

THE PRESSURE OF STRESS

Stress is an environmental pressure. As such it can be used to select hardy plant species over others less tolerant. We can use stress to get rid of annual meadow-grass if we want to. With finesse we can also use it to promote the forward development of the finer grasses. If you want to favour the development of desirable bent and fescue species you do have to learn how to use stress properly.

A GOOD GOVERNOR

The Disturbance Theory broadly centres on the knowledge that the finer grasses will populate a moderately settled environment whereas annual meadow-grass prefers a more aggressively disturbed situation. The more settled environment gives rise to the species with stronger competitive tendencies and an ability to tolerate a certain level of stress. The quick growing weeds aren't fit for anything other than regular disturbance and they don't develop natural strength (they reproduce). We can use stress against the weed annual meadow grass and to favour the stronger bents and fescues. We just need to be careful not to weaken the desired species as well. We should use stress simply to give the power to the finer grasses.

DRIVING FORCE

Stress describes the various environmental constraints to growth. It comes in many forms and from different sources. The significant sources of stress when trying to favour the bents and fescues over the annual meadow grass are:

- Droughting
- Starvation
- Soil acidity
- Desiccating winds
- Salinity

With care and understanding these sources can be used as the positive drivers of sward composition change. The problem with the different types of stress is that they act in different ways and they exert different selection pressures. You must be clear about the impact of each type of stress before considering using it.

DROUGHTING

Droughting is damaging and should be avoided. Rather than stressing the situation, you should be aiming to maintain turf health with the judicious use of irrigation inputs. Annual meadow grass doesn't really like to be dry. Just try to set a firm and dry balance rather than soft and green to give the finer grasses the edge. Regular aeration and the use of wetting agents will maximise the effectiveness of watering and so reduce the need for it. Hard-nosed droughting should be employed with care and only with a good dry patch control strategy in place. Take care, because too much drought stress will weaken the finer grasses as well.

You should try to withhold overall irrigation treatments towards the end of summer to weaken the annual meadow grass when making way for the emergence of new fine grass seedlings. Ease the pressure after a time to promote a quick germination and strong establishment of the new turf. Don't try to burn-out the meadow grass unless you already have a dominance of the finer grasses or you are fully confident of your job security. Just weaken the annual meadow grass enough for it to get a touch of anthracnose basal rot with the onset of autumn rain. Anthracnose basal rot used to be called "annual meadowgrass dieback" and was always seen as the good Greenkeepers friend. When doing this, don't let the situation get out of control and maybe apply a late season tonic feed (low NK or even NPK plus iron) to strengthen the situation before too much damage is sustained. Fungicide may also be necessary to halt a potentially damaging situation. Just try to make a way for the finer grasses at the right time.

HEALTHY GROWTH

I am not a fan of the strict starvation tactic because it holds back forward development. We need the finer grasses to grow and fill if they are to assume dominance. Simply set your fertiliser inputs at the level that produces healthy growth and good surfaces without the need for incessant verticutting. Too much growth and incessant verticutting favours the development of the disturbance loving annual meadow-grass. Regulate fertiliser enough to minimise the need for disturbance and also allow you to exert an element of drought stress given the chance.

ACIDITY

A simple view assumes that soil acidity stresses the environment by restricting nutrient uptake, but there is certainly more to it than that. Soil acidity can be used to force positive change as the bents and fescues will tolerate acid conditions, whereas the annual meadow grass doesn't do particularly well. A long-term aim might be to acidify the soil to pressurise the environment in favour of the bents and fescues.

A neutral or slightly alkaline situation does not *restrict* the growing environment and so annual meadow-grass does well without another overriding stress acting, such as an insistent wind or salinity. High alkalinity will restrict nutrient uptake and can be regarded as a stress factor but it also tends to bring disease, worms and weeds and it is not generally desired unless other controlling factors are more dominant.

THE BURNING BREEZE

I include the stress of a desiccating wind and salinity primarily for the seaside and links fraternity. The cold north wind holds back spring on the east coast of Scotland and seedlings don't stand a chance. Intermittent salt spray from the sea will also stress the situation to kill the weak. Certain types of the finer grasses are quite well adapted to survive these conditions and they will prevail as the annual meadow grass struggles. Intermittent salt spray coupled with a dominant wind can add enough stress to the situation to help a high pH favour the fescues. Although you can't really control these elements they are certainly beneficial and must be appreciated for what they are. Pray to your good god on exposed sites and overseed in the autumn. Salinity is a devil that keeps burning so you shouldn't invite it in.

POSITIVE PRESSURE

Think of the different types of stress in simple terms and realise the potential of each kind to help you change the nature of your greens. You can use stress to push out the annual meadow grass if you want to. A dominance of the finer grasses will make for better playing surfaces for longer in the year and with greatly reduced vulnerabilities. Be easy with stress and know that timing and control is the key. When playing with stress, try to be sensible, patient and understanding but not too forceful. Always look outside the comfort zone to find the best way forward.

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