

This update is produced by Dr. Dalphy Hartevelde, postdoctoral research associate at WSU Mount Vernon Research and Extension Center. Her research focuses on the epidemiology and control of fungal diseases of highbush blueberry in the Pacific Northwest. This weekly "Mummyberry Update" provides information on the timing of apothecia (mushrooms) development from mummified overwintering berries in Washington's Skagit and Whatcom counties. The apothecia produce infectious ascospores that infect emerging flower and leaf buds (Figure 1). The first two tables show the average percentages of flower and leaf buds at different developmental stages of four different cultivars and indicates when susceptible tissue is available on the plants. The third table shows the different developmental stages of mummies of the pathogen and when the mummies are producing ascospores (when cups or mushrooms are more than 2 mm open). This information is provided to help the timing of disease management practices to control mummyberry. Development of mummies and host reflect conditions occurring in the two fields we are currently monitoring and may be different from stages of development in other blueberry fields in these same counties, in different counties, or for different blueberry cultivars.

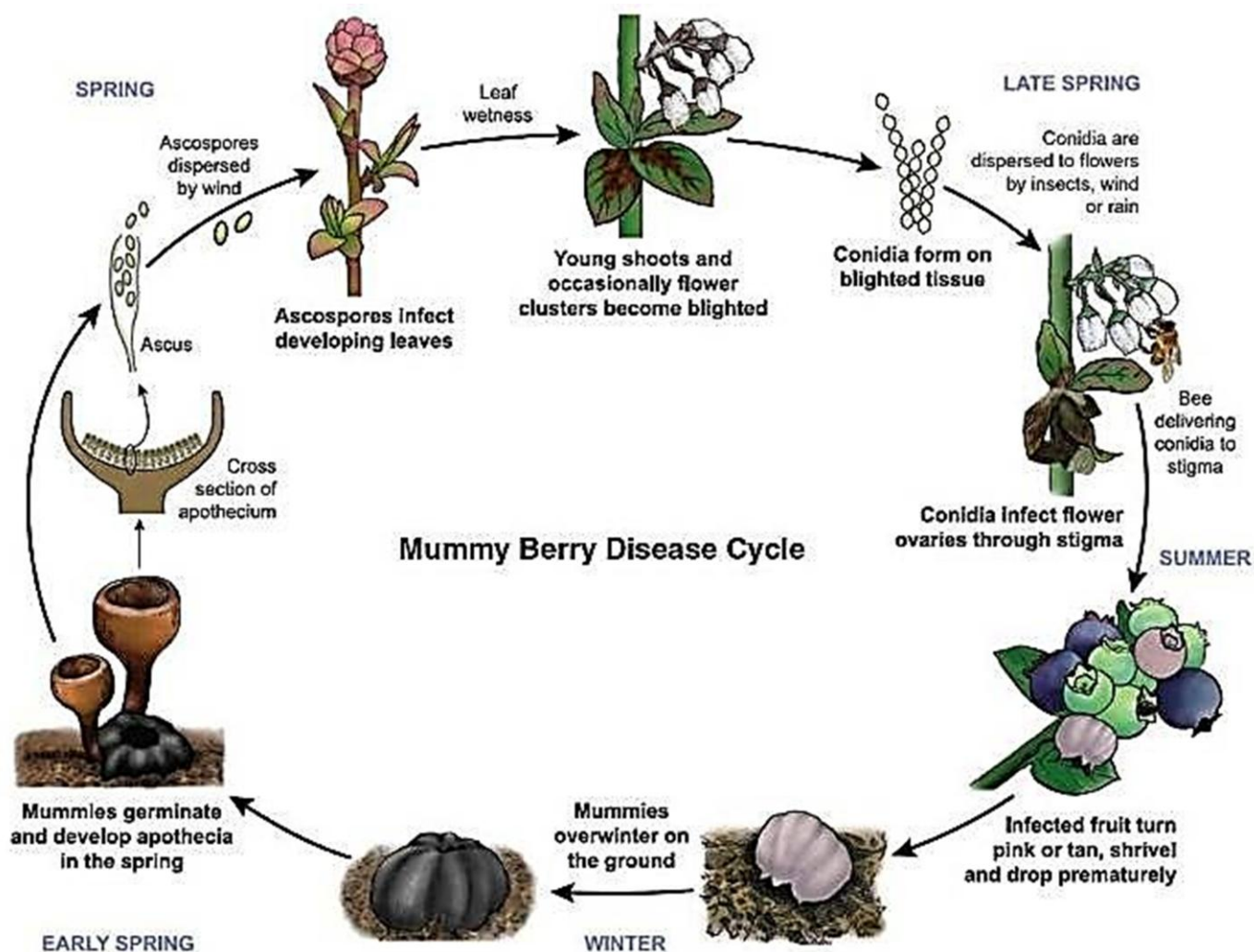


Figure 1: Disease cycle of mummy berry of blueberry. Annemiek Schilder, Michigan State University

### March Week 3- (3/14-3/18)

#### Flower Stage



Bud swell



Bud burst



Tight cluster

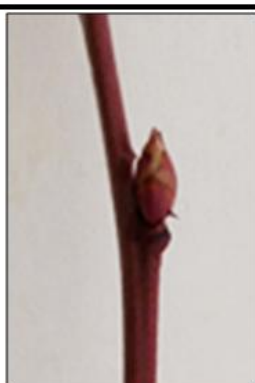


Early pink bud

|         |          | Bud swell | Bud burst | Tight cluster | Early pink bud |
|---------|----------|-----------|-----------|---------------|----------------|
|         |          |           |           |               |                |
| Whatcom | Duke     | 0.0%      | 40.3%     | 58.3%         | 1.4%           |
|         | Draper   | 0.9%      | 40.7%     | 58.3%         | 0.0%           |
|         | Bluecrop | 0.0%      | 11.1%     | 86.1%         | 2.8%           |
|         | Liberty  | 1.4%      | 36.1%     | 62.5%         | 0.0%           |
| Skagit  | Duke     | 0.0%      | 20.4%     | 68.5%         | 11.1%          |
|         | Draper   | 0.0%      | 24.3%     | 73.6%         | 2.1%           |
|         | Bluecrop | 0.0%      | 17.6%     | 82.4%         | 0.0%           |
|         | Liberty  | 0.0%      | 34.7%     | 56.9%         | 8.3%           |

Percentages represent averages of three fields per cultivar for each county. Red indicates susceptible stage for mummy berry

#### Leaf Stage



Bud swell



Early green










Late green



Shoot expansion

|         |          | Bud swell | Early green | Late green | Shoot expansion |
|---------|----------|-----------|-------------|------------|-----------------|
|         |          |           |             |            |                 |
| Whatcom | Duke     | 0.0%      | 41.7%       | 44.4%      | 13.9%           |
|         | Draper   | 0.0%      | 44.4%       | 47.2%      | 8.3%            |
|         | Bluecrop | 0.0%      | 4.2%        | 37.5%      | 58.3%           |
|         | Liberty  | 0.0%      | 51.4%       | 44.4%      | 4.2%            |
| Skagit  | Duke     | 0.0%      | 56.5%       | 32.4%      | 11.1%           |
|         | Draper   | 0.0%      | 43.8%       | 18.8%      | 37.5%           |
|         | Bluecrop | 0.0%      | 21.3%       | 39.8%      | 38.9%           |
|         | Liberty  | 19.4%     | 45.1%       | 22.2%      | 13.2%           |

Percentages represent averages of three fields per cultivar for each county. Red indicates susceptible stage for mummy berry

| Mummies   |  |  |  |  |  |  |  |
|---|---|---|---|---|--|---|---|
|   | No development  | Stipes  | Fundament   | Fundament complete  | Apothecia (<2mm)   | Apothecia (>2mm)  | Apothecia end   |
| Whatcom   | 49  | 9   | 11  | 4   | 4  | 20  | 2   |
| Skagit  | 59  | 5   | 4   | 8   | 9  | 9   | 4   |
| Percentages of mummies at each stage are out of 100 mummies per field per location. Red indicates release of infectious spores. |   |   |   |   |  |   |   |

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