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Crown Rot is a Serious Problem on Strawberry this Season

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Crown rot losses have been much greater this season than in previous years, and some growers have lost as many as 30% of their plants. Normally, perhaps 1 to 5% of the plants die as a result of crown rot and the disease has a rather minor impact on total yield. But, this season, crown rot has been more extensive and developed earlier than in past years. Samples began arriving at the disease clinic at GCREC in late October and 15 had already been diagnosed by mid-November. What has happened? Why have losses been so great this year?

Crown rot is caused by the fungus *Colletotrichum gloeosporioides*, affectionately known as *Cg* in our lab. This fungus can reach strawberry fields in Florida in two ways – on transplants arriving from other states and from local native vegetation. Historically, transplants were produced in Florida, but crown rot became such a serious problem that a solution had to be found. *Cg* is a high temperature pathogen and reproduces very well under Florida conditions, especially in summer. It was infecting most of the “home-grown” transplants, many of which subsequently died before producing fruit. So, growers started obtaining their transplants from California, Canada, or the northern U.S., where the cooler summer weather does not favor disease development. Therefore transplants from northern latitude nurseries do not become contaminated by *Cg* during propagation and usually arrive in Florida virtually free of the fungus. However, the same fungus that causes crown rot can persist on native vegetation, such as oak trees and wild grapes, which is often in close proximity to strawberry fruiting fields. Spores from this source of inoculum can move to strawberry fields early in the season, eventually resulting in some plant mortality. Losses from this source are usually low and tolerable.

This season, most of the strawberry fields with serious crown rot losses used transplants from North Carolina, and we suspect that these transplants arrived contaminated with *Cg*. 
$Cg$ is indigenous to North Carolina (at least at low elevations), as it is throughout the Southeastern U.S. With the high temperatures this fall in Florida, plants began to collapse shortly after the irrigation establishment period and have continued to decline and die. Transplants obtained from Canada and established in the same areas as North Carolina transplants have not generally had a serious problem with crown rot.

Transplant producers in North Carolina may have to adjust their production practices and move their operations to cooler, mountainous areas to avoid the fungus. Researchers from North Carolina State University are currently trying to determine the inoculum hosts in NC, so hopefully this problem can be resolved in the future. Cooler weather in the fall in future seasons and hopefully cooler weather during the next couple of months may slow the development of the disease as well. Application of fungicides such as Captan, Topsin M and Abound may slow the spread of the disease to other plants or fields but may only have a limited effect in controlling the disease on transplants that are already infected.