

Blackberry Variety Primer

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We will cover

- Taxonomy
- Biology
- Cane types
- Growth habit
- Ease of management
- Yield potential
- Local vs. wholesale
- Pests
- (south)East vs (pacificnorth)West cultivars
- Etc

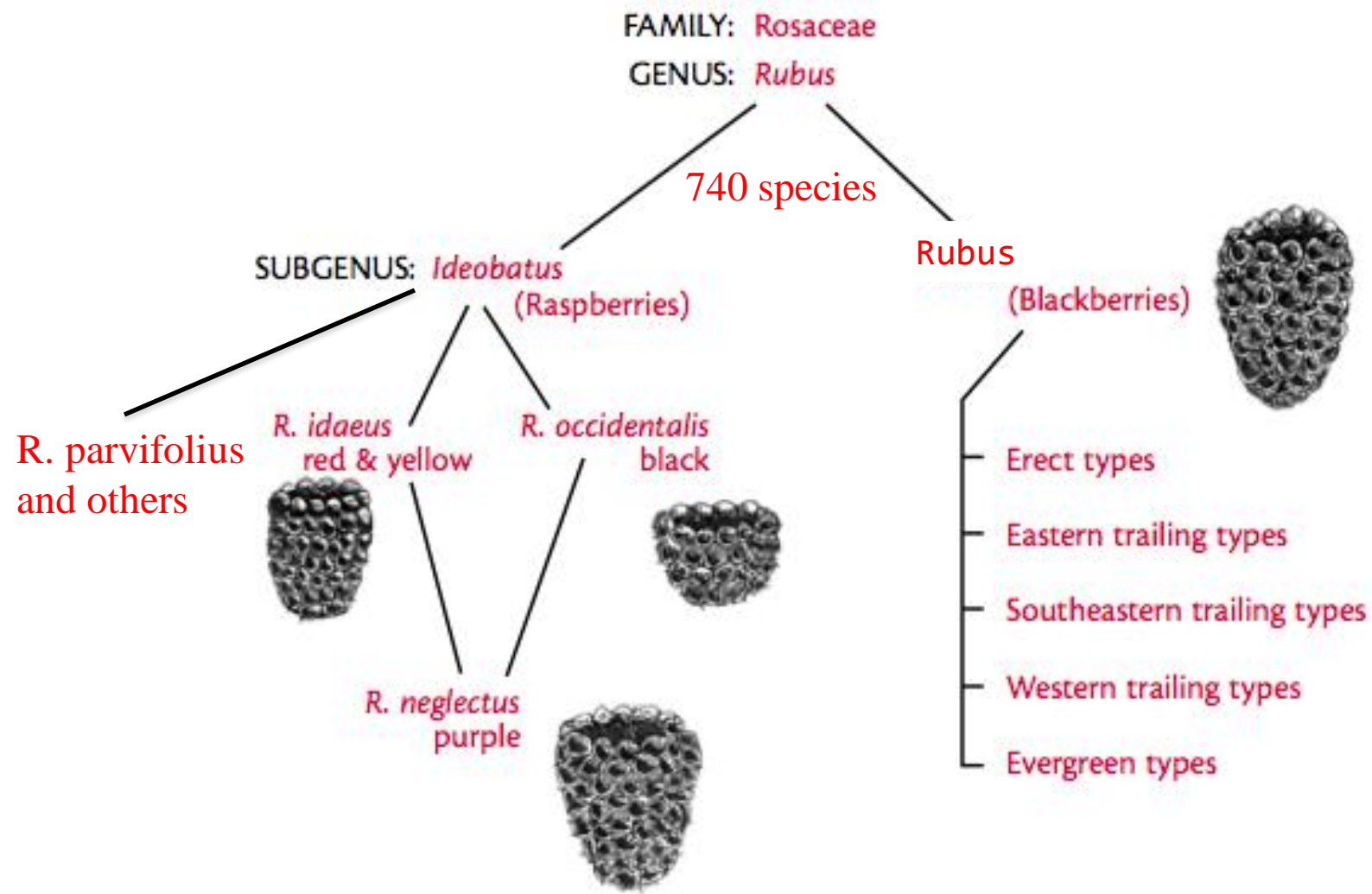


Fig. 1.1 Relationships between various types of raspberries and blackberries.

Modified from Marvin Pritts

Why is it so confusing?



Types of Caneberries

- Raspberry
 - Black, yellow, red or purple
 - Primocane fruiting or floricanne fruiting
- Blackberry
 - Erect, semi erect, trailing(dewberries)
 - Thorny or thornless
 - Primocane fruiting or floricanne fruiting
- Blackberry X Raspberry hybrids
 - Tayberry, wyeberry

Biology 101

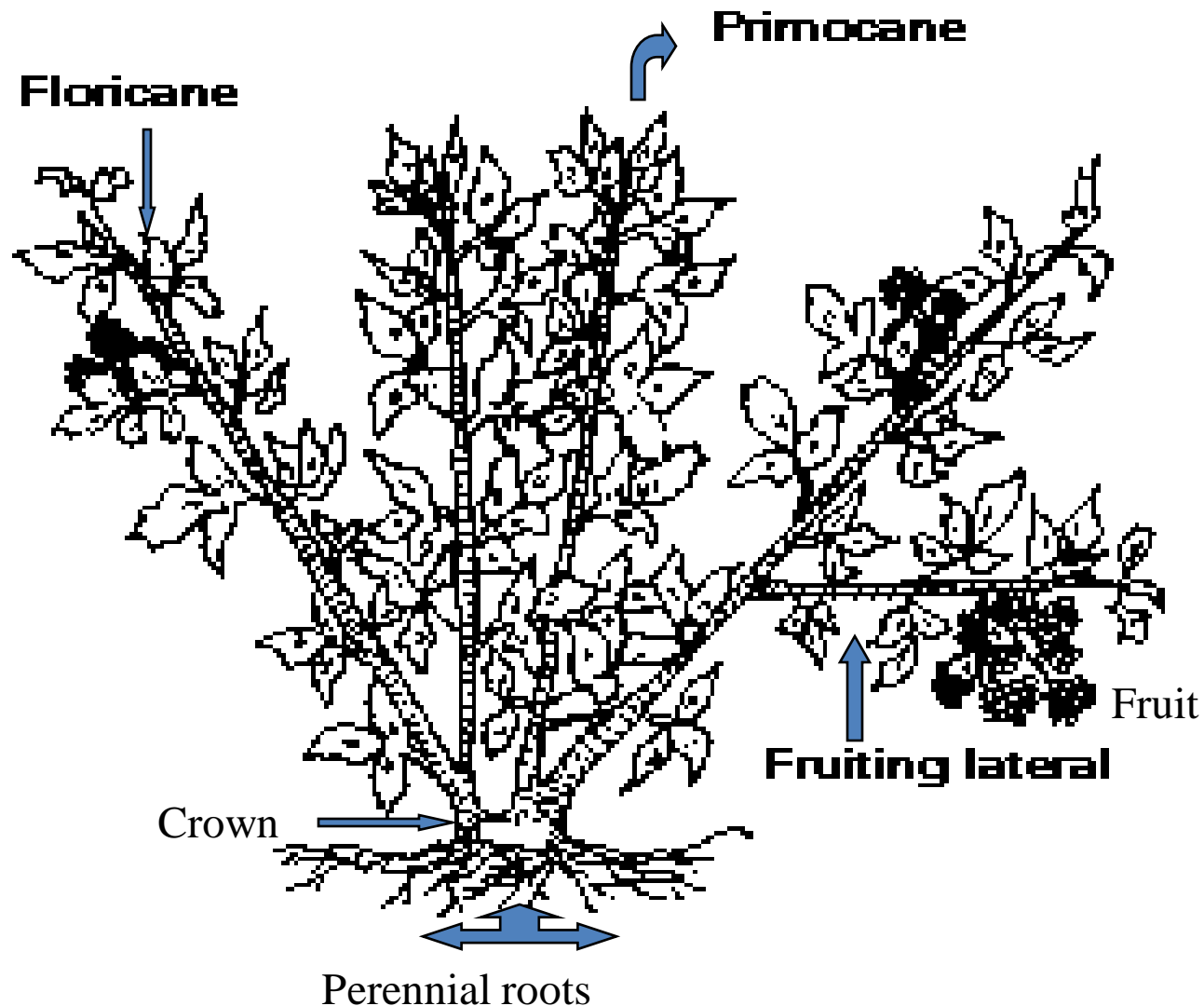
- Biennial
 - 2 year life cycle
 - Above ground growth
 - Primocanes
 - Floricanes
- Advantages
 - Manipulate season of harvest
 - Extend season of harvest
- Disadvantages
 - Difficult to understand
 - Management more complicated

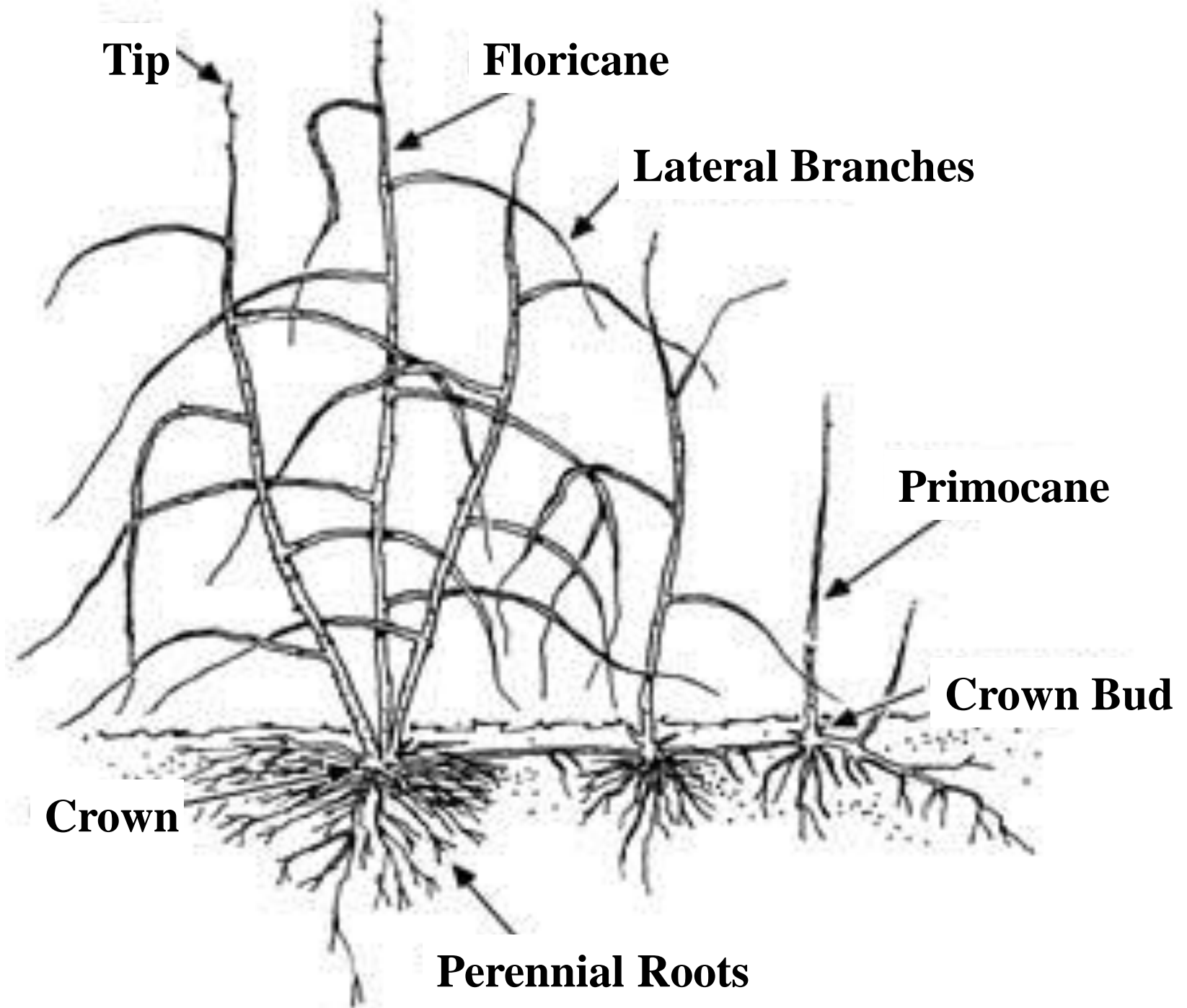
Cane Type

Two types of canes

- Primocanes
 - First year growth, usually no fruit on canes
- Floricanes
 - Second year growth, produce fruit and flowers then die

Plant growth - plant parts





Caneberry Fruiting Habits

Floricanefruiting

- 1st year:
 - Vegetative growth of cane
- 2nd year:
 - Flowering & fruiting
 - Cane death

(most varieties of blackberries, black & purple raspberries, some red & yellow raspberries)

Primocanefruiting

- 1st year:
 - Bear fruit in upper $\frac{1}{3}$ to $\frac{1}{2}$ of cane in late summer & fall
 - Fruiting portion of cane dies in fall
- 2nd year: (OPTIONAL)
 - Lower portion of cane fruits
 - Entire cane dies after fruiting



Primocane



Floricane

Growth Habits



Erect



Semi-erect



Trailing

Growth Habit

- Erect
- Semi Erect/Semi trailing
- Trailing (Semi-trailing/Semi-erect)
- Primocane fruiting?

Ease of management:

- Thorny or **thornless**?
- Summer-fruiting or **fall-fruiting**? (Growing habit)
- **Hardiness** and growing season length?
- Yield and productivity?
- Flavor?
- **Disease and insect resistance**?
- Growth habit, erect, trailing

Things to consider when selecting a variety (cultivar):

- Thorny or thornless?
- Summer-fruiting or fall-fruiting? (Growing habit)
- Hardiness and growing season length?
- Yield and productivity?
- Flavor?
- Disease and insect resistance?
- Growth habit (erect, trailing)

Blackberries- Thorny or Thornless?

- Thorny
 - More difficult to harvest
 - Tall, rugged canes do not need trellising
 - Less susceptible to low temperatures than thornless blackberries
- **Thornless**
 - **Easier to harvest, train and prune**
 - **Vigorous canes need trellising**
 - **Not hardy below 0F**
 - **Flavor as good as thorny types**



Summer or Fall Fruiting?

- Floricane fruiting “Summer”
 - fruit is produced on laterals of 2nd year canes
- Primocane fruiting “Fall”
 - Fruit is produced at tips of 1st year canes

Blackberries- Summer or Fall Fruiting?

- Summer-fruiting
 - Advantages
 - Long harvest season
 - High yields in warm climates
 - Challenges
 - Hot summer harvest
 - Postharvest warm fruit
 - White drupelets
 - Pruning is time consuming (summer and winter)



Blackberries- Summer or Fall Fruiting?

- Fall-fruiting

- Advantages

- Pruning is easy
 - Potential for 2 crops per year
 - Suited for production where winters are cold if the growing season is long

- Challenges

- Flower development in warm climates
 - Tipping needed to maximize yield
 - May need protection for adequate growing season
 - Harvest labor problems in fall



Blackberry varieties

- Erect (Upright)
 - **Arapaho**, Apache, **Ouachita**, **Osage**, Natchez, **Navaho**, Von
 - Kiowa, Chickasaw, Illini Hardy, Shawnee
- Trailing (Semi-trailing/Semi-erect, Semi-Upright)
 - Black Satin, Doyle Thornless, Hull, **Chester**, Natchez, **Triple Crown** (?),
- Primocane fruiting?
 - Black Magic, Prime-Jim and Prime-Jan, **APF-45**



Apache

- Thornless, erect
- Large, 7-10 g; (ave. 8 g)
- Yield med.-high
- Flavor between Navaho and Arapaho – Good! 11% SS
- DB/R – resistant -similar resistance as other Ark. Thornless
- White drupe limitation
- Not recommended



Arapaho

- Characteristics
 - Thornless
 - Early
 - Low yield
 - Semi erect/erect
 - May be more cold hardy?
 - DB resistant
 - Plant closer than others
 - Local and commercial if need early crop



Chester

- Late season
- Small fruit
- Long clusters
- High yield
- PH not great
- DB resistant??
- Local only



Doyles Thornless

- Late
- Productive in PA
- Small firm fruit
- Flavor good
- Winter hardiness similar to TC
- Trailing
- Local

Illini Hardy

- Early
- Thorny
- Small berries, size decreases through season
- Most cold hardy
- Secondary bud crop
- Phytophthora root rot resistant

Natchez

- Arapaho season (early)
- High yields
- Overcropping potential
- Large berries (10g)
- Excellent shipping potential
- Hardiness can be problem
- Released as erect but trailing tendencies
- Local and commercial



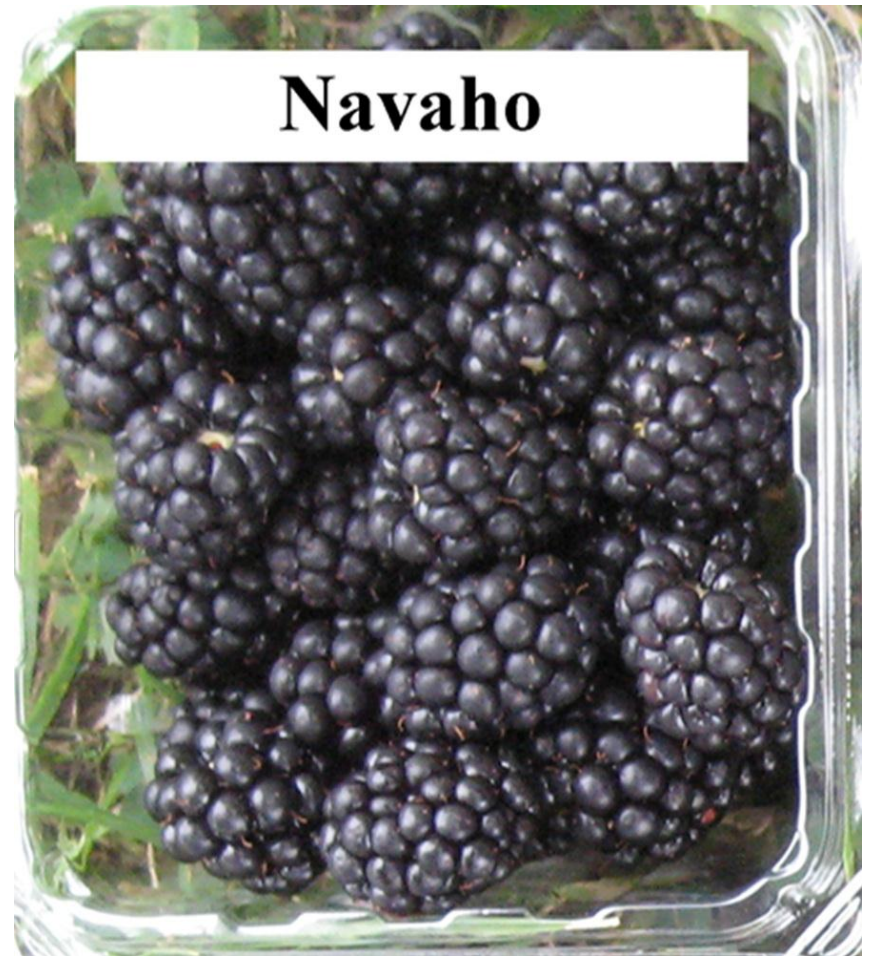
Ouachita

- Characteristics
 - High yields
 - 6-7 g
 - Great flavor
 - Good post harvest shelf life (PH)
 - Shiny berries taste good



Navaho

- Characteristics
 - UArk
 - Thornless
 - Mid-late season
 - Med-high yield
 - PH great
 - DB resistant
 - Orange rust susceptible
 - Local and commercial
 - If you want only one variety for a home garden, this is the one



Chester

- Characteristics
 - Thornless
 - Semi-erect
 - Late
 - 5 -7 g
 - Late
 - Great PH
 - Heat in south may limit large scale production



Triple Crown

- Characteristics
 - Thornless
 - late
 - Semi-erect
 - 6-8 g
 - High yield
 - PH fair
 - Great flavor
 - Fairly cold hardy
 - Adapted to mid-Atlantic, lower midwest, New England, PNW, and did OK in NC

Shawnee

- Early
- Thorny
- Good fruit size
- Less productive
- Resistant to OR
- Susceptible to DB
- Old
- 23+ year planting still very productive

Prime-Jan v Prime-Jan

- Primocane fruiting
 - Thorny
 - Flavor acceptable
 - Low yield
 - Must be tipped
 - Better than Prime-Jim
- Primocane fruiting
 - Thorny
 - Flavor acceptable
 - Low yield
 - Must be tipped

Prime-Ark 45

- High yield
- Thorny
- Large fruit
- Excellent flavor
- Sweetest of the PF blackberries
- Must be tipped
- Very late
- Commercial

Black Magic

- Large
- Soft
- Excellent flavor
- Very late
- Local only, homeowner

Newer Cultivars

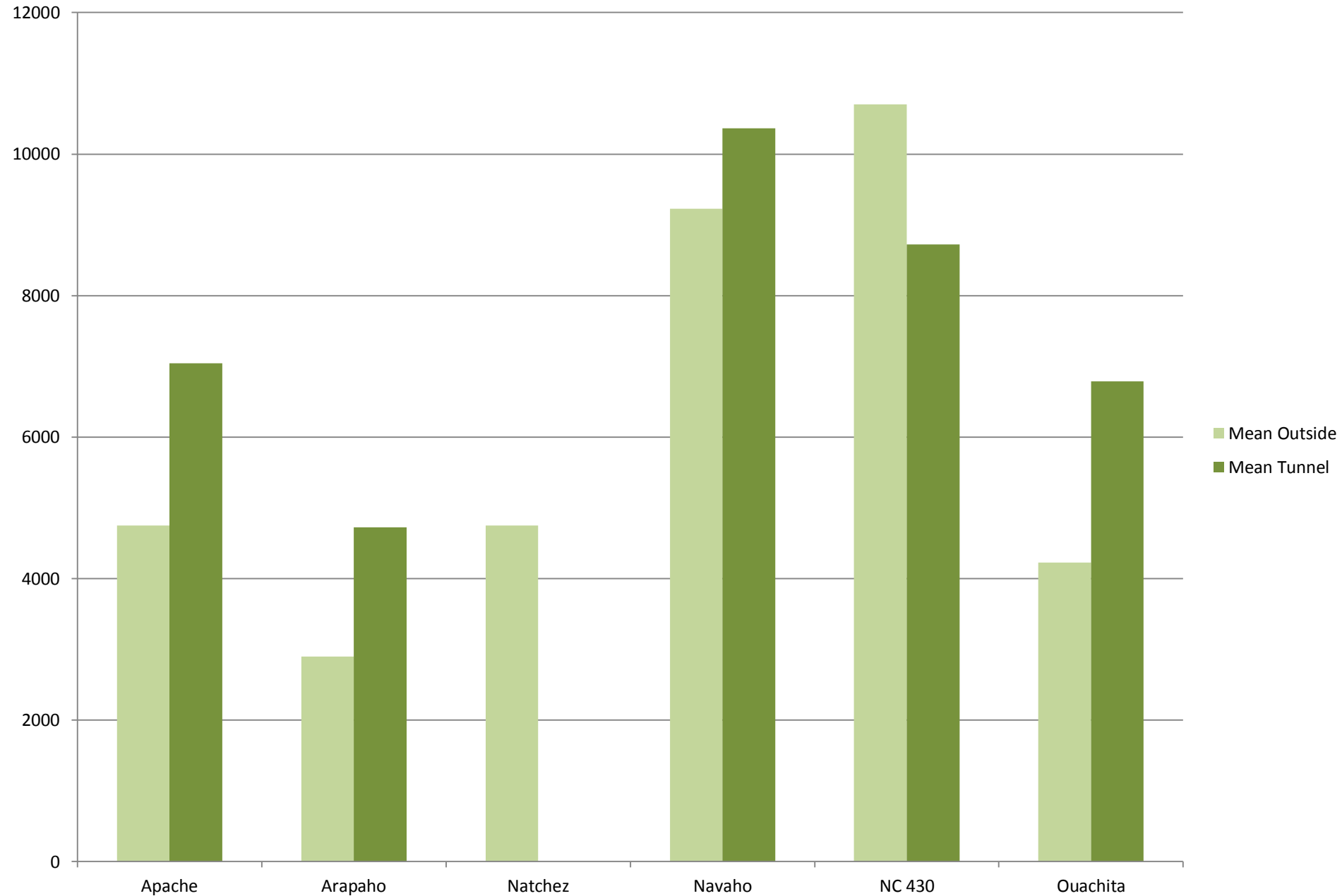


Von

- ‘Von’ is a new erect, thornless, floricane-fruiting blackberry.
- High yield
- Medium size (6.6 g) has smaller drupelet and seed size compared to other cultivars.
- Post harvest trials – very good, some red drupelet.



Piedmont Floricane Fruiting Blackberry Marketable Yield (g/plant) 2008-2010



**Mean harvest dates for blackberry cultivars in NC,
when yields were at 5, 50 and 95 percent total yield
during 2008-2010.**

| Cultivar | 5% | 50% | 95% |
|----------|----------|----------|----------|
| Apache | 26-Jund | 12-Julcd | 3-Augcd |
| Arapaho | 6-Juna | 15-Juna | 3-Jula |
| Natchez | 9-Junab | 24-Junab | 13-Julab |
| Navaho | 24-Juncd | 16-Juld | 9-Augd |
| Von | 22-Juncd | 7-Julcd | 2-Augcd |
| Ouachita | 16-Junbc | 1-Julbc | 23-Julbc |

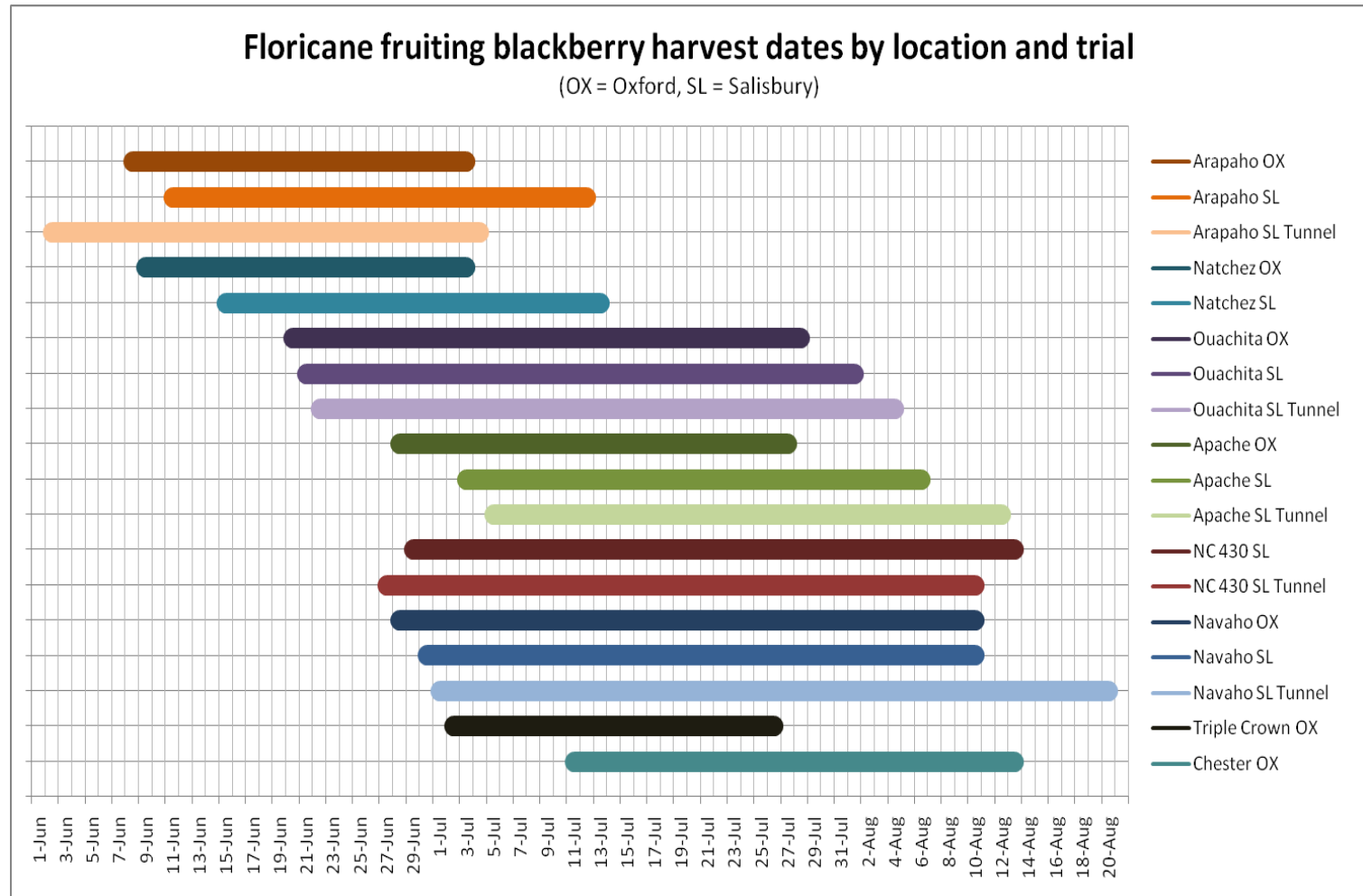
Post harvest attributes of blackberries harvested at Salisbury, NC in 2010 and held 7 days at 4° C, 90% RH in pint clamshells.

| Percent berries (%) | | | | | | |
|---------------------|------------|-------------|-------------|--------------|----------------------|-------------------------|
| Cultivar | Moldy | Leaky | Soft | Red drupe | Overall ^z | Marketable ^y |
| Apache | 5.7 | 37.9 | 23.6 | 7.9 | 32.8 | 77.6 |
| Tupy | 4.7 | 24.8 | 11.4 | 10.5 | 59 | 86.4 |
| Navaho | 2 | 13.8 | 15.4 | 5.7 | 68.8 | 89.6 |
| Von | 3.1 | 12.8 | 12.4 | 12.1 | 71.7 | 90.6 |
| Ouachita | 4.1 | 15 | 7.4 | 7.7 | 73.4 | 91.2 |
| Natchez | 0.8 | 7.3 | 4.4 | 17.2 | 87.5 | 95.8 |
| Arapaho | 0.5 | 10 | 0 | 4.1 | 89.5 | 96.5 |

^zOverall: 100- sum (moldy+leaky+soft)

^yMarketable: 100- sum (moldy+leaky+soft)/3)

Blackberry Harvest Season



Osage– The Newest Arkansas Blackberry

- Ripens (In Ark.) between Natchez and Ouachita, ave. June 10 beginning harvest
- Yields have been consistent and good, comparable to higher than Ouachita
- Berry size is medium, 5.0 g, slightly smaller than Ouachita
- Flavor is a key attribute of Osage, lower acid flavor with notable flavor components coupled with high soluble solids
- Good even on “bad flavor days” as noted by JRC over the years
- Great postharvest handling potential



Osage– Why Consider?

- A complement to Ouachita in size and season to diversify cultivars for this harvest period
- Consistently uniform in drupelet fill whereas Ouachita can have uneven fill
- Is hoped to expand on flavor and enjoyment of blackberries by consumers
- Available in 2013 from tissue culture propagators, wider availability in 2014



Yields of three blackberry cultivars in plantings established in replicated trials at the University of Arkansas Fruit Research Station, Clarksville Arkansas in 2007 with data collected in 2008 and 2009 and a planting established in 2010 with data collected in 2011 and 2012.

| Genotype | Yield (lb·acre ⁻¹) | | | | |
|----------|--------------------------------|---------|-----------|----------|----------------------|
| | 2008 | 2009 | 2011 | 2012 | Average ^y |
| Osage | 12,341 a | 7,849 a | 12,206 ab | 12,902 a | 11,324 |
| Natchez | 12,613 a | 6,030 a | 17,641 a | 17,351 a | 13,409 |
| Ouachita | 7,851 b | 4,361 a | 10,774 b | 14,021 a | 9,252 |

^z Means followed by the same letter are not significantly different at the 5% level within single columns.

^y Average is a mean of the 4 years presented in this table (2008, 2009, 2011, 2012).

Postharvest evaluations of several cultivars of blackberries at Clarksville, AR, Fruit Research Station.

| Cultivar | Overall ^z | Marketability ^z | Red (%) | Leak (%) | Soft (%) |
|--------------|----------------------|----------------------------|---------|----------|----------|
| Natchez | 42.6 ^x | 89.7 | 18.8 | 20.6 | 9.2 |
| Osage | 59.7 | 90.5 | 4.0 | 16.1 | 6.9 |
| Ouachita | 41.3 | 88.8 | 5.7 | 21.2 | 6.3 |
| Prime-Ark®45 | 57.1 | 90.7 | 6.6 | 18.7 | 4.1 |
| Tupy | 3.0 | 72.1 | 15.7 | 48.1 | 26.5 |

^zOverall=100-(%decay+%leak+%soft). Percent marketability is calculated as: 100-[sum(% decayed + % soft + % leaky)/3]. A minimum of 85 is desired.

^x All entries are means of 5 years (2008 - 2012), except Tupy entries which are missing 2011 data and therefore means of only 4 years.

Plant and fruit characteristics of three thornless blackberry cultivars at the University of Arkansas Fruit Research Station, Clarksville.

| Characteristic | Osage | Natchez | Ouachita |
|---------------------------------|---------|------------------|----------|
| 50% bloom date ^z | 2 May | 29 Apr | 6 May |
| First harvest date ^z | 10 June | 5 June | 13 June |
| Plant health ^y x | 7.6 | 7.3 ^w | 7.6 |

^z Means of 3 years (2008, 2009, 2011) from replicated trials in Clarksville, AR.

^y Means of 7 years, 2005-2011.

^x Rating scale of 1 to 10 where 10=best.

^w Missing 2008 data.

Table 4. Fruit attributes taken at harvest of thornless blackberry cultivars grown at the Piedmont Research Station, (Salisbury, NC).

| Cultivar | No. boxes | No. weeks | Percent berries with | | | | Overall rating ^v | SSC ^u |
|----------|-----------|-----------|----------------------|-------------------|-------------------|---------------------------|-----------------------------|------------------|
| | | | Leak ^z | Mold ^y | Soft ^x | Red drupelet ^w | | |
| 2009 | | | | | | | | |
| Apache | 43 | 5 | 55.4 b ^t | 7.1 b | 15.5 b | 0.2 a | 74.0 ab | 10.6 b |
| Arapaho | 40 | 5 | 43.7 ab | 8.6 b | 19.1 b | 0.7 a | 70.2 b | 10.9ab |
| Navaho | 59 | 6 | 32.2 a | 1.5 a | 14.4 b | 1.4 a | 83.1 a | 11.6 a |
| Ouachita | 51 | 6 | 18.5 a | 5.0 b | 6.1a | 1.8 b | 89.4 a | 10.6 b |
| Von | 44 | 5 | 6.9 a | 1.4 a | 3.0 a | 2.0 b | 90.3 a | 10.4 b |
| Natchez | 25 | 5 | 13.3a | 2.2 a | 4.4 a | 2.5 b | 93.4 a | 10.9ab |
| 2010 | | | | | | | | |
| Apache | 27 | 5 | 41.9 c | 5.3 b | 24.4 b | 7.9 a | 77.6 b | 10.5 a |
| Arapaho | 8 | 3 | 10.0 ab | 0.5 a | 0.0 a | 4.1 a | 96.5 a | 9.7 a |
| Navaho | 38 | 6 | 14.5 ab | 1.3 a | 13.7ab | 6.2 a | 89.6 a | 10.2 b |
| Ouachita | 20 | 6 | 15.4 ab | 3.0 c | 9.1ab | 9.1 a | 91.1 a | 10.1 b |
| Von | 27 | 5 | 12.5 ab | 1.8 ab | 11.1ab | 13.4 ab | 90.6 a | 9.4 a |
| Natchez | 22 | 4 | 7.3 a | 0.8 a | 4.4 a | 17.2 b | 95.8 a | 9.1 a |

'Obsidian'

- Fresh market, thorny
- Very early ripening! It & Metolius are earliest on the market. In PNW 3 weeks ahead of earliest Arkansas CVs
- Large, good flavor,
- Stays black in freezer & refrigeration
- Very productive
- Ships well but just barely firm enough
- Fills early niche in Calif. & Northwest



Silvan

Metolius

Obsidian



Obsidian NC



Metolius

- Fresh Market
- Thorny, trailing
- Very early
- Productive
- Excellent flavor
- V. uniform shape
- Firmer than Obsidian in field
- Very uniform shape & size
- Working well in some wholesale fresh programs



Metolius NC



Wild Treasure

- Combines ‘Waldo’ s disease resistance, thornlessness, machine harvestability & productivity with wild *R. ursinus* excellent flavor and good growth habit
- V. small fruit!! Bakery or “wild” mkt.
- Needs careful training- canes v. thin



Wild Treasure





Blackberry and Raspberry Information Portal | North Carolina Cooperative Extension

http://rubus.ces.ncsu.edu/ RSS Q+ Doyle's thornless

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SPOTLIGHT

Blackberry Budget Program 2011
N.C. State University has developed and compiled sample operating budgets to guide N.C. blackberry growers in tracking, maintaining and managing their business costs. Growers can plug their own numbers **MORE »**

At the moment, there are no upcoming events listed.

NEWS

View All

Blackberry & Raspberry Seasonal Checklist (Winter 2012)
(Download a PDF of the Winter 2012 Checklist) Plant growth and development Plant is not visibly growing during the winter months, although many blackberries will retain their leaves through the winter. Some differentiation is **MORE »**
Posted: 2/11/13

Blackberry & Raspberry Seasonal Checklist (Fall 2012)
(Download a PDF of the Fall 2012 Checklist) Plant growth and development Primocanes continue to grow, but slow down. Flower buds start to form. Primocane leaves senesce late-fall. Harvest Primocane harvest continues until frost. **MORE »**
Posted: 2/3/13

Blackberry & Raspberry Seasonal Checklist (Summer 2012)

Blackberry & Raspberry Seasonal Checklist (Spring 2012)

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The new NCSU Cooperative Blackberry and Raspberry

Get the latest checklist out

Resources

- Southern Region Small Fruit Consortium
 - www.smallfruits.org
 - Quarterly newsletter, chores, production guides
- Blackberry and Rapsberry Portal
 - <http://rubus.ces.ncsu.edu/>
 - General production info, yield data, post harvest data
- Team Rubus Blog <http://teamrubus.blogspot.com>
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