

Summer Annual Grassy Weeds in Turf

Summer annual grasses are some of the most persistent and prolific weeds of turf in Australia. Among them, summergrass (*Digitaria* spp.) and crowsfoot grass (*Eleusine indica*) are the most economically significant across the majority of the country with a vast portion of summer weed control programs being targeted at these species.

As with all weeds, in particular annuals, a basic understanding of the species' lifecycle is required in order to achieve acceptable levels of control in the turf host. The lifecycle of an annual weed offers the turf manager an invaluable opportunity to plan and implement a weed control or prevention strategy in between seasons. The ability to stand back and assess the situation prior to the coming season is vital in successful management of these nuisance weeds in the turf manager's specific venue.

Summergrass

Botanical name: *Digitaria* spp.

Lifecycle: Summer annual

Description:

- Spreading, mat-forming monocot with light, yellow-green leaves
- Membranous ligule, folded vernation purpling at the sheaths and stem bases
- Inflorescence consists of multiple small, finger-like spikes radiating from a central point

Propagation:

- A prolific seeder fruiting throughout the warmer months and germinating between 12-15°C
- Propagated through seed and vegetatively through stolons



Crowsfoot Grass

Botanical name: *Eleusine indica*

Lifecycle: Summer annual

Description:

- Tough, dark green monocot with flattened stems and strap-like leaves
- Smooth leaf blades with folded vernation and white sheaths
- Short membranous ligule divided at the centre
- Tolerates low mowing heights
- Inflorescence consists of between two and ten spikelets on a long stem

Propagation:

- Seeds profusely from late spring through to autumn and germinates between 16-18°C



Pre-emergent Control

Pre-emergent herbicides offer the turf manager a unique opportunity to approach weed control in a proactive manner. Reactive applications of post emergent herbicides are often an inefficient approach to weed management as it is simply suppressing the symptom rather than eliminating the problem altogether. A well timed application of a premium pre-emergent herbicide can offer season long protection from germinating grassy weeds such as crowsfoot and summergrass.

Correct timing is crucial when it comes to pre-emergents. As most pre-emergents have no activity on existing weed populations the initial application must be positioned prior to germination of the target species. Applying the herbicide too early can also be problematic resulting in premature deterioration of the herbicides protectant properties in the soil prior to the seasons end. The germination of these weeds is driven predominately by soil temperature and moisture, making the calendar prediction of application timing difficult due to inconsistent annual weather patterns.

Monitoring soil temperatures is the most accurate method of planning pre-emergent herbicide applications. A reliable method for recording the soil temperature is to measure the temperature of the upper 50 mm of soil every morning. Do this at several points over the surface and average out the temperature. When the soil temperature reaches the optimum temperature for the species for five consecutive days germination will occur. Setting a target temperature slightly below the optimum should give the turf manager a few days lead time to have the herbicide applied.

As a unique feature that sets it apart from other pre-emergent options, Dimension EW from Amgrow actually offers early post emergent control on summergrass. This greatly enhances the flexibility of the application window for the control of this weed. And as summergrass typically germinates earlier in the season than crowsfoot grass, the turf manager can be confident in achieving excellent control of both species. The superior UV stability of the Dimension EW formulation also further improves application flexibility and allows turf managers to apply the product with peace of mind that loss of efficacy will not occur while the herbicide sits on the foliage.

Not only is the timing of the initial application important, but the correct period of overlap between the initial and subsequent applications will determine the level of control achieved. Using a pre emergent such as Dimension gives turf managers the option of employing the single application strategy for season long control. This avoids the potential for timing errors to occur, offering solid control for a period of months dependent on the rate used.

Dimension EW

Dimension EW is the leading pre-emergent herbicide used in the US turf market and possesses the broadest label of target weeds including a vast range of both grassy and broadleaf weeds. Previously categorised as a group I herbicide, Dimension EW also offers some differences in mode of action when compared to other group D pre emergent herbicides. While all group Ds work through inhibition of the mitotic process (cell division), dithiopyr, the active in Dimension EW does appear to bind to a different protein during spindle fibre production. Other group D's including prodiamine, pendimethalin and oryzalin all bind to tubulin, a major protein used in spindle fibre formation during mitosis. This makes Dimension EW a valuable tool for rotating with other group D herbicides.





Summergrass (*Digitaria sanguinalis*) control with Dimension EW 6 months after application



Untreated Control 98% Summergrass (*Digitaria sanguinalis*)



Product	Active Constituent	Formulation	Site of Weed Activity	Post Emergent Properties
Dimension	Dithiopyr 24%	EW Liquid	Root	Yes
Barricade	Proflamifone 48%	SC Liquid	Root	No
Embargo	Oryzalin 40%	SC Liquid	Root	No
Ronstar + Starter	Oxadiazon 0.95%	Granule	Leaf	No
Pre-M	Pendimethalin 0.75%	Granule	Root	No
Pendant	Pendimethalin 33%	EC Liquid	Root	No
Tupersan	Siduron 50%	WP	Root and Leaf	Yes

