



**Pathogen:** *Waitea circinata* var. *circinata*

**Susceptible Species:** Found on *Poa annua* in the UK currently, but originated in Japan on bentgrass.

Waitea Patch (also known as Brown Ring Patch) is a relatively new disease in the UK and is a summer-only disorder as it really needs a bit of heat and humidity to develop. It can develop from any temperature above 16°C, but optimal conditions for development are 25-30°C.

It requires not just heat, but also humidity for development and this is often provided by irrigation systems rather than a high relative humidity in the air. During periods of high heat, overnight automated irrigation supplemented by hand watering 'hot spots' during the day can leave turf with near 24-hour moisture causing a micro-climate of high humidity leading to development of Waitea Patch.

## Symptoms

With a *Poa annua* sward, turf shows symptoms of coalescing yellow rings around 20-40cm in diameter. There is often (but not always) darker green turf in the centre of the ring. The disease affects the leaves, stem, crown and upper roots and if it gets to advanced stages will turn leaves a brown/red colour and kill plants. Very similar in appearance to Superficial Fairy Rings, but Waitea does not have the strong mushroom smell in the soil or the white mycelium below the surface associated with Superficial Fairy Rings. Waitea Patch can develop mycelium on the leaves, crown and soil surface, but not sub-surface.



**Waitea Patch:** Initial multiple yellow rings on the turf surface can progress to advanced stages where leaves turn a dark brown/red colour and are killed:



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## **Cultural & Chemical Prevention:**

The key to development is temperature and humidity. You cannot realistically control the weather, so you must manage applied water effectively to reduce the likelihood of infection. An accurate soil moisture meter can be invaluable in maintaining the correct levels. Aim to keep the soil moist enough to ensure plant survival and major stress reduction and no more. Excess moisture through irrigation can trigger this disease. Old, inaccurate sprinkler systems will often over-water in one area while under-watering in others, so daily moisture meter readings and hand watering through hoses is often the only way to achieve correct soil moisture in periods of drought.

Thatch is not needed for Waitea Patch development, but the moisture-retaining properties of thatch can trigger the disease. Reduce thatch mechanically as much as possible via scarification, coring, etc, and improve soil microbial activity using organic fertilisers and high quality biostimulants to naturally break down thatch from below the surface.

Check your soil for hydrophobic layers. There may be layers of hydrophobicity beneath the surface that hold up water and keep soil moisture levels high at the surface making the disease worse. Always make sure you are not dealing with Superficial Fairy Rings as these require different treatment! Check with your Regional Technical Manager for positive identification.

There are no fungicides approved for Waitea Patch in the UK. Trials in the USA have shown good preventative & curative control using fludioxonil, propiconazole and azoxystrobin, so you may notice some control if using these products for anthracnose, take-all patch, etc.

## **Non-Pesticidal Waitea Patch prevention:**

Try to ensure moisture levels are not excessive for long periods of the day. If you must water heavily, try to keep the surface dry and humidity low for the majority of the day. Ensure surface drainage is good through thatch control and reduction.

Use a high quality wetting agent such as Growth Products HydroSmart that not only retains moisture, but allows excess soil water to move away through the soil quicker.

This disease affects *Poa annua* more than any other species in the UK. Combine your efforts to provide free-draining surfaces with a move toward a perennial sward consisting of bents and fescues that are much less affected by this disease and many other common UK turf diseases.

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