



Crop pests and diseases

Banana





Photo: Scot Nelson, Flickr, CC BY-SA 2.0,
<http://bit.ly/1allhxe>

Damage caused by banana weevil.



Photo: Scot Nelson, Flickr, CC BY-SA 2.0,
<http://bit.ly/1IJWY7t>

Adult banana weevil.

Banana weevil

Cosmopolites sordidus



The banana weevil is a serious pest to bananas worldwide. A combination of clean planting material, destruction of crop residues and neem can be used to reduce weevil populations; however, movement of banana weevils from neighbouring farms can reduce the efficacy of any management options.



Photo: Grahame Jackson, CABI, CC BY 4.0

Brown streaks with yellow areas between; the spots have joined together at the leaf margin causing a blight.



Photo: Grahame Jackson, CABI, CC BY 4.0

Close-up of brown elongated spots, most with yellow margins, and some with grey centres.

Black sigatoka of banana

Mycosphaerella fijiensis



Black sigatoka, caused by the fungus *Mycosphaerella fijiensis*, is a leaf disease of banana and plantain worldwide. Spores are spread in wind and rain, and leaves die rapidly after infection, reducing fruit weight by 30-40% – less for plantains.

Management is by using tolerant or resistant varieties. Some plantains are little affected, and resistant dessert and/or cooking varieties with Cavendish characteristics have been bred.

Fungicides – protectant and systemic – exist for commercial plantations, but expense, availability and strategies to prevent fungal resistance, complicate their use by smallholders.



Photo: Denis Persley, Department of Agriculture and Fisheries

Leaves turn yellow, first at the margins and later hang down.



Photo: Denis Persley, Department of Agriculture and Fisheries

Water-conducting parts of the leaf turn red, brown or black.

Fusarium wilt of banana

Fusarium oxysporum f.sp. cubense



Fusarium wilt of banana and plantains is a fungus that invades the roots and stem, blocking the water conducting channels and causing leaves to turn yellow, dry and collapse. It is spread through movement of soil, on equipment and especially on contaminated planting material.

There are four strains: three can be contained by cultural methods and resistant varieties, but a recent variant (TR4) attacks dessert bananas and plantains, putting both industry and smallholder production at serious risk.

Recently, the fungus has spread from southeast Asia to Australia, Jordan and Mozambique.



Photo: Eric Boa, CABI, CC BY 4.0

Erect leaves, narrower and smaller than healthy leaves, with yellow edges.



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Look carefully to see how minor veins are hooked (J-shaped) as they join the midrib in infected plants.

Bunchy top of banana

Banana bunchy top virus



Bunchy top of banana is a viral disease that gets inside the plant and stays there. Infected planting material appears healthy. An aphid that is present in all banana growing countries helps to spread the disease over short distances. The bunches of erect leaves caused by the disease are more than a curiosity: the plant does not fruit and production is severely affected.

All bananas are susceptible and there is no chemical treatment. However, careful selection of healthy planting material can prevent the introduction of the disease to new countries and early detection of symptoms enables its spread to be limited.



Photo: Eric Boa, CABI, CC BY 4.0

BXW produces a distinctive premature ripening of fruit, which eventually rots.



Photo: Eric Boa, CABI, CC BY 4.0

BXW can be confused with Fusarium wilt, caused by a fungus. The bacterial wilt affects younger leaves, though, and leaves collapse inwards.

Banana xanthomonas wilt

Xanthomonas campestris pv. *musacearum*



Banana xanthomonas wilt (BXW) is named after the bacterium that infects the plant and eventually kills it. The disease has surged through Uganda since it was first found in 2001 and is now widespread in the region. All banana types are susceptible, though research has produced some promising results for future resistant varieties.

The main management option for now is sanitation: planting healthy material, using clean cutting tools and removal of male buds to limit infection by bacteria-carrying insects as they collect nectar. BXW does not occur in West Africa and the other major bacterial wilt on banana worldwide, caused by *Ralstonia solanacearum* (Moko disease), is absent from all of Africa.

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