Heat Stress (Turfgrass)

(Abiotic / Environmental — NOT a fungus)

Heat Stress occurs when turfgrass experiences **prolonged high temperatures**, **intense sun**, **dry soils**, or **shallow rooting**, causing **wilting, browning, and thinning**. It is extremely common in Colorado during **mid-summer**, especially on **south- and west-facing lawns**, slopes, and compacted soils.

Seasonal Activity Calendar

Icons: 🌸 Spring | 🌞 Summer | 🍂 Fall | ❄️ Winter

Problem	Type	Active Season	Icons
Heat Stress	Abiotic (environmental)	Summer (peak)	🌞

Symptoms (Homeowner-Friendly)

Symptom	Description
Footprint test	Footprints remain visible after walking across lawn (grass unable to rebound)
Purplish/blue-gray color	Early sign of dehydration
Wilting & folding leaves	Grass curls inward to conserve moisture
Brown or tan patches	Especially on hot slopes, edges, and full-sun areas
Slow recovery after watering	Soil is too hot or roots too shallow to absorb water efficiently
Soil feels hot & dry	Even after irrigation

Key distinction: Heat stress looks like drought — but may continue **even with irrigation** if the soil is compacted or roots are shallow.

Primary Causes (Colorado Conditions)

- 90–100°F+ temperatures
- High UV & low humidity (evaporation exceeds irrigation)
- Shallow or weak root systems
- Compacted clay soils
- Daily light watering instead of deep watering
- Heat radiating from sidewalks, driveways, and south/west exposures
- Slopes where water runs off instead of soaking in

Treatment & Management

1. Watering Adjustments (Most Critical)

Action	Why it Helps
Deep, infrequent watering (2–3 days per week)	Encourages deep rooting & reduces stress
Cycle-and-soak method	Prevents runoff and ensures full soil saturation
Water between 4–9 AM	Reduces evaporation; prevents fungal risk
Extra water on heatwave days	Helps turf survive extreme conditions

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2. Improve Turf Resilience

Practice	Benefit
Raise mowing height to 3–3.5"	Taller grass shades soil & protects roots
Avoid mowing during heatwaves	Reduces shock & water loss
Maintain sharp mower blades	Clean cuts slow moisture loss
Fall fertilization	Builds deeper roots for next summer

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3. Soil Improvement

Action	Benefit
Core aeration (spring/fall)	Reduces compaction so water can penetrate
Topdress with compost	Improves water retention & soil cooling
Check irrigation coverage	Fix dry spots caused by sprinkler gaps

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4. Grass-Type Considerations

- **Kentucky bluegrass** suffers most in heat.
- **Tall fescue** stays green longer and handles heat better → good for overseeding stressed lawns.

When to Worry vs. When It's Cosmetic

🔴 **When to Worry (action recommended)**

- Lawn stays brown even after deep watering
- Grass blades feel crispy and crowns appear white/tan
- Soil is hot, compacted, or water-repellent (hydrophobic)
- Bare patches form on slopes or sun-exposed corners
- Repeated heat stress year after year (root failure)
- Sprinklers cannot keep up due to evaporation

These areas may require **soil correction, overseeding with tall fescue, or irrigation redesign**.

🟢 **Mostly Cosmetic (monitor only)**

- Slight wilting during afternoon heat
- Temporary bluish/purplish cast
- Evening or next-morning recovery after watering
- Mild browning at edges or near pavement
- Patchy discoloration during extreme heatwaves

Most lawns rebound quickly once temperatures drop and watering is optimized.