

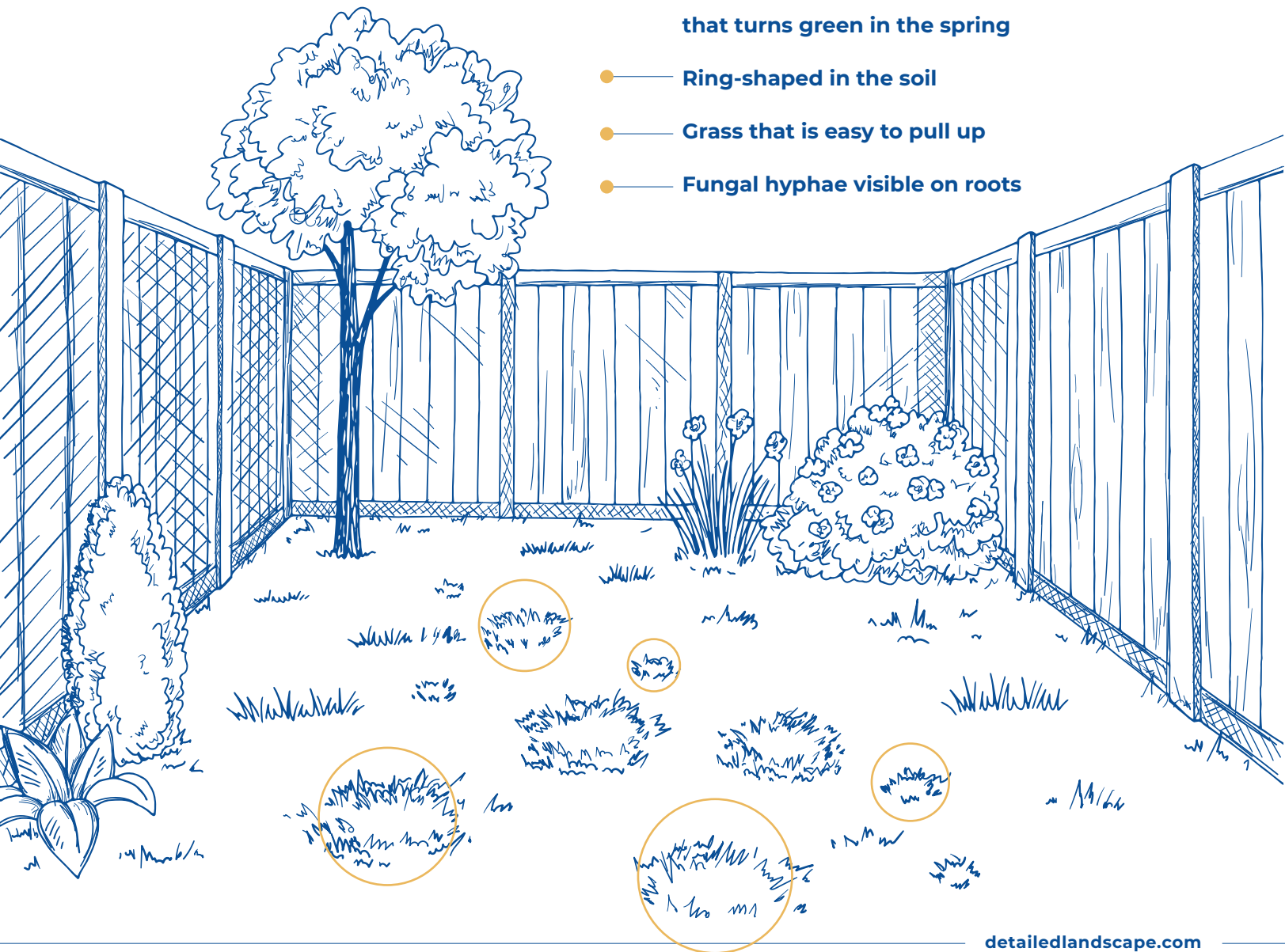


NECROTIC RING SPOT SYMPTOMS, CAUSES & MANAGEMENT

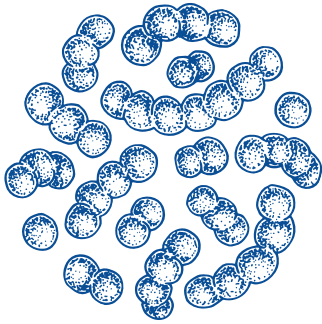
Necrotic Ring Spot (NRS) is a turfgrass disease caused by soil-borne fungi called *Ophiosphaerella korrae*. It affects both cool-season grasses and warm-season grasses, making it a perennial problem for lawns. Kentucky bluegrass, red fescue and annual bluegrass are the most commonly affected species in Colorado. NRS is particularly damaging to bluegrass because it attacks and kills the roots and crowns, leading to a slow recovery from a disease outbreak.

SYMPTOMS OF NECROTIC RING SPOT

- — Grass that feels healthy but appears brown
- — Brown spots that appear in a ring-shape that turns green in the spring
- — Ring-shaped in the soil
- — Grass that is easy to pull up
- — Fungal hyphae visible on roots



CAUSES OF NECROTIC RING SPOT

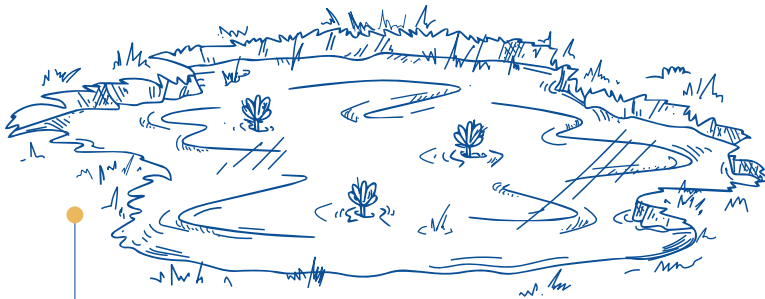
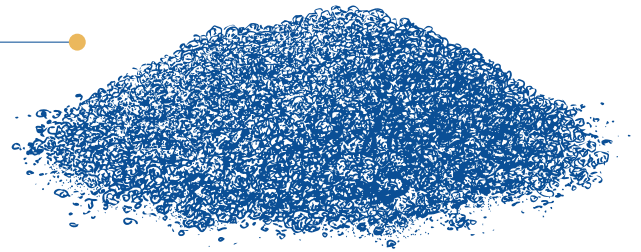


FUNGAL PATHOGENS

The fungi responsible for necrotic ring spot thrive in cool, wet conditions commonly found in spring and fall.

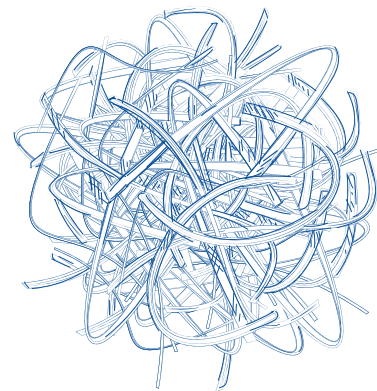
COMPACTED SOIL

Soil compaction reduces oxygen levels in the soil, making it difficult for grass roots to breathe and absorb nutrients.



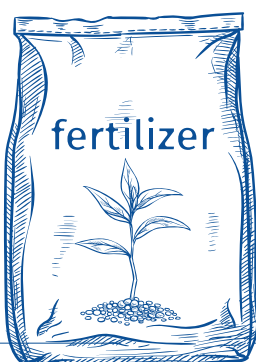
POOR DRAINAGE

Inadequate drainage can lead to waterlogged soil conditions, causing fungal growth and disease development.



THATCH BUILDUP

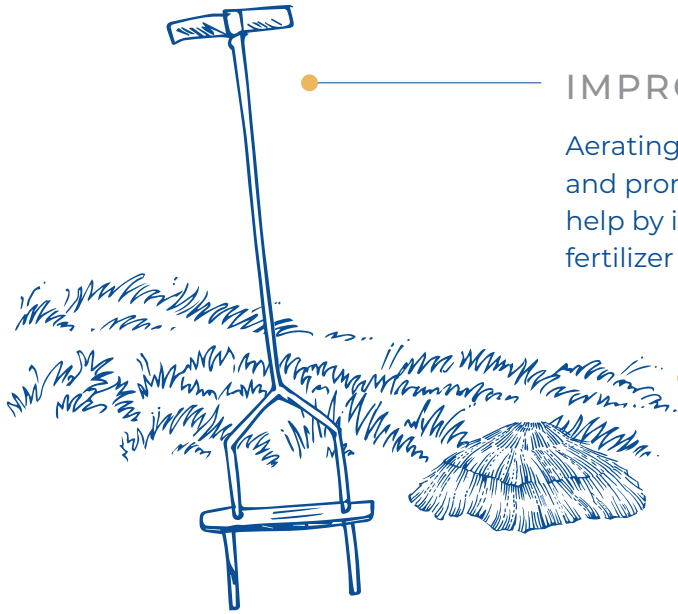
Excessive thatch accumulation prevents water, air and nutrients from reaching the grass roots.



IMBALANCED FERTILIZATION

Improper fertilization practices, especially excessive nitrogen application, can weaken grass and make it more susceptible to diseases like necrotic ring spot.

NECROTIC RING SPOT

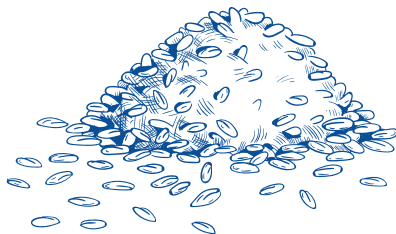


IMPROVE SOIL CONDITIONS

Aerating the soil and relieving compaction can improve drainage and promote healthy root growth. Annual aeration can also help by increasing air supply to the roots, improving water and fertilizer penetration and preventing thatch and compaction.

DETHATCHING

Regular dethatching helps remove excess thatch, allowing air, water and nutrients to reach the soil and grassroots.



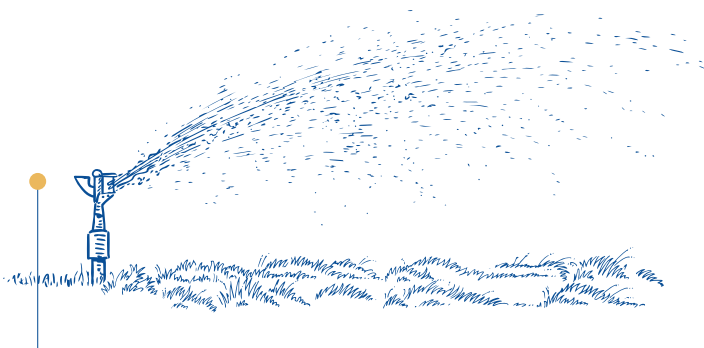
RESEEDING

Overseeding with resistant grass varieties can help fill in bare patches and strengthen the lawn's resistance to disease.



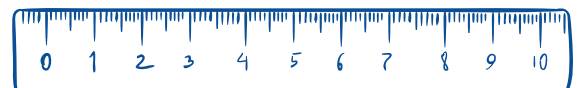
PROPER FERTILIZATION

Apply fertilizers according to soil test recommendations and avoid overfertilizing with nitrogen, especially during periods of high disease activity.



PROPER WATERING

The most important management practice for NRS is to not overwater. We recommend that you water deeply and infrequently to encourage deep root growth and avoid creating conditions for fungal growth.



FOLLOW GOOD MANAGEMENT PRACTICES

Maintain the turf at a height of 2.5 to 3 inches; remove no more than a third of the blade at any one mowing; return clippings to the turf with a mulching mower.