Dealing with Stress

INTENSIVELY MANAGED TURF IS HIGHLY SUSCEPTIBLE TO STRESS, ESPECIALLY IN OUR EVER-CHANGING AND OFTEN EXTREME NORTHERN EUROPEAN CLIMATE.

Plant stress and its causes can take different forms which broadly fall into two categories:

(1) Abiotic (Non-living)
e.g. drought or Hypoxia – lack of oxygen

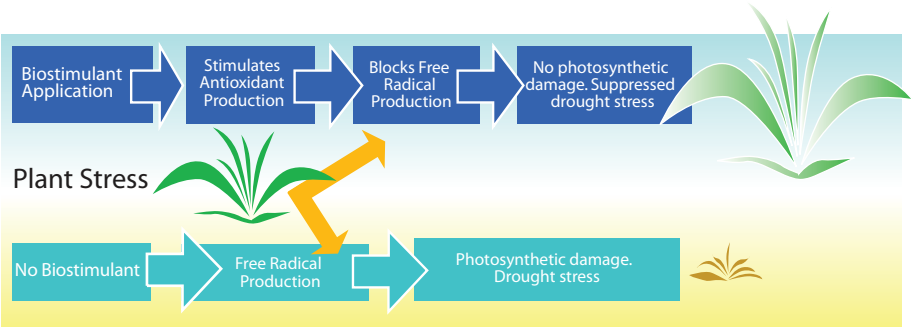
(2) Biotic (Living) e.g. nematode damage.

Whether dealing with abiotic or biotic stress, it is important to try to maintain a healthy plant prior to and during a stress period and there are a number of processes that can help to achieve this.

Work by a number of researchers in the U.S. has shown that damage to the grass plant during stress periods is caused by free-radical production and that this process and its associated negative effects can be minimised by production of antioxidants. In turn, antioxidant production can be stimulated by the combined application of the correct type and quantity of two key biostimulants - Cold processed seaweed extract and humic acid.

Pre-Stress Conditioning

It follows that if applications of biostimulants are made prior to known stress periods, the negative growth effects associated with stress can be minimised. Within the Headland range the most suitable product for pre-stress conditioning is Turfcomplex, with its cold temperature extracted seaweed (Algifol) and elevated level of humic acid. Trial work carried out by Headland Amenity in the hot summer of 2006 also highlighted the benefits of combining Turfcomplex together with a soil surfactant, such as TriCure AD. This combination applied throughout the sustained periods of hot weather, produced the most consistent results.



Post Stress Recovery

The pictures on the right show typical turf damage by pathogenic nematode species on Poa / Bent and Creeping Bentgrass greens respectively.

Assuming that the plant is already damaged by stress, there is a need to try and stimulate recovery of new root and shoot tissue.

As with pre-stress conditioning, there are a number of materials that can help achieve this, either by providing the building blocks of plant growth, as is the case with amino acids, or by stimulating the plants natural defense mechanism (SAR) using plant elicitors such as Harpin or Phosphite.

In order to achieve recovery from stress it is key that, along with applications of such materials, the correct cultural processes are also adopted to increase the plants recuperative ability.

Both these areas are dealt with in depth in the technical article available from Headland Amenity – 'Dealing with Nematode Stress'

Damage caused by Root-Knot nematode.

Damage caused by Spiral nematode.

Pre-Stress Conditioning Tankmix Suggestion

Turfcomplex @ 30L/ha Tricure AD @ 10L/ha
400- 600L of water
(Irrigated off leaf)

Post Stress Recovery Tankmix Suggestion

Turfite 7-24-0 @ 30L/ha Seamac Ultra Plus
@ 10L/ha TeMag HPE @ 6kg/ha
400 litres of water