



Box has been popular in gardens for centuries due to its ability to survive close trimming, making it ideal for topiary. But the future of box in gardens is now uncertain with box blight (below and right) and box tree caterpillar causing problems around the UK.



Garden solutions

Dealing with box problems

Our familiar plantings of box face twin threats to their health. What are our best defences - and treatments - against box blight and box tree caterpillar?

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Box can probably be called one of the most traditional of garden plants. Species and cultivars of *Buxus* appear in many gardens in various guises - as hedging, topiary or an ornamental specimen plant, as a focal point or boundary marker. From individual box balls to forming the backbone of parterres and knot gardens, this small-leaved shrub is versatile and elegant. Easy to grow and to propagate from cuttings, box is fully hardy and thrives in borders or containers, given the right care.

It is a mainstay of the four RHS Gardens, but this plant is now under threat. Box is endangered mainly by two problems: the disease box blight and box tree caterpillar, a pest.

Box blight appeared in 1998 and its spread has been dramatic; box tree caterpillar was first reported in 2011 in the UK and is already established in some areas. However, there are steps you can take to identify and help manage these two box problems. >>>

Fighting box blight



Matthew Cromey, RHS Principal Plant Pathologist
Box blight is most often encountered on clipped hedges and topiaries, but it can also occur on untrimmed box. Careful attention and strategies are needed to prevent or manage the disease, but the effort is likely to pay dividends.

Causes

- ❖ *Cylindrocladium buxicola* is the fungus responsible, and outbreaks can occur at any time of year, but are more prevalent in wet weather. Spores of the fungus infect damp leaves and stems.
- ❖ Do not confuse with less-serious *Volutella* blight, where leaves turn yellow and darken to tan, staying close to the stem.

Symptoms

- ❖ Box blight starts as brown lesions on the foliage, followed by leaf drop leading to bare patches. Young stems can be affected by black streaks and dieback.
- ❖ Early stages are easy to miss and infection might have spread along a box hedge or around a topiary before it is noticed.

Prevention and treatment of box blight

Fortunately, the pathogen has key weaknesses that can be exploited: it is sticky so spores do not travel far unaided, and the disease thrives only in damp conditions.

Prevention is better than cure and should be the first line of defence. The disease is most likely to arrive in a garden on plant material, tools or clothing.

- ❖ **Quarantine:** set up an observation area where you can keep new *Buxus* plants for a few months before planting.
- ❖ **Sanitation:** pay attention to cleaning tools, gloves and shoes after and between working on areas of box to reduce the risk of introducing or spreading disease.
- ❖ **Be prepared:** box blight is most severe where there are frequent periods of leaf wetness, so consider the environment when choosing where to plant box. Avoid planting beneath overhanging trees and be ready to treat outbreaks, should box blight arrive unexpectedly.
- ❖ **Good air flow** allows leaves to dry out, so trimming back plants to reduce the density of the canopy can help air to circulate.
- ❖ Ensure box plants are not **overcrowded** by their neighbours.
- ❖ If possible, **avoid overhead watering.**

Treatment: if you do find box blight in your garden, available courses of action include removing whole areas of your hedge to more subtle interventions.

- ❖ **Removal:** remove one or more infected plants if the box is seriously defoliated, is in a wet area of the garden, or threatens more-valuable box plants.

Management works best by combining strategies.

- ❖ **Pruning:** box responds well to pruning. Cutting out affected areas will reduce the outbreak and reduce humidity prior to re-growth.
- ❖ Remove as many **fallen leaves** as possible, add a mulch to reduce rain splash, and direct water to the base of the plant.
- ❖ Good **plant nutrition** helps promote regrowth.
- ❖ **Fungicides** can be used as part of the strategy. Bayer Fungus Fighter Plus and Bayer Fungus Fighter Concentrate are registered for box blight and can be used up to six times a year. Make the first application just before or just after cutting out infected areas to clear up undetected infections and protect new growth.



Spores of fungus *Cylindrocladium buxicola* infect damp box leaves and stems **1**. Brown lesions appear on leaves **2**, which later drop, and young stems are streaked with black and then die back **3**.



Prune out affected parts **4**, clear up fallen leaves **5**, add mulches to reduce rain splash, water only at the base and promote healthy growth. Fungicides can be applied up to six times a year.



Box tree caterpillar



Anna Platoni, RHS Entomologist, Plant Health
Box tree moth (*Cydalima perspectalis*) is relatively new to the UK and was first reported in 2011. The moth's caterpillars (below) cause the problem as they defoliate box plants.



Identifying box tree moth and caterpillar

- ❖ Originally from eastern Asia, the moth is now considered established in London and the surrounding counties.
- ❖ The most common form of the adult moth has white wings with a faintly iridescent brown border, although occasionally moths with completely brown or clear wings can be found. Wingspan is approximately 4cm (1½in).
- ❖ It is the caterpillars of the moth rather than the adults that cause damage to box plants. Caterpillars are active from the first warm days in spring and are voracious pests of box.
- ❖ Caterpillars are greenish-yellow with a black head when young but grow quickly, developing thick black and thin white stripes that run along the length of their body. Fully grown caterpillars can reach 4cm (1½in) long.

Symptoms

- ❖ As the caterpillars feed and grow, they can rapidly defoliate plants.
- ❖ They produce a fine silk webbing, which they use to bind leaves together to create a sheltered place to feed.



Box tree moth caterpillars feed on all commonly grown European *Buxus* cultivars. These voracious pests emerge in the first warm days of spring and can soon defoliate box plants.



Treatment of box tree caterpillar

Control of box tree moth can be difficult owing to the dense foliage of box and the webbing created by the caterpillars, which can protect them from chemical sprays.

- ❖ **Look out for the caterpillars** and signs of the damage that they cause from early spring. If the infestation is small, it might be possible to remove caterpillars by hand.
- ❖ If the infestation is large and hand removal is not practical, you might choose to spray with an **insecticide**. Use one based on pyrethrum (considered to be organic, such as Bug Clear Gun for Fruit and Veg or Defenders Bug Killer), deltamethrin (such as Bayer Provado Ultimate Fruit & Vegetable Bug Killer or Bayer Sprayday Greenfly Killer), lambda-cyhalothrin (Westland Resolva Bug Killer) or acetamiprid (Bug Clear Ultra).
- ❖ **Thorough spray coverage** will be required to control these caterpillars. Do not spray near plants in flower due to the danger to bees and other pollinating insects.
- ❖ Although box is a slow-growing plant, it should **recover** from the defoliation caused by the caterpillar. However, the caterpillars are likely to return each year, and many years of significant defoliation could weaken the plant.



FURTHER INFORMATION

- ❖ www.rhs.org.uk
Search 'Box blight', 'Volutella blight' and 'Box tree caterpillar' at the RHS website.

- ❖ www.rhs.org.uk/login
Sign in to MyRHS for a feature on alternatives to box growing in the Walled Garden East at RHS Garden Wisley (see also RHS Life, August, p75).

- ❖ **Monitoring moths in your garden**
Box tree moth pheromone traps are available from Agralan, www.agralan-growers.co.uk; and Buxatrap, www.amazon.co.uk