

**Incidence and Management of
Seed Transmission of *Cylindrocladium* Black Rot of Peanut
in Virginia**

Deborah Lea Glenn

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Patrick M. Phipps, Co-chairman

R. Jay Stipes, Co-chairman

Anton B.A.M. Baudoin, Member

R. Walton Mazingo, Member

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(ABSTRACT)

Seed transmission of *Cylindrocladium parasiticum* was investigated as a possible explanation for the higher-than-expected incidence of *Cylindrocladium* black rot (CBR) of peanut in fields fumigated with metam sodium. Sixty-three commercial seed lots from Virginia production fields were examined for the presence of seed with speckled testae, a symptom of seed infection by *C. parasiticum*. Speckled seed was present in conditioned seed lots in 1998, 1999, and 2000 at an average rate of 1%. Soon after pods were harvested, the fungus was recovered from speckled seed at high frequencies. During winter seed storage, pathogen survival remained high in seed stored at -13 and 4°C , but declined in some seed stored at 15°C and ambient temperatures. Speckled and normal seed with and without fungicide treatment was planted in steam-treated soil in the greenhouse and metam-treated field plots in 1999 and 2000. Speckled seed treated with captan + pentachloronitrobenzene (pcnb) + carboxin transmitted the pathogen to emerging plants in the greenhouse and field. Transmission levels depended on the amount of viable inoculum present in seed at the time of planting. In the field, yield losses were significant when 20% or more of the seed planted was speckled. The low incidence of speckled seed in commercial seed lots would not result in a loss of yield for growers, but may contribute to disease spread. Testing of additional seed treatment fungicides indicated that fludioxonil, tebuconazole, and thiram may offer the best protection against disease spread from seed transmission of *C. parasiticum*.

DEDICATION

This work is dedicated
to my parents
for their continuous love and support in everything I do,
no matter how out-of-the ordinary.

I am convinced that the encouragement I received from them while growing up
has given me a confidence that
I can always reach my goals and aspirations.

I would like to thank my entire family for their
strong support during the past two years.

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