Could you fill us in a little bit about the two soil diseases that have been showing up more lately in local strawberry fields?

The two soil pathogens being found with increasing frequency in local strawberry fields are charcoal rot, caused by *Macrophomina phaseolina* and Fusarium wilt, caused by *Fusarium oxysporum* f. sp. *fragariae.* These are very challenging diseases for strawberry growers, so it is a good thing that one takes a little bit of time to learn about them.

Both diseases were discovered in southern California strawberry fields in 2005-2006, and then the first find of charcoal rot in our area was in 2011, closely followed by the first find of Fusarium rot. The two diseases are now becoming much more prevalent, with close to a dozen finds on the Central Coast of either disease right now.

Although these two pathogens are different genera and species, their disease symptoms in the field are the same. The diseases will first become noticeable as wilting and drying out of foliage, especially of the older, outer leaves. Cutting open the crowns of *Macrophomina* and *Fusarium* infected strawberry plants will show that the internal tissues are discolored dark to orange brown rather than the usual healthy white. These diseases will first be seen in infested fields when plants are is subjected to stresses such as weather extremes, water stress (shortage of water), poor soil conditions, or heavy fruit loads. In fields where these pathogens are not controlled, the diseased patches of infected strawberry plants can be quite large and appear to continue to spread from the initial problem area of the previous year. Even though charcoal rot and Fusarium wilt are separate diseases, they may both infest the same field.

It goes without saying that the management of these two diseases is imperative for growers. First of all, one should be not planting strawberry in fields having a known history of either of these two diseases. The second option is pre-plant fumigation, and it should be emphasized that bed-applied fumigants may not provide complete control because of disease inoculum remaining in the furrows and bed shoulders. Plant stress should be avoided as much as possible, because even though infected plants will eventually develop the disease once infected with either pathogen, stress will nevertheless hasten the development and increase the severity of symptoms. It is important too that growers and field operators more than ever pay attention to sanitation. The two fungi here won't spread so much with dust and the small amounts of soil transmitted by shoes and incidental contact, but will certainly be moved around as the clods of soil invariably clinging to farm implements and machinery. Starting ground work in uninfested fields and cleaning machinery well between fields are two highly recommended procedures as we confront the two challenges of charcoal rot and Fusarium wilt diseases in strawberries on the Central Coast.

Readers looking for a more complete description of these diseases and their effects in strawberries are encouraged to refer to the "Strawberries and Caneberries" blog, which contain several recent articles regarding Macrophomina and Fusarium in strawberries on the Central Coast.

http://ucanr.org/blogs/strawberries_caneberries/