

**Project Title:** Using Anaerobic Soil Disinfestation for Management of Black Root Rot Disease of Strawberries

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**Why was this project funded?** Black root rot of strawberry is a destructive disease caused by one or more multiple fungal pathogens including *Fusarium* spp., *Rhizoctonia* spp. and, *Phythium* spp. Currently there are no effective chemical or biological strategies for controlling black root. Four to five years of rotating out of strawberries can lower black root rot incidence and severity but long rotations are not economical for strawberry growers. Anaerobic soil disinfestation (ASD) is a relatively new practice that has been shown to control soilborne diseases of tomato for 2-3 years. The objective of this project was to evaluate the efficacy of ASD in reducing black root rot disease incidence and severity on strawberry.

**Project outline:** At the time that we were awarded funding for this project we were unable to purchase strawberry plants as vendors were sold out. Therefore, we ordered plants for 2019. These will arrive in spring 2019 at which time the pot assays will be conducted. Because we were not able to start the project as described in the proposal we established an on-farm trial to evaluate ASD. Two carbon sources (wheat bran and molasses), a mixture of the two carbon sources, a chemical control (azoxystrobin plus aluminum tris) and a non-treated control (Table 1) were evaluated in a field with a history of black root rot disease. The trial consisted of four replications. Carbon treatments were incorporated into the test plots on 17 Jul, flooded, and covered with black plastic. Ten soil temperature probes were randomly placed under the black plastic to monitor soil temperature and will be removed on 2 Nov. Bare root strawberry (cv. Chandler) plants were planted on 5 Sep. Transplants for the chemical treatment were dipped in a mixture of azoxystrobin (8 fl oz/100 gal) and aluminum tris (2.5 lb/100 gal) prior to planting. Disease incidence was rated on 5 Oct and 19 Oct. Disease incidence will be rated again on 2 Nov and an addition two times in the spring.

**Take-home messages:** Preliminary incidence data indicates that average disease incidence is lowest in the plots treated with a mixture of wheat bran and molasses and highest in the molasses only treatment. However, disease pressure was low at this rating and thus inferences on efficacy for any of the treatments can't yet be made.

#### **Impacts:**

The project is on-going and we have yet to identify any impacts.

#### **What was discovered?**

We are still collecting data and thus no definitive results have been obtained. We will submit a post-project report upon completion of the greenhouse and field studies.