



SMALL FRUIT PLANTING, CARE, AND PRODUCTION IN THE WESTERN HIGH PLAINS

Jeff Edwards
2014



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TOPICS

Production of Small Fruit:

- Cane berries (Bramble berries) with focus on Raspberries
- Strawberries
- Comments on "Other" berries
 - Elderberries
 - Goose berries
 - Currents
 - Choke Cherry
 - Choke Berry
 - Wolf berry/Gogi
 - Lingon berry
 - Blue Berry



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SITE SELECTION CONSIDERATIONS



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PLANTING



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COMMON PLANTING MISTAKE



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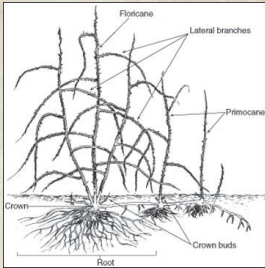
BARE ROOT PLANTING



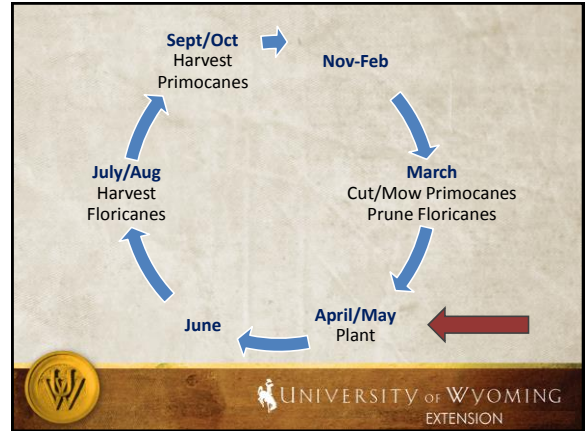
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RASPBERRY ANATOMY

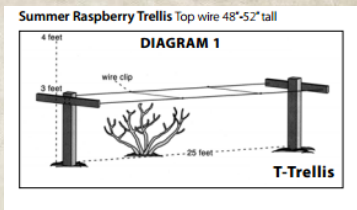


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RED RASPBERRY TRELLISING



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VARIETAL SELECTION

- Find a Reputable Source.
- Local is good if they can fill in the details concerning these characteristics:
 - Berry Color
 - Berry Size
 - Best in Zones
 - Firmness
 - Flavor
 - Freezing Quality
 - Winter Hardy

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FLORICANE VARIETIES

- Produce fruit on second year wood (floricane) starting in July
- Slightly more Cold Hardy
- Fruit smaller than primocane varieties
- Great option for Small Producers (backyard, garden)
- Pruning involves removing 3rd year wood.

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BOYNE

Released in 1960, Boyne raspberry is an early-season variety that is extremely winter hardy. It consistently produces deep-red, medium-sized berries. The medium sweet, aromatic flavor makes it great for freezing and jam. It will grow where other varieties experience winter injury damage to the canes.

Characteristics

- Berry Color: Red
- Berry Size: Medium
- Best in Zones: 3 – 7
- Firmness: Moderate
- Flavor: Excellent
- Freezing Quality: Excellent
- Winter Hardy: Excellent

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PRIMOCANE VARIETIES

- Joan J
- Himbo Top
- Polana
- Polka
- Caroline
- Anne



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THE "REFERENCE" BERRY

- Nearly all you read will discuss the variety "Heritage" or "Autumn Bliss"
- These were the standard primocane berries for many years
- You will see references similar to "fruits 2 weeks earlier/later than Heritage"
- Unless you grow the variety of reference this means absolutely NOTHING.



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JOAN J

This high-yielding, **thornless**, early primocane raspberry. The fruit is large and holds its size well. Berries are firm, easy picking (they release well) with small drupelets and good flavor. The fruit will hold and ship well, as it is dry. Highly recommended for planting when early fruit is required.

Characteristics

- Berry Color: Red
- Berry Size: Large
- Best in Zones: 4 – 8
- Firmness: Firm
- Flavor: Good
- Freezing Quality: Excellent
- Winter Hardy: Excellent



*Needs Trellised;
First to fruit;
Consistent production*



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HIMBO TOP

Himbo Top®, a primocane red raspberry variety introduced in 2008, has demonstrated high tolerance to Phytophthora root rot disease. This variety produces **extremely large**, firm, bright red fruit that does not darken. Berries have good flavor, are conic shaped, have small, well constructed drupelets and are easy to pick. This variety is extremely vigorous and will require less fertilizer.

Characteristics

- Berry Color: Red
- Berry Size: Very large
- Best in Zones: 4 – 8
- Firmness: Firm
- Flavor: Good
- Freezing Quality: Good
- Winter Hardy: Good



*Fruit clusters at cane terminal;
Easy to pick; Tall Canes
My personal favorite*



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POLANA

At least three weeks earlier than Heritage, Polana raspberry allows you to grow fall varieties in more northern locations and still produce a great crop. Released from Poland, its berries are highly productive, large, glossy in appearance, coherent, with good flavor. **Canes are vigorous and grow shorter than those of Heritage**. Polana needs extra fertilizer in May and June.

Characteristics

- Berry Color: Red
- Berry Size: Meg/Lg
- Best in Zones: 3 – 8
- Firmness: Firm
- Flavor: Good
- Freezing Quality: Good
- Winter Hardy: Excellent



*Early;
Berries hide*



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POLKA

A primocane raspberry variety from Poland. The plant is vigorous with a more upright growing habit than other varieties. Berries are large, very firm, and have good flavor. Polka is very productive and the fruit does not darken as much as other varieties. *Ripens 7-10 days after Polana.*

Characteristics:

- Berry Color: Red
- Berry Size: Large
- Best in Zones: 4 – 8
- **Firmness: Very**
- Flavor: Good
- Freezing Quality: Good
- Winter Hardy: Good



*Does not release
from plant*



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CAROLINE

Caroline raspberry has a larger berry than Heritage and is more productive, with a rich, full, and intense raspberry flavor. It is a very vigorous variety, with more tolerance for root rot than Heritage. Caroline is widely adapted, growing everywhere from the East Coast to the West Coast. **This variety does not tolerate high heat and drought.**

Characteristics

- Berry Color: Red
- Berry Size: Med/Lg
- Best in Zones: 4 – 7
- Firmness: Moderate
- **Flavor: Excellent**
- Freezing Quality: Good
- Winter Hardy: Excellent



Favorite Flavor, Sunburns



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ANNE

Anne raspberry has special characteristics. *Anne is a large-fruited fall bearer that ripens at the same time as Heritage.* Fruit holds a pale yellow color and is highly productive. Anne's excellent size, appearance, and very sweet flavor make it an excellent choice for a yellow fall bearer.

Characteristics

- Berry Color: Yellow
- Berry Size: Large
- Best in Zones: 4 – 7
- Firmness: Firm
- **Flavor: Excellent**
- Freezing Quality: Good
- Winter Hardy: Excellent



Higher pectin content than Reds; Unexpected Raspberry Flavor



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COMPETITION

- None of these varieties compete well with weeds.
- Suggest annual mulching
- Good well-timed herbicide program
- Hand Weeding
- Grass is bad!



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FERTILITY

- Must take soil sample to understand what may be lacking.
- Divide Fertilizer applications and apply once each in May, June, & July.
- Do not plant in an old corral.



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THE MOST HUMBLING ASPECT OF **KNOWLEDGE** IS THE PRACTICAL APPLICATION OF WHAT YOU THINK YOU KNOW.



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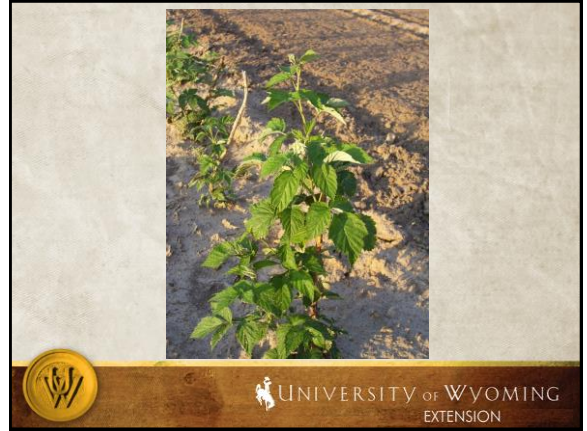
Mid June 2008





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QUIZ

Why did we have berries in July of year 1 and not in July of year 2?

November year 2



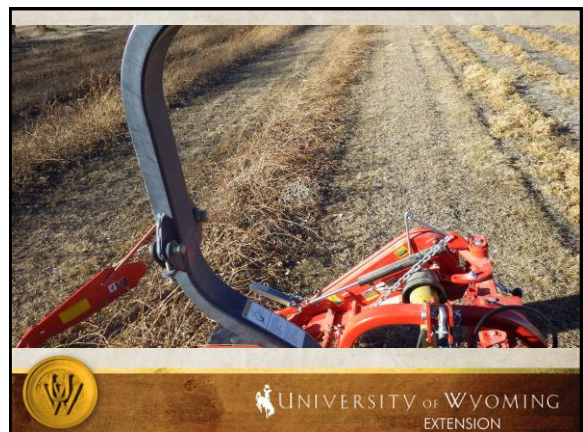
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PEST PROBLEMS

The Good News

- No detectable diseases (Yet)



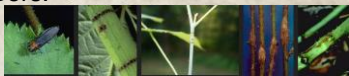
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INSECT PESTS

- 2011 and 2012 were extremely bad years for Grasshoppers.

- Cane borers

- Leaf Rollers



Carbaryl – Apply
Prior to Bloom



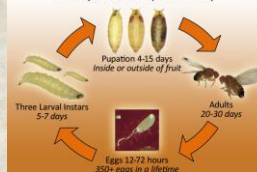
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NEW INSECT PEST IN WYOMING

Spotted Winged
Drosophila (SWD)

- Flies lay eggs on non-ripe fruit
- Maggots in fruit
- Juice on Calyx
- Fruit “dissolves” on the cane (MUSH)
- Attack ALL Fruit
- See handout

Life Cycle of the Spotted Wing *Drosophila*
Drosophila suzukii (Matsumura)



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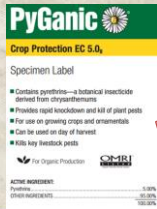
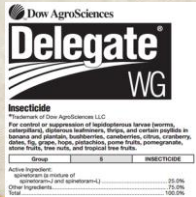


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ORGANIC DOES NOT MEAN "NO PESTICIDES"

- SWD Control Options for use in Wyoming happen to be organic.



\$9 per ounce

Costs less but requires more a!



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CONTROL IS A SERIOUS BUSINESS

- Do not try to chemically control these pests unless you are serious about it.
- Limited options increases resistance to these products if used incorrectly.
- **READ, UNDERSTAND, and FOLLOW THE PRODUCT LABELS.**
- Rotate between products – do not use either product more than 2X per growing season.



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"BIORATIONAL" PESTICIDES

VERN GRUBINGER
VEGETABLE AND BERRY SPECIALIST
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- Pesticides vary in their toxicity and in their potential to cause undesirable ecological impacts.
- Pest control materials that are relatively non-toxic with few ecological side-effects are sometimes called 'bio-rational' pesticides, although there is no official definition of this term.
- Some, but not all, biorationals qualify for use on organic farms. The major categories of bio-rational pesticides include:
 - botanicals,
 - microbials,
 - minerals, and
 - synthetic materials.



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BE ON THE LOOKOUT FOR...

- Brown Marmorated Stink Bug (handout)
- Send Samples to myself or Scott Schell @ UW



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OTHER RASPBERRY VARIETIES

- Black Raspberry (not Black Berries)
 - Zone 5 and above
 - Extensive trellising
 - Bristol
 - Jewel
 - Mac Black
- Purple Raspberry
 - Slightly more winter hardy than Blacks
 - Royalty



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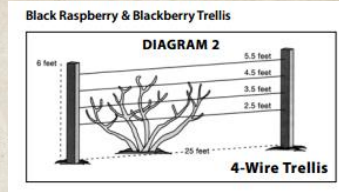
LIMITED SUCCESS

(DON'T TELL ME I CAN'T GROW THESE HERE)

- Will not survive Zone 4 *easily*.
- Need winter protection.
- Would work well in a high tunnel/hoop house.
- Recommend “thorn less” varieties.
- Must be trellised (can require extensive support system)



BLACKBERRY TRELLIS



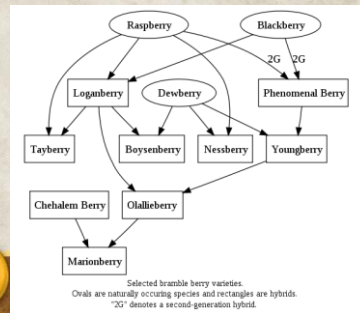
PRIME JAN

- Was “not ready for release”.
 - Druplets do not fill evenly (i.e., catfaces)
 - Takes a very long time to ripen (October).
 - NOT THORNLESS!
 - Have harvested a handful since 2008
 - Very Tart
- Recommend Variety “Chester”



“BRAMBLE” BERRY FAMILY

- <http://en.wikipedia.org/wiki/Bramble>



STRAWBERRIES



SITE SELECTION CONSIDERATIONS



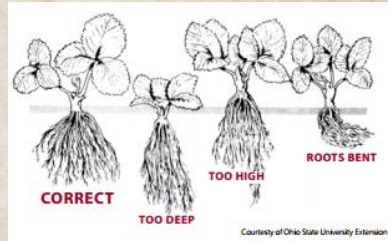


BARE ROOT STRAWBERRIES



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PROPER PLANTING DEPTH



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OH REALLY?



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Planting (May)



MANUAL WEED REMOVAL





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EARLY SPRING YEAR 2





STRAWBERRY TYPES

- Everbearing (Summer Bearing and Day-Neutral)
 - Blooming not day length dependent
 - Usually produce all season long
- June Bearing
 - Blooming day length dependent
 - Usually produce for about 10 days



JUNE BEARING VARIETIES EARLY, MID AND LATE SEASON VARIETIES

- Early-Mid
 - Honeoye
 - L'Amour
- Mid
 - Jewel
 - Dar Select
- Mid-Late
 - Clancy
 - Cabot
- Late
 - AC Valley Sunset



HONEOYE

Honeoye strawberry plant is from the Cornell Research Station, Geneva, NY, and has been a top variety for over 20 years. It combines winter hardiness, high productivity, good appearance and color, together with an excellent, firm, large-sized berry. The large berries are easy to pick, and produce high yields over a long fruiting season, making it our most consistent berry producer. Home gardeners will also appreciate its excellent freezing quality. Optimum flavor is produced by growing this variety in medium to light soil. Honeoye is a vigorous plant with no soil-disease resistance. Early-midseason variety.

Characteristics

- Berry Size: Large
- Best in Zones: 3 – 8
- Firmness: Firm
- Flavor: Good
- Freezing Quality: Excellent



L'AMOUR

L'Amour strawberry, released by the NY State Experiment Station, has excellent fruit quality and the berries are bright red and firm with excellent flavor. Long, round conic shape with a fancy calyx makes them very attractive. L'Amour is adapted to a wide range of soil conditions and is very vigorous. L'Amour is not the most productive variety but is a good consistent performer.

Characteristics

- Berry Size: Large
- Best in Zones: 4 – 8
- Firmness: Firm
- Flavor: Excellent
- Freezing Quality: Good
- Resistant to: Red Stele



JEWEL

Jewel strawberry is a midseason variety, recommended for commercial growers and home gardeners. Jewel has large berries with superb quality and flavor. Jewel performs well over a wide range of growing conditions. Plants have moderate winter hardiness. Care must be taken at renovation to maintain a good plant stand.

Characteristics

- Berry Size: Large
- Best in Zones: 4 – 8
- Firmness: Firm
- Flavor: Excellent
- Freezing Quality: Excellent





DARSELECT

Darselect strawberry is a highly productive, widely adapted variety for plasticulture or matted-row production. Its sweet, tasty fruit was rated very good for flavor and firmness. Darselect will fruit from early mid-season to mid-season. Very susceptible to leaf scorch.

Characteristics

- Berry Size: Large
- Best in Zones: 4 – 8
- Firmness: Firm
- Flavor: Excellent
- Freezing Quality: Good



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CLANCY

Clancy is a very vigorous late mid-season variety, similar season to Cabot. The berries are round and conical in shape with dark red color and have a good flavor. Fruit is firm, similar to Jewel. Clancy is adapted to a wide variety of conditions.

Characteristics

- Berry Size: Large
- Best in Zones: 4 – 8
- Firmness: Firm
- Flavor: Good
- Freezing Quality: Good
- Resistant to: Red Stele



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CABOT

Cabot strawberry is known for its **huge** berries, excellent flavor, winter hardiness and disease resistance. Cabot is best adapted for northern locations and where very large fruit size is required. The berries have excellent flavor; color and firmness were rated good. First fruits may split or be rough. Cabot is highly recommended for home gardeners and direct marketing growers.

Characteristics

- Berry Size: Very large
- Best in Zones: 4 – 7
- Firmness: Medium
- Flavor: Excellent
- Freezing Quality: Good
- Resistant to: Red Stele



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AC VALLEY SUNSET

AC Valley Sunset was bred in Kentville, Nova Scotia. This strawberry is a late season variety that will ripen 5-7 days later than Cabot. Plant shows good vigor with no apparent foliage disease concerns. Berries are lighter red, shiny and large-sized. Flavor and yield are very good. With its softer skin, fruit is best suited for local fresh market to extend the season.

Characteristics

- Berry Size: Large
- Best in Zones: 4 – 7
- Firmness: Moderate
- Flavor: Good
- Freezing Quality: Fair
- Resistant to: Leaf Diseases



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GOOD NEWS ABOUT STRAWBERRIES

- Low Humidity in Wyoming = low disease pressure.
- Few insect pests
 - SWD may become a problem
 - Flea beetles were an issue in 2013
- Easy to grow



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FERTILITY

- Soil Sample
- Split required fertilizer into three monthly applications POST FRUIT Production (July, August, September)
- Do not plant in a an old corral



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OTHER BERRIES



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ELDER BERRY

- Native to many continents
- Interesting landscaping uses
- Many food uses for flowers and berries
- Flowers attractive to birds and butterflies



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GOOSEBERRIES AND CURRANTS

- Bush type growth Habit
- Fruit in June or July
- Well drained soil
- pH 6-6.5
- Plants 3-4 feet apart
- *Require heavy pruning for optimal fruit production.*



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GOOSEBERRIES

- Red or Green
- Thorns!



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CURRENTS

- Black, Red or White



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CHOKE CHERRY

- Central pit
- Bitter Taste
- High in anthocyanin's
- Landscaping ornamental
 - Suckers
- Grows Quickly
- Great Windbreak
- Fruit ripe in late August
- Can be a harbor for "X" disease (peaches & cherries)



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ARONIA "CHOKE BERRY"

- Red, Black, or Purple Varieties
- Look like a blue berry
- No central pit
- Taste like a choke cherry
 - Bitter
- High in anthocyanin's
- Great landscaping ornamental
- Fruit ripe in late August
- Make "interesting" jelly



OTHER BERRIES

- Wolf Berry/Gogi Berry
 - Family Solanaceae (nightshade & potatoes).
 - May interact with medications including warfarin, or drugs for diabetes or hypertension.
 - Acquired taste...



LINGONBERRY

- Extremely Cold Tolerant Evergreen shrub
- Resemble cranberry
- Prefer acidic soils
- Highly likely they will not survive in Wyoming



BLUE BERRIES

- I can't tell you that it cannot be done...but
- Growing blueberries in Wyoming can be an expensive hobby.
- Prefer acidic Soils

