Instructions for Collecting and Mailing Gray Mold Samples to Clemson University for Fungicide Resistance Profiling

The Schnabel lab at Clemson University identifies potential fungicide resistance problems in commercial strawberry fields and provides location-specific disease and resistance management advice. Below are specific instructions on how to send your samples!

1. Preparation of Forms:

- To get started print out the *Strawberry Botrytis Resistance Profile Form* to send with **EACH** sample, located on the first page of this instruction sheet. Please make sure that each form is completed and clearly identifies which sample it belongs to.

2. Collection of Samples (Flowers/Leaves OR Fruit Swabs):

- We accept gray mold from **dead flowers (preferred)** in spring, leaves, and spores from fruit.
  - Early in the season you may send dead flowers and leaves within a zip lock bag.
  - Later in the season you may send cotton swabs with spores from fruit for analysis individually wrapped to avoid contamination (see instructions below).
- <u>Collection of gray mold from dead flowers or dead leaves (early season):</u>
  - Obtain 20-40 dead strawberry flowers **OR** 150 healthy strawberry flowers from throughout the strawberry field you would like to have tested. Dead strawberry flowers are preferred (Fig. 1); it is much harder to get the fungus out of healthy flowers. Sometimes we can grow the fungus from dead leaves (Fig. 2). You may send as many dead leaves as you would like in addition to the flowers. These may be combined in one sandwich size zip lock bag.

Figure 1. Dead flowers next to a healthy flower (petals and sepals were removed). The dead flowers were asymptomatic upon collection, but revealed gray mold symptoms after 2 days in the laboratory.

Figure 2. Sometimes we can get the fungus from dead leaves. The dead leaves in this picture were asymptomatic upon collection but revealed gray mold after 2 days in the laboratory.

- Collection of gray mold from fruit (late season):
  - Obtain cotton swabs from a local pharmacy. Collect spores with swabs from 10 individual berries with **FRESH** gray mold lesions (Fig. 3). Make sure the 10 samples are spread out and represent the entire field. **Do not collect** from badly rotted fruit, old mummies, or discarded fruit on the ground!!!
  - Use a fresh cotton swab for **each** berry and carefully rub **one side** of the swab on the diseased portion of each berry **without touching the fruit itself**. The idea is to only use enough force to collect the fungal spores; there should be no strawberry juice on the cotton swab (Fig. 3). **The rubbed portion of the swab should look lightly gray.** A tiny bit of gray is sufficient for analysis. A minimum of 10 cotton swabs from 10 fruit should be submitted per location, put swabs individually in paper bags or envelopes and then all together in a zip lock bag.

Figure 3. Use cotton swabs to carefully collect spores from symptomatic fruit (upper left) without getting strawberry juice on the swab (lower left). The swab should look lightly gray, a tiny bit of gray color is sufficient for analysis. If the spores cannot readily be seen, mark the area with a sharpie (right).

3. Mailing your samples:

- Attach the *Strawberry Botrytis Resistance Profile Form* to the corresponding sample and send either by regular mail OR overnight to:

  Dr. Guido Schnabel
  Clemson University
  105 Collings St./220 BRC
  Clemson, SC 29634
  Cell 864-643-7131

4. Waiting for your Results:

- You will receive a notification email when your samples arrive to the laboratory.
- The results will be sent via email approximately 7 business days (flowers and leaves) and 4 business days (swabs) after the initial notification email.