

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 strawberry fields and provides location-specific management advice. We accept gray mold from flowers, leaves and fruit. Early in the season you may send flowers and leaves, later in the season you may send cotton swabs with spores from fruit for analysis.

Collection of gray mold from flowers or dead leaves (early season):

- Obtain 20 to 40 **dead** strawberry flowers **OR** 150 healthy flowers (it is much harder to get the fungus out of healthy flowers) from each strawberry field you would like to have tested (Fig.1). Sometimes the fungus is in dead leaves (Fig. 2). Send as many dead leaves as you like in addition to the flowers.



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:

- 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 old mummies or discarded fruit between rows (contamination problems). Again, do not use badly rotted or dried berries and do not pick up discarded berries from 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.



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 (lower right). A tiny bit of gray color is sufficient for analysis.

Mail the flowers or the 10 swabs together with information about the origin of the sample (Farm name, state), your name, phone number, and e-mail to:

Guido Schnabel
Clemson University
105 Collings St/220 BRC
Clemson, SC 29634
phone (864) 643 7131

When to expect your report: The day we receive the sample you will get an email notification. You can expect results and recommendations to be sent to you by email 7 days (for flowers and leaves if we get sufficient spores) or 4 days after notification (for swabs).

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