

# Mango malformation disease

## What is mango malformation disease?

Mango malformation disease is a fungal disease of mango. It occurs throughout many mango-production areas in the world. Mango malformation disease causes abnormal flower and leaf development, resulting in reduced plant growth and fruit yield.

Mango (*Mangifera indica*) is the only known host of mango malformation disease.

## What causes mango malformation disease?

Mango malformation disease is caused by one or more species of the fungus *Fusarium*.

## What are the symptoms?

Abnormal, compact development of shoots and flowers are common signs of mango malformation disease. Both normal growth and mango malformation disease-affected growth may be present on a plant at the same time.

### Shoots

Growing points such as leaf and stem buds produce misshapen shoots with short internodes and brittle leaves. The leaves are significantly smaller than those of healthy plants and re-curve towards the stem giving a squat, bunched-top appearance.

Shoot damage occurs in mature trees but symptoms are particularly serious for young plants, which become severely stunted.



Distorted leaf bud growth



Normal leaf bud growth

### Flowers

Affected flower stems or panicles are thickened and highly branched, producing up to three times the normal number of flowers.

The flowers are enlarged, sterile and do not bear fruit. There are often high numbers of male flowers compared with perfect flowers. Panicles may also form dwarfed and distorted leaves.



Distorted flower panicle and dwarfed leaf growth



Normal flower growth

### Mango fruit

There are no impacts on human health from mango malformation disease and mango fruit is safe to eat.

## How is mango malformation disease spread?

The disease is mainly spread via infected plant material. Mango malformation disease spreads slowly within affected orchards.

The mango bud mite, *Aceria mangiferae*, has been associated with mango malformation disease as wounds from the mites' feeding activity are thought to facilitate fungal infection.

## How can I protect my farm from mango malformation disease?

To avoid introducing mango malformation disease on to your property, establish new plantings with pest-free nursery stock. Grafting or marcot material should never be taken from an infected orchard. Nurseries should not be established in orchards affected by mango malformation disease.

Thorough cleaning of pruning equipment between trees reduces the spread of pests and disease.

Make sure that you and your farm workers are familiar with mango malformation disease symptoms and other mango pests.

Make sure that workers, visitors, vehicles and equipment are decontaminated before they enter and leave your farm.

## Have you seen mango malformation disease?

Mango malformation disease is prohibited matter under the Biosecurity Act 2014. If you believe that you may have detected mango malformation disease, you must report it immediately to Biosecurity Queensland. You must also take all reasonable steps to minimise the risks of spreading the pest or making the situation worse. Do not move any damaged fruit off your property—this can spread the pest.

It is also an offence to move mango malformation disease carriers, such as mango plants, into Queensland from an area where the disease has been detected, unless you have a biosecurity certificate .

Be on the lookout for symptoms and immediately report them to Biosecurity Queensland. Do not move any plant material off your property—this can spread the disease.

Call Biosecurity Queensland on 13 25 23 or the Exotic Plant Pest Hotline on 1800 084 881.

## Further information

Further information is available from Biosecurity Queensland on 13 25 23.

Fact sheets are available from Queensland Primary Industries and Fisheries service centres and the Queensland Primary Industries and Fisheries Business Information Centre (telephone 13 25 23). Check our website at [www.dpi.qld.gov.au](http://www.dpi.qld.gov.au) to ensure you have the latest version of this fact sheet. The control methods referred to in this fact sheet should be used in accordance with the restrictions (federal and state legislation, and local government laws) directly or indirectly related to each control method. These restrictions may prevent the use of one or more of the methods referred to, depending on individual circumstances. While every care is taken to ensure the accuracy of this information, Queensland Primary Industries and Fisheries does not invite reliance upon it, nor accept responsibility for any loss or damage caused by actions based on it.