



Natural Resources  
and Environment

AGRICULTURE  
RESOURCES  
CONSERVATION  
LAND MANAGEMENT

# Will bent grass cost you \$40,000 this year ?



A business of the  
Department of  
Natural Resources  
and Environment

 **victoria ON THE MOVE**

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Compiled by G. Batson, Agriculture Victoria, Ellinbank  
Designed by Topline Design, Warragul South, Victoria  
Printed in Victoria by RMI Print, Warragul

ISBN 0 7306 6240 3

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***Chemical control.***

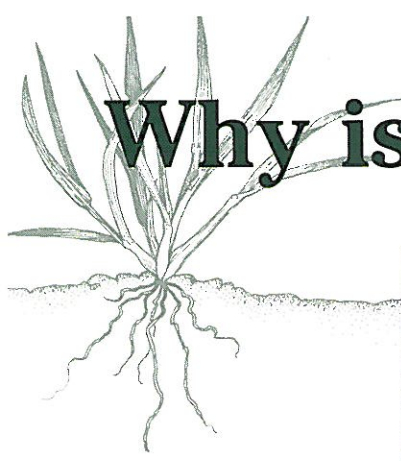
*There are restrictions on the use of some herbicides such as glyphosate, in particular geographical areas known as Chemical Control Areas (CCA). It is the responsibility of chemical users to familiarise themselves with these controls, refer Agriculture Note: Chemical Control Areas (CCA). Contact the Regional Chemical Standards Officer of the Department of Natural Resources and Environment if further advice is required.*

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# Why is bent grass a weed ?



Bent grass is a weed because its growth pattern is not suited to animal requirements. Bent grass grows very slowly over winter and early spring producing little feed for stock. In late spring and early summer bent grass produces excess feed of poor quality which is not utilised by stock. The accumulated trash chokes out clover and ryegrass in autumn.

In heavily infested pastures up to \$1,200 per hectare can be lost.<sup>1</sup>

<sup>1</sup> The dry matter lost due to the presence of bent grass can be up to 5,000 kg which equates to 200 kg butterfat (at \$6 per kg of butterfat)



*Little feed is produced from bent grass during winter.*

*Poor quality feed is produced from bent grass during late spring and summer.*



# Why is bent grass present ?

## Bent grass is able to out-compete other plants:

- *in soils with low fertility and high acidity (low pH)*

Ryegrass and clover require a higher soil fertility than bent grass. For ryegrass and clover to grow well and out-compete bent grass you need to aim for:

Olsen Phosphorus (P) above 15 milligrams per kilogram or mg/kg  
Colwell Potassium (K) above 250 mg/kg  
CPC Sulphur (S) above 10 mg/kg  
pH (water) above 5.4

- *in waterlogged soils*

Bent grass survives in waterlogged soils better than ryegrass and clover.

There are many options to reduce waterlogging. A booklet, 'Improving Waterlogged Paddocks' by F. Mickan explains how to determine the solution to the waterlogging problem. It is available from the Department of Natural Resources and Environment.

- *in lightly grazed pastures*

Light grazings during spring and summer allow bent grass surplus to accumulate which chokes out clover and ryegrass in the autumn.

- *in heavily grazed pastures*

Heavy continuous grazing or extended periods of set-stocking do not allow grasses such as ryegrass and cocksfoot to grow tall enough to shade out bent grass. Bent grass adapts to heavy grazing by growing slowly and close to ground level.

Grazing pastures evenly and then spelling them adequately ensures that bent grass is eaten and allows ryegrass and cocksfoot time to recover to shade out bent grass.

# Do I have bent grass on my farm?

Bent grass can survive and grow well in pastures receiving more than 550 mm annual rainfall.

## Recognising bent grass



*Bent grass has fine, blue-green leaves and grows close to the ground.*



*The seed-heads of bent grass are open with spreading branches and are red-brown to straw-colored.*

*When lightly grazed bent grass produces aerial tillers which are clearly identifiable.*



Bent grass, unlike ryegrass and cocksfoot, grows by underground stems called rhizomes.

## Are all bent grasses the same ?

There are many different types of bent grass found in Victoria. The most common type of bent grass found on Victorian farms is *Agrostis castellana*. All techniques in this booklet have been tested in Victorian pastures dominated by *Agrostis castellana*. Some overseas research, especially in New Zealand, has used pastures dominated by *Agrostis capillaris* and may not be relevant to Victoria. *Agrostis castellana* grows more vigorously and by longer rhizomes than *Agrostis capillaris*.



*Agrostis castellana*



*Agrostis capillaris*

**HANDY TIP:** On a foggy morning or after a heavy dew if the bent grass in your pasture has a distinctive blue-green tinge it is probably *Agrostis castellana*.

# How to reduce bent grass

## *Option 1. Graze only*

Grazing alone will not eliminate bent grass from pastures. The bent grass surplus produced over late spring and early summer can be reduced by increasing grazing pressure during that period. Pasture quality and stock performance, although not high, will be better than if bent grass is allowed to seed.

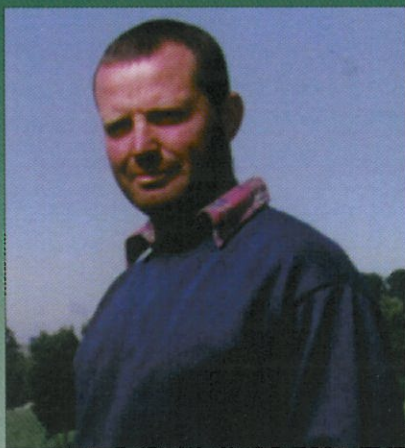
Strategies to increase grazing pressure include:

- increasing stock numbers and supplementary feeding during winter to support stock
- agisting other stock
- removing paddocks free of bent grass from the rotation for fodder crops, silage or haymaking, in order to increase the grazing pressure on remaining paddocks

Even if bent grass is heavily grazed over late spring and summer, there is generally more dead material present than in heavily grazed improved pasture. Other strategies to remove the bent grass surplus over late spring/early summer and improve the quality of feed on offer to stock are:

- Slashing or topping
- Seed-head suppression (Spraytop)

### *Fertilise and Graze - A Farmer's Experience*



Russell and Jackie McGlade became aware of a bent grass problem on their dairy farm about ten years ago, and decided to treat it simply as a fertility problem.

Russell found that about 10% of their 77 hectare farm located on a red gradational soil at Boolarra in Gippsland had bent grass. "The flats were as good as gold, but the banks were solid bent grass," said Russell.

The farm's standard fertiliser rate was doubled from 35kg to 70kg of phosphorus (P) applied per hectare. "The desirable grasses just took off and out-competed the bent grass," said Russell.

After an initial "flat out" fertiliser program the farm is now back to a maintenance level aiming to keep Olsen P at about 25, and the bent grass incidence is low. "I don't think we'll ever get rid of it completely, but we can keep it to a minimum," said Russell.

In paddocks where it is not practical to cultivate, Russell sticks to the fertiliser program. "Fertiliser is a cheaper option and you gain two benefits - the extra grass that grows as a result, and reducing bent grass". Since stepping up the fertiliser and reducing the bent grass, Russell estimates pasture production has easily doubled.

A successful bent grass eradication program, he says, relies on improving fertility. "Double the fertiliser as long as you've got some ryegrass and clover there," he said. "Hit it hard and go for it."



## ***Option 2.* Fertilise and graze**

Applying fertiliser/lime plus grazing at the correct heights will encourage ryegrass and clover plants in bent grass-pastures.

A soil test can be used to determine if you need to apply fertiliser or lime. Your soil test recommendation usually indicates the type and rate of fertiliser to apply. Soil testing kits are available from the Department of Natural Resources and Environment offices and fertiliser companies.

Grazing pastures evenly and then spelling them adequately ensures all plants are eaten and allows ryegrass and clover time to recover. Best results are obtained by allocating an area of pasture to stock that can be eaten within three days, followed by a period of rest. In order to maximise leafy growth of ryegrass and clover to shade out bent grass you need to allow pastures to grow to 10 - 15 cm (2,200 - 2,500 kg DM/ha) and then be grazed down to 3 - 4 cm (1,300 kg DM/ha). An alternative which is useful in some situations is to set-stock to keep pasture at 8 - 10 cm.

*Pasture Management Programs are conducted for dairy (Target 10) and meat (Prograze) producers which explain how to manage pastures to maximise production.*

### **Is this the best option for you ?**

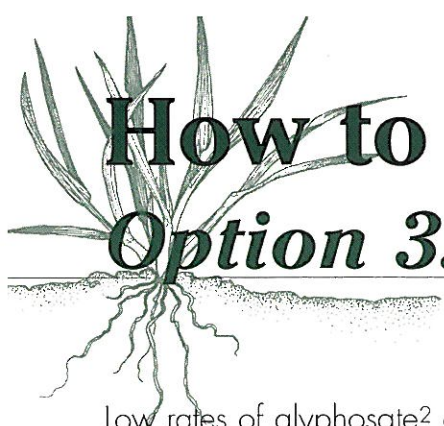
Fertiliser and grazing in the short-term will not rehabilitate pastures heavily infested with bent grass. Where bent grass is greater than 40% of the pasture full renovation to introduce ryegrass and clover is recommended (Option 3 and 4).



*Apply fertiliser and graze appropriately.*



*Renovate to introduce ryegrass and clover.*



# How to reduce bent grass

## *Option 3.* Seed-head suppression (Spraytop)

Low rates of glyphosate<sup>2</sup> applied during late October to late November suppresses the formation of seed-heads in bent grass. With follow up rains, bent grass remains leafy and provides good quality feed which is attractive to stock.

As a general rule, graze 7 days after application. Continue grazing the bent grass in rotation.

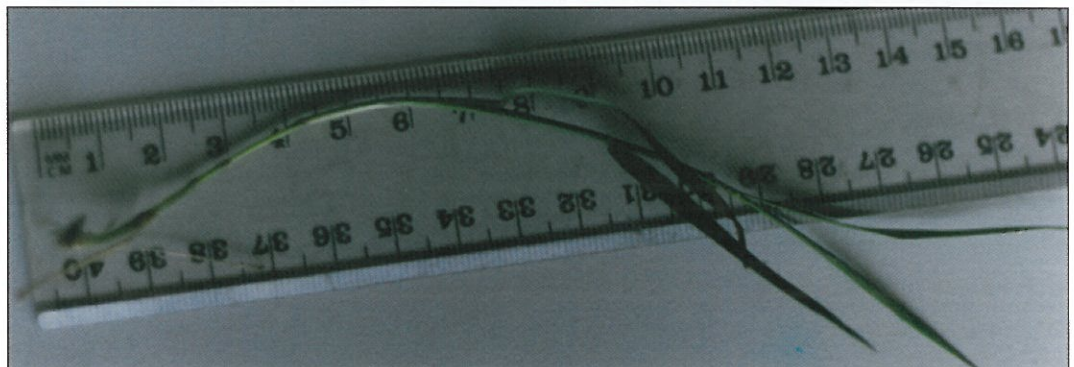
*Treated pasture*



*Not treated*



The optimum time to spray is before seed-heads emerge in bent grass. This is when stem length in bent grass is between 4 and 10 cm.



<sup>2</sup> Only some glyphosate products are registered for seed-head suppression of bent grass like Roundup CT, Roundup CT Xtra, Torch, Honcho, Rander and Saddle. Any reference to glyphosate in Option 3 is on the basis of those which have seed-head suppression as a registered use.

# After seed-head suppression

If ryegrass and clovers are present in the pasture at the autumn break, graze it in rotation and apply fertiliser regularly (Option 2) to encourage their growth.

In pastures with more than 40% bent grass at the autumn break, spray to kill bent grass and re-sow (Option 4).

## *Seed-head Suppression - A Farmer's Experience*



On the lighter flat country of Poowong North, Alan Beamish is slowly but surely winning the battle against bent grass. When Alan and his wife Yvonne first arrived at the 121 hectare property they found a farm with a lot of bent grass in some paddocks- even to the point where they discovered a buried mat of bent grass in one ploughed paddock.

Since then a slow but steady renovation has taken place on a number of their paddocks using different techniques. The one Alan praises the most is suppressing seed-heads with glyphosate, which he has used on nearly half the farm.

"The spraytopping technique is magic," he said. "If you spray at the right time then block graze large numbers of cattle over small areas, you eliminate 90% of weeds - all sorts, not only bent grass."

Alan sprays with a glyphosate product registered to suppress bent grass seed-heads and then grazes out the area heavily one week later. Some of these paddocks are then oversown in autumn.

He does, however, still use other techniques, usually tied in with a summer turnip program. He's also pleased with this renovation method. "If you choose the right clovers and ryegrasses to sow at the autumn break, bent grass can't compete," he said.

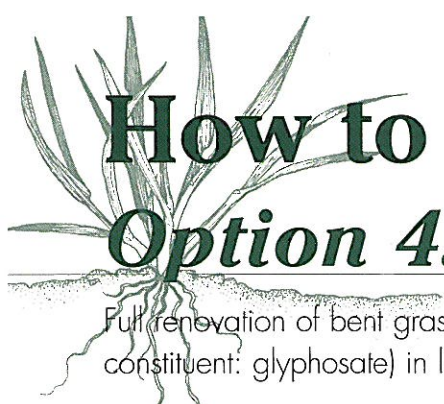
Appropriate Olsen P levels are crucial for good clover development and healthy pasture growth, according to Alan. His last soil tests showed that Olsen P is now up to around 24, a level he feels comfortable with. "You need to fertilise plants to their requirements," he said.

But the key is to utilise the pasture grown. It's no use, he says, growing standing hay. "If you haven't got the animals to eat it, conserve it as hay or silage," he said.

The Beamishes now have a farm running 68% more cattle and their per cow production figures have gone up. Alan estimates that pasture growth rates have increased by 50% or more, and in some re-sown areas by 100% or more.

"I don't think you will ever eradicate bent grass but you can reduce and control it," he said.

"Remember to feed your pasture, look after it and use the excess."



# How to reduce bent grass

## Option 4. Spray to kill and re-sow

Full renovation of bent grass-pastures involves applying a herbicide registered to kill bent grass (active constituent: glyphosate) in late spring/early summer, followed by cultivation and re-sowing in early autumn.

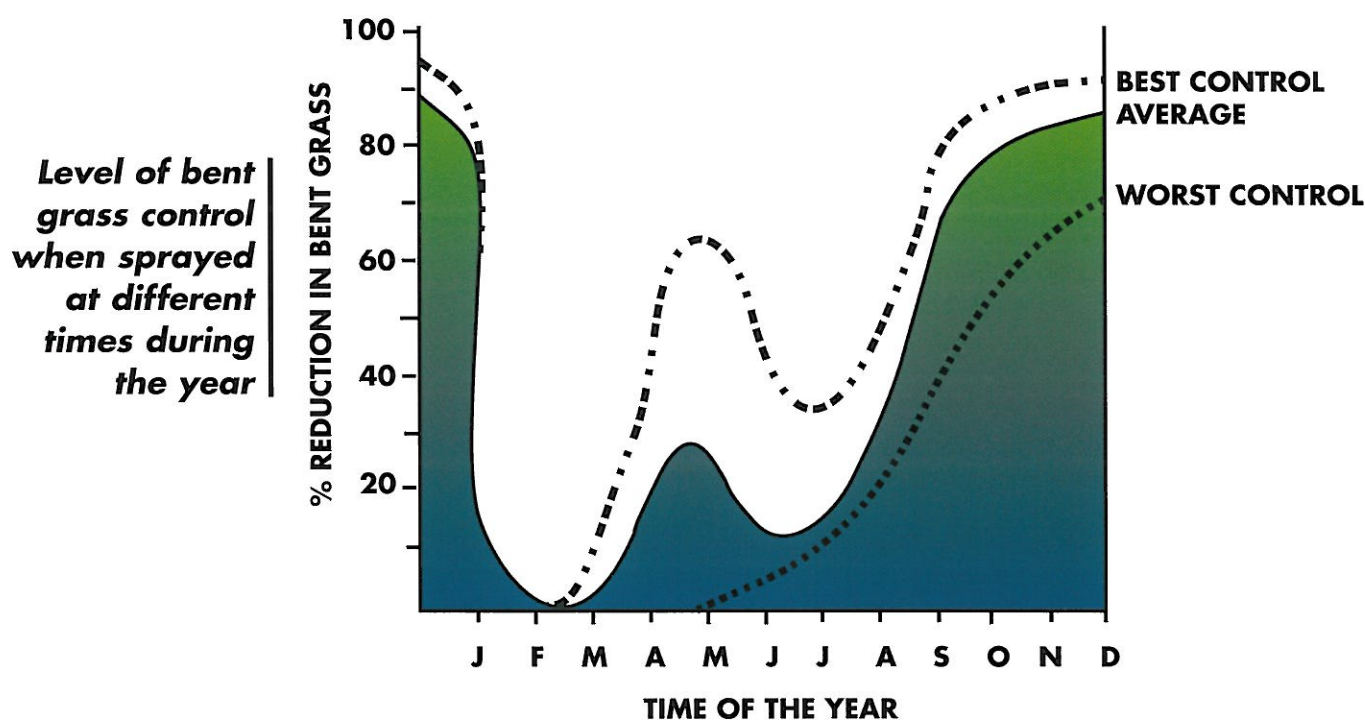
### Steps

#### 1. Bare out

Graze heavily or cut bent grass to 4 cm, 3 - 6 weeks before spraying.

#### 2. Spray

The best time to spray is when seed-heads in bent grass are just emerging in late November/early December and bent grass is green and actively re-growing.



#### 3. After spraying

Allow 7 days for the herbicide to work before removing any trash by grazing or cutting. Apply lime to acid soils before cultivation.

#### 4. Cultivate

Control of bent grass is more effective if bent grass is cultivated after spraying. Cultivation needs to break the bent grass up into small pieces in the first pass. Large clods of bent grass are difficult to break up with further passes of cultivation.

Cultivate to 5 - 7 cm, 10 - 21 days after spraying using a rotary power harrow. An alternative is to use a closely spaced (8 - 12 cm) narrow pointed ('lucerne points' 1 - 2 cm wide) spring tyne cultivator.

Disc ploughs and conventional tynd implements do not effectively break bent grass into small pieces in the first pass and are not recommended.



*Small pieces of bent grass.*



*Clods of bent grass which can regenerate.*

## **5. Leave fallow or sow a fodder crop**

The advantage of a fallow is that bent grass can be sprayed at the optimum time and a fine seed-bed free of weeds prepared over summer. If using a fodder crop before re-sowing spraying needs to be 4 weeks earlier to suit the crop sowing time. While bent grass control is still good it is not optimum.

*For a guide on how to sow fodder crops see 'Pasture Establishment and Management - a Field Guide' by P. Stapleton at the Department of Natural Resources and Environment.*

## 6. Remove weeds and sow to new pasture

Spray to kill any weeds after a fodder crop has been removed and before sowing new pasture. Sow new pasture at the autumn break.

To reduce bent grass re-invasion encourage rapid growth of the new pasture by:

- sowing seed at high rates (e.g. 20 - 25 kg per hectare)
- broadcasting seed or reducing the space between drill rows (e.g. cross sowing)
- applying fertiliser to increase the vigour of ryegrass and clover
- grazing at the recommended heights
- controlling other weeds and pests in the new pasture
- not cutting the newly sown pasture for silage or hay in the first year

## 7. Graze new pasture appropriately and apply fertiliser regularly

Have brief concentrated grazings in the first year. Allow pasture to grow to 10 - 12 cm and then be grazed down to 3 - 4 cm. Graze with many light animals for a short period (3 - 4 hours) to fully graze out the pasture and minimise treading damage.

Apply fertiliser as recommended from soil test results to ensure optimum soil fertility.



To keep control of bent grass in subsequent years you need to :

- *Maintain increased soil fertility*
- *Graze appropriately*
- *Utilise or conserve November - January pasture surplus*
- *Keep paddocks well-drained*

## *Spray to Kill and Re-sow - A Farmer's Experience*



It was about 1986 when Peter and June Owen noticed that no matter how much extra land they cleared, they could never seem to run any more cattle on their Driffield dairy farm in Gippsland. And at a Grasslands Field Day, Peter realised why. He had 120 hectares of bent grass.

In spring 1986 Peter and June sprayed out 24 hectares of bent grass, the beginning of a program that was to last eight years and completely renovate the farm's pastures.

They tackled the problem by first cutting silage in late October, spraying to kill the bent grass towards the end of November, followed by cultivation then letting the paddock lie fallow over

summer. During that time, Peter cultivated again with closely-spaced tynes to further break up the bent grass. After working lime into the soil and preparing a seed-bed, he sowed pasture just after the autumn break.

This method, says Peter, gave very good results. The Owens also tried introducing a turnip crop between spraying and resowing pasture. However, Peter feels the fallow method gives better results because the grass can be sprayed later when it is more susceptible and the paddock can be better cultivated to stop bent grass from re-invading.

"And the amount of extra grass you grow from your newly sown pasture before winter far exceeds any pasture growth you may have lost over summer by using a summer fallow," he said. By reducing bent grass to less than 5% of their pasture in any one paddock, the Owens have been able to increase the number of milkers by 70% and more than double milk production.

### **Just the beginning**

Peter warns that renovating the pasture, however, is just the beginning. If you're going to invest in pasture renovation, he says, there are two critical factors - you need to manage the extra growth, and you need to "feed" it.

Part of the Owens' success comes from increasing Olsen P levels of the property from 10 - 12 to between 27 and 50 ppm. "It is critical that soil nutrient levels are increased and maintained to the levels needed to sustain the improved species you have sown," said Peter.

Another major success factor has been to manage the extra growth by following recommended grazing practices. "Don't overstock or allow the pastures to get too long." Too many people, he says, change their pasture but don't change their management practices - and two years later they're back to bent grass again. "The key to success is to do the job properly."

*This booklet was compiled with the assistance of:*

Alan and Yvonne Beamish  
Dr Richard Eckard (DNRE, Ellinbank)  
Keith Fallow (Monsanto)  
Janet Granger (DNRE, Ellinbank)  
Reg Hill (DNRE, Ballarat)  
Sandra Jefford (GippsDairy)

Frank Mickan (DNRE, Ellinbank)  
Russell and Jackie McGlade  
Greg O'Brien (DNRE, Ellinbank)  
Peter and June Owen  
Jim Stranger (DNRE, Traralgon)  
and many others who contributed to this booklet.

