Turf Disease Identification **Guide**

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Turf Disease Identification

Early and accurate identification of disease is an essential element of managing attacks and preventing damage.

Spotting and identifying disease on your more susceptible areas of turf, is a key indicator of rising pressure and risk. That can enable earlier intervention with pro-active measures or fungicide application, to prevent a widespread outbreak.

With changing climatic conditions and turf management practices, the frequency, severity and even the disease pathogens are adapting. Outbreaks of different diseases now occur at different times, often on different areas.

This Syngenta Turf Disease Identification Guide is designed to help spot symptoms early, assess risk and manage them more effectively.

Accurate disease ID is essential for integrated turf management programmes. Cultural controls to alleviate one disease, could create the conditions to encourage another.

This guide includes tips and advice for both the cultural ITM reduction of disease pressure, along with fungicide advice that is a key element of control.

On each page you'll also find a quick link to the Syngenta turf website, for further information and advice.

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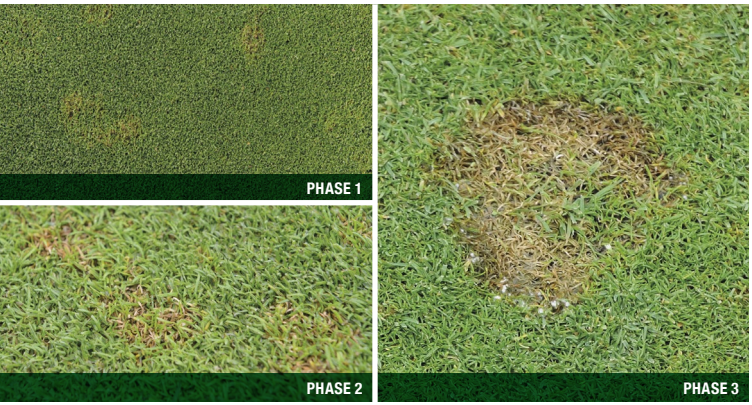
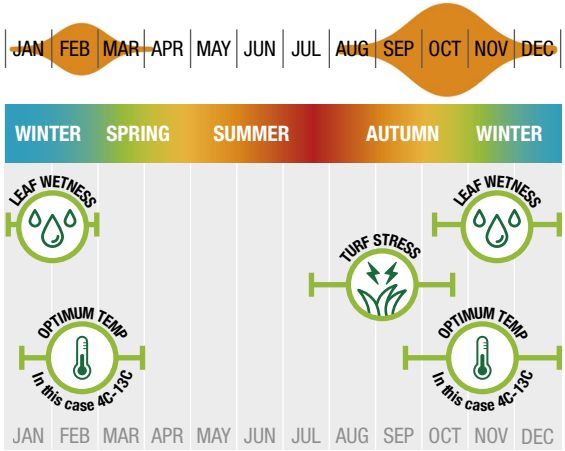
Microdochium Patch



Early symptoms	Darkened, water-soaked appearance. White/grey mycelium may be present.
Late symptoms	Patches enlarge. Salmon-pink to orange-brown colour. White to pink mycelia may be present. Scars dark when wet, pale when dry. May take months to heal.
Susceptible grass species	All grass species susceptible. Annual meadow-grass most severely affected.
Time of year	Most common is Spring and Autumn. Most severe in Autumn.
Climatic conditions	Mild and wet. Shaded areas with poor air circulation particularly susceptible.
Turf conditions	Sward with high annual meadow-grass content, wet turf surfaces, over-fertilised, excessive thatch layer, alkaline conditions, aeration and topdressing activities at the end of the season (in high disease risk periods).

Disease Risk Indicators



Management

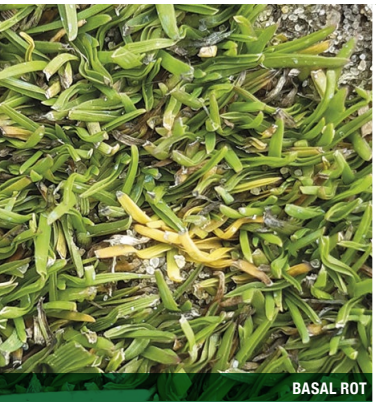
Cultural: Ensure adequate drainage; reduce surface moisture; control thatch layer (consider timing of aeration and top dressing); encourage morning sunlight penetration; appropriate use of fertiliser and nitrogen source; surface acidification.

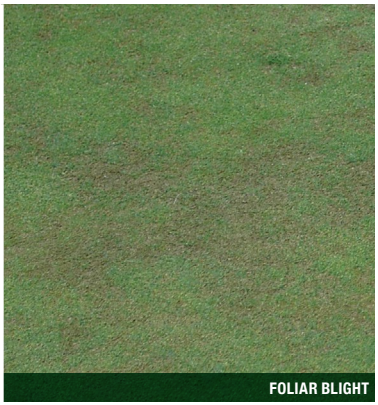
Biological: Prevent annual meadow-grass ingress into fine turf greens or convert back to finer grasses.

Chemical: Effective fungicides are available. Timing of application dictates optimal performance. Preventative use during periods of high disease pressure provides optimal control. Use at the very first signs of disease (before it gets into the grass plant) can control disease but is higher risk and may require recovery period.

See our website for more information

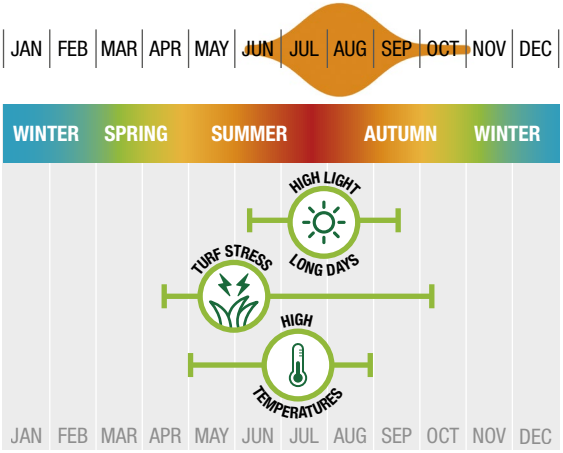
Anthracnose


BASAL ROT


FOLIAR BLIGHT

Symptoms	**Basal rot:** Youngest leaf brick red, other leaves bright yellow, black rot at base of stem. **Foliar blight:** Irregular patches of turf turn tan and die. Small black acervuli with hair like setae can be seen with a x10 hand lens.
Susceptible grass species	**Basal rot:** mostly affects annual meadow-grass. **Foliar blight:** affects all grasses but annual meadow-grass is most susceptible.
Time of year	**Basal rot:** Autumn and Winter **Foliar blight:** Summer
Climatic conditions	**Basal rot:** Cold and wet **Foliar blight:** Warm and wet
Turf conditions	High stress, low fertility (nitrogen especially but also potassium and phosphorous imbalances), compaction, moist surface with dry soil, low cutting height.

Disease Risk Indicators



Management

Cultural: Ensure adequate drainage; reduce surface moisture; maintain appropriate fertility; control thatch layer; encourage morning sunlight penetration; relieve compaction; increase cutting height.

Biological: Discourage annual meadow-grass in the sward.

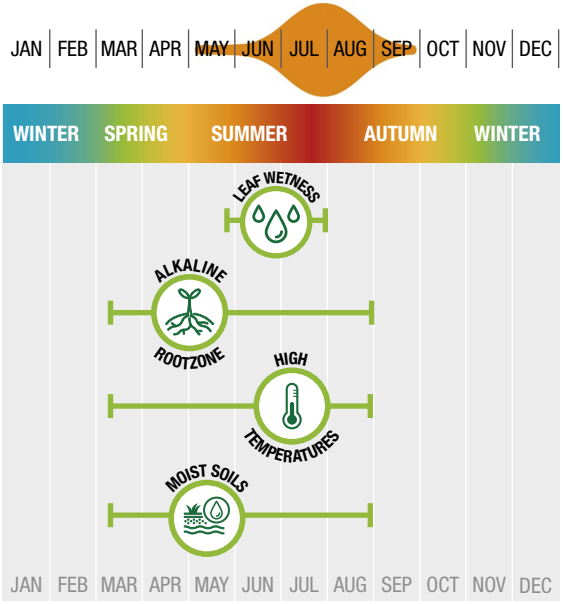
Chemical: Effective fungicides are available. Timing of application dictates optimal performance. Preventative use during periods of high disease pressure provides optimal control. Use at the very first signs of disease (before it gets into the grass plant) can control disease but is higher risk and may require recovery period. Liquid fertiliser applied at first signs of disease after fungicide application will help turf recover from infection.

See our website for more information

Take-all Patch

Symptoms	Initially slight bronzing of grass, usually in a ring. As affected grass dies, resistant grass species or broad-leaved weeds invade the centre of the patch. Symptoms may fade in late autumn and winter.
Susceptible grass species	Mostly bentgrass, can also affect annual meadow-grass.
Time of year	Pathogen active earlier in the season but symptoms usually observed during July/August.
Climatic conditions	Warm temperatures, moist soil.
Turf conditions	Presence of susceptible grass species, newly constructed sand areas low in antagonists, alkaline rootzone, use of alkaline top dressing or irrigation water, poor drainage, lack of manganese.

Disease Risk Indicators



Management

Cultural: Avoid application of alkaline material such as lime, alkaline top dressing and alkaline irrigation water; use acidifying fertilisers and iron sulphate to reduce PH of turfgrass surface; use manganese early in the season to improve turfgrass tolerance.

Biological: Oversow with red fescue.

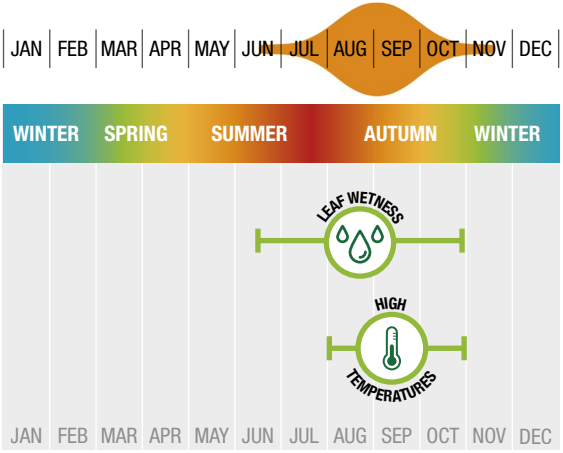
Chemical: Effective fungicides are available. Timing of application dictates optimal performance. Application at the very first sign of symptoms will help prevent large patches developing.

See our website for more information

Dollar Spot

Symptoms	Small spots of bleached turf on close mown turfgrass. Spots may coalesce to form large areas of affected turf. White mycelium may be present of affected areas on dewy mornings.
Susceptible grass species	Fescue, bentgrass and annual meadow-grass.
Time of year	Summer and Autumn.
Turf conditions	Low fertility and surface wetness (especially heavy dews).

Disease Risk Indicators



Management

Cultural: Remove surface moisture (switch when dew occurs); encourage morning sunlight penetration; encourage air movement over the surface; ensure appropriate fertility; reduce thatch; aerate surface.

Biological: Some biocontrol products have proved effective in reducing potential infection at lower disease risk.

Chemical: Effective fungicides are available. Timing of application dictates optimal performance. Preventative use during periods of high disease pressure provides optimal control. Use at the very first signs of disease can control disease but is higher risk and may require recovery period.

See our website for more information

Red Thread


Symptoms	Begins as irregular patches with dead leaves interspersed with live plants. Patches become more bleached and may also have a pink tinge. Close inspection will reveal pale pink to red needle-like growths (the red threads). Pink mycelium may also be present in conducive conditions.
Susceptible grass species	Perennial ryegrass and fescues very susceptible. Bentgrass and annual meadow-grass occasionally affected.
Time of year	Spring to Autumn.
Turf conditions	Low fertility, slow growing turf, moisture retentive turf surface, use of plant growth regulators.

Management

Cultural: Remove surface moisture (switch when dew occurs); encourage morning sunlight penetration; encourage air movement over the surface; ensure appropriate fertility.

Chemical: Effective fungicides are available. Curative control at the first signs of disease is typically optimal.

See our website for more information

Fairy Rings


Symptoms	**Type 1:** Kills grass or badly damages it **Type 2:** Stimulates growth **Type 3:** Do not visually damage the sward but has fruiting bodies
Susceptible grass species	All grass species susceptible.
Time of year	May be seen all year round if conditions are conducive. Most common in spring and autumn.
Climatic conditions	Continual wet/dry cycles. Warm soil temperatures.
Turf conditions	Light soils, free draining rootzone, added organic matter in new constructions or thatch presence.

Management

Cultural: Reduce excess thatch; aerate to help water penetration; use wetting agents to wet rootzone; apply fertiliser or iron sulphate to mask symptoms of type 2 rings; level depressions with top dressing. For type 3, remove fruiting bodies.

Chemical: Some fungicides are available. Addition of wetting agent or applying wetting agent first will help the fungicide penetrate the rootzone.

See our website for more information

Superficial Fairy Rings


Symptoms	Circular patches, arcs or ribbons of stimulated grass growth or discoloured grass growth (yellow or bleached) with or without visible mycelia at the base of the sward. Patches may be sunken due to degradation of the thatch. Musty smell.
Susceptible grass species	All grass species susceptible.
Time of year	Autumn and Winter.
Climatic conditions	Continual wet/dry cycles. Warm soil temperatures.
Turf conditions	Excessive thatch layers, rootzone with low microbial populations.

Management

Cultural: Reduce thatch layers by physical removal and prevent build up by regular aeration and top dressing. Iron sulphate may mask discolouration. If hydrophobic conditions have formed, wetting agents will help improve water penetration.

Chemical: Some fungicides may offer incidental control. Addition of wetting agent or applying wetting agent first will help the fungicide penetrate the rootzone.

See our website for more information

Yellow Tuft


Symptoms	Small spots (1-3 cm in diameter) of yellowed, densely tillered plants with shortened roots that are easily pulled from the turf.
Susceptible grass species	All grass species susceptible. Bentgrass most common in UK.
Time of year	Any time of year when conditions are conducive.
Climatic conditions	Cool, wet and humid.
Turf conditions	Saturated rootzones due to flooding or poor drainage. Low lying areas.

Management

Cultural: Improve soil drainage, pump water off immediately after flooding, promote strong grass growth, verticut to remove infected plants.

Chemical: None currently with label recommendation.

See our website for more information

Leaf Spot

Symptoms	Depends on grass species. In general, a yellowing or paling of leaves with spots or lesions developing.
Susceptible grass species	All grass species susceptible. Most common disease in Perennial ryegrass football pitches.
Time of year	Growing season.
Climatic conditions	Warm weather, moist grass leaves, overcast.
Turf conditions	Leaf wetness, poor air movement due to shading, excessive nitrogen, excessive thatch, general turf stress.

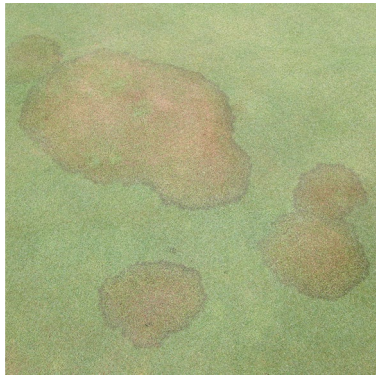
Management

Cultural: Maintain optimum fertiliser rate, remove clippings, remove excessive thatch, remove surface moisture, improve air movement over turf surface.

Chemical: Effective fungicides are available, preventative applications around high pressure periods provides optimum results.

See our website for more information

Brown Patch



Symptoms	Tan to dark patches. In humid conditions a brown/grey ‘smoke ring may develop around the edge.
Susceptible grass species	All grass species susceptible.
Time of year	Summer.
Climatic conditions	Warm, humid.
Turf conditions	Water soaked grass, poor drainage.

Management

Cultural: Ensure adequate drainage, reduce surface moisture, control thatch layer, encourage morning sunlight penetration, encourage air movement over the surface, appropriate use of fertiliser as lush grass is more susceptible.

Chemical: Effective fungicides are available. Timing of application dictates optimal performance. Preventative use during periods of high disease pressure provides optimal control.

See our website for more information

Seedling Diseases

Symptoms	There are 3 types; **Seed rot:** Prevents the seed from germinating. Results in a thin sward. **Pre-emergence damping off:** Occurs post germination before emergence. **Post-emergence damping off:** Patches of rot at the stem base and collapse. May turn red, purple or yellow as the seedlings die.
Susceptible grass species	All grass species susceptible.
Time of year	Early spring and late autumn sowings most at risk.
Climatic conditions	Cool and wet.
Turf conditions	Wet soils, poorly prepared seedbed, inadequate or excessive seedbed fertiliser, excessive seedbed rates.

Management

Cultural: Good seedbed preparation using adequate drainage; appropriate use of seedbed fertiliser; appropriate seed rate, evenly sown to recommended depth; sow in favourable weather conditions into warm soil; oversow weak areas.

Chemical: Curative control is difficult. Use fungicide with proven safety on seedling grasses as directed.

See our website for more information

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