Eggplant, Pepper, and Tomato

Black Mold

Howard F. Schwartz and David H. Gent

Identification and Life Cycle

Black mold is caused by the fungus *Alternaria alternata. A. alternata* can attack many fruits and vegetables, including tomato and pepper. The disease is common on tomato in the High Plains. Black mold affects ripe fruit exposed to free moisture, and is usually associated with heavy dew, rain, or overhead irrigation. The black mold pathogen can be found on almost any decaying organic matter, and is a very common soil inhabitant. Fruit infection occurs when windblown or water-splashed spores are deposited onto fruit, or plants contact infested soil. Disease generally occurs in and around wounds on fruit, but the pathogen can also infect healthy uninjured plants. The black mold pathogen survives between tomato crops saprophytically on decaying organic matter in the soil and pathogenically on weeds and crops.

Plant Response and Damage

Black mold symptoms appear on ripe fruit, although infection may occur on green fruit. Symptoms vary from small, superficial, brown flecks to large, sunken, black lesions. During warm, humid weather the fungus produces a black, velvety layer of spores on the surface of lesions. Lesions are common on fruit wounds caused by mechanical injury or sunscald. The disease can be very damaging to fresh market tomatoes, especially if the fruit is predisposed by another injury.

Management Approaches

Biological Control

No biological control strategies have been developed for black mold.

Cultural Control

Avoid wounding fruit during field operations and harvest. Avoid overhead irrigation if possible. Do not leave fruit on the vines longer than necessary, as fruit becomes more susceptible to black mold as it ages. Promote rapid drying of fruit after irrigation, rain, or morning dews by spacing plants as far apart as possible and planting rows parallel to the prevailing wind direction.

Chemical Control

Fungicides are often necessary to manage black mold at very low levels, but fungicide sprays should be combined with as many cultural control strategies as possible to be most effective. In California, fungicide applications beginning 4 to 6 weeks before harvest are most successful, but sprays applied later than 2 weeks before harvest are of little value. Sprays applied just prior to rain significantly reduce black mold losses.

Product List for Black Mold:

Pesticide	Product per acre	Application Frequency (days)	Remarks
Azoxystrobin			
Quadris	5-6.2 oz	5-14 days	Maximum of 5 applications or 1.15 quarts per season; Alternate Quadris with fungicides with different modes of action; 0 day PHI
Chlorothalonil and Chlorothalonil Mixtures			
Bravo 720, Ensign	1.5-3 pt	7-14 days	Do not graze or feed debris to livestock; 7 day PHI
Bravo Ultrex	1.7-2.2 lb	7-10 days	Maximum of 18.3 pounds per season; 0 day PHI
Bravo Weather Stik	1.5-3.0 pt	7-10 days	Maximum of 20 pints per season; 0 day PHI
Echo 720	1.5 -3.0 pt	7-10 days	Maximum of 2.5 gallons per season; 0 day PHI
Echo 90DF	1.7-2.5 lb	7-14days	Maximum of 16.67 pounds per season; 0 day PHI
Echo Zn	3-4 pt	7-10 days	Maximum of 3.6 gallons per season; 0 day PHI
Ridomil/Bravo	2-3lbs	14 days	Maximum of three

			applications; 14 day PHI
EBDC/Zoxamide			
Gavel 75DF	1.5-2.0 lb	7-10 days	Maximum of 8 applications or 16 pounds per season; 5 day PHI; include a nonionic surfactant to improve performance
Pyraclostrobin			
Cabrio	8-12 oz	7-14 days	Maximum of 6 application or 96 oz per season; 0 day PHI

The information herein is supplied with the understanding that no discrimination is intended and that listing of commercial products, necessary to this guide, implies no endorsement by the authors or the Extension Services of Nebraska, Colorado, Wyoming or Montana. Criticism of products or equipment not listed is neither implied nor intended. Due to constantly changing labels, laws and regulations, the Extension Services can assume no liability for the suggested use of chemicals contained herein. Pesticides must be applied legally complying with all label directions and precautions on the pesticide container and any supplemental labeling and rules of state and federal pesticide regulatory agencies. State rules and regulations and special pesticide use allowances may vary from state to state: contact your State Department of Agriculture for the rules, regulations and allowances applicable in your state and locality.

Categories: Eggplant, Pepper, Tomato, Disease, Black Mold

Date: 04/01/2007