

meatup FORUM

For the latest in red meat R&D

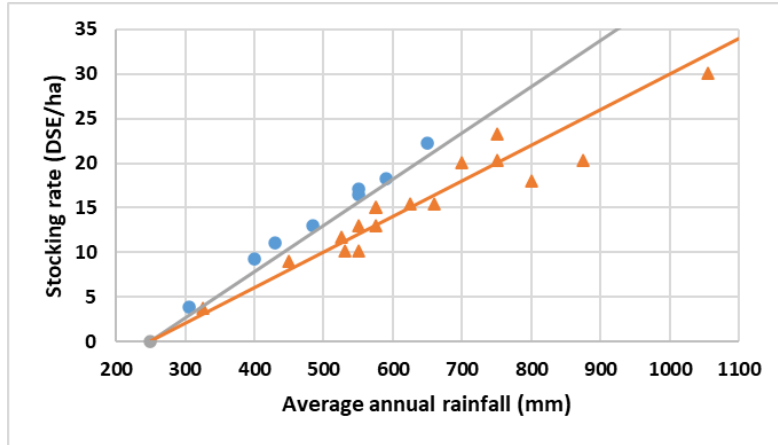
Pasture manipulation and resowing

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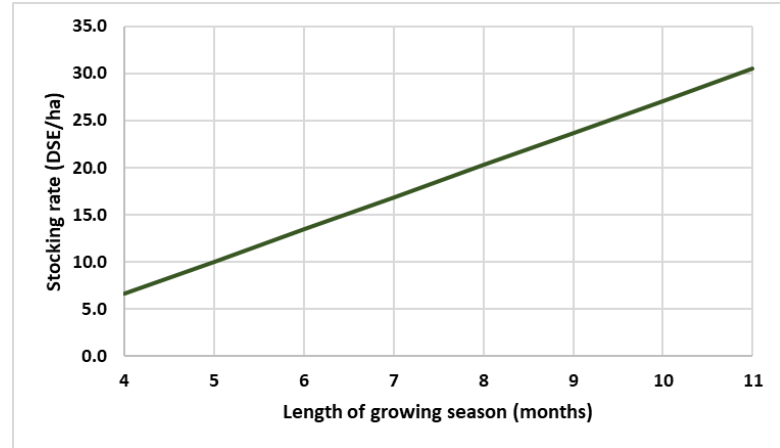
Manipulate or resow?

Question: Is the pasture performing to its potential?

Stocking rate assessment (actual V potential)



Adapted from French 1987, Hosking and Cameron, 1983.



Adapted from Saul and Kearney, 2002.

Manipulate or resow?

Question: Is the current pasture being utilised?

Simple assessment (most vulnerable time)

- **Under-utilised**, with more than two handfuls of litter and significant standing feed *in most years*
- **Well utilised**, with one to two handfuls of litter and little standing feed *in most years*
- **Over utilised**, with less than one handful of litter and no standing feed *in most years*.



Manipulate or resow?

Question: Do we have enough desirable species to encourage?

Pasture Paramedic

3 assessment criteria

- Desirable grasses
- Desirable legumes
- Dominant weeds

Suggested decisions

- Maintain current management
- Consider manipulation
- Consider resowing or oversowing



Manipulation – desirable grasses

How do I ... know if my perennial grasses need rescuing?



The Issue:	Sown perennial pastures thin out over time for a range of reasons, reducing potential production and providing opportunity for weeds to invade. Resowing pastures is expensive and can be risky.
The Impact:	Reduced desirable grass content opens the pasture up to weed invasion, which can add further stress to a pasture on the decline. Eventually the sown pasture loses productivity and persistence.
The opportunity:	There are interventions to improve desirable perennial grass content. Knowing what they are and what you can do to get them right, can increase perennial grass content and strengthen the pasture.

A productive pasture will have around 50% desirable perennial grass in spring (below) and 40% sub-clover content (the remaining 10% is volunteer pasture species and, sometimes, weeds). A perennial grass content consistently less than 30% in spring suggests something is limiting growth.

There are many possible reasons for poor desirable perennial grass growth or persistence. This factsheet contains a checklist of management factors you need to get right to achieve strong and resilient pastures. This can help you rule in or out the possible reasons why the perennial grass in a paddock might be failing to thrive

and focus on what to get right. It also provides some principles behind the management factors and directs you to further information.

The requirements of the four common introduced temperate perennial grasses – perennial ryegrass (*Lolium perenne*), phalaris (*Phalaris aquatica*), tall fescue (*Lolium arundinacea*) and cocksfoot (*Dactylis glomerata*) are described, but the tactics can be applied to other desirable grasses. However, while grasses have commonalities, there can be management differences specific to the particular grass.



Paddock consideration	Yes, no, sometimes or NA	Additional notes
SOIL CONDITION		
Is Olsen P at least 12mg/kg, Cowell P at least 35mg/kg (moderate category PBI* = 141–280) for introduced perennials?		PBI ranges with Cowell P target values: PBI 35–70 (very low) – Cowell P 23mg/kg PBI 71–140 (low) – Cowell P 25mg/kg PBI 281–840 (high) – Cowell P 45mg/kg
*PBI (phosphorus buffering index)		Native grasses are favoured by lower fertility levels. For moderate responsive native grasses, target no more than Olsen P 12mg/kg or less than 8mg/kg for low fertility native grasses.
Is Colwell K at least 105mg/kg for sandy loam or 120mg/kg clay loam?		Colwell K soil test interpretation is based on soil texture and the critical value increases with increasing clay content. Other Cowell K target values are: Sand – 95mg/kg Sandy clay loam – 110mg/kg
Is KCl sulphur at least 6mg/kg?		Can measure lower under dry conditions if little soil mineralisation has occurred.
Is soil pH (CaCl ₂) at least 4.5 and exchangeable aluminium less than 10% for sensitive species or less than 20% for acid tolerant species?		Acid sensitive species includes most phalaris cultivars. Acid tolerant species include perennial ryegrass, tall fescue and cocksfoot and phalaris cultivars: Advanced AT [®] and Landmaster [®] .

1. Soil condition
2. Grazing – green & dry pasture
3. Competitive weeds
4. Pests
5. Environment

Manipulation – sub clover

How do I identify sub-clover cultivars?

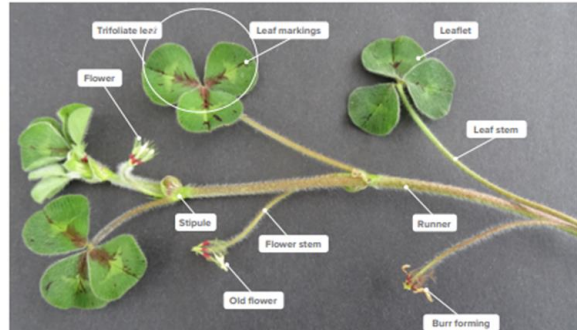
The issue:	Identification of individual sub-clover cultivars is difficult, making optimal management of sub-clover, particularly older cultivars, challenging.
The impact:	Not being able to identify problem sub-clover cultivars means up to 30% of winter production could be forfeited if growing outdated varieties. Failure to identify oestrogenic sub-clovers can impact sheep reproduction, causing health issues including permanent infertility.
The opportunity:	Developing basic skills in cultivar identification can help narrow down what sub-clover cultivars are growing in your paddocks.

Why should I get to know my sub-clover?

Identifying cultivars can be useful to determine if a pasture contains outclassed or oestrogenic (O) cultivars and to assess how well newly sown varieties are competing against residual plants.

There are at least 80 commercial varieties or cultivars of sub-clover in Australia, along with many naturalised strains and crosses. Accurate identification can be difficult and at times can only be made by experienced agronomists or researchers.

Figure 1. Features of sub-clover during spring.



1. Hairs on the runners

Runners are either considered hairy/very hairy or have no or few hairs.



Very hairy runner (left) to minimal hairs (right).

2. Flower tube (calyx) colour

Flowers on most varieties have green flower tubes, but some have distinct or faded red bands that can cover 25–100% of the tube. Some can have lobes on the flower tube that are lightly pigmented.



The flower tube on left is green, the flower tube in the middle has light pigmentation on the top quarter and on the right, purple-red pigmentation covers three-quarters of the tube.

3. Stipule colour

Sub-clover plants have small leaves located at the base of the leaf stem called stipules. Markings will vary from green veins to red veins and may or may not have solid red colouring.



Stipule pigmentation:
1. veins green
2. veins red
3. veins red plus narrow red bar
4. red surface.

Manipulation – sub clover



How do I determine why my sub-clover is underperforming?

The issue:	Many sub-clover pastures fail to perform for a range of reasons. In many of these situations, producers remain either unaware of lost production or they suspect it is underperforming but are not sure why.
The impact:	Producers are missing the opportunity to maximise livestock production by improving their feedbase. Resources are wasted attempting to improve pastures without identifying the cause of underperformance.
The opportunity:	Producers can better meet livestock condition targets and create more stable and resilient pastures by identifying and addressing the factors limiting sub-clover growth.

What makes a good sub-clover pasture?

A productive pasture will have around 40% sub-clover content in spring. A sub-clover content consistently less than this over several years would suggest something is limiting growth.

There are many possible reasons for poor sub-clover growth, so it is important to make the correct diagnosis. This guide is designed to help identify what might be limiting sub-clover growth – both common and less common reasons. Diagnosis involves visual observations, some testing and possible field confirmation.



The rule in/rule out diagnosis chart

SEASONAL CONDITIONS (observation required)		FURTHER DIAGNOSIS
Has there been repeated :		
<ul style="list-style-type: none"> poor spring finishes? years of false or late autumn breaks? 	YES	<p>Search for residual surface and buried burr in the top 1cm at the end of summer and check for plump seeds. Want more than 50 burrs/0.1m².</p> <p>Oversow additional sub-clover seed and observe its response.</p>
	NO	
SOIL CONDITION (based on the results of soil/tissue tests)		FURTHER DIAGNOSIS
Is the:		
<ul style="list-style-type: none"> Olsen P less than 8mg/kg or the Colwell P less than 19mg/kg (moderate PBI=190)? pH (CaCl₂) less than 4.3? 	YES	<p>Observe sub-clover leaf area in high-fertility areas. Should be larger than a five cent coin.</p> <p>Observe nodulation on plant roots. Want more than twenty small or three large pink coloured nodules.</p> <p>Apply test strips of phosphorus and lime, individually and in combination, and observe growth.</p>
	NO	
Is the:		
<ul style="list-style-type: none"> molybdenum less than 0.5mg/kg? 	YES	<p>Observe nodulation on plant roots. Want more than twenty small or three large pink nodules.</p> <p>Apply test strips of trace elements, individually and in combination, and observe growth.</p>
	NO	

1. Seasonal conditions
2. Soil condition
3. Grazing
4. Pest and disease
5. Other possibilities

Resowing

Question: Are the economics of resowing acceptable?

The screenshot shows the 'Pasture improvement calculator' website. At the top is a dark green navigation bar with the title 'Pasture improvement calculator' and four menu items: 'HOME', 'INSTRUCTIONS', 'CALCULATOR', and 'ETOOLS'. Below the navigation bar are three main content panels. The first panel, 'Instructions', describes the tool's purpose and includes a 'READ INSTRUCTIONS' button. The second panel, 'Data entry', explains the input requirements and includes an 'ENTER DATA' button. The third panel, 'Results', lists the outputs and includes a 'VIEW RESULTS' button. At the bottom, a yellow box contains an 'Acknowledgements / disclaimer' section.

Pasture improvement calculator

HOME INSTRUCTIONS CALCULATOR ETOOLS

Instructions

Background information and definitions

Read more about the purpose of the pasture improvement calculator and how to use it effectively.

READ INSTRUCTIONS

Data entry

Development and maintenance costs, general assumptions

Input a variety of data for paddock development and maintenance to determine your best approach for pasture improvement.

ENTER DATA

Results

Net present value, internal rate of return and peak debt

See the projected cumulative additional net income for improved pasture and the pattern between stocking rate and gross margin.

VIEW RESULTS

Acknowledgements / disclaimer

The Pasture Improvement Calculator was developed by Lee Beattie (Beattie Consulting Services, Hamilton), Geoffrey Saul (PSA Services, Port Fairy) and Kate Sargeant and Alison Dowling (Agriculture Victoria). This tool may be of assistance to you but EverGraze, its industry partners Beattie Consulting Services and PSA Services accept no responsibility whatsoever by reason of negligence or otherwise arising from the use of the information generated by this Tool.

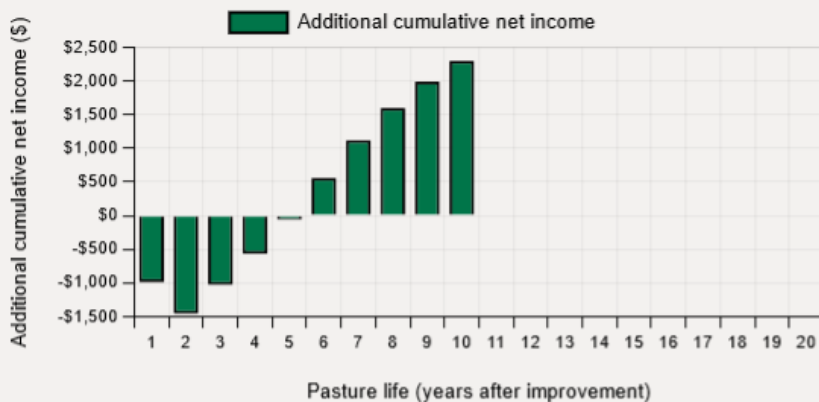
Resowing

- **Paddock infrastructure**, related to land classes, paddock size and water to enable appropriate grazing.
- **Soil conditions**, including fertility, pH and roughness of the paddock
- **Weed and pest control**, before, during and after establishment
- **Seed selection**, to suit the climatic conditions, soil type and aspect (PTN, Pasture Picker)
- **Timing and method of sowing**, including machinery type and set up
- **Post sowing observations**, around establishment, pests, weeds
- **Post sowing grazing management**, including when to graze, how hard and how often

Resowing

Measurement	Value	Decision criterion
Net Present Value (NPV) ⓘ	\$703	Undertake paddock development if NPV is greater than zero at the required discount rate.
Internal Rate of Return (IRR) ⓘ	26.4%	Undertake paddock development if IRR is greater than or equal to your specified discount rate.
Peak debt ⓘ	-\$1,461	Can you cover this cash flow with equity or borrowed funds?
Year of peak debt ⓘ	2	
Break even year ⓘ	6	Can you cover a negative cash flow for this length of time?

Additional cumulative net income for improved pasture

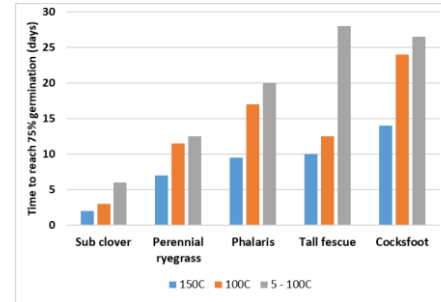


Resowing (PGS)

Resowing plan

- **Preparation phase** (soils, weeds, pest control, machinery)
- **Sowing phase** (timing, establishment observations)
- **Post sowing management** (grazing, weeds, fertiliser)










Criteria	Score	My score
Is row spacing 20 cm or less?	0 (greater than 30 cm) to 5 (15 cm or less)	
Do the points create small (~2mm), even crumbs of soil under good moisture conditions?	0 (no, big crumbs or powder) to 5 (yes, perfect crumbs)	
Can I achieve even sowing depth of 20 mm?	0 (no, very uneven) to 5 (yes (very consistent))	
Can I adjust the seeding rate in increments of at least 0.25 kg/ha?	0 (no 1 kg/ha or more adjustment) to 5 (yes, 0.25 kg/ha or even less)	
Does the soil fall back and contact the seed?	0 (no, a lot of seed visible, big air spaces) to 5 (yes, 95% of seed covered and soil surrounding the seed)	
Is there 5 to 10 mm of soil covering the seed after sowing?	0 (no, greater than 25 mm or no coverage) to 5 (yes, 5 to 10mm coverage)	
TOTAL SCORE		



Topic resources - soils

VISUAL INDICATORS OF SOIL CONDITION PART I



What do you see and when?	What could this indicate?	What test can I do to confirm?
  <p>Dark green patches with greater growth of grass or clover, paler green in other areas. Best time to look is late winter and early spring.</p>	<p>Pale green areas deficient in nitrogen, potassium, phosphorus or sulphur Dark green areas are urine patches or manure pats. Urine contains high amounts of nitrogen and potassium and some sulphur. Dung affected areas also contain phosphorus.</p> <p>Selective grazing Stock avoid pasture near dung while colour remains (up to 3 months).</p>	<ul style="list-style-type: none"> Soil testing with reference to potassium, nitrogen and sulphur. Avoid sampling the dark green areas. Test strips of potassium, nitrogen and sulphur fertiliser.  <p><i>Picture: Nitrogen response (left) with 225kg/ha applied in May. Photo Lisa Wien Ag Consulting</i></p>
 <p>Yellowing or pale green colour in pastures. Seen in late winter to spring.</p>	<p>Deficiency in potassium, nitrogen or sulphur or trace elements such as molybdenum</p> <p>Waterlogging, resulting in transient nitrogen loss.</p> <p>Maturing or flowering winter grass (blue-green)</p> <p>Dying plants caused by red-headed cockchafer grazing plant roots.</p> <p><i>Picture: Winter grass (above) and Oxley grass (Flower rose) (below) killed with yellow brown spots caused by Helicoverpa rugosa.</i></p>  	<ul style="list-style-type: none"> Soil test, with reference to phosphorus, potassium and sulphur. Tissue test for micronutrients, with attention to molybdenum. Abundance of low fertility weeds and absence of high fertility weeds. Test strips of nitrogen and / or potassium, sulphur and molybdenum fertiliser.  <p><i>Picture: Potassium response in test strip.</i></p>
 <p>Grass dominant pasture with little or no legume and slow growth. Best seen late winter to mid spring.</p>	<p>Possible phosphorus or molybdenum deficiency Low soil pH (acid activity)</p> <p>Inappropriate sub-clover management, such as leaving too much dry material at the autumn break, long rotations encouraging grass dominance or cutting hay in later maturing clovers.</p>	<ul style="list-style-type: none"> Soil test, with reference to phosphorus, pH and aluminium. Plant tissue test for molybdenum. The dry material litter test in late summer/early autumn. <p><i>Picture: Amount of loose litter in its normal, ideally one to two handfuls is 2. Low quality promoter feed need breakdown of sub-clover.</i></p> 

[Visual indicators of soil condition Part I: In the paddock - YouTube](#)

[Visual indicators of soil condition Part II: Plants and pasture - YouTube](#)

[Visual indicators of soil condition Part III: Soil surface and clover roots - YouTube](#)



How do I manage soil health to grow high quality sub-clover?

The issue:	Sub-clover can be the canopy in the conditions for mixed pastures. If your sub-clover looks poor or sparse, it can be a sign there is something inadequate in the soil affecting the desirable grasses.
The impact:	Reduced sub-clover content means reduced animal production, as clovers are more digestible than other forages, supporting higher consumption and faster weight gain. Poor sub-clover also results in decreased soil nitrogen, which restricts desirable grass growth and favours weeds which prosper in low-fertility soils.
The opportunity:	Getting the soil health right increases pasture growth, which leads to improved animal performance.

How do I know if my sub-clover is substandard?

Does your sub-clover have a leaf area smaller than a five cent piece and is the plant bright green with no mottling on the leaves? Is the sub-clover content of your pasture less than 50% in late winter and early spring? If you answered yes to any of these questions you may have an underlying soil constraint affecting sub-clover production.



Larger sub-clover leaves taken from plants next to sheep dung, compared to smaller leaves representing plants away from dung



PROFITABLE GRAZING SYSTEMS TRAINING PACKAGE



PayDirt

Getting the best bang for your fertiliser buck

Producer manual



Topic resources - Grasses



How do I ... know if my perennial grasses need resowing?

The issue: Sown perennial pastures thin out over time for a range of reasons, reducing potential production and providing opportunity for weeds to invade. Resowing pastures is expensive and can be risky.



How do I optimise seedling recruitment to avoid resowing?

The issue: Sown perennial pastures thin out over time, reducing productivity and providing an opportunity for weeds to increase. Resowing pastures is expensive and risky.

The impact: Reduced desirable grass content increases the opportunity for weed invasion that can add further stress to an already declining pasture. Eventually the sown pasture loses both productivity and persistence.

The opportunity: There are strategies that can be used every few years to encourage seedling recruitment in perennial ryegrass and cocksfoot, resulting in new plants without having to resow.

Seeding is part of the natural life cycle of perennial grasses, but allowing plants to mature and drop seed is not essential for their survival. However, encouraging optimal seeding is a strategy for some perennial grasses which tend to thin out due to hot and dry summers.³

How do I get perennial grasses to thrive and survive?

A resource for advisors

The issue: Getting productive and persistent pastures is influenced by how we manage perennial grasses to recover and maximise their growth following grazing. Under-grazing can be just as detrimental for growing productive high quality pastures as over-grazing.

The impact: Under-grazing leads to wastage of pasture and dead plant material will restrict new growth and reduce overall quality of herbage. Over-grazing maximises utilisation of pasture, but repeated over-grazing draws down a plant's reserves and over time reduces its persistence.

The opportunity: Understanding how perennial grasses grow and the factors affecting leaf emergence, tiller and root growth means we can better manage for them. We can create and utilise flexible grazing systems to optimise productivity and persistence of sown perennial grasses in a mixed pasture.



How do I ... remove excess mature reproductive pasture?

The issue: Dry reproductive tillers remaining at the autumn break reduce subsequent growth of perennial grasses and annual legumes.

The impact: Failure to remove the mature, reproductive growth reduces potential production from summer-active species and slows autumn pasture recovery of winter-active species.

The opportunity: Removing the reproductive stems by grazing or through interventions such as slashing takes advantage of summer rainfall and sets up potential summer and autumn pasture production.

The four grasses (phalaris, cocksfoot, tall fescue and perennial ryegrass) produce reproductive tillers each year.

Common to all grasses is the need to remove excessive reproductive tillers by the autumn break. Failure to remove the mature, reproductive tillers will retard new

Topic resources – Sub clover



How do I determine why my sub-clover is underperforming?

The issue: Many sub-clover pastures fail to perform for a range of reasons, producers remain either unaware or unaware of soil pH is underperforming but are not sure why.

The impact: Producers are missing the opportunity to maximise the productivity of their pastures. Resources are wasted and productivity is reduced without identifying the cause of underperformance.

The opportunity: Producers can better meet livestock condition targets and resilient pastures by identifying and addressing the cause of sub-clover growth.

What makes a good sub-clover pasture?

A productive pasture will have around 40% sub-clover content in spring, a consistently less than this over several years would suggest something is wrong. There are many possible reasons for poor sub-clover growth, so it is important to diagnose. This guide is designed to help identify what might be limiting a common and less common reasons. Diagnosis involves visual observation of field confirmation.



How do I identify sub-clover cultivars?

The issue: Identification of individual sub-clover cultivars is essential for the management of sub-clover, particularly in mixed pastures.

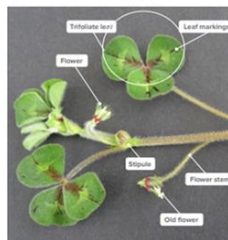
The impact: Not being able to identify problems with winter production could be forfeited. Identifying individual sub-clover cultivars allows for the selection of cultivars including permanent infestations.

The opportunity: Developing basic skills in cultivar identification allows sub-clover cultivars are growing in pastures.

Why should I get to know my sub-clover?

Identifying cultivars can be useful to determine if a pasture is suitable and to assess how well newly sown varieties are performing. There are at least 80 commercial varieties or cultivars of naturalised strains and crosses. Accurate identification is essential for agronomists or researchers.

Figure 1. Features of sub-clover during spring.



How do I replace outclassed or troublesome sub-clover cultivars?

The issue: Outdated sub-clover cultivars can cost returns due to growth habit, soil-borne diseases, insect infestations, which affects livestock fertility.

The impact: Reduced winter feed production of up to 30% and increased, long and short term fertility lowering for livestock.

The opportunity: More recently bred cultivars offer better disease resistance, nitrogen content. This means improved kangaroo and animal performance.

What are outclassed or troublesome sub-clover cultivars?

They are cultivars which result in significant pasture and/or animal and common losses occur because the sub-clover contains oestrogen, and/or are susceptible to plant diseases, resulting in lower annual production. Improvements in growth characteristics, pest and disease resistance a gap between older and newer cultivars.



The image showing mixed sown cultivars. On the left is the older Station Park cultivar, showing additional biomass production.

* Cattle are less likely to be affected, although international studies report cases of legume containing oestrogen causing reduced fertility.



How do I ... optimise sub-clover based pastures?

The issue: Subterranean or sub-clover is an effective but its productivity is low.

The impact: Producers are missing an opportunity to increase production.

The opportunity: Good establishment and management of highly productive and persistent sub-clover to the soil greatly benefiting production.

Sub-clover is an essential component of a stable and productive pasture system.

- Well nodulated sub-clover will 'fix' nitrogen that can be used by other plants.
- One tonne of sub-clover dry matter (DM) can produce 100kg of sub-clover maintains high feed quality throughout the year.
- In the vegetative stage, the green material is highly digestible and high in energy content above 11MJ ME (megajoules of metabolisable energy).
- Even though the pasture declines in digestibility as it matures, the seed and burr of sub-clover are also high in protein.

Table 1. Field test results for sub-clover plants and burr sampled in spring.

Sample	DM (%)
Vegetative sub-clover – early September	20.1
Mature sub-clover (no burr) – January	52.0
Sub-clover seed with burr – January	94.3



Drought conditions, sub-clover will regenerate.



How do I ... maximise sub-clover establishment in existing pastures?

The issue: Sub-clover is the basis of Australia's southern feed production system. Sub-clover establishment in existing pastures without seed bank and germination.

The impact: If sub-clover fails to persist or it diminishes, less production is possible.

The opportunity: Producers can maximise the returns from sub-clover pastures by ensuring optimal seed set and persistent productive pastures.

Sub-clover is an annual plant that needs to germinate from seed and establish. The germination and survival of those seeds and seedlings are closely linked to the amount of seed set and the timing of germination.

Outlined here are grazing strategies that impact burr survival, seed set and the timing of germination.

The effect of dry material over summer

Sub-clover produces a coating on the outside of the seed that prevents false germination over summer – this is called hardseededness. This coating is broken down during the hot months from seed experiencing fluctuations in temperature.

Reducing the amount of litter will increase variation in temperature and increase sub-clover germination. However, removal of too much dry material exposes the soil to wind and water erosion, as well as removing surface burr and creating a more hostile environment for sub-clover to establish.

Dry material or litter on the soil surface acts as insulation and reduces fluctuations in soil temperature. Excessive amounts of litter or dry material can be very effective at preventing seed coating breakdown, leading to low sub-clover germination.

Excess dry material is also detrimental to sub-clover germination due to toxins that leach into the soil from dry perennial grasses (gharial, perennial ryegrass, cocksfoot and tall fescue) and annual weeds, especially silver grass (cripple). These toxins are a 'natural herbicide' for the grasses to reduce potential



Dry silver grass will reduce germination of sub-clover.

To leave approximately the paddock at the material from a kno to assess the amount of sub-clover seed set.



How do I ... manage grazing to maximise sub-clover seed set?

The issue: Repeated inadequate seed set in sub-clover pastures results in depleted sub-clover pasture production.

The impact: Poor performing pastures and pastures which fail to persist mean livestock productivity is decreased and a strong return from those pastures is not seen.

The opportunity: Grazing management strategies are simple and easy to implement to ensure optimal seed set and persistent productive pastures.

A pasture with a 40% sub-clover content relies on having at least 200kg/ha of sub-clover seed in the soil. While only 10-20% of this seed needs to germinate each year to achieve optimal sub-clover density, repeated years of inadequate seed set will rapidly deplete the seed bank and subsequent pasture production.

Fortunately sub-clover has an amazing capacity to produce seed and, under the right conditions, a single plant can produce more than 100 seeds. Grazing management has a major influence on the amount of seed produced and is an important tool to maximise production.

Winter sub-clover growth

Optimising sub-clover seed set starts in winter. The aim over winter and early spring is to maximise leaf production, as this maximises potential flowering.

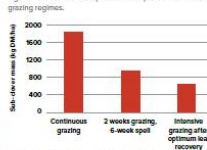
Maximum sub-clover leaf production is achieved by frequent heavy grazing, rather than light grazing and long periods of soiling. Sunlight reaching the crown of the sub-clover plant stimulates leaf production and shading reduces leaf production.



While sub-clover's prostrate growth means the plant is well adapted to frequent heavy grazing, it does make it susceptible to shading, particularly by upright-growing grasses.

Trials conducted at Broadford in Victoria demonstrated the grazing effect (Figure 1).

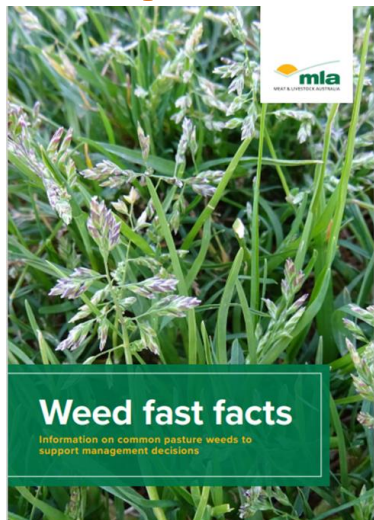
Figure 1. Sub-clover mass (October 2008) under three winter grazing regimes.



Source: Department of Primary Industries, Victoria.

It is currently unknown if more upright-growing sub-clover cultivars are better suited to rotational grazing systems as many factors come into play for light capture, such as plant density and leaf size, angle and arrangement.

Topic resources – Weeds



Barley grass

Hordeum leporinum

Main menu

Each wheel contains three layers: 1. Growth 2. Grazing Value and 3. Interventions
To access the information on each layer, simply click on the relevant layer's number below.



How do I know if herbicide application will improve my pasture?

- The issue:** Weeds can reduce pasture productivity, but controlling weeds with herbicide does not always provide all the answers and requires careful management to realise the benefits.
- The impact:** Improvement in desirable grasses and clovers enables a pasture to reach its productive potential and extend its persistence.
- The opportunity:** Weed control can be a low-cost, high-benefit tactic to improve the productivity and life of a pasture, but only under the right conditions.

Taking control

Herbicides can be a useful tool to alter the composition of a pasture, either through direct action or when combined with grazing management. Selectively removing or suppressing unwanted plants results in less competition for desirable species, providing an opportunity for those species to increase in size and occupy vacant spaces. Good weed management can deliver significant gains in the quantity and quality of pastures.

How do I ...

use hay and silage production to remove annual grasses?

- The issue:** Annual grasses with short seed viability compete with pastures, reducing productivity and quality. One control technique is cutting pastures for hay and silage but it needs to be correctly managed to optimise effectiveness.
- The impact:** Cutting hay and silage can reduce seed set in annual grasses and increase the percentage of desirable grasses and clovers, making the pasture more productive and improving livestock enterprise performance.
- The opportunity:** If we get hay and silage production right, we can extend the productive life of an established pasture.

Why consider making hay and silage to reduce weeds?

Fodder conservation can reduce carry-over weed seeds in a pasture. While the primary reason for making hay or silage is usually to conserve fodder, attention to annual weed seed production in the feed in and stubble has or silage makes can help 'clean up' a pasture.

How do I spray-graze to remove broadleaf weeds?

- The issue:** Annual broadleaf weeds, if present, reduce the value of sub-clover based pastures for livestock production. Spray-grazing is an effective tactic to reduce weeds, but only if the herbicide and grazing interventions are well managed.
- The impact:** Spray-grazing can increase the composition and contribution of desirable grasses and sub-clovers, making the pasture more productive.
- The opportunity:** If spray-grazing is carried out correctly, it can lift livestock productivity, while becoming a valuable weed management tool.

What is spray-grazing?

As the name suggests, spray-grazing involves the combination of herbicides and grazing. The technique sees a sub-lethal rate of a phenoxy herbicide applied to broadleaf plants at rosette stage, followed by intensive grazing. The combined action of herbicide and grazing kills or severely



How do I winter clean pastures to remove annual grass weeds?

39 views · Jan 5, 2022

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How do I ... use selective herbicides to safely remove common weeds from sown mixed pastures?

- The issue:** Weeds can invade sown clover/grass pastures, competing for moisture and nutrients over time. Selective herbicides provide additional weed control options to the more common control techniques of spray-grazing, winter cleaning and spray-topping. However, with many herbicides on the market, knowing which herbicides are tough on weeds but safe on desirable species can be confusing.
- The impact:** Weeds reduce the productivity of the desirable species and while some selective herbicides can kill them, others may cause unacceptable damage, reduce available feed and open the pasture up to further weed invasion.
- The opportunity:** Selective herbicides offer more management options to extend the productive life of a sown clover/grass, provided label directions are followed and the pasture is managed to minimise pasture damage.

There are three common and safe herbicide application techniques to control weeds in pastures. These are:

Selective herbicides offer a fourth option for controlling common weeds, especially in newly sown pastures or to provide diversity in the chemical groups used.

Take home messages

- Use a logical approach to support your **diagnosis**
 - Stocking rate gap, utilisation, manipulate or resow (Pasture Paramedic), then 'rule in / rule out' checklist
- Use the MLA resources to inform your **recommendations**
 - Soils
 - Grazing (grasses and sub clover)
 - Weeds

Tools and resources

- MLA Feedbase hub

www.mla.com.au/extension-training-and-tools/feedbase-hub/

- PGS courses

Paydirt

Pasture manipulation

Pasture resowing

