

Plant Clinic Diagnostic Service

Date: May 4, 2015

Plant clinic number: 2015-760-762

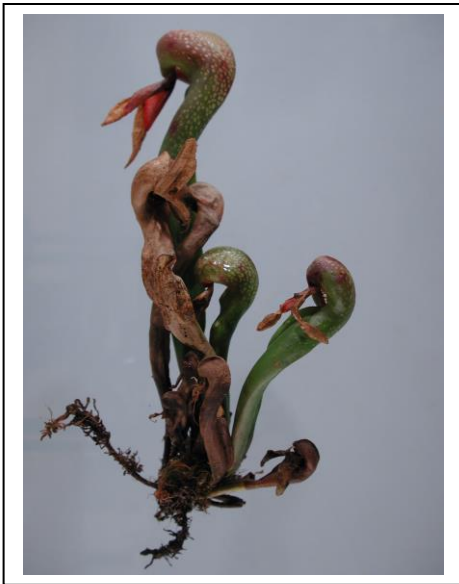
Client: Jeff Dallas
Sarracenia Northwest
[REDACTED]
Eagle Creek, OR 97022

Host: *Darlingtonia californica*, Siskiyou Mt. From

DIAGNOSIS:

Symptoms: Root rot

Cause: *Cylindrocarpon*-like fungus
Pythium



Notes:

Thank you for sending us these samples for our diagnosis. I believe these are the first *Darlingtonia* plants we have received, and the Plant Clinic has been here for over 60 years. I'm sorry the root rot problem was the reason for sending them in.

We tested all three plants for the presence of *Phytophthora* using a serological assay, and the results for all were negative (we did not detect it). We plated root tissue from the three plants onto three different nutrient media. We recovered some *Pythium* from samples 1 and 3, although not as much as the other organism we isolated.

The fungus we recovered from all three samples was the same thing: It looks like a species of *Cylindrocarpon*, or something closely related. This genus has recently been redefined and new genera have been assigned to the fungi that used to be in this group. We will have to do more extensive analyses of the fungus to properly identify it.

Taxonomic quibbles do not change the biology of the fungus: the *Cylindrocarpon*-like fungus is soil-borne and can persist for a while in the soil due to the formation of resting structures that are resistant to environmental degradation. As you have already discovered, good sanitation is a must, as is keeping the plants away from field soil. The *Trichoderma* product suggested on the carnivorous plant website in response to your post

(RootShield) doesn't actually have *Cylindrocarpon* the label, although a similarly-named but totally different fungus is. RootShield can be applied to bare-root plants (ornamentals). I have not heard of it causing disease on plants, but I don't have prior experience with *Darlingtonia*. These sorts of products (like the closely related Bio-Tam, which is a different species of *Trichoderma*) must be applied prior to planting, and will only work when the disease pressure is low. They tend to fail under high disease pressure, e.g. when there is a lot of the pathogen present and conducive environmental conditions, and they are not curative. I would suggest more traditional fungicides such as products containing iprodione and chlorothalonil, which are widely labeled for use on ornamentals. Be sure to use on a few plants first to make sure they do not cause them injury.

Regards,
Melodie Putnam
Diagnostician and Director,
OSU Plant Clinic