anyone with access to the world wide web, a **restricted** part for *only* those people who are members of BCFTA.

It can be found at <http://www.islandnet.com/~bcfta/>

FINDING YOUR WAY AROUND THE INTERNET

More farmers are now looking to the Internet for accurate, timely information about weather, prices, new products and crop reports. A new book, "The Farmer's Guide to the Internet" by Henry James and Kyna Estes of the University of Kentucky College of Agriculture is designed to help farmers get on line cheaply and then quickly find the information they need. The book is published by the TVA Rural Studies program at UK.

"Farming is primarily a rural occupation and many rural areas do not yet have local Internet access," James said. "So, many rural Internet users have to make a long-distance call to access the Internet, and that can make using the Internet too costly. "The Farmer's Guide to the Internet" shows rural users how to access information on the Internet at low cost."

The 330 page book also lists more than 1,000 Internet sites where farmers can find agriculturally related information.

Estes said that more farmers and agricultural companies now are using e-mail to conduct farm business. Sending e-mail is a way to more efficiently conduct business for farmers who are not near a telephone for most of the day.

To order the book, contact the University of Kentucky by calling 1-800-885-9800

REDUCE RUSSET BY FIGHTING FUNGI

By Thomas J. Burr and Mary Catherine Heidenreich

Russeting is a serious problem that can significantly reduce apple quality and profits. Russet, either netted or solid, may occur on any part of the fruit but is most often pronounced at the stem end.

Previous Research Suggested Causes

Russet has been attributed to the use of certain pesticides (i.e. copper-containing fungicides), and to wet conditions near and shortly after bloom. Interestingly, many years of research conducted in the early 1950s by M. Szkolnik at Cornell's Geneva Experiment Station demonstrated that the best fruit fining on Golden Delicious was always on fruit that were sprayed with captan, as compared to other fungicides used at the time.

Subsequent research on apple and other fruits has also shown that the incidence and severity of russet is affected by the use of different fungicides, implying that microorganisms (in particular fungi) may be associated with russet. However, few microbial causes of russet have been identified. It has long been reported that the powdery mildew fungus, *Podosphaera leucotricha*, can induce apple russet, and more recently S. Lindow in California has demonstrated that certain IAA-producing strains of *Pseudomonas syringae* cause russet that is associated with pear lenticels.

Russet-Causing Fungi Identified

We recently discovered that severe russet develops when apples are inoculated with fungi, *Aureobasidium pullans* and *Rhodotorula glutinis* (a yeast), that are commonly found on the surfaces of apple fruits and leaves.

Because *A. pullulans* shows a superior ability to survive and cause severe russet, it may be the most important russet-causing fungus. However, additional research is necessary to clarify this point. We were able to detect *A. pullulans* in naturally russeted tissues of fruit representing 22 apple and two pear cultivars. Although not the sole cause of russet (copper-induced russet was apparent in some orchards) we believe that *A. pullulans* is a major cause.

Control of Fruit Russet on Golden Delicious Apple

Treatment*	Average % Russet
Non-treated	44.83
C. pulcherrima 115B	57.18
P. syringae 508*	49.03
Dithane 75DF	25.00
Syllit 65WP	35.25
Captan 50WP	18.00
ProVide 2%	27.58

* Treatments included potential biocontrols *Candida pulcherrima* and *Pseudomonas syringae*, fungicides and ProVide. Six applications of each treatment were applied to trees at weekly intervals beginning at the tight cluster phe-

nological stage. Standard labeled rates of each chemical were used.

Control Strategies

Inoculation studies done in 1996 with *A. pullulans* showed that fruit are susceptible from bloom until four weeks after petal fall (the duration of the experiment). More research is needed to determine if fruit are susceptible for a longer period and if the degree of susceptibility changes as fruit develop.

Another interesting correlation found by previous researchers is that the severity of russet is stimulated by cool, moist conditions that occur around bloom. Such conditions are likely to be conducive to growth of resident fungi, such as *A. pullulans*.

A. pullulans is sensitive to some fungicides but not to others, and it is not sensitive to five insecticides used in the screen. *A. pullulans* was most sensitive to captan and mancozeb but not to dodine or sterol-inhibitor fungicides.

Results from our first orchard experiment on Golden Delicious are shown in the table at left.

Russet was most significantly reduced by the fungicides Captan (captan, ZENECA), Dithane (mancozeb, Rohm and Haas), and the growth regulator ProVide (gibberellic acid, Abbott Laboratories).

Research in the coming years will concentrate further on control strategies for russet-causing fungi, as well as determining what allows these organisms to survive so efficiently on apple fruits and leaves and how they cause russet.

Burr is professor of Plant Pathology and Heidenreich is a technician in the Dept of Plant Pathology, Cornell University, NYSAES, Barton Laboratory, Geneva, NY 14456-

OLYMPIC FRUIT FESTIVAL 1997 PRESENTED BY NORTH OLYMPIC FRUIT CLUB OLYMPIC PENINSULA MASTER GARDENERS CLALLAM CO-OP NOVEMBER 1 10:00 a.m. TO 3:00 p.m.

- ⇒ DISPLAYS OF LOCALLY GROWN FRUIT VARIETIES
- ⇒ TASTING TABLE OF LOCALLY GROWN FRUIT
- ⇒ MASTER GARDENERS INFORMATION TABLE & BULLETINS
- ⇒ PURCHASE LOCALLY GROWN FRUIT
- ⇒ FRUIT GROWING INSTRUCTIONAL VIDEOS
- 10:00 HOW TO GROW AN APPLE TREE BY BOB STEBBINS
- 11:15 HOW TO PRUNE HIGH BUSH BLUEBERRIES BY GROWER
- 11:40 ORCHARD MASON BEE POLLINIZER BY BRIAN GRIFFIN
- 12:00 DISEASE CONTROL IN FRUIT TREES BY WAYNE ROBERTS
- 1:00 EASY STEPS TO FRUIT TREE PRUNING BY GARY MOULTON
- 2:00 FRUIT TREE VARIETIES BY BOB NORTON

KNOW YOUR ENEMY

By Lynn Long for Good Fruit Grower

Last spring (1995) I had an opportunity to study the tree fruit industry in southern Europe. I visited many orchards and spoke to growers in Italy, France, Spain, Switzerland, and Germany. One of the things that impressed me most about European orchardists was their desire to understand pest populations in their orchards.

The introduction of integrated fruit production (IFP) programs throughout Europe is the primary cause of this increased awareness. IFP regulations require growers to justify, in writing, any pesticide application. Extension Service personnel have responded to this need by training growers in pest identification and monitoring techniques.

The best of these training programs was in the South Tyrol Valley of Italy. Twenty four Extension agents service an area of 42,000 acres.

Once a week, agents put on mini-workshops throughout the region, teaching growers how to identify and monitor various pests such as aphids, leafrollers, and leafminers. Growers then go to their own orchard, scout for the pests and determine if control is necessary. Chemicals are applied only when needed, and potential problems are spotted before they become serious.

Fortunately, American growers are also learning the importance of orchard scouting. Unfortunately, these are sometimes hard-learned lessons.

This point is highlighted by an incident that took place several years ago in an orchard in Wasco County Oregon. Cherries from one block were found infested with oblique-banded leafroller (OBLR).

Unfortunately, it wasn't until harvest that the grower, and field representative, knew of the infestation. Larvae were inside cherries and crawling on top of cherries in the bin. The grower lost thousands of dollars when the packing house refused several tons of harvested cherries and dumped them in the local landfill. Other cherries were left hanging on the trees, unharvested. This was a problem that could have been easily identified and controlled with an early season scouting program.

As disconcerting as this incident was, more common is the grower who applies a pesticide that isn't needed. Again, scouting can help this situation. This spring in Wasco County, growers and field reps scouted prior to bud break, looking for overwintering OBLR larvae. In several cases, larvae were not found, so sprays were not applied. Growers will continue to monitor these blocks, however to make sure that insect populations are not building.

Scouting can also increase the effectiveness of a spray. In

Oregon, tentiform leafminer on cherries can be controlled postharvest with Dimilin an insect growth regulator. Dimilin prevents egg hatch but does not kill adult tentiform leafminer. It is important, therefore, that Dimilin be applied just before or shortly after egg laying begins. A poorly timed spray will be wasted costing the grower money and causing increased damage to the orchard.

Scouting can take several forms, depending on the pest and the time of year. For example, early season OBLR scouting on cherries consists of clipping terminal buds from tree tops with pole loppers. Four samples are taken per tree from 25 trees per block. If more than one larva per block is found in these samples, a spray is indicated.

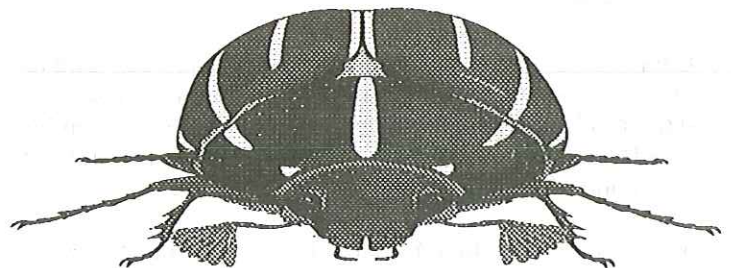
Monitoring later in the season (mid May) can be accomplished using pheromone traps. These traps attract the male OBLR moth. Low counts (under 50 by May 31) indicate that another spray is probably not necessary. Since moths can be attracted to these pheromone traps from a great distance, high catches merely indicate a need to, once again, check the trees for larvae.

Scouting for a disease such as cherry powdery mildew can be accomplished simply by walking through the orchard and observing the location of the mildew in the tree. If it is not present or if it is confined to the lower portion of the tree, near the crotch, then a control measure generally is not indicated. However, if the humidity is high and the mildew is moving up the center of the tree, a spray needs to be applied immediately to protect the fruit.

Many growers simply look for potential problems every time they are in the orchard. If they see a problem developing, they ask their field representative to take a closer look and rely on his or her expertise to assess the situation. The important thing is that someone is looking. Someone knows the pest population in the orchard, and control programs are based on need.

Many growers are beginning to see that they can save money, protect the environment, and obtain better pest control through proper timing of sprays with a well-planned scouting program. Scouting will expose a problem before it turns into a disaster and will prevent unnecessary pesticide applications.

Lynn Long is Oregon State University Cooperative Extension agent for Wasco County and is based in The Dalles.



PEST CONTROL HAS BEEN TOO NARROWLY FOCUSED

by Geraldine Warner for Good Fruit Grower

Pest control in the past has been too narrowly focused, which is why it inevitably breaks down, sooner or later, said Dr Larry Gut, entomologist with Washington State University in Wenatchee.

In trying to control pests, people in the tree fruit industry have neglected one of the principles of ecology, which is that the way living things behave is determined by their environment. And that environment is composed of physical elements, weather, pesticides, and other living organisms, all of which are interconnected.

Too often, the focus has been on a particular pesticide and the problems of managing a specific pest, Gut explained during a WSU Cooperative Extension seminar on environmental chemistry and ecology of pesticides.

"We try to manage populations right now," he said. "To me, the real problem is broader in nature than that. We forget all the connections because we're focused on the population we want to control. We forget about everything else that's going on in the orchard. We have to know more about what's going on in there when we make decisions."

Insects and mites have a long history of dealing with environmental toxicants, and are preadapted to deal with many of the pest controls used in the tree fruit industry. Resistance is the ability to avoid the toxic action of a pesticide, and is somewhat like natural selection, Gut said. Continued exposure to some pesticide, or environmental condition, increases selection pressure, resulting in a population of genetically well-adapted individuals.

The first case of resistance was reported in Washington State in 1908 when lime sulfur was losing its effect against San Jose scale. Resistance of insects and mites to pesticides has been increasing dramatically since the 1960s, Gut said. There is evidence that they can develop resistance to the newer, more selective forms of pest control, such as Bt (*Bacillus thuringiensis*), and can even become resistant to parasites by figuring out how to avoid them. Insects by nature are very adaptable. They can adapt to crop rotations, resistant cultivars, sterile male insect releases, and even mating disruption.

Sometimes a pesticide can somehow improve the suitability of the orchard to the pest, either by increasing the attraction of the crop or modifying the pest behavior so it reproduces more efficiently. Gut said mites have been known to have a positive reaction to a pesticide and laid more eggs.

Even worse than being ineffective, pesticides can lead to pest resurgence, which means that pest numbers are higher after the pest recovers from the treatment than before the pesticide was used. The result is higher pest densities and often more damage than ever.

The reason this happens is that before the pesticide was

applied, natural enemies were probably playing a role in control of the pest. The pesticide not only kills the pests, but the natural enemies, and recovery of the natural enemies lags behind that of the pest.

Replacement is another phenomenon seen when pesticides are used without considering the whole orchard system. The primary pest is treated, and populations drop. But secondary pests become key pests because their natural enemies are killed by the pesticide.

Pest upsets are also seen when natural enemies or competitive species are removed. Biological systems are interconnected, with a complicated food web, Gut said, and pest upsets occur when the connections in the web and the insects' preadaptation are ignored.

Insecticides can eliminate food sources for natural enemies, leading to flare-ups of pests. For example, mites can become an increased problem if insecticide treatments eliminate rust mites, which do not damage fruit crops but are a food source for predatory mites that control spider mites.

Gut said studies he did in Medford, Oregon, showed that there could be more than 300 species of insects and mites in unsprayed orchards, but there were usually fewer than 50 in sprayed orchards.

Many of those species can provide biological control, but little is known about them. The study of biological control is relatively new because so many parasites and predators were eliminated in the past by broad-spectrum pesticides. "There was no reason to do research on them in the past because they weren't going to survive," Gut said.

Now that orchardists are reducing the pesticide load, and there is less toxicity in the orchards, there is an opportunity for biological control, but to benefit from natural biological control in the orchard, growers may have to change their thinking as well as their spray programs.

For example, older wood is thought of primarily as habitat for codling moth, but it also is the home for more than 50 species of insects and mites in unsprayed orchards. Mites and bark lice are prey for beneficial mites and insects, including snakeflies that play a big role in the biological control of pear psylla.

A large percentage of beneficial insects spend most of their life outside the orchard and move in during the growing season, but Gut said many are being kept out of pear orchards by broad-spectrum pesticides. "It's not only the insecticides that are being applied in your orchard that are affecting the biological community, but the pesticides being applied by your neighbor," he said. "Your neighbor is going to have a huge impact on what happens."

(Continued on page 11)

(Continued from page 10)

A neighboring orchard treated with insecticides will serve as a barrier to insects and mites that might move in from other habitats, he said. "If your orchard is a little island with other orchards around it and native vegetation is quite a distance away, they have to cross that insecticide barrier to get to your orchard, and not very many can make it. Pesticides influence how many are there, what kinds are there, and when they come in."

Gut said research shows that in orchards where mating disruption is used that are next to natural vegetation, pear psylla can be controlled by natural enemies. The beneficial insects move into the orchard early in the summer and build up to high numbers.

In a conventional orchard studied, there were no pear psylla in the summer because they were controlled by pesticides, but there were no predators either.

In a pheromone-treated orchard surrounded by other orchards using broad-spectrum pesticides, pear psylla numbers were high enough to cause concern. No pesticides were applied, but there was no natural control, either. Natural enemies eventually moved into the orchard in late summer, but not soon enough to control the pear psylla.

Gut said in his experience, woodland is one of the best habitats for natural enemies. For example, *deraeocoris*, an important predator of pear psylla, spends the winter outside the orchard and feeds on pine scales. However, some natural vegetation may also be habitat for pests, such as lygus and boxelder bugs, he warned.

There is still much to learn about habitats and biological control, he said. In the past, it was not easy to find unsprayed orchards to do research in. "Now we have a few soft selective materials, we're starting to be able to do this kind of work in commercial size orchards, and I think we'll learn more about how these things from outside can survive in the orchard and make it across the barriers," he said.

An option is for growers to provide refugia for beneficials either within or outside their orchards, he said. Windrows and hedgerows have been explored in Europe as habitats for natural enemies of pear psylla.

"That's great, but all the work has focused attention on one particular insect," Gut said. "They ignore that other insects will live in that habitat. The reason it's not been implemented is it's much more complicated."

People should remember they are dealing with a biological system that is not in a steady state, and they need to work with the fluctuations, he said. They need to look at the bigger picture. "We just have our attention focused a little bit too low. We're doing all of our pest management based on populations. I think eventually we're going to start looking at a bigger chunk of the system in terms of management practices."

CONTROLLING PEAR PSYLLA IS NOT THE CHALLENGE NOW

Pear psylla has long been a challenge to Washington pear growers. But the challenge today is not in controlling the pest, because the materials available work very well. The challenge is to maintain their effectiveness, said Dr. Mike Willett WSU Cooperative Extension horticulturist for Yalima County.

The materials currently used are Comply (fenoxycarb) and Agrimek (abamectin).

"If you poll growers, pear psylla is not even mentioned as an issue because things are working so well," he said at the annual North Central Washington Pear Day. But he reminded growers that pear psylla has been able to develop resistance to just about every material used for its control.

He said the industry has been looking at resistance management since the 1980s. By using one material at the delayed dormant stage, and another during the growing season, growers can affect how quickly the pest develops resistance.

He said field horticulturists are very conscious of the need to think about possible resistance to Fenoxycarb and Agrimek and are recommending that growers use single applications and alternate the materials to reduce selection pressure.

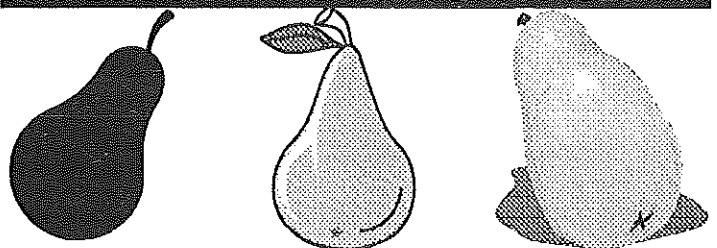
Growers are also encouraged to use tactics to avoid using either of the products during the growing season. One tactic might be to use mating disruption for codling moth, which appears to allow more suppression of pear psylla nymphs by natural enemies.

In orchards in Medford, Oregon, a combination of mating disruption and horticultural oils has increased the numbers of natural enemies and enhanced control of indirect pests such as pear psylla.

Willett said this approach is not the perfect solution. There are questions about the long-term effects on the trees of applying oils, and more work needs to be done to figure out how to monitor orchards where mating disruption is used, so the orchardist knows if the technique is still working.

Another consideration is the cost. Willett said in orchards with low codling moth pressure, the cost of mating disruption seems high, but if it can help the orchardist avoid using other materials by improving control of pear psylla, it may be worthwhile.

"Pear psylla is going to continue to be a challenge," he said. "Right now, it's not getting good control; the challenge is to maintain the materials that we have that will give us good control over the longest period."



REMOVE CULL PEARS TO SUPPRESS CODLING MOTH

From an article published in Good Fruit Grower, Aug 1997

Pear growers in California are being urged to think about controlling codling moth after harvest in order to reduce pest pressure the following year.

Dr Robert Van Steenwyk, extension entomologist with the University of California, Berkeley, said growers he works with harvest their pears between July 4 and August 4. After harvest, codling moth develops through at least one more generation before it goes into diapause for the winter. The small and misshapen pears, left on the trees after harvest, are infested with codling moth and allow high populations to build up the following spring.

Van Steenwyk said there are three ways that growers can control codling moth after harvest and reduce pressure the following spring. One is to strip as many of the remaining pears off the tree as possible, using a pole with a garden cultivator attached to the end. Growers have found that they can sell the fruit for juice, and the returns cover the cost of stripping and may even provide a little profit. Ideally, between 75 and 80% of the remaining fruit should be removed.

This method has been catching on, but very slowly. Van Steenwyk expects that once growers realize they can make money, it will catch on faster. While it is a practical option where there are fewer than 100 trees per acre, in higher-density orchards where the trees form a hedgerow, the fruit is harder to see and reach.

In orchards where it is impractical or cost-prohibitive to strip the fruit, growers are applying insecticides after harvest. This is not the preferred method because of the risk of increasing resistance to pesticides. It is estimated that between 30 and 40% of the pear acreage in the Sacramento Delta area is being treated with postharvest sprays of Lorsban (chlorpyrifos) or Penncap (methyl parathion). Resistance to Guthion (azinphos-methyl) is high, but those materials have shown a negative cross-resistance, which means that by using Lorsban or Penncap growers may be helping to reduce resistance to Guthion. However, it is not the long term solution, according to Van Steenwyk.

If growers do everything right after harvest they may be able to knock down the following year's first generation of codling moth by 50 to 75%. Typically, trap catches in California pear orchards total 200 to 500 moths per season, and can be as high as 1,200. Growers who have been able to suppress populations in the spring have usually applied the same number of cover sprays, but have been able to reduce the rate. Post harvest sprays won't eliminate codling moth, but they might help growers sleep better at night.

A more practical and economical method is being tested. Researchers have applied post-harvest sprays of Ethrel (ethephon) to loosen the fruit from the tree, so growers no

longer need to send workers through the orchard with poles. Within a week or two, the pears either fall off the trees or ripen so that the codling moth larvae cannot complete their development before the fruit turns into goo. In some cases the larvae drown.

This has worked very well in tests so far from the point of view of controlling codling moth, but research remains to be done on how Ethrel affects the tree. Scientists will treat plots for three consecutive years to study the effect on return bloom and shoot growth. The earliest the product could be registered for postharvest use would be 1998. The cost would be about the same as for an application of insecticide.

Another option for growers who are using mating disruption would be to make a second application of pheromone dispensers for the latter part of the season. Van Steenwyk said it works but the cost is too high.

M-9 ROOTSTOCKS

by Chuck Parkman

My spring 1997 grafting success on M-9 rootstock was poor. In a conversation with Christopher Dolby, owner of Copenhagen Farm Fruit Tree Understocks, I related my experience. He educated me on the problems with M-9 rootstocks compared to other fruit tree rootstocks.

The nurseryman's standard for fruit tree rootstocks requires at least 3 roots to be graded as standard. This can be a problem for M-9 rootstocks as they are very susceptible to loss of roots when being handled. They fall off when being dug and being graded and then while being separated and grafted by the buyer. I had noticed some of mine were lacking any roots when I got around to grafting them. I grafted many with less than 3 roots and as a result many rootstocks died.

The solution to the problem is to be extremely careful when separating the rootstocks in the bundle. If the bundle has been dug in the ground to await spring grafting, many new white very tender roots will grow out. If the individual rootstocks are then torn apart from the bundle, many of these tender new roots will fall off. So, the bundle should be separated when received so new roots growing out while heeled in waiting for grafting will not be torn off.

Do not graft onto any rootstocks that have less than 3 roots. Instead, plant them in a nursery bed as soon as received and let them grow until the following year for grafting, or bud them in August if they are growing vigorously.

THE LAST WORD ON CIDER

As we get into the apple cider season here are some reminders about past problems encountered and suggestions on what to do to protect yourself from being contaminated by E. Coli.

In November, 1996 after the E. coli shock from the non-pasteurized commercial cider, Ellen Terpstra, U.S. Apple Association President, wrote in the Great Lakes Fruit Growers News: "Forget everything you thought you knew about cider safety up until now. Recent cases of food borne illness linked to unpasteurized apple cider/juice have raised legitimate questions about what it takes to produce this product with a guarantee of safety.

"Until this year, we thought we understood the problem to be uneducated hobbyists and 'bad actors' not following good manufacturing practices to properly clean drops that might get contaminated on the ground by E. coli-contaminated fecal material."

She goes on to say that commercial cider producers need to pasteurize their product. If they are unwilling to do that she offers other steps to consider.

We, as home orchardists, have the following advise to guide us.

Washington State University Cooperative Extension says that most apples get contaminated from cow, sheep or deer manure when they fall onto the ground in the orchard.

Anytime cider is made from fresh apples, there is a risk that E. coli or other bacteria will be in the finished products. The most effective way to kill bacteria is to pasteurize the cider or juice by heating it. Pasteurization is particularly important when using apples which have been dropped from the trees.

They recommend the following procedures.

- 1 Use apples which are picked directly from trees. Do not use any apples which have touched the ground.
- 2 Wash the apples thoroughly with water. (Add a small amount of soap or detergent for additional cleaning power).
- 3 For additional safety, the apples can be soaked for one minute in a solution containing 1 teaspoon chlorine bleach per gallon of water. After the soak, rinse the apples to remove the bleach taste.
- 4 Squeeze the apples to make cider.
- 5 Keep the cider refrigerated.

If you make apple juice from apples which have fallen on the ground:

- 1 Wash the apples thoroughly with water.
- 2 squeeze the apple to make juice
- 3 Pasteurize the apple juice by heating to at least 160° F to kill any harmful bacteria which may hve been on the apples.
- 4 Keep the cider refrigerated.

IS THERE A BETTER WAY TO DO IT?

PEELING A KIWI So much work goes into peeling a kiwi with my paring knifr or peeler. And then what happens? The flesh gets all torn and ragged. Kiwis used to be hard for me to handle until I saw a professional chef do it the easy way.

I remove both ends of the kiwi (enough to expose the green flesh). Then take a teaspoon (a tablespoon is too big) and start to work the spoon up and around the flesh just under the skin. I follow the shape of the fruit, gently working the skin loose.

Once I've made a complete run around the fruit I can push out a skinned, smooth, whole kiwi.

D. Oppenheimer, Chicago IL

J. Hansen wrote about using an egg slicer to cut fruits. Try it on your kiwi!

The above suggestions were in the May/June 1997 issue of Cuisine.

ICE CUBES FOR FRUIT TEA Fruit teas are very popular now I like to serve them at parties, but which flavor to serve?

I've come up with a solution that makes everybody happy. I went to the grocery store and bought four ice cube trays for about a buck apiece. A couple of days before a party, I fill each with fruit juices (like peach nectar, cranberry, or raspberry. I add the cubes to regular tea As they melt, the tea becomes flavored.

D. Custin, Comstock Park, MI (publication unknown)

THIS SPACE AVAILABE

Do you have any unusual or easy solutions to make everyday chores easier? Send them to the Editor and they will be published to help our fellow members.

This is your newsletter, take a part in it.

FORMER REFUGEE FOUND FAME IN NORTH AMERICA

By Geraldine Warner

Dr Charles Lapins came to North America as a farm laborer after World War II, not suspecting that his name would ultimately be known to cherry growers the world over.

Lapins, whose real name is Karlis O. Lapins, grew up in Latvia, where he taught agronomy at an agricultural university. He and his family left Latvia during World War II and spent four years in refugee camps in Germany. Often, men in the camps were found jobs, but their families were not allowed to join them until later. Lapins and his family were determined to stay together. He finally took a job as a farm laborer, the only job that enabled him to take his family along, too.

The job was in Oliver, B.C. A year later, he went to work at Agriculture Canada's Summerland research center as a laborer. He was then assigned a special project for the British Columbia Fruit Growers Association. Growers had been finding that when they received fruit trees from nurseries, some were not the varieties they were supposed to be, and they didn't know they were mislabeled until the trees bore fruit. Lapins said it was usually a genuine mistake on the part of the nursery. He visited nurseries in the province and figured out how to identify the different varieties from one-year-old shoots. He compiled a bulletin to help inspectors identify varieties in the nursery.

Lapins then spent a year studying for a master's degree at the University of British Columbia, Vancouver. After five years in Canada, he was able to apply for citizenship.

After Arthur J. Mann, plant breeder at Summerland, retired in 1953, Lapins applied for the job and was surprised to be appointed. In 1957-58, he spent a year at Rutgers University, New Jersey, where he earned his doctorate at the age of 59. He retired in 1974.

The cherry that now bears his name is a late-maturing cross of the Van and Stella cherries that he selected in 1971.

It was not released by Agriculture Canada's fruit breeding program in Summerland until 1983, almost a decade after Lapins retired.

With very few exceptions, the names of cherry varieties released by Summerland have begun with the letter S. But when it came time to name the Van-Stella cross, Hugh Dendy, a grower in Kelowna who had been testing it and considered it one of the best he had ever grown, said he already had named the cherry after its originator.

The name stuck, and in recent years, Lapins has become familiar to cherry growers the world over. Dendy said there was a convention that fruit varieties not be named after people—especially living people—but he felt Dr. Lapins should be honored for his work in developing self-fertile cherries. He said Lapins was the first to recognize the need for high quality, late season varieties. "We had late cherries before, but they were poor quality." Today, about 80% of Dendy's cherry trees are Lapins.

Dr. Lapins, 88, tasted the Lapins cherry and recent selections from Summerland's breeding program during a

sampling of British Columbia cherries at Summerland this summer.

"I think it's good," he commented about the Lapins variety. "It turns out now better than the time when I selected it because growers have helped to develop it with GA (gibberellic acid) sprays, which delays the ripening and increases the size. It ripens at a time when normally there's no heavy rain."

Lapins matures about two days after Lambert, and the fruit is larger and firmer. The tree is self fertile and more productive than many commercial cultivars.

In 1992, Dr. Lapins received the Wilder Medal, which is awarded by the American Pomological Society for outstanding service in horticulture, and especially for the introduction of meritorious fruit varieties.

Summerland's cherry breeding program, now headed by Dr. Frank Kappel, was established in about 1936 and has produced a number of successful cherry varieties.

Several recent selections have been named, and the program has applied for breeders' rights and plant patents. The Okanagan Plant Improvement Company (PICO) is negotiating licensing arrangements with nurseries.

NEW CHERRY SELECTIONS FROM SUMMERLAND

Maturity Dates Compared to Van



- ◇ Santina-ripens 8 days before, average size, production good, reasonably firm, tendency to split-average splitting 36%
- ◇ Celeste-ripens 7 days before; fairly good size; crops light slow to come into production on standard rootstocks; low susceptibility to splitting; fruit hides under leaves
- ◇ Newstar-ripens 3 days before; no further data
- ◇ Cristalina-ripens 2 days before; not self-fertile but blooms same time as Van; crops well; fairly firm; good flavor; tree has open growth habit
- ◇ Samba-ripens 2 days after; large; firm; crops lightly once in crops; low susceptibility to splitting-damage 15%
- ◇ Santa Rosa-4 days after; low susceptibility to splitting-17 not as firm as growers like; uniform shape, size, color; good tasting
- ◇ Lapins-11 days after; firm fruit large as Bings, excellent quality; rich flavor; heavy producer; crack resistant; self-fertile
- ◇ Sweetheart-ripens 20 days after; no further data



NEMATODES COULD BE PUT TO GOOD USE IN ORCHARDS

In the September 1997 issue of Good Fruit Grower, Geraldine Warner writes that because most nematodes are associated with plant damage, most growers would be hesitant to introduce them to their orchards. She reports that Dr. Lawrence Lacey, entomologist and insect pathologist with the U.S. Department of Agriculture (USDA) in Yakima, believes certain species of nematodes could help control codling moth and cherry fruit fly.

Nematodes are a very large and diverse group of worm shaped organisms. The word nematode means "threadlike." About 10% of nematode species are parasites of plants, but 15% are parasites of animals. Others are free-living scavengers. Nematodes have been used for some time as a biological control for cranberry pests.

Nematodes are often found in the soil and like wet conditions, which makes a cranberry bog an ideal habitat. It also makes them a promising control for cherry fruit fly, which overwinters as a pupa in soil and should be an excellent target, but there will be some difficulties.

One will be timing the application. Unlike codling moth larvae, cherry fruit fly pupate within a short time and are not very susceptible to nematodes when they are in their puparia, so there is only a short time when they are open to attack. It may be possible to make multiple applications of the nematodes so that some are in the soil when the larvae drop to the ground.

The other drawback is that the nematodes will only be able to control the larvae after they have matured inside the fruit, and growers would prefer not to have their fruit infested at all. Lacey expects that *Steinernema feltiae*, which was originally isolated from a soil inhabiting fly, will be a good nematode to use for cherry fruit fly control.

He is also interested in exploring the use of nematodes to control apple maggot, a close relative of cherry fruit fly, which also overwinters in the soil.

And Lacey also believes nematodes could be used to target codling moth, which overwinters as a prepupa in bark crevices and duff on the orchard floor. He sees it as one of several soft pest control strategies that might be used together, including egg parasites and mating disruption.

He says "If we can attack a stage that's a sitting target, and if considerably less emergence happens in the next spring, then control measures like mating disruption will work better because the population densities will be lower."

Lacey's first task on arriving in Yakima (he had previously been stationed in the Portuguese Azores and Montpellier, France) was to identify which of the many species of nematodes had the best potential for controlling codling moth. He tested *Steinernema carpocapsae*-an obvious candidate found naturally infecting codling moth in Czechoslovakia. Other nematodes he is testing are *Steinernema riobravis*, *Heterorhabditis bacteriophora* and *Heterorhabditis marelatus*.

Dr Lacey has been rearing nematodes in the lab, using wax moths (which are sold as fish bait) as hosts. He's been applying them at the rate of 300,000 to 600,000 per square yard. Though tiny, they are visible to the naked eye, ranging in size from one to five millimeters.

Steinernema and *Heterorhabditis* species carry in their

gut bacteria that are beneficial to the nematode but lethal to the host, which makes them particularly suitable as biological control agents. In describing the nematode as a rocket and the bacteria as the warhead, Lacey said it is not the nematode that kills the pest, but the bacteria.

It is the third stage juvenile nematode, called an infective juvenile, that attacks the pest. Several nematodes may attack one host. Larvae make ideal targets, as the nematodes enter through the mouth or anus. The *Xenorhabdus* bacteria that the nematodes carry kills the host within a day or so and also serves to prevent the larva's cadaver from turning putrid. The nematodes eat up the slurrp, molt to the adults, and mate inside the cadaver. Young nematodes are produced as firstinstar embryos. Several generations may be produced inside the cadaver, which the bacteria turns a brick red color. When the host becomes depleted, more infective juveniles are produced, and they go off in search of new hosts. Adult nematodes are never seen outside the host.

The different species of nematodes have special ways of tracking down potential hosts. Some can sense carbon-dioxide emissions from hosts. *Heterorhabditis riobravis* is what Lacey terms a cruiser, because it will go in search of hosts. Some, like *Steinernema carpocapsae*, are called ambushers because they will stand up on their hind segment and wait for something to come by. Lacey thinks that it is unlikely that *S. carpocapsae* will be very efficient at seeking out codling moth larvae inside their cocoons, but included it in his tests because it had been found naturally in codling moth.

To his surprise, *S. carpocapsae*, an effective biocontrol agent of other insects, came out the winner in his winter testing as it did best in low temperatures. Most nematodes are not active at lower than 50° F and are killed by temperatures below 36° C. "At a time when we have good daytime temperatures and nighttime temperatures are not going to fall below 50° F, then I think we can take a pretty good size dent out of the population," Lacey said.

Commercial formulations of nematodes come in a gel, which immobilizes them until they are needed, and makes them easier to ship and store. When needed, they are soaked in water to liberate them.

Lacey envisages that in an orchard, nematodes would be applied through the irrigation or cooling system, so they contact the tree trunks and orchard floor, where codling moth larvae are likely to be.

This information was published in Good Fruit Grower, September 1997 from an article written by Geraldine Warner

No shade, no shine, no butterflies, no bees

No fruits, no flowers, no leaves, no birds

November

Thomas Hood "No"

TOP WORKING FRUIT TREES

by Stephen A. Hoying

Top-working or grafting over, can be a quick way to make over an orchard

"TOP WORKING," or "grafting over," is becoming an increasingly popular method for changing fruit orchards to new varieties. Its popularity is fueled by the outstanding returns from some of the new varieties and the disappointing returns from existing varieties that have not provided sufficient capital for replanting.

When successful, top working can change an orchard to a new variety and achieve significant yields in three to four years. Top working failures, which are common, significantly delay fruiting.

Although there are volumes written about top working and growers have practiced it for centuries, it is still very risky even for those growers with years of experience. Fruit growers must realistically assess the risks involved and figure out how a grafting failure will affect their entire farm business. Some growers are regularly successful. This article will explore what I have learned from successful "top workers."

Grafting Wood Selection and Storage

Selection and storage of scion wood are important factors in the success of all grafts. Since fruit size and color are genetically controlled, selecting wood from healthy trees with good fruit quality will ensure that grafted trees have similar fruit quality to the ones the wood was taken from. The wood should be collected from trees that have been watched for several fruiting seasons.

- * Select only the best wood. Take scion wood from healthy one year old shoot growth, not from upright vigorous suckers. All wood selected should be free of insect, disease, and winter injury. Avoid taking wood from trees with powdery mildew since infected buds are a major cause of graft failures.
- * Select fully dormant wood. Wood that is not fully dormant and begins to push too soon rarely produces a successful graft. The best time to collect scion wood is as late in the dormancy as possible, preferably after several days of freezing temperatures. Wood gathered during or shortly after warm weather may be active and not show it. Collecting wood late in the dormant season ensures that wood will be fully dormant and will not need a lengthy storage period.
- * Wood should be bundled, labeled and stored at 32°F.
- * Maintain high humidity by wrapping bundles in water soaked burlap, paper, or by storing in rotted sawdust. Avoid wrapping bundles in unvented plastic since there is a greater chance of mold.
- * Never store scion wood with apples. The ethylene gas given off by the apples can damage wood and prevent grafts from growing.
- * Avoid using newer frost free refrigerators that operate at low humidity. Older refrigerators with lots of frost make the best small storages.

- * As a last resort, carefully bundled and wrapped wood can be stored by burying close to the north side of a building completely in permanent shade.

Types of Grafts

There are many types of grafts for top working. They include cleft, side, stub, wedge, whip, and the many variations of bark grafts (inverted "L", awl, veneer). The technique chosen will depend on tree age, time of year, grafter's skill and grafter's preference.

The most commonly used graft is the cleft graft. Clefts are the sturdiest of all the grafts used in top working. They work best on trees with trunk diameters between one and three inches. This size trunk can be easily split for insertion of scion wood and is less expensive since no nailing needs to be done. I prefer to tape all cleft grafts to ensure a tight connection and help in the sealing process. Tapes must be cut (but should not be removed) during the first growing season to allow for unimpeded growth.

There are two common techniques used to match the scion and stock cambial layers in cleft grafting. One method lines up the cambium along the entire length of the scion stick and stock. When lined up properly, there is quicker take and more rapid growth. This method is appropriate for experienced grafters and in regions where fluctuating temperatures can delay cell growth. The other method angles scion sticks across the cambial layer of the stock. This ensures that at least one point of cambial contact will occur. Graft take is generally slower since cambial cells need to grow before enough callusing occurs and an apparently healthy graft fails. This method is appropriate for less experienced grafters and when wood is especially dormant.

Handling Wood

During the grafting process, keep bud sticks out of the sun and preferably moist to prevent dehydration. Many grafters put their wood in a bucket with a couple of inches of water. Cut sticks to four buds with the lowest bud facing out from the stock. Use only the mid section of collected sticks discarding both ends. Don't take a chance and use obviously damaged, shriveled, or diseased wood.

Sealing Grafts

Probably the most common reason for graft failure is allowing air to dry out the graft. To prevent this, all cracks, wounds, and the cut end of the grafting stick should receive a liberal coating of sealing compound immediately after the graft is made. Sealing compounds should be reapplied the same day that grafting is done to reseal cracks that form from shrinking materials. Another trip a few days later should finish the job.

The most commonly available compounds are beeswax-rosin based, latex-based, and asphalt-based. Just about

any sealing compound can be used if the grafter takes the time to follow up and reseal before the grafts have a chance to dry out.

Nurse Limbs and Trunk Painting

Research shows that leaving a "nurse" limb from the original tree will improve graft take. This limb helps absorb sap and flow that can "blow out" grafts and feeds developing grafts and root systems. Nurse limbs can be removed after the first growing season. Paint trunks and limbs with latex paint to help reduce sunburn.



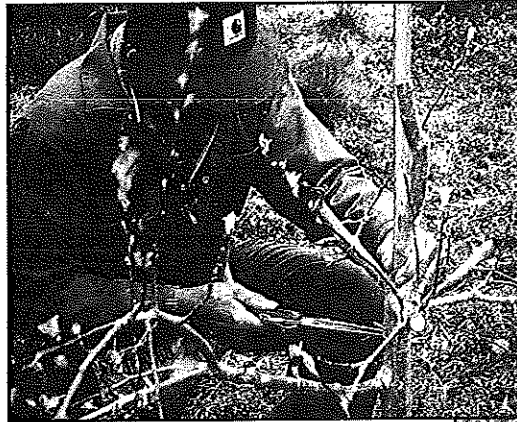
Judge ultimate graft vigor at this stage. If vigor is low, pinch off the growing tip of the weakest shoot; if vigor is excessive allow both shoots to grow as well as all shoots on the original trunk.



Be sure to fasten rapidly growing shoots to stakes by early stage of growth. High winds or flocks of birds landing on shoots can ruin grafted trees.

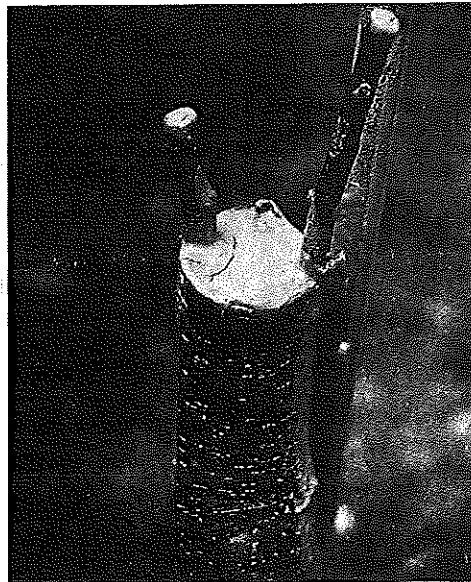
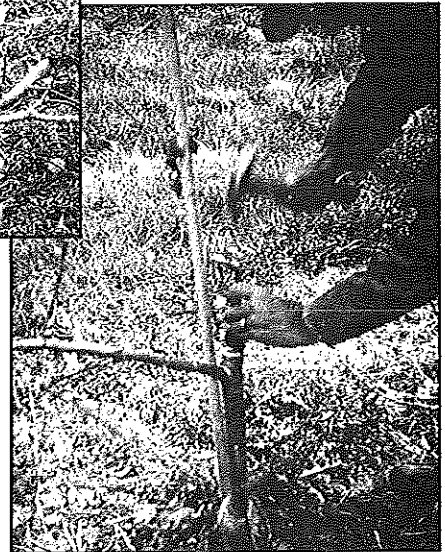
Pruning and Aftercare

Top worked trees grow vigorously after they take. Your own assessment of vigor should determine the type of pruning and training program to follow. Weak grafts can be encouraged to grow by pinching competitive shoots and by regularly removing water sprouts from the stock. Vigorous growth can be contained by allowing competition among growing grafts. As soon as possible after growth starts, support growing grafts to avoid having them breaking out. Birds landing on shoots as well as high winds associated with thunderstorms or airblast spraying can break out growing grafts. Conduit stakes are easy to install and work well as temporary stakes. Grafts are easily and quickly fastened to the stake using commonly available tape guns. Generally, top worked trees send out an abundance of side shoots which eventually become scaffolds. Rarely are heading cuts needed to encourage side branching.



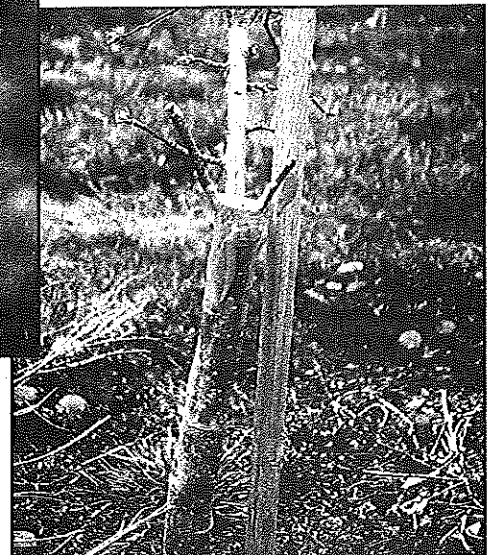
Use a fine bladed saw to cut off tree at the preferred height. Be sure to leave a "nurse" limb.

(Right) Split the tree trunk immediately before inserting grafting wood. A hammer and a stout butcher knife or sharp chisel are excellent tools for the job.



Black electrical tape is used to hold grafts tightly in place. The tape must be cut during the first season to allow for growth of callus tissue.

(Right) Cleft grafted apple tree. Note excellent covering of cut surface with grafting wax, the nurse limb to support early growth and contain excess vigor, and the stake used to support new growth.



SCORING TO CONTROL TREE GROWTH

by Rick and Karen Maib

Orchardists strive to match site, variety, rootstock, pruning and training to their particular situation. However, in spite of their best efforts, there is often further need to manipulate their trees to achieve specific goals.

Scoring is one technique often used to control vigor, improve fruit set and increase return bloom in apple trees.

Optimum Timing For Tree Growth Goals

Many growers and researchers have had a great deal of experience with scoring. There is some disagreement on which timing has the greatest effect on the different goals but the following information seems to be the consensus of opinion.

The optimum time to score is two weeks prior to full bloom to control tree growth, two weeks after full bloom to improve fruit set in the current season, and one to five weeks after full bloom to improve return bloom. The most consistent results seem to be achieved during the period two to three weeks after full bloom. Scoring can also reduce fruit size and improve red color on some apple varieties.

Common Technique to Score Trees

The most common technique used is to make two opposing "C"-shaped grooves around the leader about 1 inch apart. The two grooves each reach about three-fourths of the circumference of the leader. The cuts must be deep enough to reach the xylem and wide enough to prevent the wound from healing too soon.

Often this technique is used on the tree trunk first, then each of the leaders the following year.

Several farmers had tried a guillotine cut where a diagonal cut is made one-third of the way through the tree trunk from one side and another is made from the opposing side at a slightly different level. Most growers reported excellent results, but they have been reluctant to continue with the practice because of the danger that the tree may break off.

Common Tools for Scoring

Most orchardists seem to use a grape scoring tool with a 3/16-inch cutting tip. Many apple growers have begun to use pruning saws in order to make the cut deeper. Some have used a chain saw with a depth stop on the bar to enhance the effect.

Scoring Is A Last Option

Scoring is not the preferred way to manage tree growth but it is a tool to be used when there are no other options. There may be a positive effect when used in moderation; however, the response may be very different with increasing severity.

This article appeared in the April 1966 issue of Fruit Grower.

VINE RENEWAL IS MAJOR CONCERN IN TRELLIS DESIGN

Excerpts from Melissa Hansen's report in Good Fruit Grower, April 1, 1997.

Pacific Northwest grape growers have gone through several phases of trellising trends and systems in the last three decades, from the four-trunk fan systems, to extensive trellis designs, to the current simple, nonshoot-positioned trellises.

At a trellis workshop taught by Dr Richard Smart, Australian viticultural consultant and author of a wine grape trellis handbook, panelists consisting of Washington wine grape growers and winemakers shared their concerns regarding trellis systems.

The fan training system was popular in the 1970s, using four trunks to spread a vertical trellis. Bilateral cordons were used to train up the shoots, crossarms were 18 to 24 inches wide. Multiple trunks were thought necessary insurance in the event of winter damage, increasing the chances for trunk survival.

In the 1980s there was the Geneva Double Curtain design, among others, but it limited mechanical harvesting even though fruit exposure was improved.

By the 1990s, most of the industry had settled on the current narrow trellis spacing to facilitate quick canopy regrowth after winter injury. A common thread through all the trellis systems that have been tried in Washington is the need for vine renewal after periodic winter injury. At one time, growers would bury vines each fall for protection.

The 1996 freeze and subsequent retraining needed in many vineyards provided growers with the perfect opportunity to examine different trellis systems.

High vigor situations have been dealt with through controlling irrigation and nutrients. Some growers have been able to achieve shoots 3 to 4 feet long through irrigation.

Dr. Robert Wampler, WSU Irrigated Agriculture Research and Extension Center, near Prosser, has spent years studying stress and water management. He says that it is well known that to make the most efficient utilization of sunlight a maximum amount of foliage must be exposed. "The challenge is in the ability to maintain that over a long period of time," he says. And adds that harsh winters require frequent corrections to the vineyard's trellis system.

There are usually a number of unproductive cordons after a freeze. "When you have to make these individual adjustments, it becomes more of a challenge, and there are less challenges from a simple trellis. We've learned to keep our trellis system simple so we can do our retraining that will be necessary," Dr. Wampler says.

Saturation of the soil is not necessary as it will result in too much vigor is one of the results of Wampler's research.

"A night and day" difference in wine quality has been noticed from grapes exposed to sunlight through leaf removal. Leaf pulling helped to remove the vegetable flavor from Sauvignon Blanc wine, the herbal flavor changed to a floral character.

The Scott Henry and Smart Dyson trellis systems are now being used by grape growers in eastern Washington, helping to resolve some of the high-vigor issues.



RUSSIAN BEE WORKS IN COOLER TEMPERATURES

Good Fruit Grower, April 1997



Cool spring weather usually means poor pollination, because honeybees don't like to forage until the temperature reaches 55°F. But there's a bee in Russia that works well at temperatures as low as 45°F.

Jeff Lunden, who works with Dr. Dan Mayer at WSU's Irrigated Agriculture Research and Extension Center at Prosser, went to Russia's Caucasus Mountains to look at a race of honeybee that originated there called the Caucasian honeybee.

Mayer is exploring ways to import the bee, which he believes could be of benefit to the tree fruit industry, particularly for crops such as pears and cherries, which bloom early in the spring when the weather is cool. There are often years when temperatures are low during apple blossom time, too.

Mayer said he has been looking for cool-weather bees for several years and talked to a wild bee specialist in Alberta, Canada, who told him he had seen the Caucasian honeybee in Russia. Mayer and Lunden were able eventually to make contact with the appropriate people in Russia, and Lunden went there last fall.

Honeybees (*Apis mellifera*) are native to Europe. Several different races of *Apis mellifera* were introduced into the United States early this century. The German black bee was the first to be introduced, but is no longer used. The common honey producer is the Italian honeybee. Another major honeybee is Carnica from Greece. Others were introduced but are no longer used because they were hard to work with or were not good honey producers, Lunden said. Then in 1922, the United States placed restrictions on importation of honeybees.

Some Caucasian bees are available in the United

States, but Lunden said they were imported before the restrictions were put in place and have probably been crossbred with other strains of bees.

The Scientific Research Institute of Bee Breeding, which Lunden visited, maintains several races of bees in the Caucasus Mountains, and is able to prevent them from crossbreeding by isolating them in separate valleys. Some of the bees there have been introduced from other parts of Europe, but the Caucasian bee is native.

The institute's main business is the sale of queen bees and starter colonies, and it sells about 150,000 a year, mainly to customers in Russia. It also produces honey and other bee products, such as wax and royal jelly.

Lunden was able to spend several days evaluating the Caucasian bee's foraging activity and confirmed that it is active at lower temperatures than other races.

The institute will sell queens for \$100.00 each, which Mayer said was a reasonable amount, but the bee would have to go into quarantine for six months at a U.S. Department of Agriculture facility at Baton Rouge, LA. This would be complicated and expensive, and Mayer would have to justify bringing the bee into the country. Lunden said they may have to make another trip to Russia to obtain all the information they need. When he went in October, the bees were not very active because there was not much on which they could forage.

Another idea is to have the bees shipped to Canada and test them in British Columbia.

Lunden said there is some interest among growers in the bee, but there is a lot still to learn about it. Some bees that have been brought in before have been attractive in some respects, but not in others.

ORGANIC FERTILIZER FORMULAS

From Ted Swensen—printed in Pome News, Winter 1997

Steve Solomon's Not-So-Secret General Fertilizer Formula

4 parts seed meal (or fish meal)

1 part dolomite lime

1 part rock phosphate or ½ part bone meal

1 part kelp meal

Such a blend will analyze about 1 N:1.5 P:1 K. In spring spread one gallon per 100 square feet.

PERCENTAGE OF DRY WEIGHT
Nitrogen-Phosphoric-Potassium-Comments
Acid (HPO)

alfalfa meal	2-3	1.7	2.25	rapid release lasts 3-4 months
fish meal	10	6-4	0.0	med. release lasts 4-6 months
phosphate-rock	0	30	0	very slow release lasts 5 years
bone meal	6-2	27/15	15-0	slow-med release can burn plants
kelp	1.0	0.5	13-4	slow release lasts 4-6 months high trace minerals

Ted Swensen, of Portland, says the more we emulate nature, the better. Nature does not "fertilize" with just one species of plant residue but a mix. We should do the same. Compost is the best but limited for most of it aerates soil, breaks up clay, binds sand, improves drainage, prevents erosion, neutralizes toxins, holds moisture and nutrients, provides nutrients, feeds microbes, and feeds worms. Use up to 1 inch of curred compost/100 sq ft each 4 month growing season.

He reminds us that **nitrogen** promotes leaf and stem growth; **phosphours**, flower and fruit; and **potassui** root growth. These formulations can be adjusted to meet the requirement of the plants that you are raising. Since most fertilizers are acidifying, be sure to check t soil pH. If the pH tests in the range for your plants, omi dolomite lime for 3 - 4 years.

ON PLANTING GRAPES

In California, many pear growers are pulling out orchards and planting grapes which are more profitable. Many questions on planting and replanting have been posed by Washington growers. John W. Watson, in response to these inquiries, says in *Good Fruit Grower*, that care should be taken when planting grape vines where other crops have been. This advice would apply to home orchardists too.

He states that there hasn't been much research done on the problems of planting or replanting vineyards, however, common-sense practices should be considered.

Consideration must be given to possible herbicide and fertilizer residuals. If there is uncertainty whether the soil has chemical problems, a simple bioassay of growing peas or beans in a pot of soil taken from the proposed vineyard location will give you an indication of its condition. A year of fallow or planting a green manure crop of grasses or legumes will reduce chemical levels and possibly reduce potential pest problems.

Crops that are host to verticillium wilt can leave high levels of the disease inoculum in the ground, which can affect grapes. Some crops may also allow nematodes to build to high numbers, which may affect newly planted grape vines. A year of wheat or grass will help this situation. Another problem that occurs in previously cropped ground is compaction. These areas should be deep plowed.

Watson goes on to say that if a pesticide containing arsenic was used (in an apple tree, for instance) to kill codling moth, it could be a problem about which nothing could be done except to expect slow growth from vines. Fumigation has helped this problem in tree fruit replants.

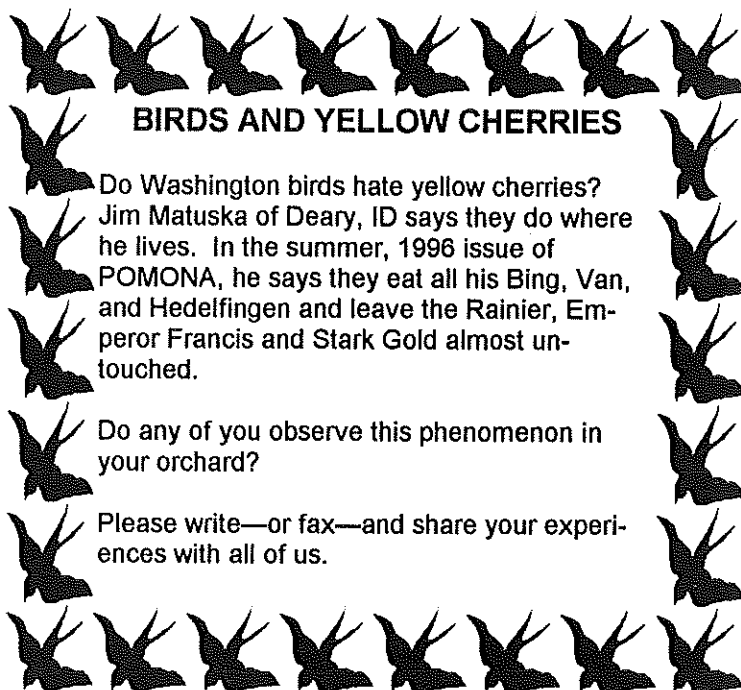
When planting grapes in ground that has not been planted before, adequate nutritional needs should be met.

John Watson is area extension agent for Benton-Franklin counties, and is based in Prosser. The information above appeared in his column, "Practical Grower" in the September 1997 Good Fruit Grower.

MAINE'S FAVORITE APPLES

About 100 people from Maine and New Hampshire attended an apple tasting and fruit show at Unity college on October 13, 1996, sponsored by the Maine Tree Crop Alliance. These are the favorites:

- | | |
|--------------------------|------------------------|
| 1-Gravenstein | 8-Stark |
| 2-Black Oxford | 9-Chestnut |
| 3-Tumanga | 10-Vartanian Lightning |
| 4-Beauties of Wellington | 11-Blue Pearmain |
| 5-Sweet 16 | 12-Liberty |
| 6-Hudson's Golden Gem | 13-Hyde King |
| 7-Honey Crisp | 14-Beacon |
| 15-Belle de Boskoop | |



BIRDS AND YELLOW CHERRIES

Do Washington birds hate yellow cherries? Jim Matuska of Deary, ID says they do where he lives. In the summer, 1996 issue of *POMONA*, he says they eat all his Bing, Van, and Hedelfingen and leave the Rainier, Emperor Francis and Stark Gold almost untouched.

Do any of you observe this phenomenon in your orchard?

Please write—or fax—and share your experiences with all of us.

WHAT'S HOT IN PRACTICAL TREE FRUIT RESEARCH

The new *Journal of Tree Fruit Production*, edited by Wesley R. Autio, highlights the results of practical research about growing tree fruit. The journal disseminates results of current research that are immediately applicable to researchers, educators, consultants, and growers in a useful, legitimate, and scientific format. Published biannually, the journal focuses on innovative approaches and technologies related to the management and handling of apples, pears, peaches, plums, cherries, and other tree fruit. International in scope, the journal presents findings on original research, practical topics in the culture of fruit, and also lengthier review articles, in a professional journal style and format.

Topic coverage includes training, growth regulation, pest management, sustainable production, fruit harvesting, handling, storage, and marketing. The journal helps growers stay up-to-date with current research; this in turn helps the industry to incorporate change rapidly and enhance profitability.

Individual subscription price is \$32.40. For information on ordering the journal, contact The Haworth Press, Inc., 10 Alice St., Binghamton, NY 13904-1580; phone 800-342-9678; Fax 800 895-0582; or e-mail getinfo@haworth.com.

SOME WINNING CIDER COMBINATIONS

1st place National & Illinois-40% Jonathan, 40% Golden Delicious, 10% Mutsu, 10% Winesap

2nd place National & Illinois-40% Jonathan, 30% golden Delicious, 10% Red Delicious, 10% Splendor, 10% Jonagold

This data from Pomoma, compiled by Art Hontz

APPLE DAY IN ENGLAND - OCTOBER 21, 1997

As editor of The Bee Line, I received a letter from Jane Kendall of Common Ground. She had read about our Fall Fruit Show in the Brogdale Horticultural Trust newsletter and thought we would be interested in receiving information on their Apple Day as it 'fell' at about the same time.

"Apple Day is a celebration of the huge variety of apples and other tree fruit we have developed over the years," she wrote. "It also aims to raise awareness of the loss of traditional orchards in the landscape and the cultural associations, the songs, stories, customs, recipes, etc., we loose with them."

"It was initiated in 1990 with a single event in London and since then the idea has spread around the country and nearly 200 locally organised celebrations took place last year. Events take place in stately homes, schools, museums and gardens and are organised by growers, nurserymen, juice and cider makers, local authorities, conservation groups and many others."

Enclosed was a copy of Apple Day News-Spring/Summer 1997. Here is what was reported for Apple Day 1996: "The number of Apple Day events increased again this year with almost every county hosting one of the over 160 events (that we knew of). New recruits including Welford Park, Berkshire, home of Charles Ross creator of the apple of that name; West Dean Gardens, Chichester and Shakespeare's Birthplace Trust, Stratford on Avon, joined the old faithfuls to brave the elements and create hugely enjoyable celebrations for thousands of people.

The weather for the weekend before apple Day as usual varied around the country, but in most places the Saturday benefitted from the sunshine which had disappeared by the next day. However, appalling weather in some areas was no deterrent and large numbers braved the storms to sample the fruity delights, over a thousand came in continuous rain to Bromham Mill in Bedford, and at Hughenden Manor, Bucks in atrocious weather, more people attended than the previous year when the weather was fine, approach roads were jammed!

The weather did force some groups to postpone tree planting or abandon outdoor activities, but there were always indoor alternatives to interest visitors. Lynn Fomison who celebrated apple Day in her home in Hampshire with over 30 local people reported that although it was too wet for apple bobbing and other games, visitors enjoyed tea and apple cakes squashed up on bales in her barn and were more than happy to pick apples from her trees for tasting and pick up windfalls in the rain to take home. Another event is already being organised for 1997 by popular demand.

Not surprisingly a large number of growers and fruit tree nurseries were involved, not only on their own premises, but also as a part of other events and some such as Charlton Orchards managed to have a presence at no

less than seven events in the South West some on the same day! Other growers reported record numbers of visitors as many as 10,000 attending the long established annual apple tastings at Blackmoor Farm in Hampshire, this was a huge increase on previous years and was put down to having a wide range of activities on offer (although not all apple related).

Fruit and tree growers as well as staff from Horticulture Colleges have become one of the major sources of expertise for Apple Day. As usual apple identification was one of the most popular activities, but identification experts are in short supply. John Edgeley of Pershore College, Worcestershire ran Identification Workshops in many parts of the country throughout the autumn in an attempt to pass on fruit identification skills to even more people and hopes to organise more in the future.

Apple Day has become an annual event for many Rural Life Museums with celebrations often covering at least a week and offering activities for children during the half term break. The Malton Museum in North Yorkshire part of Ryedale District Council, has for some years offered creative activities based on apples which this year produced a batik hanging of apple designs.

At No Man's Orchard, Chartham Hatch, Kent, the two parish Councils which own the community orchard commissioned students from Kent Institute of Art and Design to create sculptures from fallen wood and the stumps of dead trees in the orchard. The resulting works were unveiled on Apple Day and included a serpent seat which was put to good use throughout the day. The snake, which was made from logs from the adjoining woods, winds along the Parish Boundary which divides the orchard and reflects the traditional links between the serpent and the apple.

Over 12 schools informed us of their Apple Day activities but we know that many more were involved on other events or incorporated celebrations into their classroom work. Margaret Miller of Gartmore School in Stirling, where they have celebrated Apple Day for several years, has produced an Apple Day starter pack for schools and in 1996 held meetings to encourage other schools in her area to take part in the celebrations.

For several years County Caterers have offered special Apple Day meals to the schools which they supply and this year they were joined by the restaurants in county and town halls providing apple based dishes for the council staff. Once again all the cafeterias in the House of Commons joined in the Apple Day celebrations with displays and sales of different varieties as well as serving apple dishes."

These are excerpts from the newsletter, which will be available for any of you to read at the Fall Fruit Show. There are many more interesting events that take place on Apple Day in addition to other information.

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If your address label has the renewal date highlighted in **RED**, this is your last newsletter
 if it is highlighted in **YELLOW**, your membership dues are delinquent
 if it is highlighted in **GREEN** your dues are payable before the next newsletter

The Bee Line is the newsletter of the Western Cascade Fruit Society.
 It is published quarterly; January, April, July and October and is included with membership.

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NEXT NEWSLETTER JANUARY 1998

WE WANT TO HEAR FROM YOU

Your Board of Directors needs guidance, as does your newsletter editor. So we are trying to make it easier for you. As you renew your membership, or if you choose not to renew, would you let us know what you think. You may respond even though your membership is not due for renewal

Do you like the 2 column format? Yes _____ No _____ Didn't notice _____ Doesn't matter _____

What would you like to read about? _____

Please be specific

What changes would you make in The Bee Line? _____

What changes would you like to see at the Fall Fruit Show? _____

What changes would you suggest for the Spring Sale/Meeting? _____

What topics for speakers? _____

Is there a particular speaker you would like to have? No ___ Yes ___ Name _____

How else can we help the home orchardist? _____

Why have you decided not to renew? _____

Any other comments? _____

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Please indicate standard WCFS membership or affiliation with a chapter. Dues are as noted.

Name(s) _____ New
 Renewal

Street Address _____

City, State, Zip _____

Phone _____ PLEASE SPECIFY ONE CATEGORY BELOW

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BOARD MEMBER FALL FRUIT SHOW PUBLICITY FIELD TRIPS SPRING MEETING
SPEAKER
 COMMITTEE CHAIR ARRANGING FOR SPEAKERS OTHER _____

TELL US YOUR FRUIT INTEREST, SO WE CAN PUBLISH ARTICLES OF INTEREST FOR ALL

Apples Pears Peaches Plums Cherries Kiwis Nuts Berries Other: _____

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**FALL 1997
YOU'LL FIND IT HERE!**

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