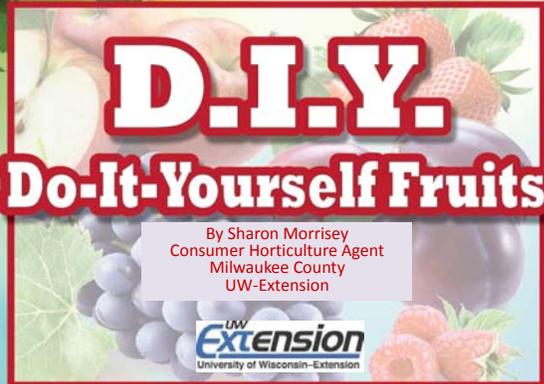


# D.I.Y. Do-It-Yourself Fruits

By Sharon Morrisey  
Consumer Horticulture Agent  
Milwaukee County  
UW-Extension

## Easy as "galette"

Each type has it's own special techniques  
"tricks" – not magic but necessary




- Healthy
- Organic

Local foods movement

- Variety
- Selection
- Educational
- Rewarding

### Recommended Fruits for D.I.Y.

- Apples
- Plums
- Grapes
- Raspberries
- Strawberries

### Other Hardy Fruits for Southern WI

- Pears
- Tart cherries
- Currants
- Gooseberries
- Elderberries
- Blueberries  
(with the right soil!)



### Fruits not reliably hardy in WI

- Peaches
- Apricots
- Sweet cherries





### UW-Extension Publications

[www.learningstore.uwex.edu](http://www.learningstore.uwex.edu) )

- Fruit series: "Growing (blank) in Wisconsin"
- "Selecting Fruits for Southern Wisconsin"
- Managing "fruit" pests in the Home Garden"
- Others:
  - Pests
  - Rootstocks for fruit trees
  - Pruning and training apple trees



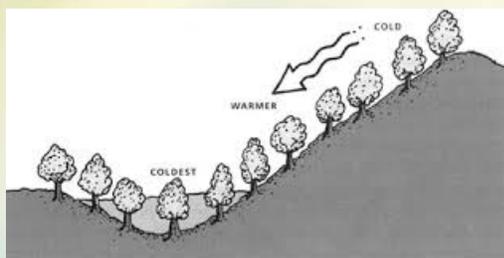
### What ALL Fruits Need

- Full sun
- Average soil with good drainage
- Space to grow
- Hardiness or winter protection
- Proper pollination
- Proper planting depth and spacing
- Early training and yearly pruning
- Ample water
- Pest control

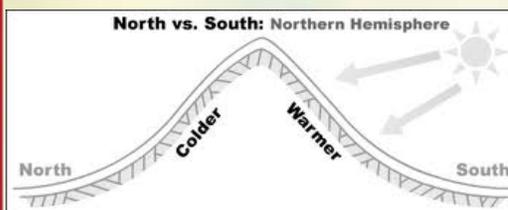
### Spring frosts can kill flowerbuds



### Cold air runs downhill

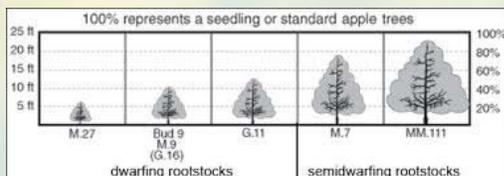


### South facing slopes warm earlier



### Size Matters

- Dwarfing rootstocks



### Saving Space

- Espalier
- Spur-types
- Colnade



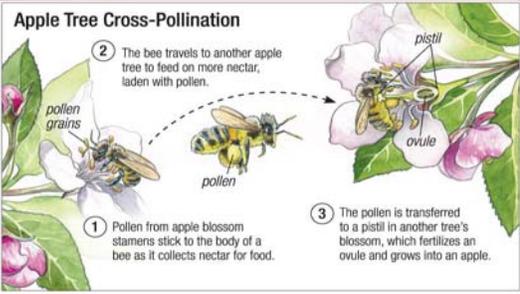
### Hardiness

- Flower bud
- Whole plant
- Root and crown



The image shows a map of Wisconsin divided into hardiness zones. A legend on the left indicates temperature ranges for various zones, such as 4 (29 to 37°F) and 5 (30 to 38°F). The map is titled 'USDA Plant Hardiness Zone Map' and 'Wisconsin'.

### Apple Tree Cross-Pollination



The diagram illustrates the process of cross-pollination in an apple tree. It shows a bee visiting a flower to collect nectar. Pollen grains are transferred from the stamen to the pistil. The process is numbered 1 through 3.

- 1 Pollen from apple blossom stamens stick to the body of a bee as it collects nectar for food.
- 2 The bee travels to another apple tree to feed on more nectar, laden with pollen.
- 3 The pollen is transferred to a pistil in another tree's blossom, which fertilizes an ovule and grows into an apple.

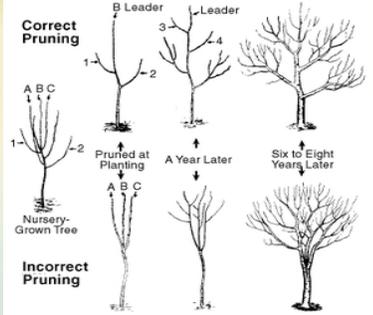
Pollen is produced in stamens, or the male part of flowers, and must be transported to the pistils, or female part. After fertilization, the ovary begins to ripen into fruit. For successful pollination, blossoms on compatible tree varieties must appear at the same time. Wind and insects then transfer the pollen, with bees being the most effective method.

### Fruit Crop Pollination



The image shows a decorative statue of a cherub with wings, holding a large, colorful flower. The statue is mounted on a wooden base.

### Pruning



The diagram compares 'Correct Pruning' and 'Incorrect Pruning' over time. 'Correct Pruning' shows a tree with a single leader (B Leader) and a main leader (Leader) that branches out. 'Incorrect Pruning' shows a tree with multiple leaders (A, B, C) that become increasingly dense and unproductive over time. The stages are labeled: 'Nursery-Grown Tree', 'Pruned at Planting', 'A Year Later', and 'Six to Eight Years Later'.

### Plethora of Pests



The collage shows various signs of pest damage on apples. It includes a cluster of raspberries, a green apple with a large hole and dark decay, and a tray of apples with various diseases. A label at the bottom reads 'COMMON APPLE DISEASES'.

# APPLES

- Select disease-resistant varieties
- Dwarf and semi-dwarf trees grow 10'x20' tall and wide
- Plant a pollinator unless there's a crabapple within 200 yards (and there usually is!)
- Train branches to 60 degree angles for higher yield
- "Thin" fruit to 6 -8" apart after petal fall
- "Bag" apples to prevent insect damage
- Protect lower trunk from rodents in winter

### Varieties (in order of ripening)

- Disease Resistant Varieties:
  - Redfree
  - Prima
  - Priscilla
  - Jonafree
  - Nova Easygro
  - Liberty
- Moderately resistant:
  - McIntosh
  - Empire
  - Haralson
  - Red Delicious
- Other Popular varieties:
  - Honeycrisp – Zone 3; ripens late September
  - Wolf River – Antique or 'heirloom'



Liberty      Honeycrisp



Empire      Haralson      Red Delicious

### Plant so graft union is 2-3" above ground



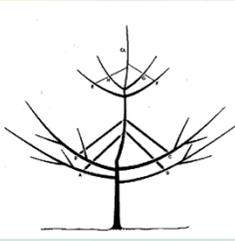
### Stake dwarf trees at planting

- Set a post next to the trunk at planting
  - Use a 10' post, pounded 2' deep
  - Tie tree to stake with a figure 8




### Prune Annually

- To establish a framework
- Maintain light penetration and height




### Training

Before clothspraying      After clothspraying

### "Thin" to 6-8" apart after petal fall

Thinning clusters

### Fertilize annually in spring

- 1 oz. actual nitrogen per year of age up to 8 oz.

Ammonium nitrate or urea      Composted manure

### When are apples ripe?

- Ground tissue at stem end goes from 'green apple' green to light green
- Seeds are completely brown

### Store in vented plastic bags

- Vented
  - Ethylene gas produced by ripening fruit
  - Ethylene promotes ripening
- Cool temperatures
  - 30 – 32 degrees

### Pest control

- "Preventative approach"
  - Resistant varieties
  - Exclusion
  - Monitoring
    - Traps
    - Shake onto sheet
- Curative
  - Pesticides
    - Organic
    - Synthetic

## Diseases

Big 3 for apples

- Apple scab
- Cedar apple rust
- Fireblight

## Apple scab

- Fungus
- Attacks leaves
- Weakens



## Cedar Apple Rust

- Fungus
- Attacks leaves
- Weakens



## Fireblight

- Bacteria
- Attacks stems, branches and trunk
- Fatal

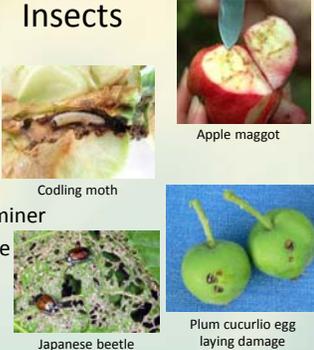


- Others
  - Powdery mildew



## Insects

- Over a dozen
  - Apple maggot
  - Codling moth
  - Plum curculio
  - Tentiform leafminer
  - Japanese beetle





### "Bagging" apples

- When fruit is dime-sized
- Zipper sandwich bags
- Zipped & stapled
- Corners cut off
- 100 in 30 minutes



### Prevent rodent damage in winter

- Keep lower trunk clear of weeds and grass
- Trunk guards



### QUESTIONS?



# PLUMS

## And other stone fruits

### Stone fruits (in order of hardness)

- Plums
- Tart Cherries
- Apricots
- Sweet cherries
- Peaches
- Nectarines

### Stone fruits in general...

- Short-lived due to fungal and bacterial diseases and borers
- Flower buds damaged by late frosts or extreme winters
- Peach and sweet cherry trees can be killed by extreme winters
- European plums, tart cherries and apricots may be hardy some years in southern WI



## PLUMS

- Blue, European or prune-type, plums are hardy and need only one tree to produce fruit
- Need about 125 sq. ft. per tree; less for dwarfs
- Prune to develop a good structure
- Train branches to 60 degree angles
- "Thin" fruit to 6-8" apart
- Prevent bird damage with scare devices or netting
- Harvest when fruit tastes fully ripe
- Dried blue plums are prunes

### Varieties

- Blue, European or prune-type
  - 'Mt. Royal' and 'Stanley'



'Mt. Royal'



### Varieties

- American hybrid Red
  - need a 'pollinizer'
    - Kaga and Toka
- Japanese plums not hardy in WI
  - Unless they are in an extremely protected location



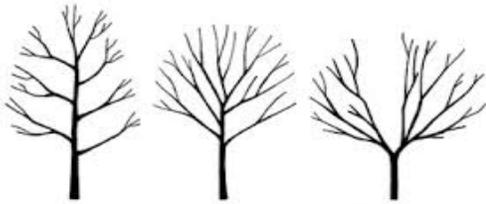

'Toka'  
Cross between American hybrid red and Japanese

### As with apples.....

- Plant with graft union above ground
- Stake next to trunk at planting and tie to the stake
- Train branches to 60 degree angles
- Prune annually
  - Tiers 24" apart
- Prevent winter rodent damage

### Prune to develop framework

- Central leader; Modified leader; Open center



Central leader      Modified central leader      Open center or vase shape

### Diseases

- Brown rot
- Black knot
- Cankers



Brown rot of stone fruit



Bacterial canker



Black knot

### Controlling diseases

### Insects

- Borers
  - Peach tree borer
  - Lesser peach tree borer



HISG, UMD

### Controlling borers

### Other insects

- Apple maggot
- Plum curculio
- Aphids
- Japanese beetle



Apple maggot



Plum curculio

### Controlling insects

**QUESTIONS?**

## GRAPES



- American grapes and some French hybrids are hardy in southern WI
- Grape vines are perennial and produce fruit annually on the current season's canes
- Prune out all old canes every spring leaving only a few shortened ones to produce the current year's and next year's crops
- A strong trellis is essential; 10-14' long per plant, in a bed 3-4' wide
- "Thin" flower clusters to 2 per cane
- Harvest when they taste fully ripe and sweet
- Use or process soon after harvest

### American grape (*Vitis labrusca*)

- Plant is hardy throughout WI but varieties ripen at different times
- Must ripen by early October to be hardy in so. WI
  - 'Concord' only bears well for 2-3 out of every 5 years.
- Disease and insect resistant



### French hybrids

- Cross between the American grape (*V. labrusca*) and the French wine varieties (*V. vinifera*)
- French hybrids are not considered hardy in WI
  - Some winter damage many years
  - Protected sites

***Both may be damaged or killed at 20 degrees below zero***

### Wild American grapes

- Some are male or female plants
  - Only females produce fruit
  - Without pollination, no fruit is formed





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### Choosing a variety

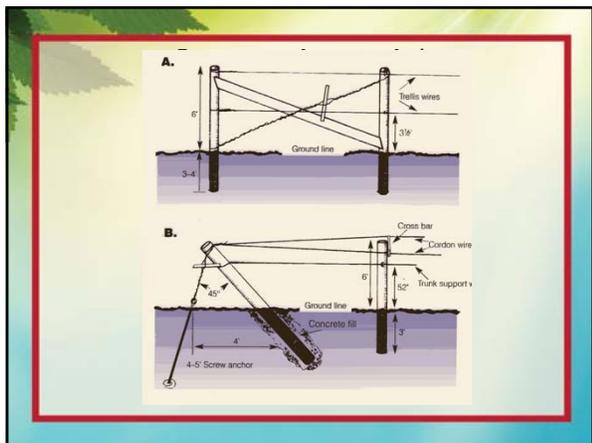
- Use
  - Fresh or table
  - Juice
  - Wine
  - Jellies and jams
- Seeds or seedless
- Ripening
  - Mid- to late August through early October
- Color
  - Blue, black, white, yellow, green, red



© www.chefinyou.com

### Grapes prefer gravelly, sandy soil

Tolerate a range but not extremes

### Training systems

- Grape vines are perennial and produce fruit annually on the current season's canes

### Pruning

- Each spring, remove ALL canes
- Leave 10 – 12 downward canes on each 'arm'
- Cut every other one to 4 – 6 buds
- Cut the others shorter as renewal spurs
  - To produce next year's canes and spurs

*Cane pruning*

Renewal spur

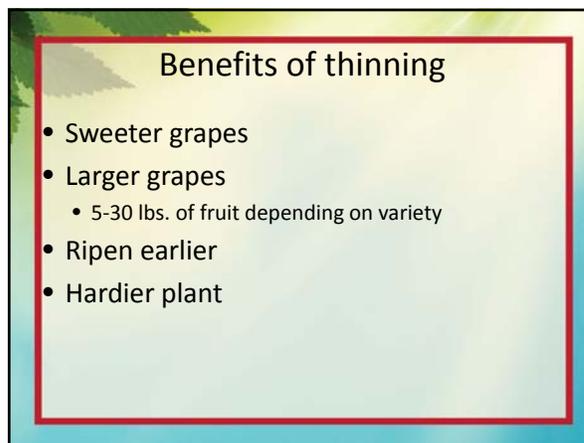
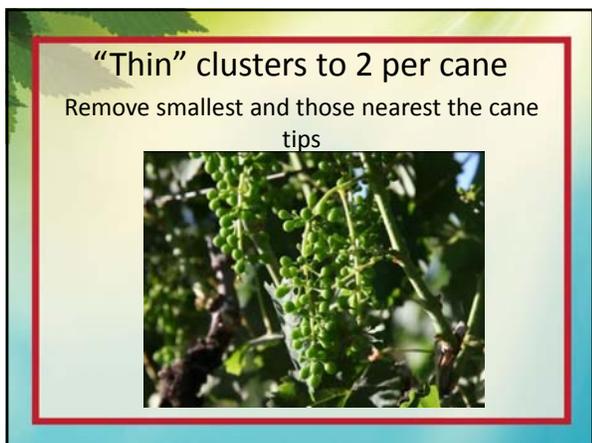
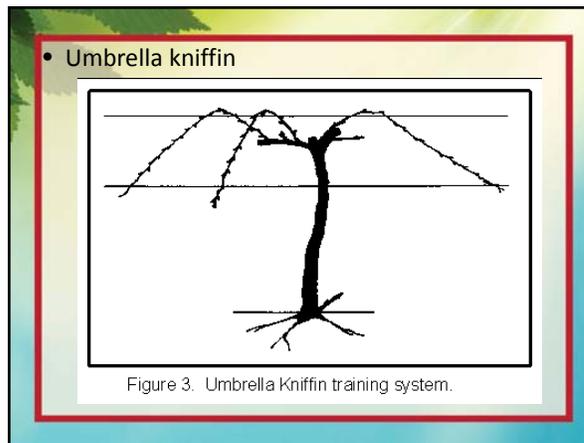
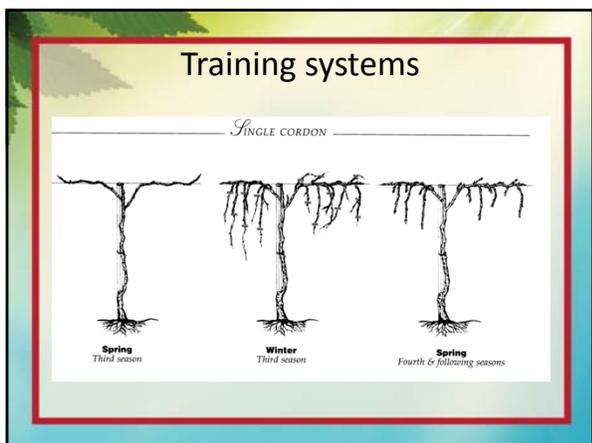
Leave five or more buds on each cane.

American types bear fruit at the second to fifth cane nodes

*Spur pruning*

Leave two to three buds on each cane.

French types bear fruit at the second and third cane nodes



### Fertilize annually

- Spring after snow melts or as growth resumes
- Mid-June but only if winter injury is minimal
- Any form of nitrogen is acceptable
  - Composted manure
  - ¼ c. ammonium nitrate or urea
    - Increase by 1 oz. per year up to 5 oz. (2/3 c.)

### Control grass and weeds

- Mulch over the rootzone
- Certain broadleaf weedkillers can deform leaves



### No major pests!

#### Insects

- Phylloxera
- Berry moth
- Japanese beetle



#### Diseases

- Powdery mildew
- Downy mildew

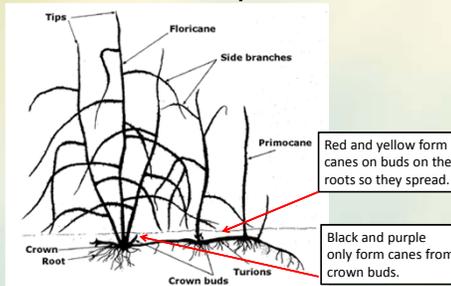


QUESTIONS?

## RASPBERRIES

- Red, yellow, purple and sometimes black raspberries can be grown in southern WI
- Plant in hedgerows or hills and prune annually to keep from spreading
- Most red, purple and black raspberries are summer bearing and ripen in July; prune after fruiting.
- Fall-bearing raspberries bear a large crop in fall and a small crop next summer.
- Sturdy supports improve the crop and make harvesting easier
- Harvest as they ripen to avoid over-ripe fruit which will attract picnic beetles
- Plantings can produce for 12-15 years

### Roots and crowns are perennial; canes live only two summers



### Varieties

- Only red and yellow are hardy enough to be grown throughout the state
- Yellow is the same species as red
  - Spread by forming canes from buds on roots
  - Rows must be narrowed annually
- Red and black are separate species
- Purple is a cross between the two
- Black and purple form clumps because they only form canes at the base of flowering canes
  - Easier to maintain in rows or “hills”
- Blackberries are not raspberries and are not hardy in WI

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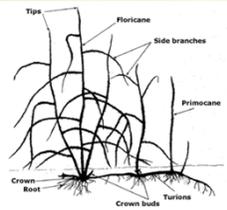
### Varieties

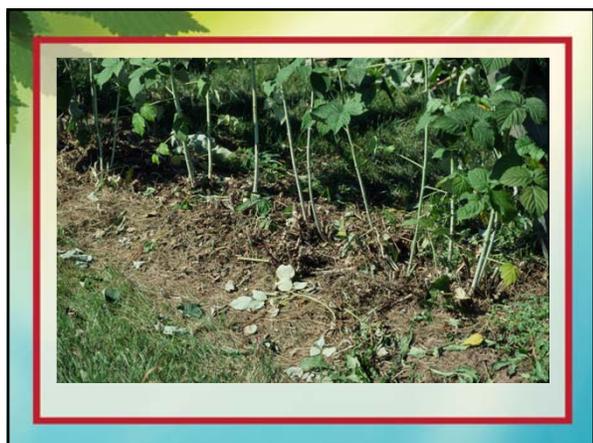
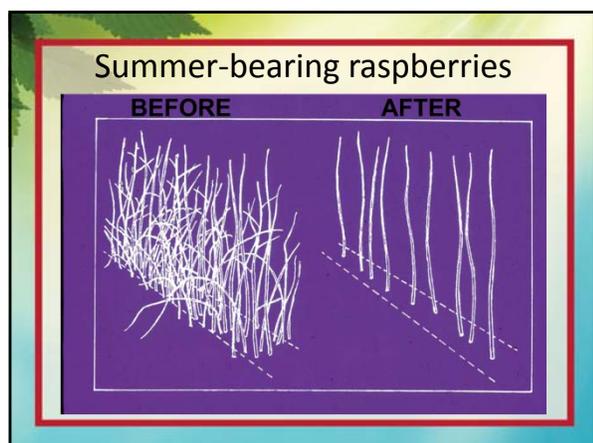
- Blackberries are not raspberries and are not hardy in WI



### Summer-bearing raspberries

- Bear once in July on “floricanes”(old wood)
- After harvest,
  - prune out “floricanes”
  - Control spread
    - leaving only 3-4 per foot of row
    - Leave only 6-8 canes per hill





### Fall-bearing raspberries

- Produce fruit twice
  - First fall is largest crop
  - Following summer a small crop
- For fall crop only
  - Cut back all canes after fall harvest
  - Sharp mower or chopper (not weed whacker)
- For two crops a year (not recommended)
  - Prune out canes that have flowered twice

### Black and purple raspberries

- Specialized pruning requirements
  - See UWEX publication A1610 for details

- Black and purple raspberries have specialized pruning requirements
  - See UWEX publication A1610 for details

### Plant in early spring

- Buy new, certified plants; old canes may harbor insects or diseases
- Slightly deeper than they were in nursery
- Mulch with 2" o.m.

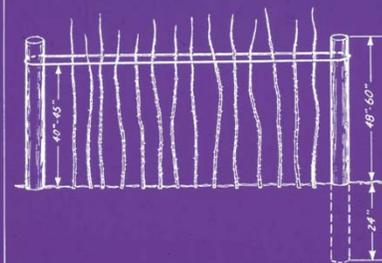
### "Narrow hedgerow" planting

- Plants in a row, 2-3' apart
- Maintain rows at 12-15" wide
- Leave 6-9' of sod between rows



### Support

- 4-6" endposts, 6-8' tall, set 2' deep
- Up to 20' apart
- Top wire or plastic twine encircling posts at 3.5"
- Optional second one 18" lower



### "Hill" planting

- One plant per hill
- Place permanent stake in center of hill at planting
- Only allow to spread 1' in diameter
- 4-5' between hills



### Other methods of support

- Single "T"
- Double "T"
- "V" trellis

### Fertilize in spring before growth resumes

- Hedgerow system – per 100 ft. of row
  - 150 lb. well-rotted manure
  - 1 c. ammonium nitrate or 1 c. urea
  - Repeat 3 – 4 weeks later
- Hill systems
  - ½ c. complete fertilizer in a band 18" wide around each plant

### Keep well-watered until fall dormancy



### Pests

- Pests are usually not serious in home plantings.
  - Insects include picnic beetles, cane borers and Japanese beetles.
  - Diseases can mostly be prevented through good pruning, fertilizing, watering and weed control.

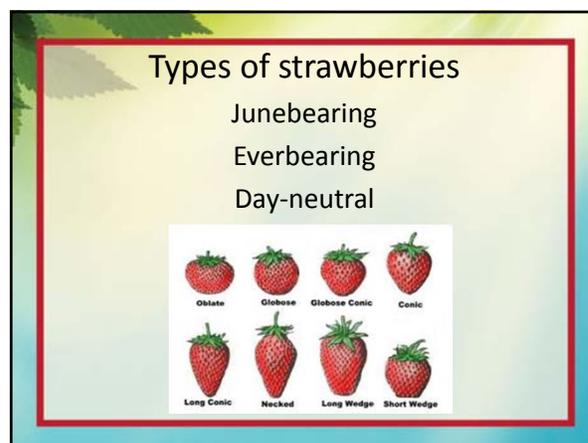
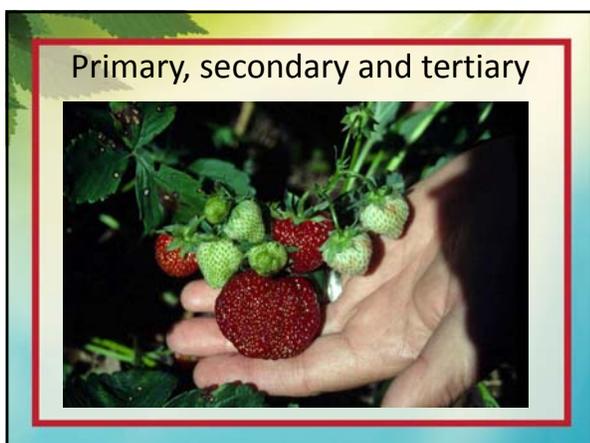
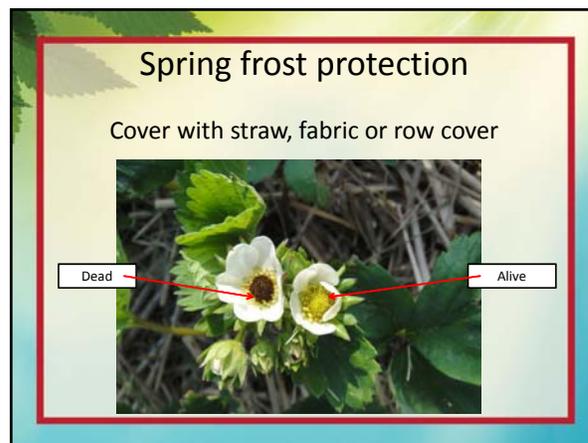
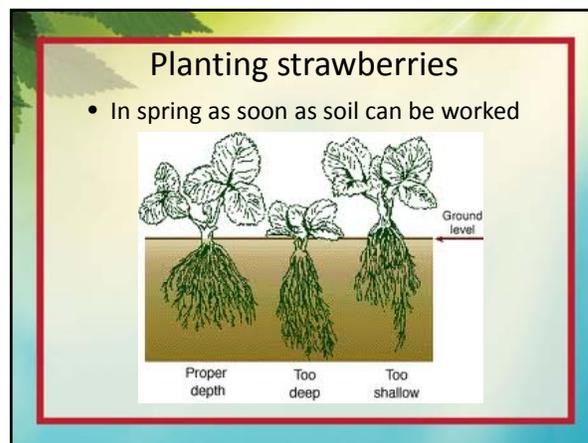
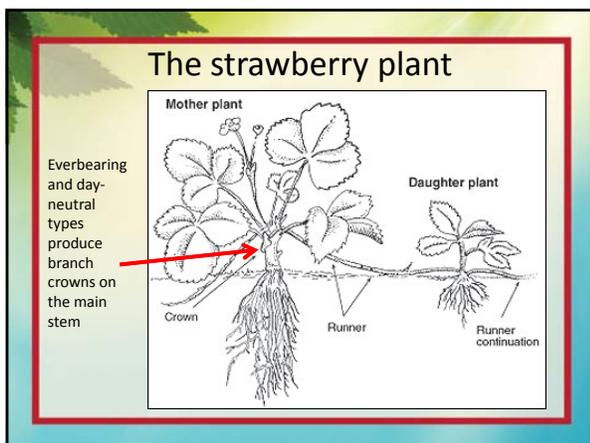
### Spotted wing drosophila



### QUESTIONS?

## STRAWBERRIES

- Choose Junebearing, everbearing or day-neutral varieties.
- Forty plants can be grown in an 8'x12' bed.
- Protect flower buds from spring frosts
- Remove flowers of Junebearing plants the first year; for other types remove for only 6-8 weeks the first year.
- Harvest at peak of ripeness leaving caps intact.
- Chill immediately and store in vented plastic bags without washing.
- Renovate Junebearing plantings yearly after harvest by narrowing the rows and fertilizing. Mow off diseased leaves.
- Mulch for winter with 2-4" of straw once soil has frozen. Uncover as spring growth begins.

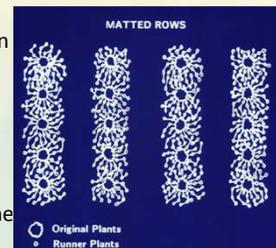


## Junebearing

- Flower once in June every year after the first year
- Replant after 4 – 5 years
  - Do not reuse plants
    - Less vigorous
    - May harbor pests that are not apparent

## Growing Junebearing strawberries

- Allow runners to fill-in row 12-15" wide
  - Remove all runners outside of row
- Mulch after runners have rooted
- Remove all flowers the 1<sup>st</sup> year



## Fertilize

- First year
  - twice; mid-June and mid-July
- Other years
  - At renovation



## “Renovate” beds after harvest yearly

- “Narrow” rows back to 12-15” removing all plants between rows
  - Fruit only produced on outside edge of rows
- If foliage has diseases, mow or cut off just above crown
- Fertilize with nitrogen



## Everbearing

- Flower once heavily; then sporadically all season
- Mulch with red plastic before planting
- Remove runners; don't let “daughters” root
- Plants grow branch crowns
- The first year remove flowers for the first 6 – 8 weeks
- Fertilize every month they are flowering or fruiting
- Replace plants after harvest the second year

### "Hill" planting system



### Day-neutral

- Bear all season from mid-July on
- Mulch before planting
- Remove runners
- Remove flowers the first 6-8 weeks
- Grows branch crowns
- Fertilize every month they are flowering or fruiting
- Replace every year
- Good for containers



### Watering and weeding are critical



### Junebearing & Everbearing

#### Winter Protection



3 to 4 inches of clean straw  
Applied after the ground freezes

Remove mulch when new leaves emerge



Place mulch between rows



### Pests

- Leaf spot
- Tarnished plant bug
- Sap beetle
- Tarnished plant bug damage
- Leaf blotch

## QUESTIONS?

### Blueberries in Containers

- Half whiskey barrels
- Acidify container mix
  - 1:1 peat and soil or compost
  - Add elemental sulfur
    - Pre-planting
    - annually

- Better yield with two plants
- Keep well watered & fertilized
- *Need winter protection*

### Hardy varieties

- Half-high bush cultivars
  - Full-sized fruit on small to medium plants
    - 'Northblue', 'Northsky', 'St. Cloud', 'Polaris', 'Chippewa', 'Northland', and 'North Country'
    - (Self-fruitful except 'St. Cloud' and 'Polaris')
- Low bush blueberry cultivars
  - Small-fruited on 12" tall, spreading plant
    - 'Top Hat'



### Winter protection is MANDATORY!

Two half whiskey barrels with blueberry plants

### Questions?



### D.I.Y. Fruits

- It is easy if you know the “tricks” – no magic, just good hort.
  - Use the UWEX publications
- The rewards are huge...luscious, fresh, healthy fruit
  - for you
  - your family
  - your friends (don't forget your friendly, County Horticulture Agent!)
- Can, freeze or dry the extra to enjoy all season!
  - applesauce
  - stewed prunes
  - frozen grape snax
  - raspberry sauce for ice cream
  - strawberry preserves



QUESTIONS?