Bramble Culture and Management

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## Red/Black Raspberry Components

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>ORAC(^1)</th>
<th>Ellagic(^1) Acid mg/g</th>
<th>Vitamin(^2)</th>
<th>Fiber(^2) Total Dietary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bristol</td>
<td>303-364</td>
<td>0.52</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>Jewel</td>
<td>415-451</td>
<td>0.39</td>
<td>70</td>
<td>10</td>
</tr>
<tr>
<td>Red</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caroline</td>
<td>213</td>
<td>0.30</td>
<td>380</td>
<td>152</td>
</tr>
<tr>
<td>Heritage</td>
<td>53-90</td>
<td>---</td>
<td>280</td>
<td>115</td>
</tr>
</tbody>
</table>

\(^1\) Brunswick Laboratory – 2001
\(^2\) Covance Laboratory – 2001
What Is A “Bramble”? 

• Any plant belonging to the genus *Rubus*

• Member of the rose family (Rosaceae)
  – Close relatives include strawberry and rose
  – More distant relatives include apple and pear

• Brambles have perennial crowns with biennial shoots
  – 1\textsuperscript{st} year *primocanes* grow vegetatively
  – 2\textsuperscript{nd} year *floricanes* bear fruit and die
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Bramble Types

Raspberries
- Floricane
  - Early summer harvest
    - Red, Purple, Gold, Black
- Primocane
  - Late summer – Fall harvest
    - Red, Gold

Blackberries
- Floricane
  - Mid-summer harvest
- Primocane
  - Late summer/Fall harvest
- Thorny/Thornless
Choose a Favorable Site

- Excellent drainage—no wet feet!
- Full sun
- Air circulation that promotes rapid drying of plants
  - Plant rows in the direction of prevailing winds if possible
  - In warmer areas, plant brambles on north-facing slopes to avoid solar heating in winter
Choose a Favorable Site

• Compatible cropping history
  – No history of Phytophthora root rot
  – No history of Verticillium wilt (5–10 yrs) or recent planting of susceptible crops (brambles, strawberries, tomatoes, peppers, eggplant, potatoes)
  – No recent history of crown gall (2–3 yrs)
  – No nearby bramble plantings or wild brambles that cannot be removed (500–1000-foot buffer)
  – Be aware of any residual herbicides
Prepare the Site

- Test for soil organic matter (4–6% is ideal) and add “green manure” or compost as needed
- Test for harmful nematodes (dagger and root-lesion nematodes)
  - Reduce populations by biorenovation with rapeseed (1 or 2 crops) or fumigation
- Control perennial weeds
Prepare the Site

- Create raised beds to improve drainage
- Remove any wild brambles and wild (multiflora) roses within 500 to 1000 feet
- When replanting, consider crop rotation to reduce populations of soilborne pathogens and nematodes
Bramble Varieties
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Summer-Bearing Red Raspberry Varieties

- Early

- Mid-Late
‘Reveille’
Primocane Bearing Red Raspberry Varieties

- **Early**
  - ‘Polana’ ‘Jaclyn’ ‘Autumn Britten’ ‘Caroline’
- **Mid-Late**
  - ‘Josephine’, ‘Heritage’, ‘Deborah’
- **Golden**
  - ‘Anne’, ‘OAY-F1’
‘Jaclyn’
‘Autumn Britten’
Jaclyn Caroline with ‘Caroline’
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Floricane Bearing Purple Raspberry Varieties

• ‘Royalty’
  – Red or purple
• ‘Brandywine’
Floricane Bearing Black Raspberry Varieties

- ‘Bristol’
- ‘Jewel’
- ‘Haut’
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Floricane Bearing Thornless Blackberry Varieties

• Semi-Erect
  ‘Chester’, ‘Triple Crown’
  ‘Dirksen’, ‘Hull’

• Erect
  ‘Apache’ ‘Arapaho’
  ‘Navaho’ ‘Ouachita’
Floricane Bearing Thorny Blackberry Varieties

- ‘Choctaw’
- ‘Black Butte’
- ‘Kiowa’
- ‘Chickasaw’
- ‘Shawnee’
- ‘Illini Hardy’
- ‘Chesapeake’
“Armed and dangerous...
Types of Bramble Propagules

Dormant sucker

Tip-layer

Tissue-culture plug
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Bramble Establishment

• Planting Procedure
  - plant early spring
  - raised beds – 2.5m spacing
  - plastic mulch (white on black)
  - drip irrigation
  - year 2 – remove plastic
    - fruit in fall of second leaf
Bramble Irrigation and Fertigation
## Bramble Culture and Management

### Nutrition (lbs of N/Acre)

<table>
<thead>
<tr>
<th>Type</th>
<th>Year</th>
<th>Irrigated</th>
<th>Non-Irr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primo RR</td>
<td>1</td>
<td>25-40</td>
<td>25-35</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>60-80</td>
<td>50-70</td>
</tr>
<tr>
<td></td>
<td>3+</td>
<td>90-120</td>
<td>70-90</td>
</tr>
<tr>
<td>Flori RR</td>
<td>1</td>
<td>25-35</td>
<td>25-30</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>45-55</td>
<td>35-45</td>
</tr>
<tr>
<td></td>
<td>3+</td>
<td>60-80</td>
<td>40-60</td>
</tr>
<tr>
<td>Flori PR/BB</td>
<td>1</td>
<td>25-30</td>
<td>20-25</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>35-45</td>
<td>25-35</td>
</tr>
<tr>
<td></td>
<td>3+</td>
<td>45-60</td>
<td>30-45</td>
</tr>
</tbody>
</table>

(Lower Range = Clay; Upper = Sandy)
Fertigation
Drip Irrigation for Small Fruits

Timing of Brambles Drip Irrigation

• Establishment
  – do not wet leaves
  – minimum leaching of pre-plant applied fertilizer

• Production years
  – Fertigation
    • control amount, location, timing
    • Nitrogen, Boron,
  – Bloom
    • critical for fruit set and fruit size!
  – Fruit development
    • critical for fruit size!
    • increase yield - size and development of 2º, 3º, 4º
    • reduce heat stress, increase sugar
  – Maintenance
    • reduce heat stress; Flower bud initiation; Primocane growth
Red Raspberry Pruning

Before winter pruning

After winter pruning
FIGURE 1C
4-wire horizontal trellis or "wide-topped" trellis with canes trained in an inclined fan pattern. Fruiting shoots on the outward slanting canes tend to dangle downward for easy visibility.
Drip Irrigation for Small Fruits
Black Raspberry Training

Before winter pruning

After winter pruning
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Blackberry Training

Before winter pruning  After winter pruning
Bramble
Season Extension
1990 "Heritage" Yield - NJ

% of Total Yield

Month

August  September  October

March
FRC
Control
(no FRC)
Soft tip
Primocane Season Extension - Cream Ridge, NJ
Heritage Bloom Delay - 1998

The bar chart shows the Heritage Bloom Delay for different months (Aug, Sept, Oct, Nov) and treatments (FRC, Control, Lt Tip 6/24, Hd Tip 6/24). The total values are also provided.
Heritage Bloom Delay Summary

- Tipping successfully delays harvest but non tipped canes always have higher yield
- Floating Row Covers successfully give earlier yield and can increase yield
- A combination of FRC and soft tip in late June along with non treated primocanes will extend harvest season earlier and later as well as stagger production peaks
Bramble Pest Diagnosis and Management
Growing Healthy Brambles

• Managing bramble diseases requires using a “toolkit” with many different tools
  – **Suitable varieties**: Choose varieties adapted to your site, with disease resistance where possible
  – **Healthy stock**: Buy clean, virus-indexed plants from a reputable source
  – **Sound cultural practices** from site selection through postharvest handling of fruit
  – **Appropriate chemical controls**: Use a season-long protectant fungicide program for diseases that respond to chemical controls
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