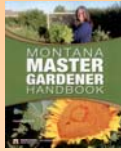


SMALL FRUIT

Chapter 10, pp. 158-166 in the
Montana Master Gardener Handbook



SMALL FRUIT

❖ Refers not just to the size of the fruit, but rather the size of the plant.



❖ Most small fruits are self-fruitful

- ❖ Can be fertilized from the pollen on their own anthers
- ❖ Need only one cultivar to get a good crop
- ❖ Cross-pollination from several cultivars is better



SMALL FRUIT

- | | |
|-------------------------|------------------------------------|
| ❖ Successful in Montana | ❖ Less successful, not recommended |
| ❖ Strawberries | ❖ Grapes |
| ❖ Raspberries | ❖ Blueberries |
| ❖ Gooseberries | ❖ Huckleberries |
| ❖ Currants | ❖ Blackberries |
| ❖ Chokecherries | |

SOIL PH FOR SMALL FRUIT

- ❖ The pH optimum for small fruit is slightly to highly acidic
- ❖ Most of Montana's environment and soil conditions are too harsh for blackberry, blueberry and grape
 - ❖ May survive in protected areas, but will not bear much fruit

Small Fruit	Optimum Soil pH	Hardiness Zones
Strawberry	5.0-6.5	3-8
Raspberry	5.5-7.0	3-8
Current	6.0-7.0	3-7
Gooseberry	6.0-7.0	3-7
Blackberry	4.5-7.5	4-10
Blueberry	4.2-5.5	3-7
Grape	4.5-7.0	4-10

STRAWBERRIES

- ❖ Shallow root system (6")
 - ❖ Susceptible to drought and nutrient deficiencies
- ❖ Propagates through runners (stolons)
 - ❖ Mother plant → Runner → Daughter plant
- ❖ June-Bearing
- ❖ Everbearing
- ❖ Day-neutral



JUNE-BEARING STRAWBERRIES

- ❖ Most common in Montana
- ❖ Single crop each year
- ❖ Ripens in late June to mid July
- ❖ Better flavor and quality than everbearing
- ❖ Cultivars
 - ❖ 'Honeoye,' 'Surecrop,' 'Redcrop,' 'Sparkle,' 'Veestar,' 'Glooscap,' and 'Vibrant'



Ripening 'Sparkle'

EVERBEARING STRAWBERRIES

- ❖ Produce one or two crops each season
 - ❖ 1st crop in late June/Early July
 - ❖ 2nd crop late August/early September
- ❖ Not recommended for areas with shorter growing season (much of Montana)
 - ❖ Won't get fall crop
- ❖ Cultivars
 - ❖ 'Ogallala,' 'Gem,' 'Red Rich,' 'Streamliner,' 'Fort Laramie,' and 'Ozark Beauty'



'Ozark Beauty' strawberries are considered the best of the everbearing. Zone 4-8

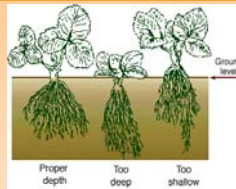
DAY-NEUTRAL CULTIVARS

- ❖ Flower and fruit all season
- ❖ Most likely annuals in Montana
- ❖ Plant early to establish roots, and use frost protection in the spring and fall
- ❖ Good cultivars for hanging baskets or patios
- ❖ Needs much more nutrients and water than June- or everbearing
- ❖ Cultivars
 - ❖ 'Tribute,' 'Tristar,' 'Fern,' and 'Hecker'



STRAWBERRY PLANTING

- ❖ Plant 18" to 24" apart in rows 18" apart
- ❖ Plant in early spring
- ❖ Planting depth - crowns are at soil level
- ❖ Remove flowers first year to stimulate vegetative growth
- ❖ Matted row planting on hills and mulched
 - ❖ Moderate size, yield and uniformity
 - ❖ Easier to pick than a mat of strawberries



Matted row planting

STRAWBERRY FERTILIZATION

- ❖ Nitrogen
- ❖ Potassium
- ❖ Fertilize at planting
- ❖ Fertilize just after harvest subsequent years
- ❖ Complete fertilizer is best
 - ❖ Or, topdress with composted manures
 - ❖ Example: 16-16-16 or 10-10-10
 - ❖ .2 to .3 pounds of actual N/100 sqft.
 - ❖ Try not to use slow-release

STRAWBERRY IRRIGATION

- ❖ Even soil moisture
 - ❖ Mulch with straw
- ❖ Drip irrigation is best
- ❖ 1-2½" of water per week depending on temperatures
 - ❖ Overwatering will cause large and hollow fruit
- ❖ Frequency is determined by soil texture
 - ❖ Even soil moisture up to 9" deep



WHY RENOVATE?

- ❖ Reduced vigor
- ❖ Weeds
- ❖ Off-type
- ❖ Disease



STRAWBERRY RENOVATION

- ❖ Keeps plants in peak production
- ❖ Just after harvest
- ❖ Mow leaves at least every 3 years
 - ❖ Set blade high to remove leaves, not crowns
 - ❖ After 5-6 renovations – replant
- ❖ Rake vigorously
- ❖ Decide where walkways are and till?
- ❖ Topdress to build canopy before fall



...AND

- ❖ Don't fertilize in early spring!
 - ❖ Rot and disease due to canopy shade
- ❖ Mulch plants if no snow cover
 - ❖ 4" of straw mulch over plants just after soil freezes
 - ❖ Remove straw in early spring
- ❖ Use row cover or netting to keep out birds



RASPBERRIES

- ❖ Of the brambles, raspberries are the most hardy
- ❖ Canes in 1st year are called primocanes
- ❖ Canes in 2nd year are called floricanes



PLANTING AND MAINTAINING RASPBERRIES

- ❖ Spacing 18"-24"
- ❖ Rows 8' apart
- ❖ Water thoroughly after planting and 1"-2" per week
 - ❖ Allow to harden in fall, but make sure there is plenty of moisture in winter or they will desiccate
- ❖ Fertilize 0.6 to 0.8 lbs actual nitrogen/100ft row of a complete fertilizer (10-10-10)
 - ❖ Early spring

RASPBERRIES

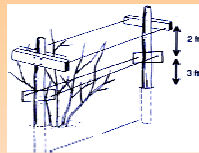
- ❖ June-bearing
 - ❖ Despite their name, some can ripen clear into August
 - ❖ Work best in Montana climates
 - ❖ Cultivars
 - ❖ 'Boyne,' 'Canby,' 'Gatineau,' 'Hilton,' 'Killarney,' 'Latham,' 'Madawaska,' and 'Newburgh'
- ❖ Everbearing (fall-bearing)
 - ❖ Early and late crop
 - ❖ Late crop usually freeze-out
 - ❖ Cultivars
 - ❖ 'Fall Red,' 'Heritage,' and 'September'



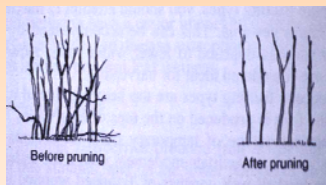
'Latham' are probably the most popular June-bearing

PRUNING RASPBERRIES

- ❖ Should be regularly pruned
- ❖ Remove dead and weak canes
- ❖ Thin to 6" spacing
- ❖ Support needed



- ❖ June-bearing fruit on floricanes (second year canes)
 - ❖ Do not remove first year growth
 - ❖ Remove floricanes only after harvest



RED RASPBERRIES- PRUNED AND SUPPORTED



RED CURRENTS AND GOOSEBERRIES

- ❖ In the Genus *Ribes*
- ❖ Very cold hardy
- ❖ Grow best in areas where the summer is cool and moist
- ❖ Adapted to clay loam soils



RED CURRANT

- ❖ Plant when dormant
- ❖ Plant crown 1" deeper than how it was grown in nursery (to promote suckering)
- ❖ Approximately 5' apart
- ❖ Bears fruit on 2-3 year old wood
- ❖ Prune canes older than 4 years annually
- ❖ Water and fertilize a bit less than raspberries



- ❖ Cultivars
 - ❖ 'Red Lake', 'Minnesota 71', 'Perfection', 'Cherry', 'White Grape', 'Consort' and 'Kerry'

black currants can spread white pine blister rust. Contact MDA before importing into Montana

GOOSEBERRY

- ❖ Plant when dormant
- ❖ Plant crown 1" deeper than how it was grown in nursery (to promote suckering)
- ❖ Approximately 5' apart
- ❖ Bears fruit on mostly 2 and 3 year old wood
- ❖ Pruning
 - ❖ Remove several canes older than 4 years old
- ❖ Use heavy gloves when harvesting or pruning (thorns)
- ❖ Cultivars
 - ❖ 'Pixwell', 'Poorman' and 'Welcome'



CHOCHECHERRY

- ❖ Small tree or shrub
- ❖ Used in shelter belts throughout Montana
- ❖ Hardy to zone 2
- ❖ Adequate water and fertilizer
- ❖ Best in full sun, moisture retentive but well-drained
- ❖ Does not do well in sodic soil
- ❖ Cultivars
 - ❖ 'Boughen Sweet,' 'Canada Red,' 'Johnson,' and 'Schubert'
 - ❖ 'Mission Red,' and 'Mission Yellow' only for ornamental value



CHOCHECHERRY



Very fragrant flowers

POSSIBLE NORTH AMERICAN GRAPE SUITABLE FOR MONTANA

- ❖ Riverbank/ Frost Grape
 - ❖ Hardy to many areas of Montana
 - ❖ Grapes small, black
 - ❖ Best for jam or juice
 - ❖ Requires a long, hot season, such as in Eastern MT
 - ❖ Minimum 145-150 day season
 - ❖ Not very successful in most areas
 - ❖ Derived Cultivars: 'Beta', 'Valiant'



HUCKLEBERRIES AND BLUEBERRIES?

- ❖ Huckleberry
 - ❖ Do not grow well under cultivation
 - ❖ Has been tried even under control situation in greenhouse and still failed
 - ❖ Need acidic soil
 - ❖ pH 4.2 to 5.2
- ❖ Blueberries
 - ❖ They're hardy. So why don't they grow well in most of Montana?
 - ❖ Cool, moist well-drained sandy- and silt-loam?
 - ❖ Acidic soil?
 - ❖ pH 4.2 to 5.2



The moral of the story:

It is sometimes fun to experiment.

With huckleberries and blueberries, you will become frustrated and will most likely be unsuccessful.

END

Questions?