

Testing biological control agents against Fusarium basal rot of onions in the Annapolis Valley

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Onions grown from seed in greenhouse

Fusarium basal rot refers to the rotting that begins in the basal plate of bulb onions, caused by the soil-borne, fungal pathogen *Fusarium oxysporum* f. sp. *cepae* (FOC).

The incidence and severity of Fusarium basal rot have recently increased in the Annapolis Valley, causing significant crop loss despite current control measures.



Infected onion field in Aylesford, NS

Biological control (adding an organism to the system that will decrease the disease incidence) is an ideal strategy to control a fungal pathogen: bio-control agents act against the pathogen in multiple ways, are otherwise beneficial to the plants, have low toxicity, and can be self-propagating.

Objective: to identify an effective bio-control agent in local soil that can be incorporated into a control strategy against Fusarium basal rot in the Annapolis Valley.



Soil sample



Fusarium sp.



Trichoderma harzianum
(possible bio-control agent)

Methods:

1. Take soil samples from local fields cropped for onions
2. Grow and isolate fungi from the soil
3. Identify fungal species using DNA barcoding
4. Propagate FOC and species with known bio-control potential
5. Test potential bio-control agents against FOC in both lab and greenhouse conditions



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