Fact sheet

Stewart's disease of maize

What is Stewart's disease?

Stewart's disease is a foliar and sometimes systemic bacterial disease caused by the pathogen *Pantoea stewartii* (synonym *Erwinia stewartii*). The main host of this disease is maize, especially the sweetcorn varieties, but it is also known to infect other Poaceae species often with very few symptoms. It can cause losses between 40-100% depending on the maize variety. This pathogen is spread by, and overwinters in the gut of, an exotic insect vector – the Corn flea beetle (*Chaetocnema pulicaria*).

Jerald K Pataky, University of Illinois

Systemic infection of maize.

What does it look like?

Pantoea stewartii is capable of causing Stewart's disease on both young and mature plants. The infection of plants around the seedling stage produces a systemic infection whereas infection of older plants produces a leaf blight. The initial symptoms of both the types of infection include water-soaked lesions around insect feeding sites, followed by foliar chlorotic streaks parallel to the veins and wilt. In susceptible varieties streaks may cover the full length of the leaf. In systemically infected plants a soft rot may develop in the pith and the growing point. Copious tiller growth may occur as a result of main stalk death.

Frank Peairs, Colorado State University, Bugwood.org

The vector of Stewart's disease, the Corn flea beetle.

What can it be confused with?

Stewart's disease can be mistaken by diseases and disorders which cause yellow or pale green foliar streaks. This includes iron and other nutrient deficiencies, insect injury and the fungal disease Northern leaf blight (*Exserohilum turcicum*). Microscopic examination for the presence of bacterial ooze is required to identify the disease. If you see unusual symptoms please contact an agronomist or your state department of agriculture for advice.

Jerald K Pataky, University of Illinois

Maize leaf with yellow to pale green streaks running parallel to leaf veins. Note the wavy margins.

Department of Plant Pathology Archive, North Carolina State University, Bugwood.org

Soft rot of the pith caused by Stewart's disease.

Jerald K.Pataky, University of Illinois

Infected maize plant.

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What should I look for?

Look for symptoms of Stewart's disease including yellow or pale green foliar streaks which become necrotic with age, copious tiller growth and soft rots in the pith and the growing point of maize plants. Also look for the insect vector, the Corn flea beetle, which is an oval shaped, shiny, black coloured beetle between 1.3 to 3.5 mm in length.

If you see any unusual symptoms or pests in your crop please contact the Exotic Plant Pest Hotline on 1800 084 881.

How does it spread?

Seed transmission of Stewart's disease in some maize varieties is possible but plant to plant transmission in the field is not known to occur without the Corn flea beetle.

Where is it now?

Stewart's disease is native to America and is found throughout North, Central and South America. It has also been reported in Europe and Asia intermittently.

How can I protect my farm from Stewart's disease?

You can protect your farm from Stewart's disease by checking your property frequently for the presence of new pests and by closely examining poorly preforming plants for signs of stunting or leaf discolouration.

Make sure you are familiar with the symptoms of common pests so you can tell if you see something different.

If you see anything unusual, call the Exotic Plant Pest Hotline on 1800 084 881.

EXOTIC PLANT PEST HOTLINE
1800 084 881

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