Tree Fruit Production

Topics

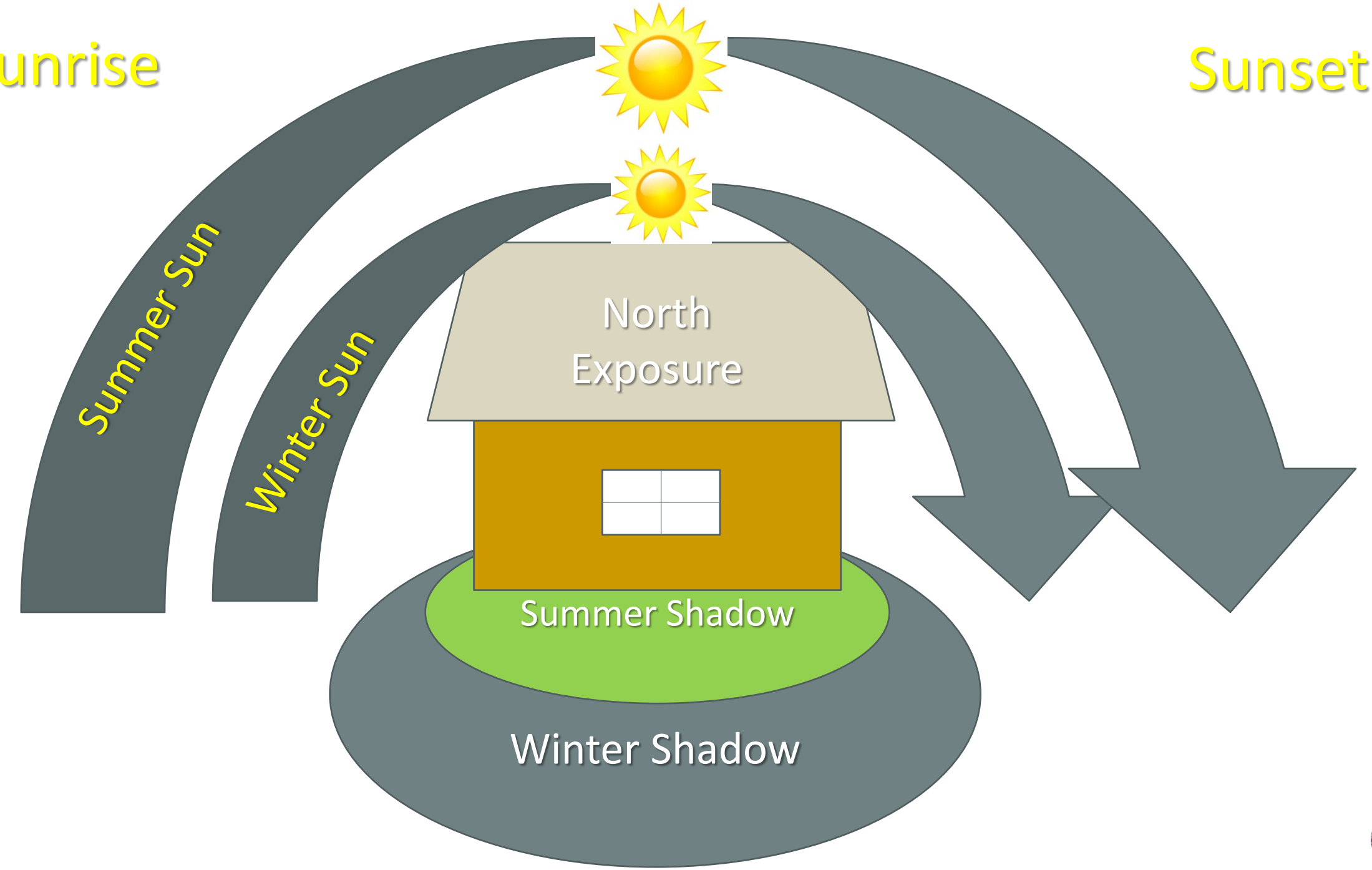
- Pruning
- Cherries
- Peaches/Nectarines
- Plums
- Apricots

Site Selection

- Soil
- Water quality and availability
- Climate
  - USDA Hardiness Zone
  - Early and late frosts
  - Other microclimates

Microclimates


EXT
1°F
Peaches, Plums, etc.
Tart Cherries and Apples
EXT
- 8°F
Pasture


Sunrise
Sunset
Summer Sun
Winter Sun
North
Exposure
Summer Shadow
Winter Shadow

Pruning Styles: Open Center

- Open center
- Peaches/nectarines
- Apricots
- Tart Cherries
- Japanese Plum

Pruning Peach and Nectarine Trees

Pruning: Central leader & Modified Central Leader

- Apples
- Pears
- European Plums
- Sweet Cherries

Pruning

Pruning and Training

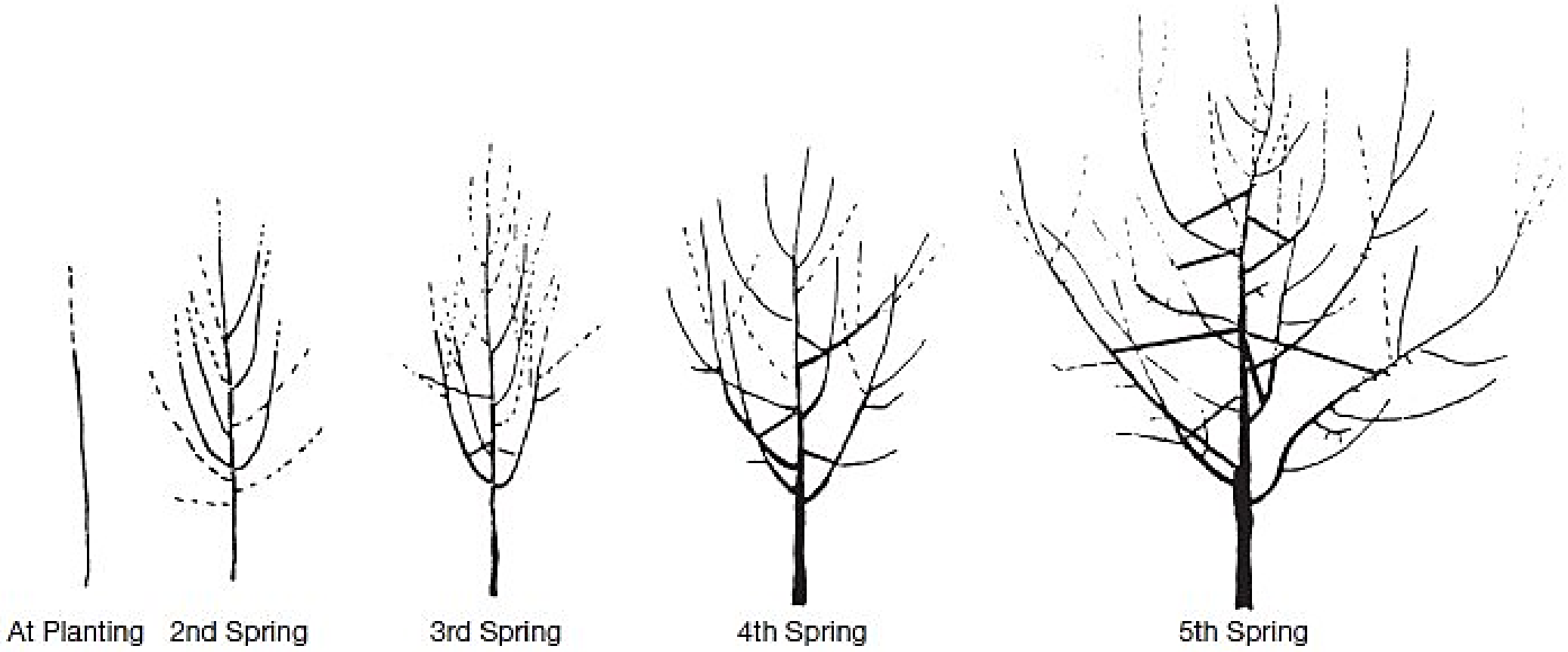


Figure 1. Central leader training system for apples and pears. Dotted lines represent branches that are removed. Source: Stebbins, R.L. 1980. Training and Pruning Apple and Pear Trees. PNW Cooperative Extension Service Bulletin 156

Pruning Cherry Tart Trees

Rootstocks

Rootstocks

- Control the growth of a tree (dwarfing)
- Disease or pest resistance
- Soil tolerance
- Precocious: a characteristic of rootstocks of causing flowering or fruiting earlier than usual.

Common Apple Rootstock Descriptions

Root-stock	Description	Fire Blight Resistance	Eventual Size (FT.)
M.9	Common commercially. Requires anchoring for life of tree.	Low	8-12
G.30	Common commercially. Requires anchoring for life of tree.	High	18-20
M.7	Mainly home use. Moderate suckers. Tolerates wet soil.	Med	18-20
M.106	Mainly home use. Suckers. Wooly aphid resistant. Anchors well.	Med	25-30
M.111	Resistant to apple aphid. Drought tolerant.	Med	30-35
Seedling	Rootstock from apple seedlings. Delays fruiting.	Varies	35-40

30% 60% 90% 100%

M9 Bud 9 G11 M7 G41 G890 M111 Seedling

APPLE ROOTSTOCKS

Cherry Rootstocks

Rootstock	Precocious	Sucker Tendency	Eventual Size	Requires Staking	Comments
Mazzard	No	Yes	80-100%	No	Most common rootstock. Tolerates wetter soil. Well anchored.
Mahaleb	Yes	Yes	60-70%	No	Use only in well drained soils. Cold hardy.
Gisela 5	Yes	Moderate	50%	Yes	Tolerates wetter soil. Virus resistant. Produces spreading tree.
Gisela 12	Yes	Limited	60%	Yes	Produces spreading canopy.

Gisela 5 or 12 rootstocks

Trees are aprox. 10 years old and under 10 feet tall.

Peach Rootstocks

Rootstock	Cold Hardiness	Alkaline Soil	Wet Soil	Peach Tree Borer	Other
Bailey	5a	Susc.	Susc.	Susc.	Increases bud cold-hardiness, tolerates weather fluctuations
Lovell	6a	Susc.	Susc.	Mod. Res.	Very common on East Coast (EC)
Krymsk® 1	5 or 6	Mod. Res.	Tolerant	Susc.	From Russia.
Seedling	?	?	?	Susc.	Very vigorous, common in box stores

Pollination

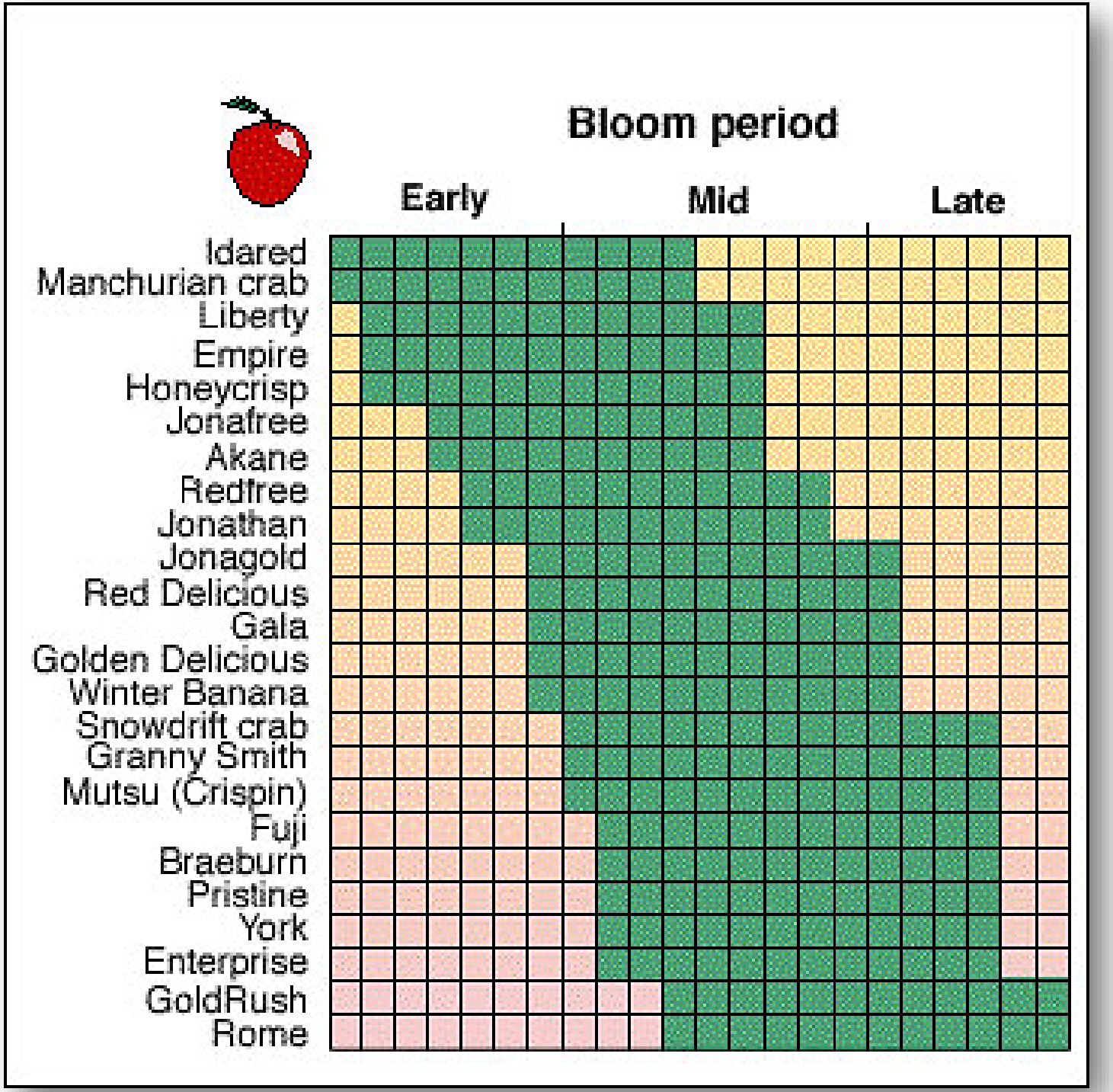
Pollination

Not Self Fertile

- Apples (Golden Delicious)
- Pears (Bartlet)
- Most sweet cherries (Van, Benton)
- Most Japanese plums (Santa Rosa)
- Nut crops

Self Fertile

- Peaches/nectarines (J H Hale)
- Tart Cherries
- Many European plums


Bloom period
Early
Mid
Late
Idared
Manchurian crab
Liberty
Empire
Honeycrisp
Jonafree
Akane
Redfree
Jonathan
Jonagold
Red Delicious
Gala
Golden Delicious
Winter Banana
Snowdrift crab
Granny Smith
Mutsu (Crispin)
Fuji
Braeburn
Pristine
York
Enterprise
GoldRush
Rome

Fruit Thinning

Fruit Thinning

- Apples, peaches/nectarines, pears
- Japanese plums, larger apricots?
- Cherries no

- Thin when Dime sized so that there is 1 fruit per 6 - 12 inches of branch.

Nutrient Management

Peaches/Nectarines

- 1-3 years old
  - 18 – 20 inches of growth or more do not fertilize
  - Otherwise ½ cup of fertilizer in mid March and maybe Mid May spread under the canopy
- 4 years old or older
  - 1 foot or more (excluding water sprouts) of growth do not fertilize
  - Otherwise 1 – 2 cups of fertilizer in mid March and maybe Mid May spread under the canopy

Other Fruit Trees

- 1-3 years old
  - 12 – 16 inches of growth or more do not fertilize
  - Otherwise ½ cup of fertilizer in mid March and maybe Mid May spread under the canopy
- 4 years old or older
  - 9 – 12 inches or more (excluding water sprouts) of growth do not fertilize
  - Otherwise 1 – 2 cups of fertilizer in mid March and maybe Mid May spread under the canopy

USU IPM Resources

- Utahpests.usu.edu/ipm
- Home Orchard Pest Management Guide

PEST ADVISORIES

Timely Integrated Pest Management Alerts for Fruits, Vegetables, Landscape Ornamentals, Turf, and Urban Areas

Fruit

FRUIT IPM ADVISORY • FRUIT 2022

Earwigs, Peach Twig Borer, Raspberry Crown Borer, and More

August 24, 2022

FRUIT IPM ADVISORY • FRUIT 2022

Cornucopia of Summer Fruit Pests

July 20, 2022

Vegetable

VEGETABLE IPM ADVISORY • VEG 2022

Abiotic Disorders, Curly Top Virus, and Earwigs

July 19, 2022

VEGETABLE IPM ADVISORY • VEG 2022

Grasshoppers

June 3, 2022

Tree Fruit Growth Stages and Critical Temperatures – PEACH/NECTARINE

	Swollen Bud (First Swell)	Calyx Green	1/4" green (Calyx Red)
10% kill	18	21	23
90% kill	1	5	9

	Pink (First Pink)	First Bloom	Full Bloom	Post Bloom (Petal Fall)	Shuck Split
10% kill	25	26	27	28	28
90% kill	15	21	24	25	25

Cherries

Varieties: Tart

- **Montmorency**: Ripens in July. Productive and more compact than other varieties.
- **Balaton**: Similar to Montmorency but has larger, firmer fruit. Ripens over a few weeks.

Varieties: Sweet Cherry Varieties

Variety	Self-Fertile	Blossom Period	Color	Ripening Time	Comments
Bing	No	Middle	Dark Red	Middle	Best flavor, cracking and disease susceptible
Van	No	Early-Mid	Dark Red	Middle	High yielding, good pollinator, more cold-hardy
Stella	Yes	Mid-Late	Dark Red	Middle	Less cold-hardy, very good flavor
Black Tatarian	Yes	Early	Dark Red	Early	Soft fruit, high yielding
Lapins	Yes	Early	Mahogany	Late	Less cold-hardy, high yielding and excellent flavored fruit
Rainer	No	Early-Mid	Yellow/Pink	Middle	Mild, sweet, very good flavor, high yielding
Lambert	No	Mid-Late	Dark Red	Mid-Late	Sweet, and useful for cooking, high yielding
Royal Ann	No	Early-Mid	Yellow-Pink	Early-Mid	Good flavor, less cold-hardy

Varieties: Newer Sweet Cherry Varieties

Variety	Self-Fertile	Blossom Period	Color	Ripening Time	Comments
Chelan	No	Early	Dark Red	Early	Good flavor, very high yields
Santina	Yes	Middle	Dark Red	Early	Good flavor, moderate yields
Tulare	No	Early	Bright Red	Early-Mid	Best flavor, high yielding, more cold-hardy
Benton	Yes	Mid-Late	Dark Red	Middle	Best flavor, high yielding

Peaches and Nectarines

Peaches

- Hundreds of varieties
- Virtually all are self pollinating
- Make sure that the varieties are locally hardy

Traditional Peach Tree Varieties

Variety	Self-Fertile	Ripening Time	Cold Hardiness (USDA Zone)	Canning/ Eating	Comments
Red Haven	Yes	0	5b	All	Semi-freestone. Flesh less firm than Elberta. Flesh has red tent
(Gleason's/Lemon) Early Elberta	Yes	+27	6a	All	The Utah canning peach
Elberta	Yes	+34	6a	All	The other Utah canning peach
Halehaven	Yes	+20	6a	All	Good canner, flesh has slight red blush
J.H. Hale	No	+35	6a	All	Old time favorite, large fruit, good canner

Other "Home Owner" Varieties

Variety	Self-Fertile	Ripening Time	Cold Hardiness (USDA Zone)	Canning/ Eating/ Freezing	Comments
Cresthaven	Yes	+27	6a	All	Later blooming, nearly fuzz-less
Elegant Lady	Yes	+16	6a	All	Common commercial variety, sweet and juicy
Red Globe	Yes	+22	6a	All	Firm flesh, consistent size
Canadian Harmony	Yes	+21	5b	All	Firm flesh, slightly softer than Elberta
Glohaven	Yes	+14	6a	All	Firm flesh that resists browning
Angelus	Yes	+37	6a	All	Moderately firm flesh
O'Henry	Yes	+40	6a	All	Very firm, very sweet, last to ripen locally
PF Lucky 13	Yes	+5	5b	All	Firm, sweet flesh. Fruits hangs on tree well.
Suncrest	Yes	+24	6a	All	Firm, sweet flavor
Loring	Yes	+22	6a	Eating	Tender, juicy flesh flesh

Cold Hardy Varieties

Variety	Self-Fertile	Ripening Time	Cold Hardiness (USDA Zone)	Canning/ Eating/ Freezing	Comments
Contender	Yes	+27	4b	All	Red tent to flesh, otherwise firm
Intrepid	Yes	+21	4b	Eating, baking	Good desert peach
Madison	Yes	+22	5b	Eating	Tender flesh, sweet flavor, early blooming
Ranger	Yes	+35	5a	Eating, canning	Best canner, cling stone
Reliance	Yes	+3	5a	Eating	Fruit quality less than Elberta, but good eating peach
Veteran	Yes	+24	5a	All	Good canner, little red color

Genetic Dwarf/Columnar Peaches

Genetic Dwarf

- Bonanza
- Honey Babe
- Pix Zee

Columnar/Upright

- Crimson Rocket
- Sweet-N-Up
- SummerFest

Selected Nectarines

Variety	Self-Fertile	Ripening Time	Cold Hardiness (USDA Zone)	Comments
Fantasia	Yes	Mid	5-6	Bright yellow, firm flesh with red blush. Vigorous and productive.
Flavor Top	Yes	Mid	5-6	Medium to large fruit. Yellow flesh with red skin.
Mericrest	Yes	Mid	5	Late blooming and increases cold hardiness as compared to other nectarines. Tangy flavor that scores well in taste tests.
Goldmine	Yes	Late	5-6	Common white fleshed variety. Very sweet.

Plums

European Plums

- Usually more upright growth habit
- Prune plums are European selections oval in shape
- Bloom later than Japanese and American varieties
- Most are partially self-fruitful but production is greatly increased with a pollinizer
- More suitable than Japanese plums for colder populated areas in Utah

European Plums and Prune Plums

Variety	Self-Fertile	Ripening Time	Cold Hardiness (USDA Zone)	Prune/ Plum	Comments
Stanley	Yes	Early	5-7	Plum	Firm, juicy, easy to grow
Improved French Prune	Yes	Early	5-7	Prune	Dark amber flesh, leading dried variety
Early Italian Prune	Yes	Mid	5-9	Prune	Can be eaten fresh or dried, sweet
Sugar Prune	Yes	Mid	5-9	Prune	Good canning variety
Brooks Plum	Yes	Mid	5-9	Prune	Good canning variety
Green Gage	Yes	Early	4-9	Plum	Green flesh, used for cooking and canning
Blue Damson	Yes	Late	5-9	Plum	Heirloom variety, blue black flesh, jams and jellies

Japanese Plums

- Almost all require a pollinizer
- Bloom just after apricots
- Least hardy of plum species
- Fruit:
  - Usually larger than other species
  - Use fresh or process
- Trees more rounded

McCabes Nursery

Japanese Plums

Variety	Self-Fertile	Ripening Time	Cold Hardiness (USDA Zone)	Canning/ Eating/ Freezing	Comments
Elephant Heart	No	Mid	5	Fresh, Jam	Long harvest season
Santa Rosa	Partially	Mid	5	Fresh	Pollinator for other plums, classic plum flavor
Methley	Yes	Early	5	Fresh	Very early, more cold-hardy
Satsuma	No	Early	5	processing	Sweet flavor, Maroon skin over green flesh. Excellent for jam
Shiro	No	Early	5	Fresh	Moderately sweet, mild flavor
Duarte	No	Mid	5	Processing	Large, heart shape. Juicy

Apricots

Apricots

- Relatively closely related to plums
- First fruit tree to bloom
- Susceptible to many of the same diseases as other stone fruits
- Many cultivars somewhat cold-hardy in zone 4
- Ripen from mid to late summer depending on variety

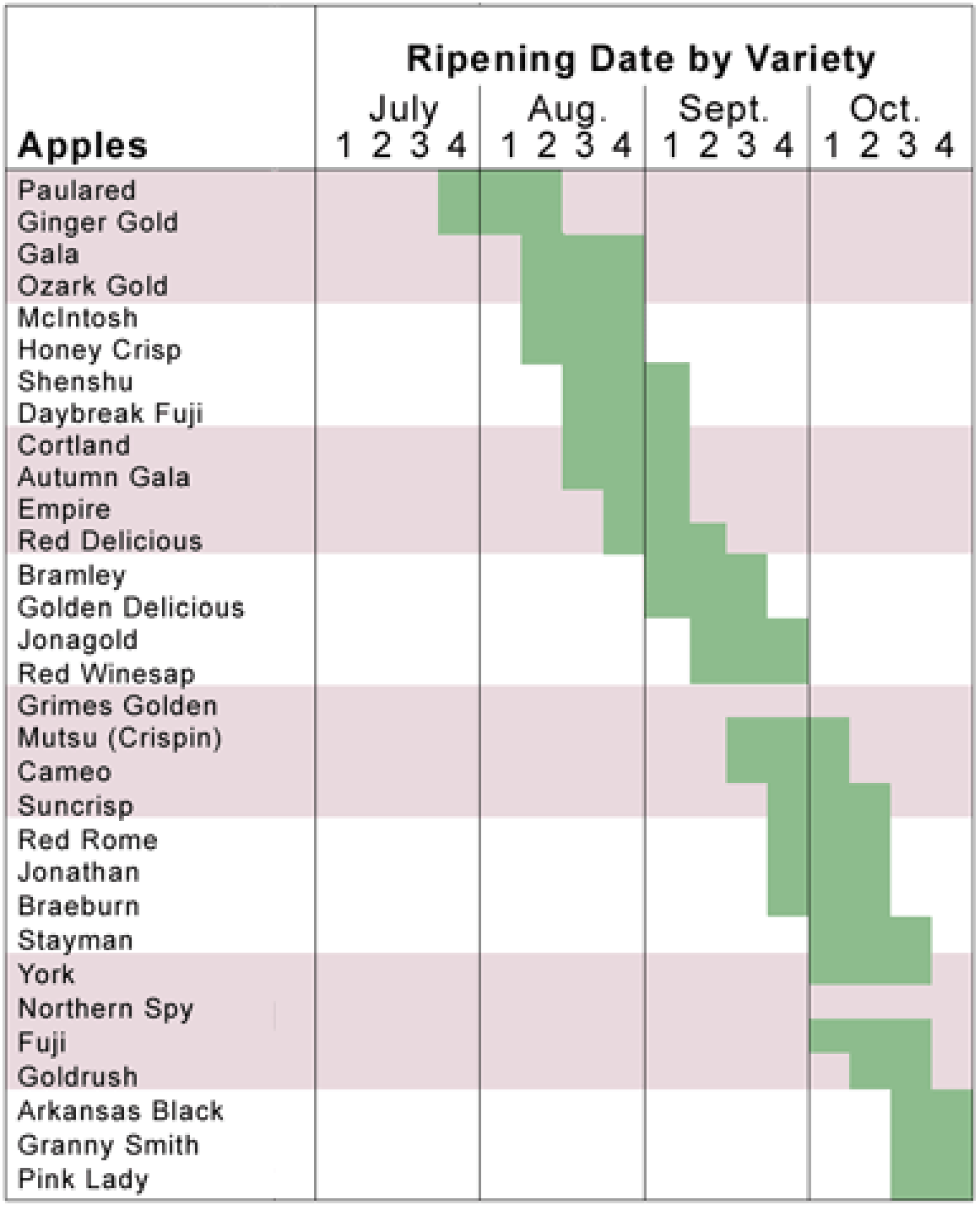
Apricot Varieties

Variety	Self-Fertile	Ripening Time	Cold Hardiness (USDA Zone)	Canning/ Eating/ Processing	Comments
Wenatchee Moorpark	Yes	Mid	5a	Yes	Large fruit with yellow flesh. Trees are very productive. Excellent dried and canned.
Chinese (Mormon)	Yes	Early	4b or 5	Yes	Good flavor, can be dried or canned. Considered a sweet-pit variety. Good pollinizer. Thin to increase fruit size
Manchurian	Yes	Early	3	Fresh or Jam	Grown where other apricots are not hardy. Look for Moongold, Sungold or Siberian.
Goldrich	No	Early	4b	Yes	Slightly less susceptible to damage than Moorpark.
Tilton	Yes	Mid	5a	Best	Excellent dried, canned or in jam. Medium to small fruit.
Harglow	Yes	Mid	4b	Yes	Blossoms up to five days after other apricots. Good for general use.

Interspecific Hybrids

- Plumcot
- Pluot
- Aprium
- Peacotum
- Nectaplum
- Pluerry
- Peach-Plum

Apples and Pears


Ripening Date by Variety
Apples
July
1 2 3 4
Aug.
1 2 3 4
Sept.
1 2 3 4
Oct.
1 2 3 4
Paulared
Ginger Gold
Gala
Ozark Gold
McIntosh
Honey Crisp
Shenshu
Daybreak Fuji
Cortland
Autumn Gala
Empire
Red Delicious
Bramley
Golden Delicious
Jonagold
Red Winesap
Grimes Golden
Mutsu (Crispin)
Cameo
Suncrisp
Red Rome
Jonathan
Braeburn
Stayman
York
Northern Spy
Fuji
Goldrush
Arkansas Black
Granny Smith
Pink Lady

Varieties and Fruit

Apple Varieties

Summer

- Transparent
- Royal Gala
- Ginger Gold
- Summer Red
- Lodi*
- Zestar*
- Paula Red

Pear Varieties

European

Variety	Fire Blight Susceptibility
Bartlett	High
Bosc	High
Comice	High
Anjou	Moderate
Seckel	Moderate
Buerre Bosc	Mod to Low
Starking Delicious	Mod to Low

Asian

Variety	Fire Blight Susceptibility
20th Century	High
New Century	Mod to Low
Kosui	Low
Shinko	Low

When are Pears Ripe

Summer Pears

- Fruit drops from tree
- Fruit separates from tree relatively easily when lifted
- Seeds are dark brown to black
- Refrigerate for 1-2 says
- Allow pears to ripen at room temperature for an additional 1-5 days
- Check the neck for softness

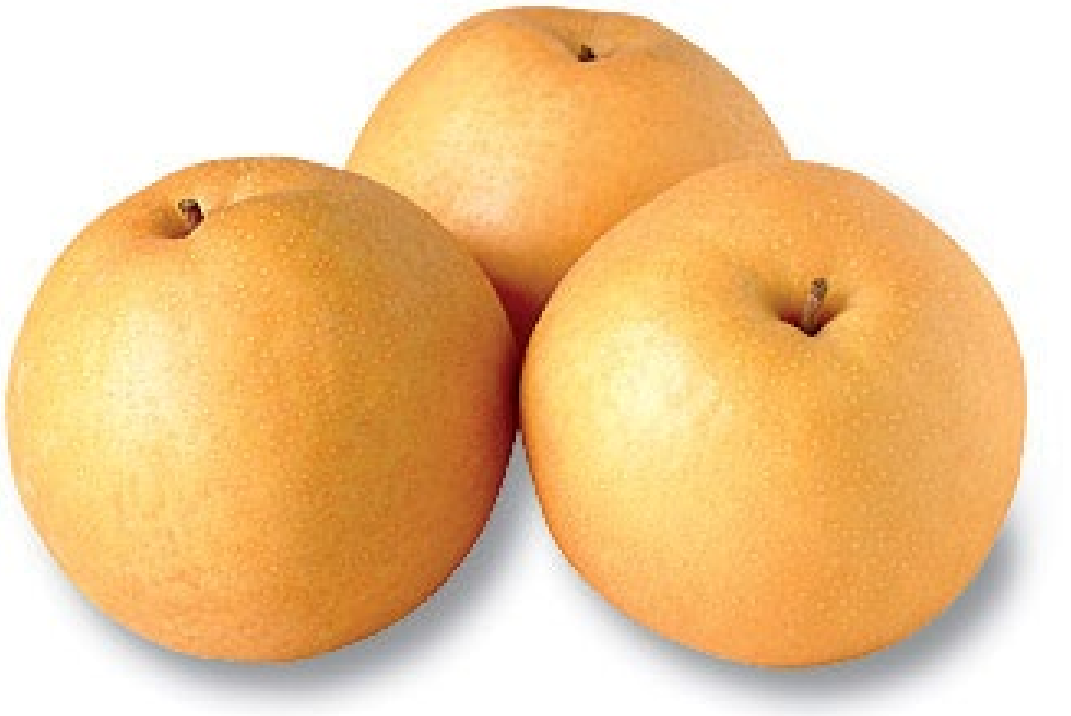
Winter Pears

- Refrigerate for 2-6 weeks
- Allow pears to ripen at room temperature for an additional 1-5 days
- Check the neck for softness

When are Pears Ripe

Asian Pears

- Fruit drops from tree
- Fruit separates from tree relatively easily when lifted
- Seeds are dark brown to black
- Taste them
- Ripen on the tree



When are Pears Ripe

Summer Pears

- Bartlett

Winter Pears

- Anjou
- Seckel
- Comice
- Concord
- Bosc

Eating Pears

- “After years of study, scientists have found that a really juicy pear is best eaten naked, in the bathtub, so that you needn’t be concerned about the abundant juice streaming down your chin.”
    - David Sugar