

# DISEASE MANAGEMENT IN ORGANIC BRASSICA SEED AND TRANSPLANTS



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## Background

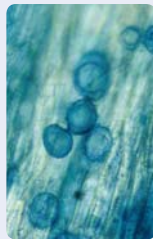
- Clean seeds and planting material are essential for good disease management, and are arguably even more important for organic growers.
- The major soil- and seed-borne fungal pathogens of brassicas are *Pythium* spp., *Rhizoctonia solani*, *Alternaria* spp., *Phoma*.
- The inclusion of companion species (for rootfly control) of variable quality creates additional disease management problems for plant raisers.
- This HDC project will evaluate a range of organically acceptable brassica seed and transplant treatments for their efficacy and cost effectiveness in controlling a range of common diseases.



## Pythium

- Soil-borne
- Damping off, root rots

**Right:** Root surface is easily sloughed off in affected plants.  
**Far Right:** *Pythium* oospores in an affected root



## Phoma

- Seed-borne
- Black leg, leaf spot, stem canker
- Damping off, reduced vigour

**Right:** *Phoma* lesion progressing down seedling stems from infected cotyledons



## Rhizoctonia

- Soil-borne
- Damping off and wirestem
- Head rot in the field

**Right:** Cauliflower seedling with damping off symptoms caused by *Rhizoctonia*



## Alternaria

- Seed-borne
- Reduced emergence / vigour
- Dark leaf spot in the field

**Right:** *Alternaria* sporulating on the surface of a brassica seed



## Project Plan

### Year 1

- Evaluate individual seed treatments in blotter and emergence tests (*Phoma* and *Alternaria* infected brassica seed, birds foot trefoil)
- Evaluate individual compost treatments for control of damping off in compost inoculated with either *Pythium* or *Rhizoctonia*.

### Year 2

- Evaluate best treatments/combinations in simulated production system

## Compost treatments

Triatum (*Trichoderma harzianum*)  
Prestop (*Gliocladium catenulatum*)  
Mycostop (*Streptomyces griseoviridis*)  
Subtilex (*Bacillus subtilis*)  
Revive (*Bacillus subtilis*)  
S17A (*Trichoderma viride*)  
Triatum + Green Waste  
S17A + Green Waste  
**Controls:**  
Untreated                      Thiram treated seed

## Seed treatments

Hot water  
Thyme oil  
Clove oil  
Mycostop (*Streptomyces griseoviridis*)  
Serenade ASO (*Bacillus subtilis*)  
BA2892 (Experimental product)  
BU1430 (Experimental product)  
BU1360 (Experimental product)  
**Controls:**  
Untreated                      Thiram treated seed