

Black spot disease on strawberries

Colletotrichum acutatum



Fruit with black spot (Gerald Holmes, California Polytechnic State University at San Luis Obispo, Bugwood.org)



Dry infected strawberry twig (Jonas Janner Hamann, Universidade Federal de Santa Maria (UFSM), Bugwood.org)



Margins folded downwards in infected leaf (Jonas Janner Hamann, UFSM, Bugwood.org)

Prevention	Monitoring	Direct Control	Direct Control	Restrictions
<ul style="list-style-type: none"> • Avoid planting strawberries on a plot previously infected • If disease is known from previous season, solarize the soil by covering with a clear polythene sheet for 4 to 6 weeks during hot days before planting • Thoroughly clean all soil debris from the plantlets to destroy any fungi in root and crown before planting. • Crown thinning and weed control can also aid management • Buy clean planting materials from a HCDA certified nursery. • Mulch with straw or hay and/or avoid overhead irrigation to prevent splashing and thus spread of the disease • Destroy crop residues after harvesting an infected plot and uproot all volunteer strawberries to reduce likelihood of disease recurrence, otherwise residues should be left on the field • Rotate with beans or onions for at least 9 months to get rid of the disease as it survives in soil 	<ul style="list-style-type: none"> • This is a soil borne fungal disease that is spread by water splashes • Be vigilant during warm humid conditions. Generally, it shouldn't be a problem in dry weather • Scout for dark brown to black lesions (3-8mm) on leaf margin tips. These leaf tips later roll and fold downwards • Dark brown lesions usually occur first on leaves and stems if the disease is in the soil, but may appear on fruits first if fungal spores land on the flower or leaf. With time, they enlarge into dark brown to black elongated, dry, sunken lesions which often girdle the whole stem. Leaves or entire daughter plants may wilt and die • On fruits, 1/2 cm small, sunken, oval-to-round brown spots (on green fruit) or black spots (red fruit) may expand over most the fruit in 2-3 days. Tiny dark brown fruiting bodies (spores) are present, which differentiate this from leaf spot disease • Decayed tissue is firm and dry which differentiates it from 'wet' Botrytis fungus • Consider action when infection is between 20-30% and if it occurs before complete formation of canopy 	<ul style="list-style-type: none"> • Remove infected plant parts and bury them deep outside the field or burn them. Carry diseased materials in a bag or sack to prevent further spores spreading on your way. • Use calcium nitrate for nitrogen supply instead of ammonium e.g. C.A.N. Ammonium forms of nitrogen are readily accessible to the pathogen thus it multiplies fast. 	<ul style="list-style-type: none"> • For foliar sprays, thorough coverage of leaves and fruit is required. Alternate the chemicals to avoid resistance build up. Fungicides may only prevent further spread of the disease and cannot cure the crop once infected. Avoid spraying chemicals during the harvesting/ ripening stage. • When using a pesticide or botanical, always wear protective clothing and follow the instructions on the product label, such as dosage, timing of application, pre-harvest interval, max number of sprays, restricted re-entry interval. Do not empty into drains and water sources. • Pre-harvest intervals of pesticides in a certain crop must also be followed for the intercrop, and may be even longer • WHO toxicity class II products may not be allowed in local IPM schemes. 	<ul style="list-style-type: none"> • WHO toxicity class U (Unlikely to present acute health hazard in normal use). Pre-Harvest Interval :14 days; Restricted Re Entry Interval: 12 hrs. Do not apply in combination with, immediately before, or following oil sprays. Toxic to fish; avoid spraying near water. • WHO class II (moderately acute hazardous); Toxic to earthworms & fish; Avoid spraying near water bodies. PHI: 7 Days; REI: 12 hrs. Max of 2 sprays per season

Kenya

CREATED/UPDATED: June 2017

AUTHOR(S): MBUGUA Teresia Wairimu, Ministry of Agriculture- County Government of Kiambu, Kenya

EDITED BY: Plantwise