

Algae on Turf

Algae occur in almost every terrestrial environment on earth, even Antarctica, they are natural survivors and are some of the oldest living organisms.

Most algae contain chlorophyll and are therefore able to photosynthesise and grow, however many terrestrial algae found in turf grass soils can also be heterotrophic, which means they can obtain energy from the decomposition of other organic compounds. They are able therefore to survive deep within the soil where no light is found, however it is at the surface when they can photosynthesise that they thrive best.

The key factors that assist algae in turf grass soils are:

- Solar radiation
- Moisture
- Temperature
- Nutrients
- pH



Soil texture and organic matter tend to play less of a role, but increased nutrients both organic and mineral enhance the growth of algae.

Subsurface algae is very important in soils, they play a part in the organic carbon and nitrogen cycle, they also produce polysaccharides that helps to aggregate soils, and they can associate with plant roots, stimulating root growth and enhance the activities of other beneficial root-associated microorganisms.

Surface algae problems on greens can be a rapid and significant event. In periods where turf is under stress with a thin grass cover, environmental factors can conspire to favour the development of algal growth. Typically warm conditions with excess surface moisture and sufficient nutrients near the surface often after a fertilizer application can induce a 'blooming' of algal growth.

The photosynthetic ability of algae can be more efficient than turf under stress too, so in poorer light conditions where there may be shade, the establishment of squidge like algae can be prevalent.

Algal Growth Requirements:

- Excessive moisture
- Soil surface exposure to sunlight
- Adequate nutrients, particularly phosphates and nitrogen
- Weak and stressed turf

Controlling Surface Algae

- Understand why the algae has become a problem, if necessary and available look at effect of shading, and removal of trees and objects causing shadows
- Increase height of cut to alleviate stress and reduce sunlight getting to the soil to prevent establishment of algal growth.
- Develop a cultural programme to include regular top dressing, this will help to block direct sunlight from the soil surface present algae, consider irrigation requirements and surface moisture levels. If algal crust begins, disrupt and ensure free passage of air and moisture through the surface.
- Use a penetrant surfactant where excess moisture may become an issue.