hdl.handle.net/1813/42877

NEW YORK STATE IPM Integrated Pest Management PROGRAM

Invasive Species & Exotic Pests

Asiatic Brown Rot *Monilinia polystroma*

Juliet Carroll and Michelle Marks, New York State Integrated Pest Management Program, Cornell University

Asiatic brown rot, caused by the fungus *Monilia polystroma,* is native to Japan. Unlike our native brown rot which infects primarily stone fruit, Asiatic brown rot readily infects apple and pear. Asiatic brown rot has been introduced into China and Hungary where it is affecting apple orchards. The fungus travels from place to place on infected plant material – young trees, nursery stock, and fruit. Because brown rot fruit infections can be latent (essentially invisible), people can unknowingly bring the disease into the U.S. from other countries.

European brown rot blighting new growth on peach. Photo: K. Cox, Cornell University.

Concern

Asiatic brown rot can be extremely destructive to stone fruit, including cherry, peach, nectarine, apricot and plums, but also apple and pear trees. On infected trees, brown rot kills the blossoms and new shoots, rots fruit, and cankers stems. In European apple orchards, losses of 7-36% have been recorded. The disease can also infect ornamental flowering fruit trees. If introduced to the U.S., there is a high probability that Asiatic brown rot would become established, particularly in the Northeast, and this could be of substantial concern to our apple farms that are growing varieties resistant or immune to apple scab.

An apple destroyed by brown rot infection. Photo: K. Cox, Cornell University.

Description

Brown rot manifests on blossoms as wilting and browning of flower parts and emerging shoots. Infections on twigs and small branches, called cankers, are brown, oval and elongated, and usually sunken with a darker margin. Diseased fruit, the primary and most frequent symptom, develops soft brown spots which may enlarge and become

Cornell Cooperative Extension

NEW YORK STATE Agriculture and Markets

covered in grey-brown tufts of fungal growth, covered with spores. Sometimes these tufts of spores develop in a characteristic concentric ring pattern on the fruit. All diseased plant parts may show signs of the grey-brown tufts of fungal growth. Spores travel to other plants primarily via rain and wind.

Damage

By killing blossoms and rotting fruits, the fungus can destroy or severely reduce crop yields. When weather is rainy, humid and warm, the damage may be even greater. Asiatic brown rot poses a considerable threat to stone fruit, apple and pear production if it becomes established in the U.S. Current IPM practices for apple varieties that are scab resistant may fall short of controlling Asiatic brown rot.

For More Information

Asiatic brown fruit rot—*Monilia polystroma.* 2010. USDA, Agricultural Research Service, Systematic Mycology and Microbiology Laboratory—Invasive Fungi Fact Sheet. http://nt.ars-grin.gov/taxadescriptions/factsheets/index.cfm?thisapp=Moniliapolystroma

Brown rot can spread by contact from an infected fruit to others in a fruit cluster. Photo: K. Cox, Cornell University.

Produced by the New York State Integrated Pest Management Program, which is funded through Cornell University, Cornell Cooperative Extension, the NYS Department of Agriculture and Markets, the NYS Department of Environmental Conservation, and USDA-NIFA. Special funding for this project was provided by USDA Farm Bill 10201. Funding administered by the NYS Department of Agriculture & Markets and USDA-APHIS. Design by Karen English, New York State IPM Program. Cornell Cooperative Extension provides equal program and employment opportunities. Updated 3/2018 at hdl.handle.net/1813/42877

www.nysipm.cornell.edu