

Summer Grass Control

Introduction

Annual summer grasses are a significant challenge on many golf courses within the “CNITMA” region, compromising both the appearance and playing quality of the golf course. The main annual summer grasses that are of concern within the region include:

- Annual summer grass/Five finger (*Digitaria sanguinalis*)
- Crowsfoot (*Eleusine indica*)
- Bristle grass (*Setaria sp*)
- Witch grass (*Panicum capillare*)

COMMON ANNUAL SUMMER GRASSES



Crowsfoot



Witch grass



Digitaria sanguinalis



Setaria pumila

Courtesy of: Trevor James AgResearch

Lifecycle

Summer grasses are the summer equivalent of *Poa annua* and are characterised by:

- Substantial seed reserve
- Vigorous and dominating growth habit

Germination/establishment of summer grasses requires:

- Warm soil temperatures (>13°C at 50mm depth approx). These soil temperatures typically occur during September - early October within the Waikato/Bay of Plenty.
Note: Generally each grass species has a specific temperature range at which it germinates. Crowsfoot requires warmer temperatures and generally germinates 4-6 weeks later than Summer grass (*Digitaria*).
- Light (bare ground or an open turf cover – particularly where the *Poa annua* dies out during summer).



Note: The “mat” created by dormant perennial grasses such as browntop or fescues is generally sufficient to exclude light from the soil surface and reduce or prevent the likelihood of the summer grasses germinating.

Left: *Digitaria* seedlings establishing within a bare area

Control strategies

Management

The overriding goal is to establish and maintain a complete, perennial turf cover especially during the spring / summer periods. Key management considerations include:

Fertility

Application(s) of nitrogen during late spring (late October approx) can assist to improve the density of the desired grasses, such as browntop.

Renovation

- Avoid exposing the summer grass seed bank with renovation treatments from mid-September onwards. This is more of a problem with treatments such as coring or dethatching that brings soil and seed to the surface.
- In the absence of irrigation, *Poa annua* dominant surfaces are more susceptible to invasion from summer grasses following renovation, given their typically slow growth and poor recovery at this time of the year.

Sowing

Although often easier said than achieved, introducing/increasing the content of perennial grasses (Browntop, Fescues, Cynodon etc) is the key to reducing problems with summer grasses.

Fumigation/stale seed bed

These techniques are useful when establishing a new turf surface in areas that have a history of summer grass.

Other

Other management considerations that can assist in reducing the severity of summer grass problems include management programmes for disease and Dry patch.

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CHEMICAL CONTROL OPTIONS FOR USE IN CONTROLLING SUMMER GRASS ON COOL SEASON GRASSES

Active ingredient	Trade names	Post/pre-emergent control	Registration NZ/ International	Types of surfaces	Rate (per ha)	Comment
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Chlorthal 750gai	Dacthal 75W	Pre-emergent	International	Ryegrass, Kentucky bluegrass	10 & 6 kg/ha	<ul style="list-style-type: none"> ▪ Not recommended on other cool/warm season grasses ▪ Initial application @ 10kg/ha and follow-up applications at 6 weekly intervals @ 6kg/ha ▪ Do not reseed for at least 12 weeks following treatments with Dacthal. ▪ Results with Dacthal maybe variable when controlling summer grass and are typically less effective when used on Crowsfoot ▪ Not widely used
Fenoxaprop-P ethyl 69gai	Puma S	Post emergent	International	<i>Poa annua</i> , NZ browntop, Creeping bentgrass, Fescues and Ryegrass	0.65 – 1.0L/ha	<ul style="list-style-type: none"> ▪ Not recommended on greens or warm season grasses ▪ Use with a spreader sticker such as. Codacide oil ▪ Effectiveness maybe reduced under hot conditions (>25⁰C) ▪ Adequate soil moisture is required ie summer grasses need to be actively growing.
Ethofumesate 500gai	Nortron, Ethosin, Claw	Post & Pre emergent	NZ/ International	Ryegrass	4.0L/ha	<ul style="list-style-type: none"> ▪ Not recommended on other cool /warm season grasses.
MSMA 600gai	Agpro MSMA 600	Post emergent	NZ/ International	Browntop, Ryegrass, Cynodon	11 L/ha	<ul style="list-style-type: none"> ▪ Not recommended on greens, <i>Poa annua</i> or Kikuyu ▪ To reduce phytotoxicity, MSMA is typically used at lower rates (3-5L/ha) on cool season grasses. ▪ Use with a spreader sticker such as Codacide oil ▪ Adequate soil moisture is required, to promote recovery and reduce phytotoxic effects on cool season grasses.
Pendimethalin 7.5gai	Premax Hi N 22-0-5	Pre emergent control	NZ	<i>Poa annua</i> , NZ browntop,	180-260kg/ha	<ul style="list-style-type: none"> ▪ A typical programme on cool season grasses involves an initial application at 220kg/ha and follow-up applications at 6-8 weekly intervals at 160-180kg/ha. ▪ When used at high rates necessary to control summer grasses, pendimethalin will provide post emergent control of <i>Poa annua</i> ▪ Highest label rate is required for controlling Crowsfoot. Follow-up at 8 weekly intervals for a <u>maximum of 3 applications/year</u> using the lower rate. ▪ Sowing should not occur for <u>at least</u> 12 weeks following the use of pendimethalin.
330gai	Pend-X, Ruck		International	Creeping bentgrass, Fescues, ryegrass,	6-10L/ha	
445gai	Stomp Xtra		Kikuyu, Cynodon	4.5-7.5L/ha		