



# Growing Fruit & Nut Trees in the Mid Klamath Region

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# Growing Fruit and Nut Trees in the Mid Klamath

The Mid Klamath region has excellent growing conditions for a wide variety of fruit and nut trees. The winters provide the chill necessary for many temperate zone varieties; the intense summer heat is ideal for ripening stone fruits such as peaches; the long season means we can grow sub-tropicals like figs, pomegranates and persimmons; and the wide temperature swings characteristic of our fall weather pattern are ideal for developing complex flavors in wine grapes and tree fruits. Most references address the coastal or inland climates, while this one addresses the unique characteristics of this region, with information on how to select varieties, plan an orchard and care for fruit trees.

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# Planning Your Orchard

Fruit and nut trees are longer term investments than annual vegetables, and deserve more planning. It's no fun planting a fruit tree and tending it patiently for several years only to find that you planted the wrong variety, or put it on the wrong soil or site, or never planted a pollinizer. Follow these tips on selecting fruit trees and you'll avoid these pitfalls and ensure an abundant harvest for your efforts.

## Soil & Drainage

Most fruit trees prefer a moderately fertile, well-drained soil. How do you know if your soil is well drained? Easy: dig a hole large enough to accommodate your tree roots (about 2' x 2') and fill it with water. Let it drain and fill it again. If you still have water in the hole after 12 – 24 hours you likely have a drainage issue. If so, your options are 1) find a better draining site for fruit trees, or 2) plant your trees on a mound to promote drainage and avoid “wet feet” (i.e. having the tree roots in standing water for long periods of time). Cherries and Walnuts will not tolerate heavy wet soils. Fruit trees that tolerate heavy soils include Plum, Apple, Pear, Asian Pear, Persimmon, Currant and Filbert. You can grow fruit trees right in your garden beds if you wish, just be sure to keep overhead water out of the canopy as it can create disease problems.

## Rootstock Determines the Size of the Tree

The rootstock is the lower portion of the tree that you don't see. Rootstock selection and pruning determine the size of a tree. If you have limited space, choose a dwarf or semi-dwarf rootstock and keep it well pruned. If you want a tree to hang a hammock on, or to use as windbreak or shade, go for a semi-standard or standard. The diagram below shows the relative sizes of different rootstocks.

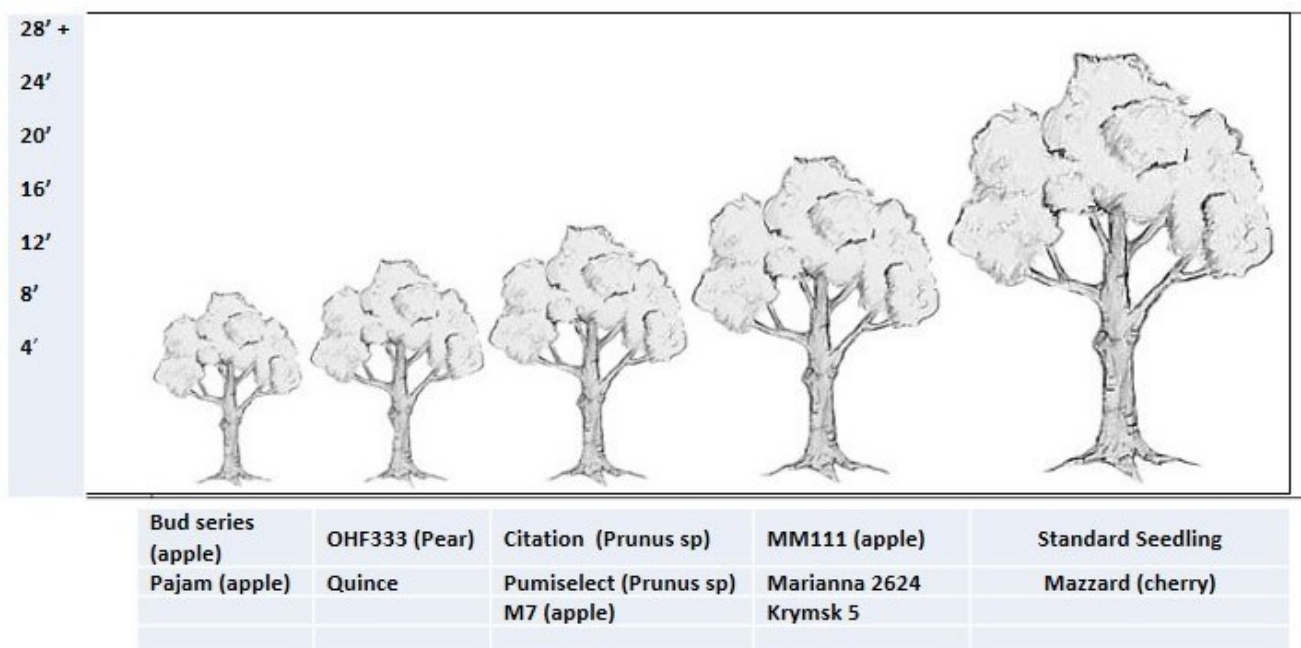


Figure 1: Adapted from Kourik (2005) and based on personal observations.

# Ripening Times - Spread Your Harvest Through the Year

Be sure to spread your harvest out. By choosing varieties that ripen over a long period of time, you can enjoy fresh fruit for most of the year. Some varieties are good keepers and will provide you with fresh fruit well into the winter. Canning, drying and freezing are also great ways to extend your harvest and eat fruit all year.

Ripening & Storage Dates for Fruit and Nut Varieties, Orleans, CA												
	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.
Berries												
Cherry												
Apricot												
Peach												
Nectarine												
Apple												
Plum												
Pear												
Asian Pear												
Fig												
Grape												
Pomegranate												
Persimmon												
Berries												
Almond												
Filbert												
Walnut												
Chestnut												
Kiwi												
Fejoia												
Citrus												

Figure 2: Adapted from Kourik (2005), Dave Wilson Nursery (2017) and based on personal observations.

## Pollination

Most fruit trees require pollination to produce fruit. Some trees are capable of pollinating themselves (self-fertile), others require pollen from another tree (self-sterile). As a general rule, pollinizers should be no more than 50 feet apart from one another, though trees up to 200 feet apart may cross-pollinize. The “At a Glance” charts outline the general requirements for common fruits. See variety descriptions for more specific information. (Note - an insect or critter that spreads pollen from one plant to another is a **pollinator**, while a plant that produces pollen necessary to fertilize blossoms on another plant is a **pollinizer**.)

# Chilling Requirements

Temperate fruit trees must pass through some cold in order to know that winter is over and it is time to bloom. **The Mid Klamath region has plenty of chill hours, so this is generally not an issue or our area**, but some areas of Southern and Coastal California are "low chill," meaning they lack the amount of chill required to stimulate bloom. Chill hours for many fruit and nut varieties are listed in the "At a Glance" charts.

Chill is measured by the amount of hours below 45°F from November to mid-February. Temperate fruits require anywhere from 100 to 1400 chilling hours. Gauging cumulative chill and matching varieties for your area is more of an educated guess than an exact science, as low temperatures vary considerably within a climate zone and from year to year. Chilling requirement is a concern for USDA zones 9B and 10, predominantly southern and coastal regions where chilling hours average 100-600 chilling hours per year. If you are within this area, take note of the chilling requirements listed for fruits and choose accordingly. Persimmons, almonds, olives, berries, pomegranates and chestnuts all have low chilling requirements. Filberts need lots of chill (1200-1500 hours) and should be avoided in low chill areas.

## How Many Trees Should I Plant?

The number of trees you plant will depend, of course, on how much fruit your family consumes. The "At a Glance" tables tell you how much fruit you can expect to harvest from each variety on different rootstocks. Don't be intimidated by the quantities. You can spread your harvest throughout the season so that your fruit does not ripen all at once (see below). Some of the fruit will be culls and a lot of weight is lost when processing fruits. If you intend to preserve your fruit by juicing, canning or drying then you will want to plan accordingly. Consider the following processing conversions:

**20 LB of fresh fruit yields approximately:**

- **1 ½ to 2 LB dried fruit**
- **1 gallon of juice**
- **About 5 quarts of fruit preserves**

## How to Use this Guide

This guide is a quick reference for growing fruit and nuts in the Mid Klamath region. It showcases different fruit/nut types using an "At a Glance" table with the details needed for planning an orchard. Please see the Table of Contents for fruit/nut types and appendices.

*Note: At a Glance tables are based on information from Sunset Books & Brenzel (2012), Kourik (2005) and personal observations.*

AT A GLANCE	
Climate Zones:	What growing climate is suitable. Referencing both USDA and Sunset zones. See Climate Zones for more details.
Chilling Requirement:	Hours of cold, winter weather required to produce fruit.
Pollination:	Whether the plant is self-fertile or requires a pollinizer.
Height:	Maximum height of plant.
Width:	Maximum width of plant.
Years to First Fruit:	How many years before fruit production.
Life Expectancy:	Maximum lifespan of plant.

# Apples

**Apples** are the most diverse and widely adapted of all temperate fruits. They vary tremendously in their color, texture, acid-sugar balance, density of flesh, juiciness, keeping qualities, fragrance, aftertaste and eye appeal. Apples can be used for cooking, juice or hard cider, baking or fresh eating. Some need to be eaten right off the tree, others will store for months.

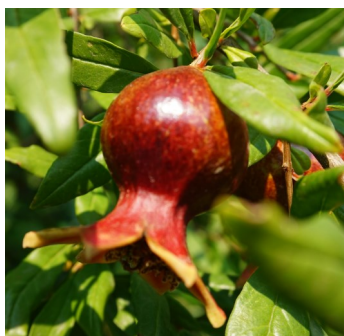


APPLES AT A GLANCE			
Climate Zones:	USDA zones 3-10, see individual variety descriptions		
Pollination:	Most require a pollinizer. Some varieties are pollen sterile and will not pollinize other apples.		
Rootstocks:	Bud 9 or Pajam Dwarf	M7A Semi-dwarf	M111 Semi-standard
Height:	6-10'	8-15'	15-22'
Width:	6-10'	8-15'	12-20'
Years to Fruit:	1 to 3	2 to 3	3 to 4
Life Expectancy:	20 yrs +	35 yrs +	60 yrs +
Yield Mature:	60 LB	80-100 LB	160-200 LB

**Apples and heat** - If daytime temperatures are consistently above 85 degrees for the three weeks prior to harvest (a common occurrence in the mid Klamath Region) then many apple varieties will suffer sunscald and *bitterpit* (calcium deficiency in the fruit, resulting in spotting and corky lesions, fruit drop before ripening, mushy apples and poor storability). Low elevations in Sunset Zone 14 of the Klamath-Trinity region can experience hot afternoons above 85 degrees well into late September, sometimes even into October. If you live in this zone you may use one or all of these three strategies - 1) Plant late varieties that ripen several weeks after this temperature spike. 2) Plant your apples where they are not subject to hot, late afternoon sun. 3) Choose heat tolerant apple varieties. Varieties known to be heat tolerant in our region include Gala, Ginger Gold, Ashmeads Kernal, Freyberg, Golden Delicious, Jonathan, Spigold, Winesap, Fuji, Hauer, Arkansas Black and Granny Smith. Mutsu will incur some bitterpit spots but still yields a high amount of good fruit. The following varieties are listed as heat tolerant but we have no direct experience with them: Grimes Golden, Keepsake, Wickson Crab, Orleans, Kandil Sinap, Sturmer, Tydeman Late Orange, York.

# Pomegranates

**Pomegranates** do well in the hot summers of the lower elevation Mid Klamath, cooler zones may lack the heat needed for ripening. They have attractive bright green to golden foliage which puts on a great show in autumn. They ripen late in the season and keep well, providing precious winter fruit. Shrub grows to approximately 10 feet. They are self-fruitful and bear heavily, even when young. USDA zones 7-10; Sunset zones 5-24.



POMEGRANATES AT A GLANCE	
Climate Zones:	USDA zones 7-10, Sunset Zones 5-24; 1-4, in container
Chilling Requirement:	100-200 hours
Pollination:	Self-fertile
Height:	6-15'
Width:	6-15'
Years to First Fruit:	2-3
Yield When Mature	20 to 50 LB
Life Expectancy:	50-75 years

# Pears

Pears are easy to grow and one of the most reliable and delicious of temperate fruits. In the Mid Klamath, Bartlett, Red Bartlett, Bosc, Warren, and Orcas varieties withstand the heat of lower elevations better than Comice and D'Anjou. Pears can tolerate heavier, wetter soils than most fruit trees, but avoid planting in waterlogged soils. European pears must be ripened off the tree to attain the buttery texture and intense flavor that make pears so sumptuous. Asian pears can be left to ripen on the tree, which will yield a sweeter fruit than those found in the store. Three of many pear rootstocks are listed here: **Pyrus communis standard** is hardy to -35 F. Needs consistent watering and is tolerant of wet soils. **OHxF 333 semi-dwarf**



will produce a tree 50-70% of standard rootstock. Resistant to fire blight and pear decline. Does not sucker and produces a well-anchored, productive tree. **Pyrodwarf** is a true dwarfing rootstock for pears which produces a tree 35% smaller than OHxF 333 (about 8-13 ft). Pyrodwarf bears early, does not sucker, and has good winter cold hardiness.

PEARS AT A GLANCE			
Climate Zones:	European: USDA zone 4 –9; Sunset zones 2-9, 14-18, 32-39 Asian: USDA zone 5-10; Sunset zones 3-12, 14-21, 32-41.		
Chilling Requirement:	European: 600-1500 hours Asian: 400-600 hours		
Pollination:	Plant two varieties (European and/or Asian) for pollination		
Rootstocks:	Pyrodwarf	OHxF 333	Standard Seedling
Height:	8-13'	12-16'	14-22'
Width:	5-7'	7-10'	8-12'
Years to First Fruit:	2-3	2-3	3-4
Life Expectancy:	20 yrs +	35 yrs +	50 yrs +
Yield Mature:	30-40 LB	50-60+ LB	60-75+ LB

**Asian Pears** have the shape and crunchiness of an apple, and the flavor of a pear. The trees have an upright growth habit, attractive foliage that turns beautiful orange in the fall, and tolerate a wide range of soils. Most varieties are disease resistant and fairly trouble free. They have a lower chill requirement and can be grown in areas with warmer winters. Plant two varieties for pollination, or use any European pear as a pollinizer. USDA zone 5-10; Sunset zones 3-12, 14-21, 32-41.

# Persimmons



PERSIMMONS AT A GLANCE	
Climate Zones:	USDA zones 7-11, Sunset zones 6-9, 14-16, 18-23, 26, 28-33
Chilling Requirement:	100-400 hours
Pollination:	Self-fertile
Height:	Can be kept to 15' by pruning, up to 30 feet if unpruned
Width:	Up to 30', less if pruned
Years to First Fruit:	2-5
Life Expectancy:	50-75 years

Persimmons ripen late in the season and store well, providing fresh fruit into the winter months. They are excellent fresh and prized for cooking and baking. Dried persimmons are the "sugar plums" of traditional Christmas celebrations, a delicious, chewy, date-like treat. The tree is highly ornamental, with large glossy leaves that turn to flaming reds and orange into the fall and fruits that hang on the tree long after the leaves have dropped. The tree is trouble-free with few pests, has a low chilling requirement, is self-fruitful, tolerates heavy soils, and needs little pruning once the framework is established.



# Apricots

APRICOTS AT A GLANCE		
Climate Zones:	USDA zones 4-9, Sunset zones vary by variety but include 3-24.	
Chilling Requirement:	350 - 900 hours	
Pollination:	Self-Fertile	
Rootstock:	Semi-dwarf Citation	Semi-dwarf Marianna 2624
Height:	12-16'	14-18'
Width:	8-12'	10-16'
Years to Fruit:	2 to 3	2 to 3
Life Expectancy:	20 to 30 years	20-40 years

Apricots are absolutely delicious, and they are problematic to grow in the Klamath-Trinity. They are susceptible to a wide range of bacterial and fungal diseases. They bloom early and most years the blossoms and/or young fruit are destroyed by winter rains. They will not tolerate heavy soil or standing water. Microclimate is all- important. If you want to try apricots:



- Plant only on well drained soil, apricots do not tolerate any amount of standing moisture in the winter.
- Do not winter prune. *Eutypa* is a common fungus that will enter fresh pruning cuts in the wet season and cause dieback. Wait until summer to prune.
- If possible, place trees to avoid the early winter sun, it is those first warm days that can break dormancy too early in the year, causing the tree to bloom early and lose its blossoms in the winter rains.
- Disease resistant varieties, such as Puget Gold, withstand disease better, but do not taste as good as the more popular varieties such as Blenheim and Tomcot.

When planting apricots, look for the right microclimate; a knoll or rise that cold air drains away from is ideal.

# Cherries

CHERRIES AT A GLANCE		
Climate Zones:	Sweet cherries – USDA zones 5-9, Sunset zones 2,6,7,14-18, 32, 34-37, 39	
	Pie Cherries – USDA zone 3, Sunset zones 1-9, 14-17, 33-43	
Chill Requirement:	600 - 1300 hours	
Pollination:	Most sweet cherries require a pollinizer; Lapins, Stella & Montmorency are self-fertile.	
Rootstocks:	Krymsk 5	Mazzard
Height:	12-20'	18-30'
Width:	6-10'	8-15'
Years to First Fruit:	2-4	2-4
Life Expectancy:	30 years +	35 years +
Yield when Mature:	60 LB	80-100 LB

Cherries are a mixed bag in the Klamath Region. The trees grow well in our area, and on good years they are the first tree fruit of the season, providing that precious, early fresh fruit, for eating, pies, cobblers and jams; and a bonanza for market farmers. They are, however, susceptible to a range of bacterial and fungal diseases, and more recently the Two-Spotted Drosophila. What's more, our region often gets June rains that may split and rot the ripening fruit. Cherries require a well-drained soil and will die out in heavy soils. Cherries on standard rootstock will become very tall, up to 40 feet, so it is advisable to obtain them on a dwarfing rootstock such Gisella or Krymsk 5. The recent arrival in the Mid Klamath of the Two-Spotted Drosophila, a fruit fly that infests cherries and other soft fruits, has many folks discouraged about growing cherries. See our bulletin on this pest for more details.



# Plums

Japanese plums are generally larger and juicier than European plums. They bloom early and require a pollinizer, so be sure to plant at least two varieties within 50 feet of each other, or plant your new tree next to an existing plum. Japanese plums can be pollinated by early blooming American (wild, or "seed") plums.



PLUMS AT A GLANCE		
Climate Zones:	USDA zones 5 to 10, Sunset zones 2-12, 14-23.	
Chilling Requirement:	European plums: 700-1000 hours	
	Japanese Plums: 300-600 hours	
Pollination	European Plums– Partly self-fertile, pollinizer will improve production.	
	Japanese Plums - Pollination with another variety required.	
Rootstocks:	Semi-dwarf Citation	Semi-standard Mariana
Height:	12-16'	14-20'
Width:	8-10'	8-12'
Years to Fruit:	2 to 3	2-3
Life Expectancy:	20 to 30 yrs.	30 yrs. +



# Peaches and Nectarines

The Mid Klamath grows excellent peaches. They need well-drained, fertile soils and plenty of sun. Peach leaf curl, a fungal disease that attacks the foliage and causes curled, misshaped leaves, is a problem in our area, and the only options are resistant varieties, or spraying lime sulfur two to three times, (first week of December, early to mid January and just before budbreak). Peaches grafted onto plum rootstock are better adapted to heavy soils. Nectarines are peaches with no fuzz. They also do well in our region, but are susceptible to thrips, which feed on the young fruit and cause it to ripen malformed (the fuzz on peaches protects them from thrips, otherwise they would suffer too. Other than this, they are managed just like peach trees.

PEACHES AND NECTARINES AT A GLANCE	
Climate Zones:	USDA zones 5-10
Chill Requirement:	200-850 hours
Pollination:	Most Peaches are self-pollinating, with the exceptions of JH Hale & Indian Blood.
Rootstock:	Pumiselect
Height:	12-16'
Width:	10-14'
Years till Fruit:	2 to 3
Life Expectancy:	20 to 30 years
Yield when Mature:	40-60 LB

# Figs



Figs are vigorous, productive and long-lived trees, adapted to a wide range of soils. Their large leaves and luscious drooping fruit bring a subtropical flavor into temperate gardens. Figs bear two crops annually –

the early, light crop, known as “breba,” and the later fall crop, known as figs, which tends to be a heavier crop. If you are in a marginal fig area (climates lacking a long, hot summer season) you need to encourage the early crop to ensure a harvest. This is done by 1) Selecting varieties with a heavy, early crop and 2) Pruning lightly or not at all in winter, since the first crop of figs is borne on the previous season’s growth.

FIGS AT A GLANCE	
Climate Zones:	USDA zones 7-11, Sunset zones 4-9, 12--31; can be grown in cold areas in container
Chilling Requirement:	100-400 hours
Pollination:	Self-fertile
Height:	Can be kept low by pruning or less by growing in a container, grows up to 30 feet if unpruned
Width:	Up to 20 feet, less if pruned
Years to First Fruit:	1-3
Life Expectancy:	Up to 100 years

# Grapes



Grapes are one of the oldest of cultivated fruits, and for a good reason. They are easy to grow, yield abundantly and provide fruit, juice, wine, preserves, shade and beauty. Plant 6 to 12 feet apart and support the long vines with a trellis or arbor. Our damp Spring weather often results in powdery mildew in grapes, so consider planting disease resistant varieties such as Interlaken, Himrod, Glenora, Beauty, and Heavenly Blue.

GRAPES AT A GLANCE	
Climate Zones:	All Sunset zones in the Klamath-Trinity
Chilling Requirement:	100 – 400 hours
Pollination:	Self-fertile
Height and Width:	Can be grown on fence, trellis or overhead arbor
Yield When Mature	30 LB/ vine
Years to Fruit:	1-3
Life Expectancy:	Up to 100 years

# Citrus

Citrus provide an excellent source of winter fruit, high in vitamin C and minerals. Cold-hardy citrus can be grown in climate zones 14, 4 and 15 in the Klamath-Trinity region, as well as the milder areas of zone 7. These areas all have plenty of heat to ripen the fruit; the real trick is protecting the plants from hard winter frosts, and even then you'll have to live with the occasional severe cold snap that may destroy a crop and/or lightly damage foliage. Citrus require a fertile, well-drained soil and nitrogen throughout the growing season – start applying in late winter and stop late summer to avoid promoting tender, frost-prone growth late in the season. Citrus require minimal pruning, shaping the tree and removing old and dead branches is usually adequate. Rolling River Nursery is a local nursery that carries a wide selection of cold-hardy citrus.

**Variety Selection** – Stick to the most cold-hardy citrus varieties for the best chance of success such as kumquat, mandarin, Meyer lemon and calamondin.

**Site Selection** – Planting in a greenhouse will ensure the best frost protection. You will need a larger walk-in greenhouse rather than a cold frame, and it's best to have side walls that can be raised for summer ventilation. Even greenhouse-planted citrus will experience occasional frost damage during our coldest spells. Growing outdoors is limited to zone 14 and banana belts; look for south facing walls, overhangs, and thermal mass. See Microclimates for more detail. It's also possible to grow citrus in containers.

**Frost Protection** – Be prepared to provide supplemental frost protection during the coldest weather. This includes covering plants with row cover fabric and/or stringing Christmas lights in the tree (use the older type, the energy efficient LED lights do not produce enough heat). Deep mulching helps to protect the shallow root systems.

## Cold Hardy Citrus

**Meyer lemon** - Though not a true lemon, it looks and tastes exactly like a lemon with the advantage of being sweeter and more cold-hardy. The thin-skinned, juicy fruit hangs well on the tree for an extended harvest through the winter. The mild-flavored rind can be grated or eaten with a bit of honey.

**Kumquat** – A small, orange colored fruit, unique among citrus in that the tender flesh is sweet-tart and the fruit is eaten whole.

**Mandarin** – Delicious, thin-skinned fruits that peel easily and have a unique flavor and extended harvest. One of the largest groups of citrus that includes many named varieties. Satsuma is one of the more cold-hardy varieties that do well in the Klamath-Trinity.

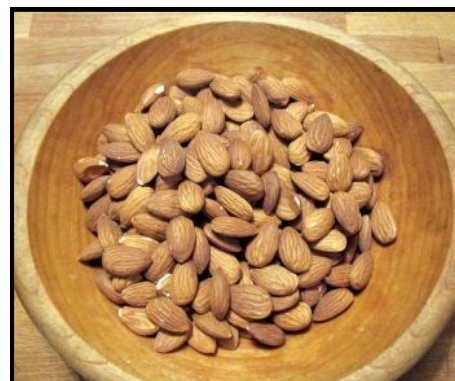


# Nut Trees

Nuts are an important element in a balanced diet, rich in protein, oils, natural fiber and complex carbohydrates. Nuts are also an important source of trace minerals and anti-oxidants. Chestnuts and walnuts are large, majestic trees, which yield valuable timber as well as shade, windbreak and wildlife habitat. Almonds and filberts are intermediate size trees that can work well in the garden.

## Almonds

Almond trees are closely related to peaches and resemble them in form and pruning needs. Almonds have the highest protein content of all the nuts, and are rich in monounsaturated fats, calcium, vitamin E (a natural anti-oxidant) and trace minerals. They are however, challenging to grow in the Klamath Trinity region. They are the earliest of any fruit or nut trees to bloom, so the blossoms are often knocked off by winter rains, and they are subject to a variety of diseases. Commercial almonds require supplemental bee hives to ensure pollination and good yields, so you can expect lower yields on homegrown trees. Most almond varieties require a pollinizer, but All-In-One is a self-fertile, semi-dwarf variety that has produced crops in the Orleans area. Titan is a late blooming, cold-hardy variety that is pollinized by peach; trials in Orleans have yielded a good, healthy tree but marginal almond set.



## Chestnuts

Chestnuts thrive in the Mid Klamath region, where they can grow to majestic trees 50 - 100 feet wide and high. There are many established, mature trees in the Klamath-Trinity valleys that produce reliable crops annually with no extra irrigation or fertilization. The chestnut, *Castanea*, is closely related to the golden chinquapin, *Castanopsis chrysophylla* (and can share many of the same pests), and the tanoak, *Lithocarpus*, that yields highest quality acorns, which may explain its suitability to the region. Chestnuts drop from the tree in spiny burrs (which deter squirrels) in the fall, the easiest way to harvest is to step on the burrs to release the nuts and use gloves to protect from the burrs.

Over the years some highly California skilled horticulturalists have recognized the value of chestnuts and devoted

CHESTNUTS AT A GLANCE	
Climate Zones:	Sunset zones 2-9, 14 - 17. Hardy to USDA zone 5
Chilling Requirement:	Low chill requirement,
Pollination:	Requires a pollinizer. Plant two seedlings or a designated pollinizer variety.
Rootstock:	Seedling
Height:	30 - 100 feet, Colossal is smaller averaging 20 feet
Width:	30 - 100 feet, Colossal is smaller averaging 20 feet
Years to Fruit:	3 to 10
Life Expectancy:	100 years

considerable efforts to breeding and selecting varieties for Northern California. Albert Etter of Etersburg in Southern Humboldt County selected and bred varieties for that region, and Felix Gillet of Nevada City hybridized various species and developed "Colossal," a highly productive blight resistant variety planted for commercial production. Word has it that the renowned horticulturalist Luther Burbank spent summer vacations on the Klamath and is responsible for many of the old chestnut trees in the Happy Camp area.

# Filberts (Hazelnuts)

Filberts (also known as hazelnuts) have a deliciously sweet flavor, good for baking and confections, raw or roasted. The filbert is one of 14 crops selected by David Duhon, author of the book *One Circle*, for providing a balanced diet in a minimum growing area. The nuts are an excellent source of carbohydrates, protein and balanced amino acids. Homegrown nuts are extremely flavorful, rich in oils and subtle tastes. Filberts prefer even moisture and moderate temperatures, to the key to growing them successfully in the Klamath-Trinity region is to plant out of the intense late afternoon sun and provide consistent water through natural groundwater or a drip irrigation system. Plant at least two varieties, within 50 feet of one another, for wind pollination.

FILBERTS AT A GLANCE	
Climate Zones:	USDA zones 4-9, Sunset zones 2-9, 14-20, 32-41
Chilling Requirement:	800-1,600 hours
Pollination:	Requires a pollinizer
Height:	15-20 feet
Width:	10-12 feet
Yield When Mature	20 LB +
Years to Fruit:	2-4
Life expectancy:	50 years



# Walnuts

A handsome, spreading tree, walnuts are great for shade and a single tree will produce 100 LB or more of high-protein nuts. The nuts are delicious and high in Omega 3 oils. Walnuts are self-fruitful once they mature, but they will come into bearing earlier and produce more if pollinated with another variety. Walnuts do very well in the Klamath-Trinity, where there are many remnant trees from the days when they were grown as a cash crop. There are no dwarfing rootstocks available for walnuts, and due to their size the standard trees are not practical for smaller plots, but "Pedro" is a genetic dwarf variety that grows 16 - 20 feet tall and produces high quality nuts, so consider this variety for tighter areas.

WALNUTS AT A GLANCE	
Climate Zones:	Sunset zones 4-9, 14 - 23, 29 -33, Hardy to USDA zone 5
Chilling Requirement:	700 hours
Pollination:	Not required, but will bear earlier and more prolifically with a pollinizer
Height:	30-40' (Pedro 16 – 20')
Width:	30-40' (Pedro 12 – 16')
Yield When Mature	20 LB +
Years to Fruit:	2-6
Life expectancy:	50-100 years



# Fruit and Nut Reference Chart

## Fall Color

Asian Pear  
Blueberry  
Cherry  
Pear  
Persimmon  
Walnut

## Showy Foliage/ Fruit

Kiwi  
Pear  
Persimmon  
Pomegranate  
Walnut

## Good for Container

### Growing

Dwarf and Semi-Dwarf Apples  
Blueberry  
Currant  
Fig  
Gooseberry  
Grape  
Most berries  
Pomegranate

## Showy Flowers

Pomegranate  
Saturn Peach  
Double Delight Nectarine  
Pink Pearl Apple

## Tolerant of Heavy Soils

Apple  
Asian Pear  
Blueberry  
Plum  
Pear  
Persimmon

## Tolerant of Light Soils

Almond  
Apricot  
Peach  
Nectarine  
Cherry

## Drought Tolerant

Apple on M-111  
Apricot  
Fig  
Grape  
Peach  
Pear  
Pomegranate

## Shade Tolerant

Blueberry  
Cherry  
Currant  
Filbert  
Gooseberry

## For Espaliers

Apples  
Figs  
Pears

## Low Chill Varieties

Almond – All-In-One  
Fig  
Nectarine – *Fantasia*  
Peach – *Babcock, Strawberry Free, Saturn*  
Persimmon  
Plum – *Beauty, Mariposa, Santa Rosa*  
Pomegranate

## Fairly Cold Hardy

Apples  
Blueberry  
Boysenberry  
Currant  
Cold Hardy Kiwi  
Grape – see varieties  
Montmorency Cherry  
Pear  
Raspberry

## Disease Resistant

Apples – *Akane, Alkmene, Liberty, Hudson's Golden Gem, Mutsu,*  
Asian Pear  
Fig  
Grape – *Interlaken, Himrod, Suffolk Red, Lakemont*  
Kiwi  
Persimmon  
Peach – *Frost, Red Haven, Indian Blood*  
Pears - *Orcas*  
Pomegranate

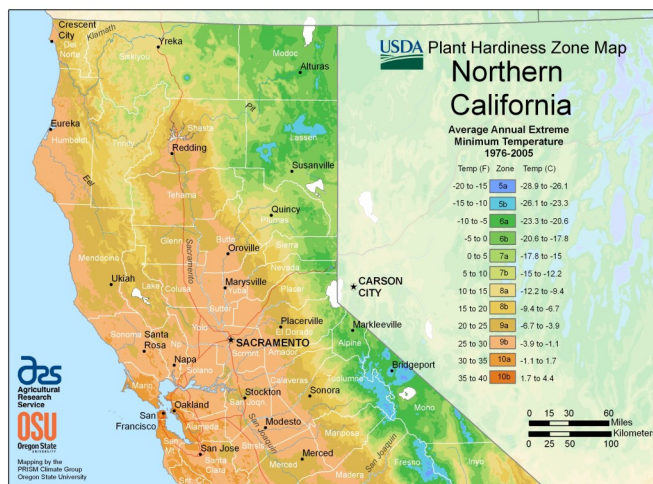
## Fruits That Store Well

Apples – *Arkansas Black, Fuji, Spitzenburg, Cherry Cox, Granny Smith, Newtown Pippin, Hauer Pippin,*  
Fuzzy Kiwi  
Pears – *Comice, Bosc*  
Persimmon  
Pomegranate

Chart 1: Data drawn from Bear Creek Nursery Catalog (1993) (out of print), Kourik (2005), Western Gardening Book, Editors of Sunset Magazine (2012), and personal observation.

# Climate Zones

The Mid Klamath region encompasses a wide array of elevations, soils and topography that have given rise to one of the most diverse flora and fauna of any temperate zone on earth. This same complexity yields a range of opportunities and challenges for farming and gardening. It is possible to grow fresh produce year round on low elevation valley floors and river bars, while higher elevations and north facing drainages are some of the coldest climate zones in the West. Banana belts offer microclimates that escape frosts, extending the growing season by many weeks on some sites.



Map 1. USDA Plant Hardiness Zone Map. (2012). Agricultural Research Service, U.S. Department of Agriculture. Accessed from <http://planthardiness.ars.usda.gov>.

Identifying your **climate zone and microclimates** will help clarify the challenges and opportunities of gardening in your area and provide a way to adapt information to your specific site. Most of the charts and calendars listed on this website are based on Sunset climate zone 14, which includes the lower elevations of Orleans, Hoopa Valley and Willow Creek. If you live in a cooler climate zone, such as Happy Camp or Seiad Valley (Sunset zone 7), you will need to adjust the information accordingly. Most gardeners are familiar with the USDA climate zones that reference plant hardiness (tolerance to cold). The climate zones developed by Sunset Gardening are much more detailed and are a better resource for our area. However, since most plant tags reference the USDA zones, we have included them as an additional reference.



Map 2.: From Western Gardening Book, and Sunset website, Editors of Sunset Magazine, © 2012





# Resources

- For more information see the Mid Klamath Watershed Council's Foodshed webpages at <http://mkwc.org/programs/foodsheds/growing-fruits-nuts-berries/>
- The UC Davis California Garden Web has a page on growing fruit and nut trees and vines. [http://homeorchard.ucanr.edu/Fruits\\_&\\_Nuts/](http://homeorchard.ucanr.edu/Fruits_&_Nuts/)
- Pruning Manual by Dan Lurie, Filoli Gardens Newsletter - This is the **best** pruning manual we've seen. Divided into three sections - Principles of Tree Growth, Training Young Trees, and Pruning Mature Trees, published in The Sundial, a newsletter of Filoli Gardens. <http://mkwc.org/files/4713/8904/6027/Pruning-Manual-Lurie.pdf>
- Pruning to Restore an Old, Neglected Apple Tree, by R. L. Stebbins and J. Olsen, Oregon State University - This completes the manual above by showing how to restore an old tree that has not been pruned for years (hint: it takes a few years). Follow this simple, concise guide for good results. <https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/ec1005.pdf>
- Pruning Notes - Here are the Pruning Notes for the workshop that Mark DuPont teaches, including links to sources for pruning tools, books etc. [http://mkwc.org/files/8814/2066/8792/Pruning\\_handout.pdf](http://mkwc.org/files/8814/2066/8792/Pruning_handout.pdf)
- Principles of Grafting and Budding - If you want the full scoop on grafting, the why as well as the how, then this chapter on grafting, posted by UC Davis, is a good, comprehensive overview of grafting principles and techniques. <http://mkwc.org/files/1613/9489/5291/Grafting-Principles-Practice.pdf>
- Grafting and Propagating Fruit Trees - This pamphlet by Penn State boils it down to the basics of how to graft using a variety of techniques. (Good photos, but most professional grafters use a different hold on the knife). <http://extension.psu.edu/publications/uj255>
- Grafting Fruit Trees - This is a useful PowerPoint presentation by Lloyd Collet of Oregon State University - nice photos of the step-by-step processes involved in a variety of grafts. <http://mkwc.org/files/9413/9489/5254/Grafting-PP-Oregon-Ext.pdf>

## References

- Kourik, R. (2005). *Designing and Maintaining Your Edible Landscape Naturally*. White River Junction, VT: Chelsea Green.
- Sunset Books & Brenzel, K. N. (2012). *The New Sunset Western Garden Book: The ultimate gardening guide* (9<sup>th</sup> ed., completely rev. and updated). New York, NY: Time Home Entertainment Inc.
- Sunset Publishing Corporation. (2017). *Sunset Climate Zones: Northern California*. retrieved at <http://www.sunset.com/garden/climate-zones/sunset-climate-zone-northern-california>.
- Otto, S. (1995). *The Backyard Orchardist* (2nd ed.). Maple City, MI: OttoGraphics.
- Walheim, L. & Stebbins, R. (1981). *Western Fruit, Berries & Nuts: How to select, grow and enjoy*. Tucson, AZ:HP Books.
- Korn, L., Snyder, B. & Musick, M. (Eds.). (1982). *The Future is Abundant: A guide to sustainable agriculture*. Seattle, WA: Tilth.
- ☑Dave Wilson Nursery. (2017). *Fruit and Nut Catalog*. Retrieved from <http://www.davewilson.com/product-information/category/fruit-trees>.
- Bear Creek Nursery Catalog, Northport, WA. (1993). (out of print).
- USDA Plant Hardiness Zone Map. (2012). Agricultural Research Service, U.S. Department of Agriculture. Accessed from <http://planthardiness.ars.usda.gov>.