

WHITE AND RED CURRANT PRODUCTION

Rebecca Harbut
UW-Madison
harbut@wisc.edu
608-262-6452



RIBES

- Red and White Currants:
 - *Ribes rubrum*, *R. petraeum*, *R. sativum*
 - Only difference between red and white is fruit color
- Black currants: *R. nigrum*

RED AND WHITE CURRANTS:

RIBES RUBRUM, R. PETRAEUM, R. SATIVUM

- Native to cooler regions of Asia and Europe
 - Most cultivated currants are European selections
- 1868- ‘Fay’s Prolific’ – first American bred red currant
- Other American –bred cultivars: ‘Wilder’, ‘Red Cross’, ‘Diploma’, and ‘Perfection’
 - These were leading cultivars in early part of 20th Century

WHITE PINE BLISTER RUST

- Arrived in America around 1900 when gooseberries and currants were rising in popularity and pine was an important lumber source
- 1930- Civilian Conservation Corps crews ripped out wild and cultivated *Ribes*
 - Not effective due to large number of wild *ribes*

WHITE PINE BLISTER RUST

- 1966- Federal ban on *Ribes* lifted
- State bans- vary
 - Permit planting of any *Ribes*
 - All *Ribes* planting banned
 - Limited planting to certain species
 - Townships within a state can vary

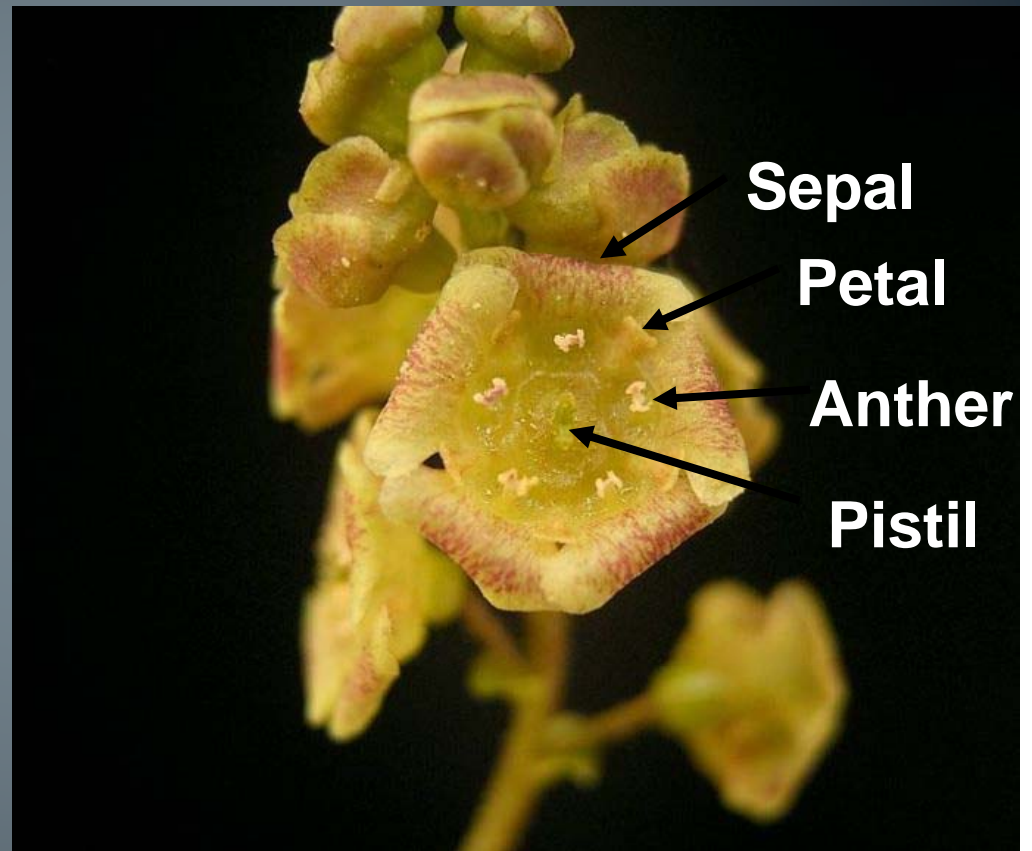
PLANT BOTANY

- Small shrub, 1-1.5 m tall
- Non-thorny
- Deciduous
- 1-2 year old wood is most productive
- Productivity declines after 4 years



FLOWERS

- Non-showy flowers
- Self-fruitful
 - Fruit size larger with cross pollination
- Insect pollinated
- Prolonged flowering





FRUIT

- Small berries
- Racemous
- Anther filaments persist, remove before eating
 - Major limitation for fresh market
- Not a problem for processing



THE UNIVERSITY
of
WISCONSIN
MADISON

UW
Extension



PLANT PRODUCTION



“The currant takes the same place among fruits that the mule occupies among draught animals- being modest in its demands as to feed, shelter, and care, yet doing good service.”

-19th Century Horticulturist

GENERAL GROWING CONDITIONS FOR CURRANTS

- Can tolerate mid-winter lows of -40°F or lower
- Require 800-1600 hr chilling period (32-45°F)
- 160-200 GGD
- 120-140 frost-free days
- USDA Hardiness zone: 3-5
- Will tolerate part- sun

SITE PREPARATION

SITE SELECTION

- Currants are cold hardy...but not heat tolerant!
- High summer heat can cause early defoliation and sun scald on the fruit
- Plant on north slopes in warm locations (several days $>90^{\circ}$)
 - Can also reduce risk of frost damage

PLANT ESTABLISHMENT: SITE SELECTION

- Currants will *tolerate* cool wet soils

BUT

- Will be more productive in deep well-drained loam
- High organic matter is desirable
- Water table should not be less than 3' deep
 - Raised beds may be needed

PLANT ESTABLISHMENT: SOIL

- Prepare the soil *at least 1 year* before planting
 - Test soil and amend as needed (uofidaho)

Nutrient	Test Level
P	100ppm
K	150ppm
Mg	> 30ppm
Ca	1,000-5,000ppm

- Add organic matter

PLANT ESTABLISHMENT: WEED CONTROL

- Get rid of weeds before you plant!!!
 - Especially perennial weeds (quackgrass, canada thistle)
 - This may take a few years in very weedy sites



PLANT ESTABLISHMENT: WEED CONTROL

- Pre-plant control measures:
 - Cultivation
 - Cover crops
 - Green manure crops
 - Herbicide- systemic (ie. glyphosate) for perennial weeds

PLANT SELECTION

- One year old plants are best
 - Older plants are less vigorous
- Propagation
 - Can easily be propagated from cuttings or by layering

PLANTING

- Before planting:
 - Remove damaged roots/stems
 - Cut back top portion to 8-10”
 - Base amount cut back on size of roots
 - Lowest branch should be at soil depth

PLANT MAINTENANCE

Currants will *tolerate*
poor conditions...

BUT

Perform best with a
little care!



FERTILIZATION

- N and K are most common limiting nutrients
- If soil was amended prior to planting, no additional P or K is necessary first year

RIBES FERTILIZER RECOMMENDATIONS

Table 7. Recommended amounts of commonly available fertilizers to apply annually to *Ribes* crops

Year	Composted manures (pounds (kg) per bush)		Commercial fertilizers (ounces (g) per bush)			
	Cow or horse ^a	Rabbit or poultry ^b	10-10-10 ^c	18-5-10 ^d	21-0-0 ^e	46-0-0 ^e
1 (planting)	5 (2.5)	1.5 (0.6)	4 (115)	2.2 (64)	1.9 (55)	0.9 (25)
2	5 (2.5)	1.5 (0.6)	4 (115)	2.2 (64)	1.9 (55)	0.9 (25)
3	8 (3.5)	2.0 (1.0)	6 (170)	3.3 (94)	2.9 (81)	1.3 (37)
4	10 (4.5)	3.0 (1.3)	8 (225)	4.4 (125)	3.8 (107)	1.7 (49)
5+	13 (5.0)	3.5 (1.7)	10 (285)	5.6 (158)	4.8 (136)	2.2 (62)

NOTE: Other manures and commercial fertilizer formulations can also be used to apply needed nutrients. Any one of the first four listed fertilizers and amounts provides all required nutrients. This table simply presents fertilizer options for growers to choose from.

^a Cow and horse manures contain approximately 0.5% N, with varying amounts of P, K and other nutrients.

^b Poultry and rabbit manures contain approximately 1.8% N, with varying amounts of P, K and other nutrients.

^c 10-10-10 contains 10% each nitrogen (N), phosphorus (P₂O₅), and potassium (K₂O).

^d 18-5-10 is often formulated as a slow release fertilizer containing 18% N, 5% P₂O₅, and 10% K₂O.

^e Ammonium sulfate (21-0-0) and urea (46-0-0) contain 21% and 46% N, respectively, but no P or K. These nitrogen-only fertilizers can be used to supplement complete fertilizers or are appropriate when soil and foliar tests indicate P and K are already adequate.

NUTRIENT MANAGEMENT PLAN

- Determining appropriate nutrient requirements requires site-specific information:
 - Soil test results
 - Soil and moisture characteristics
 - Crop history
 - Weather conditions
- Nutrient management is a *DYNAMIC* process

IRRIGATION

- Currants are tolerant of dry conditions
- In dry areas or areas with inconsistent rainfall, irrigation is recommended
 - Especially important during establishment

TRAINING SYSTEM

- Training systems:
 - 1) Bushes
 - 2) Fan trellis
 - 3) Cordon

GENERAL PRUNING PRINCIPLES

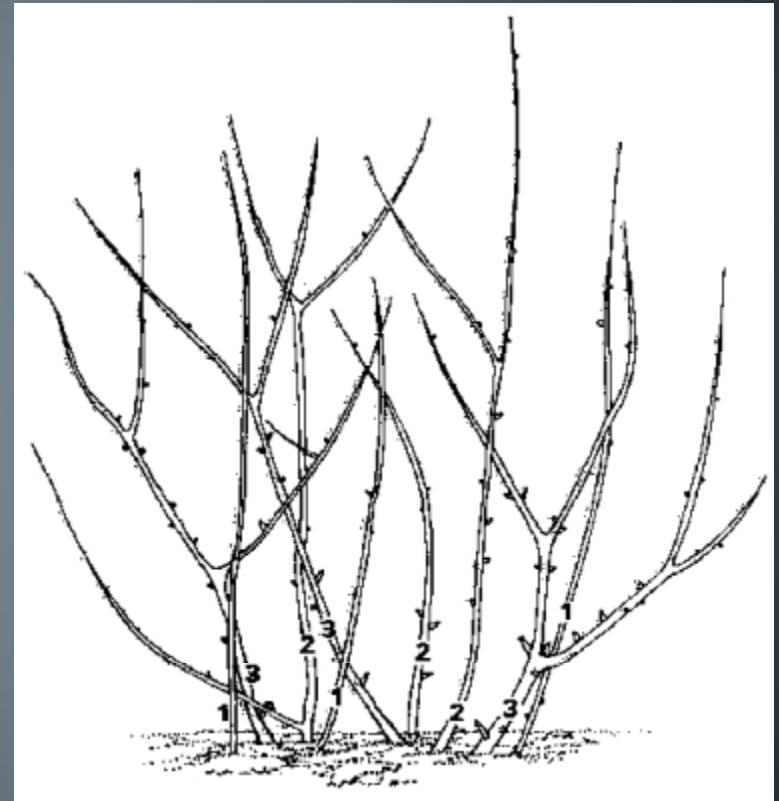
- Remove diseased or damaged canes
- Remove canes as close to the ground as possible
- Remove canes that are close to or lying on the ground
- Most fruit is borne on spurs of 2-3 yr old canes

PLANT SPACING

- Within row: 3'-5'
 - Closer for mechanical harvested
- Between rows 10'-12'
 - Modify to accommodate equipment and training systems

PRUNING BUSHES

- Year 1:
 - remove all but 6-8 canes
- Year 2:
 - keep 3-4 2 year old shoots
 - Keep four or five 1-year old shoots
- Year 3:
 - 3-4 each of 1, 2 and 3 year old canes
- Year 4 and beyond:
 - Remove all 4 year old canes
 - Keep 4 new 1 year old canes



PRUNING BUSHES

- Goal- each bush should have 9-12 canes:
 - 3-4 each of 1, 2 and 3 year old wood
 - Remove wood that is 4 years or older



CORDON TRAINING SYSTEM



1 –yr branches spaced around cordon(photo: S. McKay, Cornell Extension)



Mature cordon-trained red currants in Dutch greenhouse (photo: S. McKay, Cornell Extension)

CORDON TRAINING SYSTEM

- Plant spacing: 18” apart
- 3 canes selected and trained up bamboo stake
 - 1 in center and 2 15cm on each side
 - Cordons grow 5-6’
 - Spare branch is left at the base in case a cordon dies



CORDON PRUNING

- After harvest, *all fruiting wood is removed*
- Small branches and misplaced branches are removed
- Leave medium sized branches that will produce fruit following year
- Vigorous lateral branches can be headed
- ***Plant is completely renewed every year***
 - Cordon is only permanent wood

GROUND MANAGEMENT

WEED MANAGEMENT

- Weed control is critical for *Ribes* crops
 - Shallow root system is not competitive
 - Clean understory can reduce pest and disease problems
 - Limited herbicide options

WEED CONTROL STRATEGIES: MULCHES

- Bark, compost, row clippings
 - Can create rodent habitat
 - Consider nutrient contributions
- Black plastic
 - Effective weed control strategy
 - Canadian trial: higher yields when combined with bare alleys
- Weed barrier fabric

WEED CONTROL: CULTIVATION

- Must be shallow (2" or less)
 - Deep cultivation can damage currant roots
- Good for annual weeds
- Not good for perennial weeds
 - Break up rhizomes and increase number

HARVEST

- Fruit are harvested before colour becomes dull red (over ripe)
- Soluble solids of 9.5-14%
- Acidity 2%
- Harvest entire cluster
 - Requires cultivar with uniform ripening
- Do not harvest when fruit are wet

POST HARVEST HANDLING

- Place in forced air cooler at 95% humidity
- Not chilling sensitive
- Store at 32-34°F with 95% RH
- Can store up to 2.5 weeks

RETAIL DISPLAY

- Currants should be in refrigerated case
- Do not mist or top-ice the berries

PEST MANAGEMENT



INSECTS

- Insects are not a major problem for currants in most years
 - Currant aphid
 - Currant Borer
 - Imported Currant Worm
 - Currant stem borer
 - Gooseberry Fruitworm
 - Currant Fruit Fly
 - Fourlined plant bug
 - San Jose Scale

DISEASES

- Powdery Mildew
- Anthracnose
- Leaf Spot
- Minor:
 - White Pine Blister Rust
 - Botrytis
 - Cane blight
 - Cluster cup rust

MARKETING

- Black currants
 - More astringent, higher aromas, so good for processing
- Red Currants
 - Less astringent than black but still primarily used for processing
- White Currants
 - Lowest acidity and best suited to fresh

MARKETING NICHE/NOVEL CROPS

- Currants are a niche crop...do not assume you will be able to sell them!
- Customers often do not know what to do with an unfamiliar crop
 - Educate customers about the fruit
 - Provide tips/recipes for how to use them
- Explore options with processors/wineries prior to planting
 - Talk specifics (ie. volume, delivery expectations, schedule, payment)

