



The Fruitful Northwest Home Orchard

by Philip Dickey



Peaches, cherries, apricots, and nectarines aren't generally the best choices for fruit to grow in the Northwest. Apples and pears will do better.

Gorgeous blossoms in the spring, luscious fruit in the summer or fall. Having a home orchard is an appealing prospect. Unfortunately, many fruit trees are not easy plants to maintain, especially if you want a good harvest of edible fruit. Pests and diseases with disgusting names—apple maggot, brown rot, apple scab, bacterial canker—are common in the world of fruit growing, and pesticides used on fruit are some of the most toxic. Yet, by carefully selecting fruit varieties, siting the trees properly, and following strict sanitation procedures, the home grower can reduce pest problems and reap a bountiful harvest. Although much of the specific information on fruit varieties and pests is most appropriate for the Maritime Northwest, the principles and procedures described here are applicable anywhere. If you live elsewhere in the country, consult your local extension office for regionally appropriate information. Planting fruit trees requires commitment; many do not produce well for the first several years. If you want quick results and low maintenance, perhaps you should stick to vegetables or try berries.

Location Location Location

Fruit trees require lots of sun, at least 6-7 hours a day, for a good harvest. Sunny south or east slopes are best. Trees should be well spaced to allow for air circulation. If trees are too closely spaced in existing plantings, you may need to remove some trees. When siting trees, avoid frost pockets. Well-drained soil is necessary and more important than soil type. Avoid shallow hardpan soils or sites with standing water in winter. The ideal soil pH range is 6.2 to 6.5, and soil should be limed if necessary. Avoid excessive fertilizer, which delays bearing and can lower fruit quality. Most trees, especially young ones, need little, if any, added fertilizer. Learn to judge the need for fertilizer based on the vigor of the tree, as indicated by the amount of new growth the previous year. To avoid burning, never apply fertilizer closer than eight inches from the trunk.

Choosing Suitable Varieties

The bad news is that you can't grow any kind of fruit you want to just because it tastes good on your corn flakes. The good news is that many tasty varieties are well adapted to the Pacific Northwest's cool, damp climate. In selecting varieties, do three things: first, select kinds of fruit (e.g. apples, pears) that generally do well in your area; second, select pest or disease resistant cultivars where possible; and third, develop a tolerance for some fruit imperfections in order to reduce pesticide use. This third step is difficult, because we have all been conditioned to select the very best apple or peach at the grocery store. Remember that size and perfection of appearance do not equate to flavor. In fact, quite the opposite is often the case, since commercial fruit may be bred for storage and transport rather than flavor.

For the greatest chance of success here, grow apples. Next best are Asian pears, then European pears, Italian plums, and persimmons, roughly in that order. Cherries and peaches give minimal production in the Maritime Northwest or have major pest problems. Apricots and nectarines require more summer warmth than our climate provides.

If you moved here from elsewhere in the country, don't even think of trying to grow your childhood favorite apples here. Instead of spraying three to six times a year, try the tasty varieties with scab and mildew resistance, such as Liberty, Prima, Williams Pride, Fiesta, Akane, Shay, or Chehalis. For crabapple, Evereste, Red Jewel, and Centennial are recommended. Good bets for Asian pear include Chojuro, Shinseiki, Yongi, Shinsui, and Ichiban. Italian prunes do well here and are very tasty. For more ideas, see WSU Bulletin EB 0937, *Tree Fruit Varieties for Western Washington*, as well as the excellent catalog from Raintree Nursery in Morton, Washington, or ask about suitability and pest/disease resistance at your local nursery.

Pollination is an important issue in fruit tree selection. Most apples, pears, sweet cherries, and plums either require or benefit from cross-pollination from another variety. This means that you may need to have more than one variety in your yard to get fruit. Selecting varieties to ensure adequate pollination can be tricky, so check with your nursery supplier before purchasing trees. The WSU publication EB 0937 has cross pollination charts that are very useful. An interesting combination is to plant one apple and one crabapple, which will pollinate each other if they have the same bloom period.

Making the Cut

Pruning of fruit trees is important because it opens the plants up to light and air, enhances fruiting, and removes diseased twigs and branches. Poor pruning or no pruning at all ruins fruit trees, and proper pruning is necessary for good fruit. Buy a tree that will grow to fit your garden. Many are available on "dwarfing" rootstocks. Space does not allow a discussion here about pruning techniques. A considerable investment in plant stock justifies the expense of professional pruning expertise or the time spent in learning how to do it yourself. WSU Extension bulletin PNW 400 is a good place to start, or get a book from your library or bookstore.

Cleaning Up

Sanitation in the home orchard is important because the common fungal diseases and some insect pests are spread via infected fruit, leaves, or twigs. Fallen fruit should be raked up and destroyed. Do not compost this material at home because home compost piles usually do not reach the temperatures required to kill pests and disease organisms. Leaves also should be destroyed if trees are infested with fungal diseases. If accepted, leaves or fruit can be composted in municipal or commercial yard waste collection programs, where a hot composting process kills diseases and insects.

Although fallen fruit should be destroyed, imperfect fruit on the tree can still be eaten. Apples with scab blemishes are still edible, and even wormy apples can be carefully cut up for immediate cooking. Look for telltale entry holes in the skin and cut thoroughly. Remember the old joke: what's worse than finding a worm in an apple? Finding only half a worm.

Pests and Diseases

Assuming that you follow all of the suggestions to this point, what do you do if pests or diseases strike? Even if you select the most appropriate fruit and choose resistant cultivars, you may still have some pest or disease problems. Scab-resistant apples can still be attacked by codling moths. This article describes a variety of control methods, including some completely non-chemical strategies.

Whatever you do, don't purchase "home orchard sprays" containing a mixture of fungicide and insecticide. These combination products are a bad idea and highly toxic as well. Decisions on disease and insect controls should be made separately. Even if chemical controls are chosen, the best timing for insect and disease problems are rarely the same.

It is essential to identify a pest before choosing treatment. Since chemicals can kill

Recommended Varieties

Apple

Liberty
Prima
Williams Pride
Fiesta
Akane
Shay
Chehalis

Crabapple

Evereste
Red Jewel
Centennial

Peach

Frost Peach

Plum

Italian Prune

Asian Pear

Chojuro
Shinseiki
Yongi
Shinsui
Ichiban



Fruit trees should be kept pruned, and fallen fruit should be picked up and destroyed to prevent the spread of disease and insects. The neglected tree shown above may be romantic, but it isn't going to be productive or healthy.



Codling moth traps come in several shapes and are baited with pheromones.



Apple maggot traps are either red spheres or yellow cards, coated with bait and a sticky glue.

Photos from Territorial Seed Catalogue
(www.territorial-seed.com)

harmless or beneficial insects, unnecessary or ineffective treatments should be avoided. That means understanding insect and disease life cycles so that treatments, if needed, are only done when they are effective. Pest cycles are weather-dependent, so what happened last year may not happen this year, or it may happen at a different time. It's a good idea to keep a garden notebook to record pest problems, noting the severity of the problem, when it occurred, what treatment was used, and how effective it was. Often the value of such a record only becomes apparent after several years.

■ Apple Scab

Apple scab is a fungal disease prevalent in western Washington. Scab is best managed by cultivar selection. The varieties listed on the opposite page should perform well. If scab does occur, evidenced by lesions on the leaves and eventually the fruit, destroy diseased leaves. Fruit that is slightly affected may still be eaten because scab is superficial.

■ Codling Moth

Codling moths are important pests of apples in Washington. Eggs laid on the leaves by the female moth hatch into larvae—the traditional “worms in the apple”—that burrow into the apples and feed there. An important monitoring and partial control strategy is to place pheromone traps in the trees before they are in full bloom. These traps lure males via their hormone scent, and sticky material prevents their escape. Checking the traps for moths allows monitoring of populations, and trapped males are not able to reproduce, thus reducing population levels. Trapping should continue all summer.

The second trapping strategy takes place in late summer (mid-July to fall). It makes use of the fact that when the caterpillars are ready to pupate, they leave the apples and seek out dark recesses in the bark to undergo their metamorphosis. Some also drop to the ground and make their way up. The trick is to wrap burlap or corrugated bands around the trunk or large branches, 24 to 36 inches up from the ground and on several large branches. If you use cardboard, orient the grooves parallel to the trunk or branch. Secure with removable ties or strapping. The caterpillars crawl under the burlap or into the dark corrugations in the cardboard. Remove the traps once a week in summer, squash or drown the cocoons, and replace the trap. Some work is involved, but the procedure does work, especially on more smooth-barked trees.

Those who have used *Bacillus thuringiensis* (B.t.) successfully on caterpillars may be tempted to try it on codling moths. It doesn't work because the caterpillars have to eat the material for it to be effective. These particular caterpillars have no interest in eating leaves—they're looking for apples—and they are sheltered inside the apple, out of reach of the spray. Any residue on the apples that the caterpillars might eat as they burrow inside would be insignificant.

In non-commercial production, the trapping techniques just described can often provide adequate control without resorting to chemicals, provided you are diligent.

■ Apple Maggot

The apple maggot is a very serious pest that can render apples inedible. For the home grower of apples, the key is to be watchful. Apple maggot traps are available for monitoring purposes and may reduce the population. Consult local experts for advice on timing, number of traps required, and maintenance of traps. If you are unsure of pest identification, take a sample to your local Cooperative Extension office or WSU Master Gardener clinic for positive identification. Fallen, infested fruit must be destroyed by freezing or boiling. Pick up and destroy all fallen apples. Do not compost infested fruit, except where compost reaches high temperatures, around 130 degrees Fahrenheit.

Some small-scale organic growers use small paper bags to cover the developing apples on the tree, preventing the apple maggot fly from laying her eggs on them. It also works for codling moth. Obviously, this is a labor intensive process, but an effective one.

■ Cherry Bark Tortrix (CBT)

CBT is a relatively new insect pest in western Washington. It can affect all woody shrubs and trees in the rose family, but especially cherry. Symptoms include reddish-orange frass in rough areas of bark, especially at damaged areas or pruning wounds. Sometimes the frass forms small protrusions as it is pushed out of the tree by the larvae inside. (Photos are available at http://vancouverreu.wsu.edu/research/entomology/CBT_biomgmt.htm.) The adults are small gray and orange moths with a wingspan of 0.6 to 0.7 inches that fly from May through about September. Larvae are found under the bark from fall through April and May.

In Europe, where CBT apparently originated, parasitic wasps keep the pest in check and prevent substantial damage. It is hoped that natural enemies will eventually exert significant control here as well. Until then, careful monitoring is advised, and the need for treatment should consider the value of the tree, as well as the knowledge that a large infestation and many years would be needed to kill a tree.

When replacing or planting new trees, consider avoiding host species. Good maintenance practices can help prevent infestation of susceptible varieties because CBT tends to attack damaged or stressed host trees. Good pruning technique is important to avoid damaging bark. Avoid injury to bark by string trimmers or mowers.

Research continues in order to identify effective insecticides for this disease. The good news is that treatment in the fall is usually confined to the trunk area and can be effective for years. There is no need to treat foliage or smaller branches. If treatment is thought necessary, consult a reliable tree specialist.

■ Peach Leaf Curl

Peaches, nectarines, and apricots are subject to this fungal disease, which causes easy to recognize puckered, distorted, or thickened leaves, often with reddish spots. Defoliation may occur in summer. Peach leaf curl rarely kills trees, but it can cause a gradual decline in health and reduced yields.

The best advice is probably to avoid trying to grow susceptible plants. An exception is the 'Frost' peach, which is resistant when it reaches four years of age.

If only a few leaves are affected, these can be removed or pruned and destroyed. If used, fungicides should be applied during dormant season. Even some of the "organic" controls are fairly hazardous (corrosive) and several applications may be needed.

WSU researches have found some novel alternative methods. Keeping rain off the tree during wet winter months greatly reduces the disease. Two ways to do this are to rig a plastic canopy over the tree or to grow dwarf peaches in containers and move them under shelter in winter.

■ Brown Rot

Brown rot affects mainly cherries and plums. First noticeable as a sudden wilting of flowers, brown rot may cover dead flowers with a grayish mass of spores. Fruit gets soft, brown spots and may also become covered with spores, with some fruit eventually drying and becoming mummified. Twigs may also show cankers.

Resistant varieties of stone fruit are not available, but other kinds of fruit can be substituted. Practice cultural controls including good siting, pruning, and sanitation. Mulching in fall with 2 to 3 inches of clean compost helps to bury any spores.

Organically certified controls include sulfur, lime sulfur, and fixed copper. ■

Special thanks to Mary Robson, Carl Elliott, and Todd Murray for assistance in preparing this chapter.

The Washington Toxics Coalition is a non-profit organization dedicated to protecting public health and the environment by preventing pollution. Please write or phone for information: WTC, 4649 Sunnyside Ave N, Suite 540, Seattle, WA 98103. Phone: 206-632-1545. Visit our Internet Web site at www.watoxics.org.

Resources

For more detailed information on the pests and diseases discussed above refer to the Green Gardening Program's *ProlPM* fact sheets on the Internet at www.ci.seattle.wa.us/util/proipm. Also, see chapters 29 and 30 in this book for more on plant diseases affecting fruit trees.

Beers, Elizabeth. *Orchard Pest Management*, Good Fruit Books, Yakima, 1993.

Benowitz, Sam and others. *Raintree Nursery Catalog*, Morton, Washington, 1997.

Flint, Mary Louise. *Pests of the Garden and Small Farm*, UC Berkeley, Pub 3332, 1994.

Page and Smillie. *The Orchard Almanac: A Seasonal Guide to Healthy Fruit Trees*, agAccess, University of California at Davis, 1994.

Disposal of Pesticides

Pesticides used in orchard care are some of the most hazardous available to homeowners. Unwanted pesticides from homes should be taken to a household hazardous waste disposal site, never flushed down the drain or placed in the trash. For information on disposal of pesticides, contact your local household hazardous waste agency. In the Seattle/King County area, call the Hazards Line at 206-296-4692.

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