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## Reduce turfgrass stress during late summer to combat disease

Throughout the year, greenkeepers are faced with numerous decisions that are crucial to the health of their turfgrass, and late summer is no exception.

During late summer, turfgrass has used up most of the nitrogen and nutrients that have been fed to it in the spring and early summer months. And, as a result of this, it's susceptible to diseases such as anthracnose and red thread. According to the Bayer technical manager, Dr. Colin Mumford, they're known as 'low nitrogen diseases' and commonly take hold at this time of year.

"The grass has used up the readily available nutrients, meaning it's not as 'healthy' as it once was, and this is when anthracnose can strike," says Colin. "Greenkeepers generally don't want to be adding fertilisers at the end of the summer, because this will encourage the grass to grow at a fast rate, and young, tender shoots or 'soft plant tissue' is more susceptible to disease.

"It's a trade off. Greenkeepers may need to find the balance between applying enough fertiliser to control anthracnose, but not too much, to encourage an influx of new growth," he says.

"The reality is that you would need to add a lot of fertiliser at this time of year, to control anthracnose, more than is advisable. Therefore it's important to start thinking about other ways to reduce the risk of the diseases developing in the first place," says Colin.

Ways to mitigate the risk include ensuring the turf is healthy and not under any stress. Stress can be brought on by the following factors:

### **Low nutrient levels**

Low nutrient and nitrogen levels leave the plant stressed, and more susceptible to anthracnose.

### **Low height of cut**

If the grass is cut very low, it can become stressed. Due to the increased demands of golfers we have seen these heights lower with aims to improve playability. Even on golf tee's the height of cut is now approaching levels that can add to turfgrass stress.



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## **Predominance of annual meadow grass (*Poa annua*)**

Annual meadow grass is the predominant grass on many sports surfaces across the UK and is very susceptible to anthracnose.

## **Compaction**

If the ground is too hard the roots can't grow through the soil easily, this can stress the grass plant and encourage disease to thrive.

## **Over-watering**

Over-use of irrigation can lead to environmental conditions that stress the grass plant and encourage disease to thrive.

## **Under-watering**

Drought conditions cause plant stress, and this leaves the plant unable to contend with diseases such as anthracnose.

## **Nematodes**

Plant pathogenic nematodes eat the grass roots and weaken the plant.

## **Applying the wrong type of top dressing**

Colin advises that paying attention to the top dressing you apply is a factor that is overlooked in managing turf stress. "It's absolutely crucial that greenkeepers use the correct top dressing.

"You need to apply an 'optimum top dressing material' and by this I mean a top dressing that is most suitable for your soil type. The top dressing that works for the course down the road won't necessarily be ideal for your course.

"If it's a constructed profile, the top dressing must comply with the correct specifications. As a general rule of thumb, if you're going to put anything on your turf it needs to be a larger particle size than the existing soil profile. If the particles are smaller, they will cap the surface.



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“The only way you can really find this out is to send a soil sample to an agronomist or turf advisor,” says Colin. “Top dressings can be abrasive, and cause stress to turf grass, and using the right top dressing for your situation might be less abrasive than the one you are currently using”

By mitigating turf stress and promoting plant health, turfgrass is less likely to develop diseases such as anthracnose. However, if it does develop the disease, there are key things to monitor for. “The disease develops in two ways. In late summer, especially during hot weather, the first type is the development of foliar blight (*Collectotrichum graminicola*) and this is when the actual leaf itself loses its green colour. The leaves typically turn yellow, but young leaves can actually turn red. Look out for irregular shaped patches forming that are yellow to brown in colour. “Foliar blight can be misdiagnosed as drought stress, meaning that the greenkeeper may overwater to combat what they think is drought, but what they are actually doing is increasing the conditions for anthracnose” explains Colin.

The second type of anthracnose occurs later in the year when the temperatures have dropped, known as basal rot but also referred to as crown rotting anthracnose (*Colletotrichum spp*). This is the blackening at the base of the grass plant. Annual meadow grass is commonly affected by basal rot, especially if excessive irrigation is applied. When this type of anthracnose becomes established the grass can come away very easily,” warns Colin.

Cultural practices are always preferable, but early diagnosis of the disease is crucial. A fungicide application at the foliar blight stage will have a positive impact on anthracnose and can stop it spreading and taking hold later on as the damaging basal rot. “A combination of the actives Iprodione and Trifloxystrobin can be effective for treating this disease.

“Often greenkeepers mix the actives themselves in a tank mix. This sometimes seems more convenient, but ideally it’s best to use a product with a combination of these actives that has been specifically formulated to optimise the efficacy of the active ingredients and achieve maximum plant health,” adds Colin.

