

Cover-up.

Underneath some beautifully conditioned, championship golf courses are mountains of trash, the scars left by years of garbage replaced by a beautiful, invaluable green belt.

Landfill covers are only one way today's professionally managed golf courses are helping make our world a better place. They also filter water, inhibit runoff and are key avenues for groundwater recharge. They're a refuge for wildlife and a conservatory for exotic plants. Courses provide life-giving oxygen and help cool the air. Some even serve as disposal sites for effluent wastewater.

Who's in charge of keeping these amazing ecosystems in harmony with nature? Today's golf course superintendents. They're part troubleshooter, part business manager, part scientist and all environmentalist—dedicated to making our world a greener place.



WE KEEP GOLF GREEN.

Soil Temperature And Crabgrass

Crabgrass germination is very dependent on soil temperature, NOT air temperature. As a rule of thumb, crabgrass will germinate if you have three (3) consecutive days with soil temperatures taken between 7 and 8 a.m. at a three-inch depth for the soil textures indicated below.

SOIL TEXTURE	SOIL TEMPERATURE °F between 7 & 8 a.m.
Loam	50-52° F
Heavy wet clay soil	53-57° F
Sandy soil	49-51° F

The time (7 to 8 a.m.) represents the daily low point of soil temperatures. Soil temperatures can be expected to increase 10 to 15 degrees by midafternoon on a sunny, moderately dry date in late April and May. A person could take a soil temperature reading at 3 p.m. and get a high reading, i.e. 59°F. This does not mean that crabgrass will germinate.

Variations in soil temperatures depend on several factors:

1. The soil in a wet lawn area will warm up much slower than a dry soil.
2. Lawns on south-facing slopes warm up faster than those on north-facing slopes.
3. A thick lawn grown on muck sod (dark color) will warm up sooner than a thin lawn on light colored soil.

Wet clay soils may require up to 3 to 4 times more heat to warm them than when they are dry. Future weather conditions play an important role in determining if soils will remain ade-

quate soil temperature for good crabgrass germination. Generally a forecast for below normal temperatures, but dry and sunny conditions will result in little or no change in the seasonal warming trend of the soil. Future cloudy, cold, wet weather will produce a rapid decrease in soil temperatures. Warm, dry sunny weather provides a moderate rate of soil temperature increase.

Crabgrass germination is also dependent on abundant sunlight near the soil surface. A tall dense lawn or a heavily shaded area will delay and/or eliminate the potential for crabgrass germination. Moisture is also needed for the germination process and for survival after germination.

Crabgrass will germinate much later than you think. And, as you can see, many factors contribute to its germination. Consider these factors when applying pre-emergents. For instance, a somewhat dry sandy area should not be applied in the late spring, while a poorly drained lawn could be delayed until mid to late spring.

Several environmental factors can be used as guidelines in predicting crabgrass germination. You cannot use one factor only in making this decision.

1. Night temperature — consistently greater than 65°F.
2. Daytime temperature — consistently between 55-75°F.
3. Soil temperature — 7 to 10 consecutive days at or greater than 55-60°F.
4. Moist seedbed.

—Jeff Lefton, *Turfgrass Specialist,*
writing in *The Bull Sheet*