

Cotton blue disease

What is it?

Cotton blue disease (CBD) is suspected to be caused by aphid-transmitted viruses. The disease has been reported from Africa, Asia and the Americas.

In Brazil, Cotton leafroll dwarf virus (CLRDV) has been identified as the causal agent however it is not known if this is the causal agent in other regions. CBD has similarities with other diseases of cotton, such as cotton bunchy top, anthocyanosis and cotton leaf roll and all are spread by the cotton aphid, *Aphis gossypii*.

What does the symptoms look like?

CBD affected leaves tend to be small, thick, more brittle and leathery than healthy leaves and have an intense green to bluish colour with yellow veins. Reddening of stem petioles and leaf veins can occur. Leaf edges tend to roll downwards, plants become stunted due to a shortening of the branch internodes and produce many branches, giving a bunchy zig-zag stem habit. Symptoms are more obvious in plants infected at an early age. Infected plants also produce smaller bolls and boll shed may occur.

CBD is often seen as small patches of plants, often in a single row, and infected plants can be overgrown by nearby healthy plants. The susceptibility of different cotton species and commercial varieties to blue disease varies.

There are no known hosts of blue disease outside cotton.



Ivan Bonacic, INTA

CLRDV-infected cotton plant showing intense green-blue leaf colour. The plant is also severely stunted and has abnormal growth habit.



Lewis Wilson, CSIRO

Infected cotton plant with downward rolling of leaf edges typical of blue disease. Veins appear discoloured with major veins red and the minor yellow in colour.



COTTON
AUSTRALIA

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Stephen Allen

Deformed growth habit and blue discoloration of CBD-infected cotton



Stephen Allen

Rolled leaf contrasts with the unaffected surrounding leaves

What can it be confused with?

CBD has similar symptoms to cotton bunchy top disease. Both diseases display shortened internodes and can result in stunted plants. The typical green-blue colour and yellow veins observed in CBD-affected leaves is absent from those affected by cotton bunchy top. Instead, CBD causes an angular pattern of pale green margins and darker green centres.

What should I look for?

Plants which are stunted, have downward rolling leaf edges and/or an odd growth habit should be selected for closer evaluation.

Other symptoms may include:

- Intense green or bluish colour of leaves
- Veins, petioles and stems becoming dark red-purple
- Yellowing of minor veins
- Zig-zag stem habit, shortened internodes and many branches
- Leaves with a brittle and leathery texture
- Flowers and bolls fewer and smaller than normal

How does it spread?

CLRDV is moved between plants by, the cotton aphid (*Aphis gossypii*) and disease spread is favoured by conditions which are suitable for aphid reproduction, feeding and spread.

Where is it now?

CBD and other similar leaf roll diseases are known to occur in Benin, Chad, Cameroon, Ivory Coast and Zaire as well as in Brazil, Argentina and Paraguay. Similar symptoms have also been described from Azerbaijan, Turkmenistan and Armenia as well as from the Philippines and Thailand.

How can I protect my farm from Cotton blue disease?

Check your farm frequently for the presence of new pests and unusual symptoms. Make sure you are familiar with common cotton 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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