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Pears in the Home Garden

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The Greek historian Homer, writing in 1000 B.C., referred to pears as a gift of the gods. By 300 B.C. the Greeks were growing named pear varieties from grafts and cuttings.

Today's home gardener will find that pear trees are attractive even in winter, require very little pruning after they begin to bear and bear early and heavily. The trees take well to any sort of training so they have no definite space requirements. Pears have fewer insect problems than peaches, plums or apples, and their fruit stores well without any special requirements.

There are two major groups of pears: the soft-fleshed European pears (*Pyrus communis*) and the crisp-fleshed Asian pears (*Pyrus pyrifolia*). European pears are best when ripened off the tree. They consist of summer pears and winter pears. Summer pears such as Bartlett can be ripened after harvest without storage. Winter pears such as D'Anjou and Comice need a month or more of cold storage before ripening to highest quality. Asian pears, also known as Nashi or Oriental pears, Chinese pears, salad pears and apple pears, differ from European pears in remaining firm, crisp and juicy when ripened on the tree.

Most pears are eaten fresh (dessert pears), but they are excellent canned. Pears are also enjoyed dried or pickled and in purees, jams, jellies, pear wine (Perry) and brandy.

Varieties

The best reason to raise your own pears is to get exactly the varieties you want. Of some 3,000 existing pear varieties, 20 are grown commercially and more than 40 are available to the home gardener. Some 90 percent of the commercial pears come from just three varieties: Bartlett, D'Anjou and Bosc. The Asian varieties of pears are currently gaining commercial popularity in this country.

Many varieties of pear mature from mid-August into mid-October. The following varieties, listed in order of harvest maturity, are some of the many varieties worthy of consideration for the home garden:

European pears

Clapps Favorite originated from a seedling that occurred by chance and was found in Massachusetts in 1850. It is the earliest pear of good quality.

Bartlett descends from a seedling found in England around 1750. Excellent fresh, it is also considered the best variety for canning.

Seckel originated from a wild seedling found near Philadelphia around 1800. A small gourmet pear with a high sugar content and pleasant flavor, it is served pickled and as a dessert.

D'Anjou, also called Beurré D'Anjou, was introduced to the United States from France in 1844. It is a high-quality winter dessert pear.

Bosc, also called Beurré Bosc, comes from a chance seedling found in Belgium in 1807. A fine-flavored dessert variety, it has russetted skin.

Comice originated near Angiers, France, around 1840. This variety is grown in the Medford, Oregon, area as a specialty gift-box pear. It is one of the finest for eating and drying but is not recommended for canning.

Asian pears

Hosui is the earliest ripening Asian pear grown commercially and is the principal variety grown in China and Korea. Its large fruits have a golden russett, mildly sweet flesh and a crisp texture.

Chojuro is easily identified by its distinctive brown to orange russetted skin. It is very firm, stores well and bears every year.

Kikusui is a flat, yellow pear with very good quality.

20th Century became the most widely planted variety in the Orient after its discovery in 1888. Its stark white, sweet and juicy flesh make it the most popular Asian pear variety. It tends to bear in alternate years because it sets a heavy crop and must be thinned heavily.

Pollination

Cross-pollination is necessary! Plant at least two varieties that are compatible for pollination and that bloom at the same time. Almost any pear will work as a pollenizer of any other pear; however, Bartlett is a poor pollenizer of Seckel. The trees should not be planted more than 30 feet apart.

An alternative method is to plant only one tree and graft branches of the pollenizer variety onto it. Or, have your neighbor plant a compatible variety.

Planting site

Climate — Pears are not quite as cold hardy as apples. Sites where winter temperatures frequently drop below −15°F and sites prone to frequent spring frosts should be avoided.

In protected sites next to buildings in warmer growing areas such as the Boise Valley, some dwarfing rootstocks, such as the hybrid Old Home × Farmingdale 51, are cold hardy. Some of the dwarfing quince rootstocks, while sufficiently cold hardy, are susceptible to lime-induced chlorosis or leaf yellowing due to nutrient deficiency.

Any of the other Old Home × Farmingdale rootstocks are as cold hardy as a Bartlett seedling rootstock and as resistant to chlorosis. Unfortunately pear trees available to homeowners in local nurseries may indicate only that they are semi-dwarf. One runs the serious risk of buying a tree that is adapted to an area with mild winters such as California. Buy your trees from a reputable nursery, and know what rootstock you are planting.

Soils — Pear trees grow best in deep, finely textured soil with good drainage, such as silt loams or clay loams. Pears do not thrive in gravelly soil.

Spacing — Bartlett trees can be planted as close together as 15 feet. Most other standard pears will need 20- to 25-foot spacing and will grow as tall. A pear on a dwarfing rootstock will require about 15 square feet if allowed to keep its natural shape, but with proper training methods it will grow flat against a fence or wall in very little space. The range of pear tree sizes is more limited than for apples because there are fewer choices of pear rootstock.

Planting

Select vigorous, 1-year-old trees at the nursery. They will establish more quickly than older ones. Dig a hole larger than the root mass to accommodate all the roots and allow for initial root growth and development. Trim off any dead roots with a pair of sharp shears.

For containerized stock remove the tree from the pot and make three or four lengthwise cuts about 2 inches deep into the root mass to promote new root growth. Plant the tree an inch or so deeper than it stood in the nursery, but make sure that the bud union (the budding region) is about 4 to 5 inches above the ground.

Make sure the soil is thoroughly moist before planting. Cover the roots with top soil and tamp soil in firmly. When the hole is about two-thirds full with soil, fill it with water then replace all the soil.

Don't place peat moss or other soil amendments into the planting hole because changes in soil texture will affect water movement. If the soil needs to be improved, dig the amendment into an area larger than a normally sized planting hole.

Wrap the first 10 to 14 inches of trunk above the soil line with a tree wrap to prevent trunk damage from sunscald or rodents. Refer to CIS 869, *Controlling Sunscald on Trees and Vines.*

Training and pruning

A pear tree can be trained much like an apple tree, and a trained tree can last 75 years. Pear trees can be trained to a central or multiple leader as described in PNW 156, *Training and Pruning Apple and Pear Trees*. Multiple-leader training is preferred, as it spreads the risk of fire blight among three or four leaders and makes it easier to set a ladder in the tree. Heading the leaders annually (cutting into 1-year-old wood) stiffens them and ensures branching of the young tree. Don't head secondary branches.

The lateral branches should be spread outward with wood or wire spreaders or tied down. Keeping the lateral branches at 45-degree angles from the vertical will encourage early bearing. Once the desired form of the tree has been achieved, very little pruning is required, if any, and heading cuts can be kept to a minimum.

As the trees start to bear, prune for convenience in picking and spraying and to allow light to penetrate to even the lowest branches. When branches tend to crowd each other or begin to cross, thin them out by removing the most vigorous branches completely. When removing large limbs it is good practice to cut just beyond the branch bark collar to promote rapid healing.

Pears can also be grown as espaliers. Train them to 45-degree angles for an informal hedge. Alternatively, you can train them as cordons with many uprights, in a single-cordoned tub or on a trellis. The only limitations are your imagination and the one real drawback — fire blight. Fire blight, a bacterial disease, can destroy your horticultural design by killing limbs.

Fertilization

Consult CIS 866, *Homeowner's Guide to Fruit Tree Fertilization*, for details. Aim for about 12 to 15 inches of new growth annually on branches growing outward at 30- to 60-degree angles from the horizontal. Keep in mind that a heavily fruiting tree will have less shoot growth than a lightly fruiting tree. Reduce nitrogen fertilizer applications if fire blight is a problem.

Irrigation

Adequate water during the growing season is essential for leaf, limb and root growth and quality fruit production. Schedule irrigations to maintain enough but not too much moisture in the soil profile. Soil should be moist down to 2.5 feet for dwarfs and to 3.5 to 4 feet for standard trees.

A handy way to water backyard fruit trees is to make a shallow basin from the tree base to the drip line (just outside the branch tips) and soak it thoroughly every 3 to 4 weeks or whenever the top inch of soil dries out. Trees in a lawn should have a deep soaking at least twice a summer in addition to normal lawn watering.

Flowering and fruiting

Pear trees are prolific flower producers. Their fruit is borne on long-lived spurs, which are fat twiglets with many flower buds. Most pears, except Bartlett, have a low rate of fruit set and do not require blossom or fruitlet thinning. If the blossoms set fruit heavily, thinning is required to ensure adequate fruit size and to prevent overloading the tree. Thin varieties such as Bartlett by removing all but one fruitlet from each spur in June. An average spacing of 6 to 8 inches between fruits is usually adequate for Bartlett.

Pest and disease control

The most serious pests and diseases of pear are pear psylla, codling moth and fire blight. Fire blight is a bacterial disease carried by insects. Bacteria enter the trees through the blossoms or through lush, tender new growth.

To control fire blight, prevent succulent growth by limiting the amount of applied nitrogen fertilizer. Remove black or brownish wilting branches that appear scorched by cutting them off at least 8 inches below the point of last visible wilt. After each cut, dip the shears in a solution of 1 part household bleach to 9 parts water to avoid transmitting the disease to another branch. For more details about fire blight control refer to CIS 242, *Fire Blight — A Bacterial Disease of Apple, Pear and Certain Ornamentals*. Instructions for control of other pests may be found in CIS 603, *Insect Control for Apples and Pears in the Home Garden.*

Table 1. Maturity dates and ripening requirements for pears.

Variety	Date	Storage required before ripening
Hosui	Late July	None
Chojuro	Early August	None
Clapps Favorite	Early August	None
Kikusui	Mid-August	None
Bartlett	Mid-August	None
20th Century	Mid- to late August	None
Seckel	Early to mid-September	None
D'Anjou	Early to mid-September	1 month
Bosc	Late September	1 month
Comice	Late September	1 month

Harvesting

Unlike apples, most pear varieties do not ripen with good quality while still on the tree and should be harvested when "mature" but not "ripe" (Table 1). A pear is mature when it is ready to be picked and ripe when it is ready to be eaten. Thus, most pears are harvested when still green. Asian pears are an exception and should be allowed to ripen on the tree.

European pears allowed to become too mature or to ripen on the tree develop a coarse, mealy texture and often have core breakdown. On the other hand, pears harvested too early develop a superficial discoloration of the skin called scald during storage.

Commercial pear growers use a device called a pressure tester to determine when to pick. The amateur may judge the correct stage of maturity by looking closely at the skin of the pears as the harvesting season approaches. The correct picking maturity for Bartlett and D'Anjou is reached when skin color changes from grass green to a lighter green and the lenticels or pores of the skin appear more prominent.

Ease of fruit removal is another way of determining readiness to pick. If pears are dropping from the tree, strip the rest of the pears from the tree. It may already be too late for optimum quality.

Mature pears will usually detach when tilted to a horizontal position from their usual vertical hanging position. However, Bosc pears are always difficult to separate from the spur. Fruit growing in the tops of larger trees typically ripens earlier than fruit in the interior.

Asian pears ripen on the tree. Just sample the fruits occasionally as they turn from green to various shades of orange or yellow and pick them when they taste good. Asian pears do not have to be harvested all at once, but if allowed to hang on the tree they develop a slightly alcoholic flavor.

Storage

Store fruit immediately after picking it. Store it in clean wooden or cardboard boxes that are ventilated

to allow air circulation. For varieties that require a storage before ripening (Table 1), some kind of loose paper wrapping to prevent shrivelling may be necessary if the storage area is not refrigerated.

An old but still serviceable refrigerator makes a good fruit storage unit. Ideally, storage temperatures should be 30° to 32°F. An unheated garage, shed or basement may be satisfactory if temperatures below 30°F and above 45°F can be avoided. An insulated box, storage cabinet or underground room that can be ventilated at night for cooling makes a good storage unit.

Maintain high humidity in storage by placing the fruit in unsealed or perforated plastic bags or by dampening the floor or the boxes. Remember that free water or too much humidity may promote fungal growth.

Do not store fruit with onions or other strong-smelling items because the fruit will absorb the odors. Inspect regularly for mold, flesh breakdown, freezing or excessive ripening. Storing ripe fruit with pears may cause the pears to ripen. Unlike apples, partly frozen pears often can be salvaged if thawed slowly.

The storage life of pears varies according to the variety and storage temperature (Table 2). Pears held beyond their normal storage life will not ripen after removal from storage.

Table 2. Approximate storage life of pears.

Variety	30° to 32°F	40° to 42°F
	(days)	(days)
Bartlett	30 to 45	15 to 20
Bosc	50 to 70	30 to 40
Comice	70 to 90	45 to 55
Clapps Favorite	70 to 90	40 to 50
Seckel	90 to 100	60 to 80
20th Century	120 to 140	70 to 80
D'Anjou	120 to 140	70 to 80
Kikusui	135 to 150	80 to 90
Hosui	135 to 150	80 to 90
Chojuro	160 to 180	90 to 100

Ripening

Before pears are ready to eat, they should be ripened. To ripen fruit, remove it from cold storage and place it in a room at a temperature of 60° to 70°F and fairly high humidity for 3 to 10 days. To accelerate ripening, add one or two ripe bananas or apples. They will produce ethylene gas that speeds the ripening process.

D'Anjou pears are greenish yellow when ripe. Other yellow varieties lose almost all of their green skin during ripening.

D'Anjou and other winter pears will ripen very slowly if held in basement storage in plastic bags.

For canning, pears should be soft enough that they can be dented with the thumb and still be slightly firm. In this firm-ripe condition, they will peel easily. The flesh color of Bartlett pears should have changed from greenish to ivory white but not yet to creamy yellow or dull. The flesh of other varieties may be still somewhat greenish.

Problems with Pears

Handle pears carefully while picking and storing. Internal browning and soft spots not evident from the outside may be caused by bruising during handling or from ripening off the tree at temperatures above 70°F. Pears that become soft after canning were probably overripe. Pink color, a harmless condition, sometimes appears in canned fruit. More-rapid cooling after canning will reduce the amount of pink.

Hard-end, a hardening and blackening of the end opposite the stem due to growth of pears on certain rootstocks, cannot be prevented and requires replacing the tree. Grittiness in a normally smooth-textured pear caused by stony pit virus also cannot be prevented and requires tree replacement. Fruits with stony pit virus or hard-end are safe to eat.

Further reading

CIS 242 *Fire Blight — A Bacterial Disease of Apple, Pear and Certain Ornamentals* (35 cents)

CIS 603 *Insect Control for Apples and Pears in the Home Garden* (35 cents)

CIS 866 *Homeowner's Guide to Fruit Tree Fertilization* (35 cents)

PNW 156 *Training and Pruning Apple and Pear Trees* (50 cents)

PNW 341 *Choosing Pear Rootstocks from the Pacific Northwest* (25 cents)

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