

BLUEBERRY (*Vaccinium corymbosum*)  
Mummy Berry; *Monilinia vaccinii-corymbosi*

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### **Long term survival of mummy berry pseudosclerotia, 2018-2021.**

Based on direct observations during 2017, pseudosclerotia (mummies) within a blueberry planting can survive and produce apothecia 2 years after contact with the soil surface. A 7 x 55 ft section of land at the Botany and Plant Pathology Field Laboratory that had never been planted to blueberries was selected for multi-year observations of pseudosclerotia germination. Plots were tilled with a walk behind Troybuilt rototiller prior to mummy distribution. Mummified fruit was collected from many different blueberry bushes during the 2018 harvest season at an organic farm near Eugene, OR and stored in a cold room. Mummies were obtained on 21 July 2018, spread out in a thin layer and allowed to dry on newspaper. Dry mummies were placed in 10 rows 2 inches apart with 100 mummies each for a total of 1,000 mummies in a 5 x 5 ft area, and partially covered with soil on 26 Sep 2018. This plot was replicated 8 times with 1 ft between plots for a total of 8,000 mummies. Although mummies were placed in neat rows, many of them were scattered and/or grouped by foraging earthworms within 24 hours. A similar set of 6 x 6 in square corals were also placed out in the same area, each containing 100 mummies and replicated 15 times with 3 ft between plots. Plots were sprayed with Makaze (2 fl oz/gal) plus Stinger (2 ml/ gal) on 13 Feb 2019 and with Makaze (2 fl oz/gal) plus Rely 280 (2 fl oz/ gal) on 15 Oct 2019 with a “Green Thumb” hand-pump sprayer for weed management. Each plot was generally observed for mummies and apothecia in the springs of 2019, 2020 and 2021.

#### **Spring 2019**

Rainfall for the dormant season (Oct 2018 to Mar 2019) was 9.7 inches below the 115 yr average but temperatures were average. April precipitation was 3.4 inches above normal which led to localized flooding from April 9 to 11 in other parts of the farm but not in these “mummy gardens”. Across the farm in a field of Berkeley blueberries, pseudosclerotia (mummies) were at germination on 18 Mar, at emergence on 25 Mar, a few at sporulation on 29 Mar, apothecia were also observed 5 Apr but no more found on 8 or 12 Apr for an approximate 8 day primary infection period. Very few apothecia were observed in this block compared with previous growing seasons.

Black pseudosclerotia were easily observed all spring of 2019 from Feb through Apr in the mummy gardens. One mummy was at germination and 2 apothecia, each in separate plots, were first observed on 8 Apr. A total of 5 apothecia were observed on 12 Apr, mostly in one plot, and another 2 apothecia were observed on 15 Apr but no more were observed on 22 Apr for an approximate 7 day primary infection period. The maximum number of apothecia in any one plot during any one observation period was 4 (or 0.4%) and the minimum was 1.

#### **Spring 2020**

Rainfall for the growing season (Oct 2019 to Sep 2020) was almost half of the 116 yr average. Black pseudosclerotia were partially buried by gopher activity in 3 of the 1,000 mummy plots and thus were not easily seen. All other 1,000 mummy plots had many easily observed pieces of partial or whole pseudosclerotia. Apothecia were first observed on 16 Mar 2020 and continued to appear until 9 Apr for a 24 day infection period (Figure 1). The maximum number of apothecia in any one plot during any one observation period was 18 (or 1.8%) and the minimum was 0 (Figure 1). On 26 Mar the average number of apothecia was 3.6 with a standard error of 2. The 100 mummy plots had a similar number of apothecia observed over a similar time period (Figure 1).

Across the farm in a field of Berkeley blueberries, pseudosclerotia (mummies) were at germination on 2 Mar and a few apothecia were observed 25 Mar 2020 but very few when compared with previous growing seasons.

#### **Spring 2021**

Rainfall for the dormant season (Oct 2020 to March 2021) was close to normal but spring rainfall was the second lowest ever recorded. Weed growth and plant debris was burned away on 17 Feb and 10 Mar so mummies could be more easily observed. Plots still had many easily observed pieces of partial or whole pseudosclerotia. Apothecia were first observed on 29 Mar 2021 and continued to appear until 12 Apr for a 14 day infection period (Figure 2). The maximum number of apothecia in any one plot during any one observation period was 3 (or 0.3%) and the minimum was 0. The 100 mummy plots had a similar number of apothecia observed over a similar time period (Figure 2).

Across the farm in a field of Berkeley blueberries, pseudosclerotia (mummies) were at germination on 22 Feb, emergence on 8 Mar and a few apothecia were observed 29 Mar 2021 but very few when compared with previous growing seasons.

**Future**

Plots will be maintained with minimal herbicide use to manage weeds and observed in future years for apothecia formation.

**Acknowledgement:** We wish to thank Indigo of Royal Blueberries for collection of mummies for our use in this experiment.

**Figure 1.** Average number of apothecia observed per plot in 2020.



**Figure 2.** Average number of apothecia observed per plot in 2021.

