

Warm season lawn disease

Disease	Susceptible Grass	Symptoms	Environmental Factors	Management
Brown Patch/ Rhizoctonia Blight (Disease of foliage and roots)	All warm-season turf grasses, especially Zoysia St. Augustine	The fungus infects & kills the leaf area closest to the soil. First signs are as small patches that turn yellow and then brown as leaves die. Not uncommon to see yellow/ brown rings of turf with what looks like healthy turf in the centre.	High relative humidity & temps of over 28°C during the day and over 15°C at night. More than 10 hours a day of leaf wetness for several consecutive days.	1) Do not apply excessive N, esp. in summer. 2) Avoid over watering & poor drainage. 3) Increase air circulation. 4) Avoid shade. 5) Use disease resistant cultivars.
Curvularia (Disease of foliage and roots)	Couch	Individual leaves initially show a yellow and green discolouration that extends downwards from the leaf tip. Infected leaves turn brown, then grey as they shrivel and die. Irregularly shaped patches of thinned turf appear, often merging together to affect larger areas. Stolons and leaf sheaths may also rot.	This occurs in areas having prolonged leaf wetness for several consecutive days. It occurs at temperatures of 25°C to 35°C. Soil compaction and excessive levels of nitrogen and thatch also favour this.	1) Maintain balanced fertility. 2) Increase the height of cut. 3) Avoid nitrogen applications in the spring when the disease is active. 4) Increase the air circulation. 5) Avoid over watering. 6) Improve the drainage of the turf. 7) Reduce thatch.
Dollar spot (Foliar Disease)	All warm-season turf grasses, especially Couch	Small circular patches may merge into larger, irregular, dead areas. Individual leaves have tan (hourglass) lesions with reddish-brown margins. In the early morning, white mycelium can be seen.	1) Low nitrogen levels. 2) Temp ranges of 15°C to 30°C and high humidity. 3) Dry soil makes it worse.	1) Provide enough nitrogen. 2) Don't over irrigate and remove dew in the morning. 3) Don't mow too low. 4) Reduce thatch.
ERI (Root Disease)	All warm-season turf grasses	Initial symptoms are irregular, yellow or light green patches (from a 50mm to 200mm). Roots are initially thin and off-white in color with isolated black lesions. Over time, roots become very short, black, and appear rotted. Stolons and rhizomes may also have black lesions and begin to rot creating bare patches.	In combination with high temps, prolonged periods of rainfall are most conducive to this disease. Symptoms are often seen under moisture stress. Symptoms are most likely to occur when the weather is hot and humid, rainfall is high and heavy cloud cover reduces light intensity. The main fungus associated with the disease is <i>Gaeumannomyces graminis var. graminis</i> , which tolerates temps above 25°C and is active during the warmer months of the year.	1) Minimise stress. 2) If root systems are damaged, adjust fertilisation to account for the shallow root system. 3) Frequent foliar feeding at low rates will be required. 4) Avoid excessive nitrogen inputs (especially nitrate nitrogen). 5) The pathogen favours lower pH so avoid using lime. 6) Raise the height of cut and irrigate to prevent moisture stress.
Fairy Ring (Soil)	All Turfgrasses	There are three types of fairy rings: Type I rings have a zone of dead grass just inside a zone of dark green grass. Weeds often invade the dead zone. Type II rings only have a band of dark green turf, with or without mushrooms present in the band. Type III rings do not exhibit a dead zone or a dark green zone, but a ring of mushrooms is present.	Grow over a wide range of temps.	1) Improve water penetration; aeration, deep watering, and soil wetting agents. 2) Apply Clean Sweep Trio or a registered fungicide
Grey Leaf Spot Leaf disease)	St. Augustine grass and Centipede grass	Often seen late spring to early autumn, especially during prolonged periods of rainfall.	Early symptoms include small pinhead-sized spots that are olive green to brown in color. These enlarge and form circular to oblong spots that are tan to brown in colour with distinctive dark brown margins. During periods of high humidity, the fungus produces abundant spores in the center of these spots, giving them a grey appearance. No distinct patches are observed, but areas may appear thin. Severe infestations look similar to drought stress.	Excessive applications of quick-release nitrogen sources enhance disease severity, as does compacted soil.
Helminthosporium Disease (Foliar and Root disease)	All turf species	Initial symptoms are small lesions on leaf blades. Leaf tissues turn yellow around these lesions. Severely infected leaves may die and appear light tan to straw-coloured. In Couch, Helminthosporium causes dark brown or white "net" blotches on the leaves.	Helminthosporium is able to develop at temperatures between 3°C and 30°C. Leaf moisture is necessary for infection to occur. More than 10 hours a day of leaf wetness for several consecutive days. Poor air movement, excessive nitrogen and any stress situation such as drought, herbicide injury or heavy traffic can increase the severity of the disease.	1) Maintain healthy turf through proper fertilisation. 2) Irrigate infrequently and deeply. 3) Avoid late afternoon or evening irrigations. 4) Do not allow the turf to become extremely dry during warm weather. 5) Increase air movement and improve turf drainage. 6) Avoid herbicide applications during critical periods of disease activity. 7) Disperse traffic in high traffic areas. 8) Mow turf at recommended height for turf species.
Leaf Spot/Melting Out (Foliar and Root disease)	All turfgrass species.	Initially very small dark spots on leaves - Spots enlarge in size - Center of spots may be a lighter brown - Leaf sheaths can be entirely - Crowns rot, turf thins	Occurs during cool, humid periods Temps between 5°C and 26°C favour this and the optimal is 15°C to 18°C. Also more than 10 hours a day of foliar wetness for several days. Root, rhizome and crown rots may occur during warm, dry periods or during wet periods following dry periods. Poor air movement. High nitrogen fertility and low mowing height.	1) Raise cutting height. 2) Mow frequently to avoid stressing turf. 3) Avoid excessive nitrogen. 4) Avoid frequent watering and wet turf. 5) Select more resistant cultivars to the disease.
Pythium Blight (Pythium species)	Couch	Pythium Leaf Blight appears suddenly during hot, humid weather. Patches occur these patches can enlarge at a rapid rate. In the early morning, grass leaves appear water-soaked and dark in patches. When rubbed between the fingers, these water-soaked patches feel oily. Infected leaves become light tan to brown, shriveled and matted when dry. When humidity remains high, especially at night, the collapsed leaves become matted and covered with a fluffy white mass of fungal	Hot days (30°C - 35°C), humid or rainy weather when night temperatures are warm (above 20°C). Relative humidity exceeding 90% for at least 14 hours and a minimum temperature not falling below 20°C. Lush, dense grass growing under high nitrogen fertility is especially susceptible to attack. Turf areas with poor drainage and air circulation.	Severe disease outbreaks commonly occur on turfgrass sites that are over-irrigated or poorly drained. Removal of excessive thatch. Do not over fertilise turf with nitrogen. Promote good light penetration into the turf canopy. Increase air circulation to speed the drying process of the turf.
Pythium Root Rot	All warm-season turf grasses	Symptoms may appear at any time of the year, but they are always associated with wet soil conditions, either from excessive rainfall or from irrigation.	Hot days (30°C - 35°C), humid or rainy weather when night temperatures are warm (above 20°C). Relative humidity exceeding 90% for at least 14 hours and a minimum temperature not falling below 20°C. Lush, dense grass growing under high nitrogen fertility is especially susceptible to attack. Turf areas with poor	This is a root rot disease. The symptoms observed are the result of fungal activity on the root system. Poor drainage makes things worse.
Spring Dead Spot (Root Disease)	Couch	Circular patches of bleached, straw coloured dead grass appear in spring as the dormant grass regrows. Patches are also visible in autumn and winter after a series of unusually cool days or wet, cold weather. Patches are a few cm to 1 m in diameter and reappear and expand in the same spot for 3 or more years. After 2 to 3 years, the centres of active patches may remain alive, and the patch takes on a "ring-like" appearance. Roots of affected plants turn dark brown to black and are severely rotted. Regrowth of grass into affected patches is slow and patches may remain barren or fill with weeds.	Most active when temperatures are cool (12°C to 14°C) and soil is moist. Roots of Couch grow most rapidly at 24°C to 29°C and extremely slowly at 15°C, thus the fungus has a competitive advantage at low temperatures. Spring Dead Spot favours cool, wet weather in the spring and autumn and daily temperatures of less than 15°C. This disease is typically found where thatch is more than 1.2 cm thick and in locations with poor drainage and low potassium levels. Heavy applications of nitrogen in late summer often increase disease severity the following spring. Spring Dead Spot is more severe on turf that is over three-years old and in locations with long dormancy and cold temperatures.	Preventative systemic fungicide applications during late summer and autumn. Good fertiliser management especially nitrogen and potassium. Control weeds in affected turf to enhance recovery from Spring Dead Spot. Apply moderate to high levels of phosphorous, potash and minor elements. Improve drainage of turf and reduce thatch.