

White Mold of Vegetables

Bulletin #5084

Introduction

White mold is the common name for the fungus *Sclerotinia sclerotiorum*, which infects over 350 species of plants. It occurs commonly in Maine on crops such as beans, peppers, head lettuce, and cucurbits to name a few but there are few vegetables it will not attack. This fungus can cause extensive losses in the field and can continue to cause extensive post-harvest losses by rotting the fruit.

Environmental Conditions

At the beginning of the growing season, the fungus produces infective spores when the soil temperature is between 50 and 80°F (optimally 55-60°F) and when the soil moisture has been at field capacity for ten days. The spores are forcibly shot into the air when the relative humidity drops. These spores require a film of free water on the plant tissue to germinate but they can survive under low humidity until these conditions are met. At 75 °F they require 16 hours of free water in order to germinate and infect. Longer periods (2-3 days) are required at lower temperatures.

Symptoms

The common name “white mold” refers to the dense cottony growth that is produced under conditions of high humidity. However, the symptoms can vary greatly depending on the plant and the environment. Other common names for this disease are watery soft rot, stem rot, timber rot, crown rot, stem canker, stem rot, damping-off, pink rot, *Sclerotinia* drop, and wilt. Stem infections can appear as light tan to dark brown lesions from which the cottony growth appears during periods

of high humidity. The best diagnostic feature of this disease is the tiny (2-10 mm) black sclerotia which form within the cottony growth. The sclerotia look like tiny black pebbles and are often found on the inside of the stem when it is split open.

Survival and Dispersal

The sclerotia are the survival structures of the fungus and can be quite long-lived (up to 5 years). When the conditions are right, tiny cup-like mushrooms (apothecia) grow up from the sclerotia and spores are forcibly ejected from these into the air. The spores can be blown great distances (even from non-crop host plants outside the field) to land on susceptible plant tissues. Flowers and damaged tissues are the most easily colonized sites because they offer a readily available nutrient source. After these sites have been colonized the fungus then spreads by tissue to tissue contact. At harvest sclerotia are scattered throughout the field, and new sclerotia continue to form on crop residue.

Control

1. Rotation is of limited value because the sclerotia are long-lived and because spores can be blown in from outside the field (it should be practiced anyway to control other diseases). Non-susceptible rotation crops include corn and small grains.
2. Where possible, crop residue should be removed after harvest to prevent the post-harvest build-up of sclerotia.
3. Do not compost infected plants. 4) Avoid isolated fields surrounded by windbreaks. Such fields, especially when.

A Member of the University of Maine System

The Land Grant University of the State of Maine and U. S. Department of Agriculture cooperating
Cooperative Extension provide equal opportunities in program and employment

4. Avoid isolated fields surrounded by windbreaks. Such fields, especially when small, have poor air circulation with resultant high humidities.
5. Maintain proper spacing of rows and do not overcrowd plants within rows.
6. Plant rows parallel to the direction of prevailing winds to promote rapid drying of foliage and the soil surface.
7. Plant in well-drained soils. Raised beds dry out quickly and can be of some benefit.
8. Plastic and other mulches offer a barrier to spore dispersal.
9. Irrigate only when necessary.
10. Some varieties of various crops may be more or less resistant.
11. The fungicide thiophanate-methyl may give good control depending on the timing of sprays. Recently, a biological fungicide consisting of the fungus *coniothyrium minitans* (Contans) has been registered with the EPA but is not currently registered in Maine.

**When Using Pesticides
ALWAYS FOLLOW
LABEL DIRECTIONS!**

**Bruce A. Watt
Extension Plant Pathologist
2004**

Where trade names are used, no discrimination is intended and no endorsement by Cooperative Extension is implied.