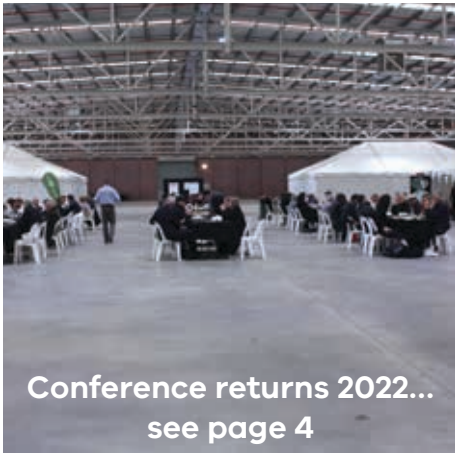


Sheep Notes



Conference returns 2022... see page 4

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Welcome to the autumn edition of SheepNotes.

SheepNotes, as a hard copy, is only funded for another year, and as many of you have told us that you enjoy and prefer the hard copy newsletter, we would appreciate more feedback so that we can look at options down the track.

We have included a link to a short survey, via the QR code, that asks some simple questions about what you do or don't like about the newsletter. Good and bad (constructive) feedback is very welcome. Alternatively, if you would prefer to do over the phone, call Jane Court at the number in the box below. An email may also follow.

We hope you find some articles of interest in this edition.

Jane Court and Rachael Holmes, Agriculture Victoria.



The future of SheepNotes

Please complete a short survey (5 minutes) to share your views on this newsletter – do you like it? want it? and if so how do you want to receive it? If you don't want it, you can use this survey to say so.



Scan the QR code to do the survey or if you prefer to do over the phone, ring **Jane Court** 0436 606 742.



The prolapsing ewe

Dr Cathy Bunter – District Veterinary Officer, Agriculture Victoria

Prolapses in ewes (vaginal and uterine) occur at varying frequency but can be costly in ewe and lamb deaths so this article looks at the possible causes and preventative measures.

Vaginal prolapse

Occurring most commonly in the last month of pregnancy, this is where the ewe pushes her vagina out of her vulva. The prolapsed vagina appears as a smooth red mass varying from tennis ball to melon size. The ewe may separate herself from the mob and because of the pressure around her vulva many ewes become confused and try to steal other lambs, thinking they have already lambed themselves.

During the last trimester of pregnancy, the ewe's oestrogen levels rise, and they produce a hormone called relaxin which relaxes the pelvic ligaments and surrounding soft tissues. Increased abdominal pressure caused by the pregnant uterus combined with this soft tissue relaxation is the main predisposing factor.

Causes/Predisposing Factors

There are many factors that may contribute to an increased likelihood of vaginal prolapses and these include:

- Genetic predisposition – higher prevalence in crossbred ewes and prolapse is heritable.
- Age – older ewes who have lambed before however ewe lambs also seem to be affected by



Ewe with a vaginal prolapse

vaginal prolapses.

- Over-fat ewes – over-fat ewes are likely to have higher levels of intrabdominal fat and more fat in the vaginal wall. The increased pressure in the area particularly as the weight of the developing lamb increases causes pressure on the already heavy vagina.
- Multiple lambs – equals more weight in the area and the increasing pressure on the vagina.
- Lameness/increased time lying down – longer periods of recumbency results in increased pressure on the enlarging uterus and vagina.
- Little exercise – results in less muscle tone and increased pressure on abdominal structures due to increased time sitting.
- Diet – oestrogenic clovers/other oestrogenic feed consumed may cause swelling of the vagina and relaxation of the pelvic ligaments. Bulky diets may also contribute to increased ruminal size.
- Low blood calcium (hypocalcaemia) – calcium is required for the normal functioning of muscles. Low calcium levels result in weakness and low muscle tone.
- Tail length – tails which are docked too close to the ewe's body result in contraction of the lower end of the spinal cord and decreased nerve control to all the structures (rectum, bladder and vulva-vagina) around the base of the tail. This results in decreased feeling and less tone in these structures.

Management options/Treatment

Treatment options for vaginal prolapses depend on the size of the prolapse, but the one thing they all have in common is that treatment should be commenced as soon as possible to prevent further damage to the surface of the vagina. If the

vaginal prolapse is only small and keeps self-lubricating itself by replacing itself back in the right position through the vulval opening, then it may not need treatment. This type of prolapse still requires ongoing close observation. If the vaginal prolapse is of bigger dimensions and the mass hangs out of the vulva for prolonged periods of time, then the blood flow to the vagina can become damaged with the prolapse turning blue/black and the surface becomes dry and very easily damaged and ulcerated. The prolapse can also become fly struck.

Ideally, the ewe should be treated by a veterinary surgeon as they have the correct medications and techniques to prevent the ewe from straining while the vaginal prolapse is replaced. If this is not possible then treatment of a vaginal prolapse involves gently cleaning with warm clean water (+/- a mild non-irritating disinfectant) to remove any debris, if fresh, small, and not damaged, cover with either obstetrical or a water-based lubricant and apply gentle pressure on it to replace it back through the vulva. First check the prolapse for significant damage or any sign that the ewe has started to lamb (cervix open, lamb head/legs palpable, waterbag protruding) and seek veterinarian advice before proceeding.

The urinary bladder may get flipped up inside the prolapse, blocking the bladder outlet, so you can gently lift the prolapse up towards the tail and this may allow the ewe to urinate and reduce the size of the prolapse. If there are signs that the sheep's intestines have herniated through a tear in the vagina, then humanely euthanise as soon as possible.

The ewe will most likely strain against you, so keeping the vaginal prolapse in, is more difficult. A number of treatments are used by farmers with varying success but if in doubt the best option is to speak



Spoon/T piece retainer

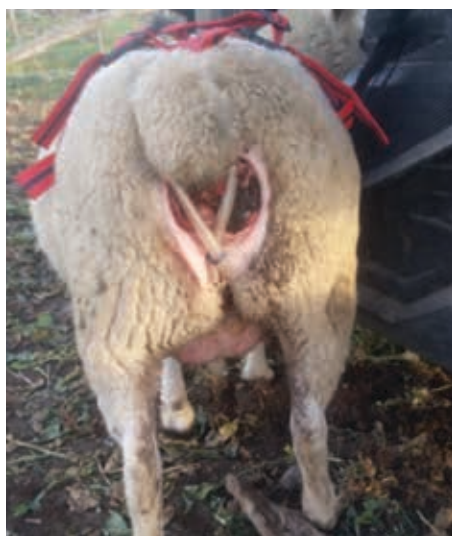
to your veterinarian about treatment before proceeding.

- Harnesses which apply pressure around the edges of the vulva to stop the prolapse from popping out again. It is important to fit the harness correctly and check them regularly. As lambing time approaches, they should be loosened or totally removed.
- Spoon/T piece retainer. This is secured to the ewe using string or tape and has a T shaped implement which applies pressure into the vagina to stop it from popping out. The ewe can lamb past the device, but it should be removed at lambing time.
- Suture placement – Buhner/purse-string suture. These must only be placed using local anaesthetic by a registered veterinary surgeon. As lambing time approaches the suture must be loosened or completely removed.
- Appropriate antibiotics and anti-inflammatories/pain relief administered in consultation with your veterinarian.

Prevention

To reduce the prevalence or likelihood of vaginal prolapses, management options include:

- Cull affected ewes from the mob. If possible, also cull the ewe lambs



Harness

from these ewes, as vaginal prolapses are heritable.

- Manage age profile of breeding ewes.
- Appropriate nutrition: Manage to avoid over-fat ewes at lambing. Avoid high bulk diets especially in the final month of pregnancy. Provide appropriate nutrition for ewes carrying multiple lambs. Address nutritional deficiencies of calcium in your mob by supplying calcium licks, as appropriate.
- Avoid ewes grazing oestrogenic pastures. Phytoestrogens can be found in lucerne, clovers/sub clovers. High oestrogen subclovers still persist in many pastures across southern Australia. If in doubt, pastures can be tested for oestrogen content.
- Treat lame ewes in a timely manner.
- Tail dock at the appropriate length. Tails should be long enough to cover the tip of the vulva (below the third joint space) which ensures nerve damage is minimal and reduces the likelihood of vulval cancer.

Uterine prolapse

Occurring shortly after lambing, the ewe's uterus is pushed to varying degrees out through

the open cervix and protrudes through the vulva. The size of the uterine prolapse varies from partial to complete with the mass of the uterus hanging below the mass of the ewe's hocks. The prolapsed uterus appears as a large mass hanging from the vulva. The surface of the everted uterus appears bloody and has large numbers of round or oval shaped, mushroom-like lumps called "caruncles" on its surface. (These "caruncles" are lumps of uterine tissue which connect with "cotyledons" on the foetal placenta).

Causes/Predisposing factors

The uterine prolapse generally occurs as a result of prolonged dystocia/lambing difficulty, excessive traction applied when pulling a lamb, invagination/eversion of the uterus and/or recumbency after lambing with the hindlimbs lying lower than the forelimbs. Hypocalcaemia and oestrogenic feeds also have an impact on the occurrence of uterine prolapse.

Management options/Treatment

Uterine prolapses should ideally be treated by a veterinarian as soon as possible, under appropriate medications and techniques. Unless the uterus is correctly replaced to



Uterine prolapse

its normal position within the abdomen the ewe will continue to strain and re-prolapse. The ewe's prognosis depends on the amount of damage and contamination of the uterus and the longer the uterus is exposed the worse the prognosis becomes. The uterus needs to be kept as clean as possible and the ewe restrained while waiting for veterinary assistance.

If there are signs that the sheep's intestines have herniated through a tear in the vagina, then humanely euthanise as soon as possible.

Prevention

While it is impossible to completely prevent uterine prolapses, there are a few management tips which will make their occurrence less severe. Careful observation of lambing ewes will enable early recognition of ewes having lambing difficulties and early intervention so that the lambing process is not prolonged. Be careful not to apply excessive traction when pulling lambs from the birth canal. Also, position the lambing ewe so that she is lying either on flat ground or with her hindquarters

elevated. Careful observation also allows the provision of immediate assistance when a uterine prolapse occurs in terms of keeping the uterus clean and protected from damage as much as possible and calling for veterinary help as soon as possible.

Avoid grazing oestrogenic pastures and supply calcium pre-lambing if required.

For further information or advice please contact your private veterinarian or your local Agriculture Victoria District Veterinary Officer on 136 186

References

The Merck Veterinary Manual 11th Edition "Vaginal & Cervical Prolapse" and "Uterine Prolapse and Eversion"

Veterinary Medicine: A Textbook of the Diseases of Cattle, Horses, Sheep, Pigs and Goats. Radostits et al 10th edition (2007)

MLA : <http://www.veterinaryhandbook.com.au> "Prolapse of the Vagina"

Save the date – BestWool/BestLamb and BetterBeef Annual Conference

Agriculture Victoria is looking forward to delivering the 2022 BWBL/ BetterBeef conference with an exciting mix of keynote speakers, concurrent and interactive sessions and displays.

When: Thursday June 16th (pre-conference dinner on the 15th June)

Where: Bendigo

The program and registration details are available at:
<https://agriculture.vic.gov.au/support-and-resources/event-listing>



Safe use of manure as fertiliser on a livestock farm

Dr Hayden Morrow, District Veterinary Officer and Dr John Phelps, Principal Veterinary Officer, Agriculture Victoria.

Livestock manure can provide a valuable and cost-effective source of nutrients and organic matter for improving soil fertility and structure for crop or pasture production. The Environment Protection Authority (EPA) Victoria defines livestock manures as livestock faecal matter including any mixture with biodegradable animal bedding such as straw or sawdust.

In 2021, EPA Victoria introduced Livestock Manure and Effluent Determination (or regulatory standard) detailing the conditions for receiving livestock manures from other properties. Important conditions of this determination are that the receiver must inspect each consignment to ensure it contains only livestock manure and it must only be accepted on-farm for the purpose of application to land as a soil amendment.

Good management practices are needed to gain maximum benefit from the use of manure as fertiliser, while also protecting animal, human and environment health. Inappropriate manure use can have significant animal and human disease risks and cause adverse environmental effects such as soil nutrient imbalances, chemical and heavy metal residues, run-off and ground water pollution and public concerns from dust or odour generation.

Potential Risks

A range of biosecurity/animal health risks need to be managed when using manures as fertilisers on livestock properties. These risks need to be evaluated before bringing manure onto the farm and precautions then need to be taken with manure handling, storage, application and grazing management.

When introducing animal manure there is potential to introduce certain pathogens such as bacteria, viruses and parasites. Examples of disease agents that can be present in different types of manure include Salmonella, Clostridia (including botulism), E. coli strains, Cryptosporidium, Q fever, and Johne's Disease.

Effective composting can significantly reduce or eliminate many pathogens in manure. However some more resistant pathogens such as Johne's disease, Clostridia, Q fever and transmissible spongiform encephalopathies (TSEs) including mad cow disease may survive at infectious levels.

When selecting a suitable manure or compost it is important to ask where it is from and whether it could contain 'restricted animal material' (RAM) or 'prohibited pig feed' (swill). RAM is defined as any material taken from a vertebrate animal other than tallow, gelatin, milk products or treated oils. It includes rendered products, such as blood meal, meat and bone meals, fish meal, poultry meal, eggs, feather meal, and compounded feeds made from these products.

In Victoria it is illegal to feed materials containing RAM to ruminants (including cattle, sheep, goats, deer, alpacas and llamas) or to allow them access to piles of manure containing RAM due to the risks associated with TSEs. To avoid the risk of ingestion, all piles of manure must be stored in fenced off areas to prevent access by livestock.

Where manure containing RAM is spread onto ruminant grazing paddocks, livestock must be kept out of the paddock until there has been sufficient pasture growth to limit any ingestion of potentially contaminated waste. Access should not be allowed for at least 21 days after last application, and a minimum pasture height of four centimetres must be sustained at all times, even after grazing.

Prohibited pig feed (swill) refers to any mammalian product or material that has been in contact with any mammalian product. Legislation in Victoria prohibits pigs from having access to swill because of the risk of introducing or spreading exotic diseases such as African swine fever and Foot and Mouth disease.

The use of manure as fertilisers should be based on sound agronomic advice including nutrient budgeting and soil testing, to ensure that soil nutrient balances are maintained. Animal manures may also contain significant levels of heavy metals such as zinc and copper or carry antimicrobial residues and resistant bacteria as a result of supplementary feeding or treatment programs conducted on the source property.

Managing the Risk

- Ensure livestock **never have access to manure stockpiles**
- **Do not graze pastures for at least 21 days after spreading manure.** If pasture regrowth is slow or manure is still viable on pasture a longer period maybe required. Pasture should have grown well above manure to ensure no manure is consumed.
- Consider the use of composted instead of raw manure
- Inspect and remove foreign material or poultry carcasses if present

Seek agronomic advice to avoid excess nutrients and application rates. If high rates are applied, a longer period may be needed until grazing can occur safely

- Seek information/declarations from supplier:
 - Test results
 - Composting process specifications
 - Quality Assurance Programs
 - Chemical inputs and treatments on source farm/s
 - Disease history on source farm/s
- Always implement good hygiene and personal protective equipment when handling manure.

Continued on page 6

Further Reading

- Agriculture Victoria 2021, *Compost and farm biosecurity*, <https://agriculture.vic.gov.au/farm-management/soil/composting/compost-and-farm-biosecurity>
- Australian Pork Limited 2015, *Piggery Manure and Effluent Management and Reuse Guidelines project 2012/1028*, https://www.australianpork.com.au/sites/default/files/2021-06/PMEG_2014.pdf
- Environment Protection Authority Victoria 2021, 2006: *How to comply with the livestock manure and effluent*

determination, <https://www.epa.vic.gov.au/about-epa/publications/2006>

- Griffiths, N. (2011) 'Best practise guidelines for using poultry litter on pastures' *NSW Department of Primary Industries Primefact 534*. <https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/soils-fertilisers-manures/poultry-litter>
- Wiedemann, S.G. (2015) 'Land Application of Chicken Litter: A Guide for Users' *Rural Industries Research and Development Corporation*. Publication No. 14/094 <https://www.agrifutures.com.au/wp-content/uploads/publications/14-094.pdf>

Using soil moisture for making decisions early

Jane Court and Raquel Waller, Agriculture Victoria

In previous newsletters we have reported on an Enhanced Producer Demonstration Site that is looking at soil moisture probes to predict spring pasture growth. If we can predict a particularly poor (or good) spring season early, what useful decisions could be made that might save money or stress?

Discussions with farmers involved in the demonstrations have indicated that early decision making in spring, could assist with key management decisions such as selling stock early (or purchasing), buying-in feed and timing of pasture sowing in autumn (before too cold) or spring (before moisture limiting) and for summer crops e.g. brassicas (see Laura Forward's article next).

How did we go?

Pasture growth for spring at all sites – as estimated by pasture cage cuts and silage weights – were within the predicted ranges modelled by Brendan Cullen from Melbourne University on 1 September 2021. This was probably not surprising, however, as all soil moisture profiles were full at the beginning of spring and the probability for a wetter than average spring was forecast for between 65–75 per cent depending on where you were in the state (i.e., higher probability in the east of the state). Therefore, all predictions were for above average (in peak and/

or length of spring growth), which was what actually occurred at these sites.

The Bureau of Meteorology (BOM) soil moisture maps have shown to be a good representation of what we are seeing on the ground at the Agriculture Victoria soil probe sites. This is shown in Figure 1, the map of soil moisture (at root zone) as produced by the BOM on 8 February, with the soil probe data (as represented by the coloured "soil cores" on some selected sites).

We held a webinar recently that covered the decision-making topics

in more detail, including

- How did we go? – Brendan Cullen, Melbourne University
- Effect of season on stock and feed prices
- What I did – Tim Leeming, farmer and site host
- Critical soil moisture and temperature for pasture sowing – Laura Forward, Meridian Agriculture

If you would like to access the webinar recording, please contact Jane Court jane.court@agriculture.vic.gov.au.

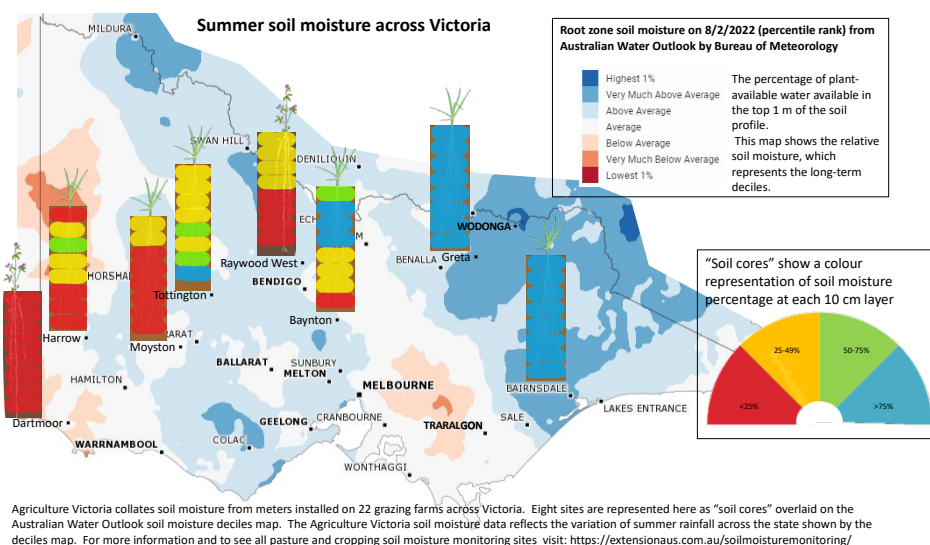


Figure 1. Soil moisture map of Victoria (1st September 2021) showing soil moisture at root depth produced by the BOM and soil core representation at eight soil moisture probe sites.

Using soil temperature to make sowing decisions

Laura Forward, Meridian Agriculture

When preparing to sow pasture paddocks, either in autumn or spring, the main consideration is usually moisture. In autumn, it's all systems go as soon as we get some decent rainfall, while in spring it's often a question of how soon we can get on the paddock without getting the tractor bogged. The other key consideration is soil temperature, which is frequently missed despite it playing a huge role in whether or not your sowing is successful.

In the autumn, we are generally considering the temperature requirements of temperate grasses (ryegrass, phalaris, etc.) and legumes (clovers and sometimes lucerne). The optimal topsoil temperature ranges for these species are listed in Table 1.

In spring, we are most often considering summer crop species such as brassicas/forage rape, maize, millet or sorghum. The temperature requirements for these species are listed in Table 2. If spring sowing phalaris – a fairly common practice – the temperature guidelines for grasses in Table 1 will apply.

When measuring soil temperature in preparation for sowing, there are two easy methods:

1. Use a temperature probe/soil or meat thermometer – put this into the ground to about 10 centimeters deep, in an area that

is representative of your paddock (not under a tree, etc.) at around 10 am for three consecutive days. The average of those three measurements is the soil temperature

2. If you have a soil moisture probe, or one near you on the network, this will give you a live reading of the current soil temperature.

The Agriculture Victoria soil moisture probe network provides real time soil and moisture data for many soil probe sites across the state and is available at <https://extensionaus.com.au/soilmoisturemonitoring/>. Looking at historical soil temperature (about three years of data is

available for most pasture sites) is useful to see when critical temperatures generally occur and can be used as a guide as to when plants may need to be established.

References

Jim Moir. (2020) Advances in Plant Sciences. *New Zealand Journal of Agricultural Research* 63:3, pages 269–271.

Serafin, L., 2022. *Moving summer crop sowing early or late – risks and rewards on the Liverpool Plains*. [online] Grains Research and Development Corporation.

Table 1: Top-soil temperature requirements for autumn-sown species

	Most grasses	Legumes
Above 10°	✓	✓
Between 5° and 10°	✗	Some will strike, but will be slow and lack vigour
Below 5°	✗	✗ (1)

Table 2: Top-soil temperature requirements for spring-sown species

	Brassica	Maize	Millet	Sorghum
Below 8°	Will begin to strike, but slow and not ideal	✗	✗	✗
Between 8° and 12°	✓	Will strike, but will be slow	✗	✗
Between 12° and 15°	✓	✓ (2)	✗	✗
Between 15° and 18°	✓	✓	Ideal is 15° and rising	✗
Above 18°	✓	✓	✓	✓ (2)

FeedingLivestock.vic.gov.au

Have you visited the FeedingLivestock website lately? Feeding and nutrition information with links to tools and calculators and see the latest 'how to do a Pearson Square' YouTube.

Inspect your dam to avoid failure

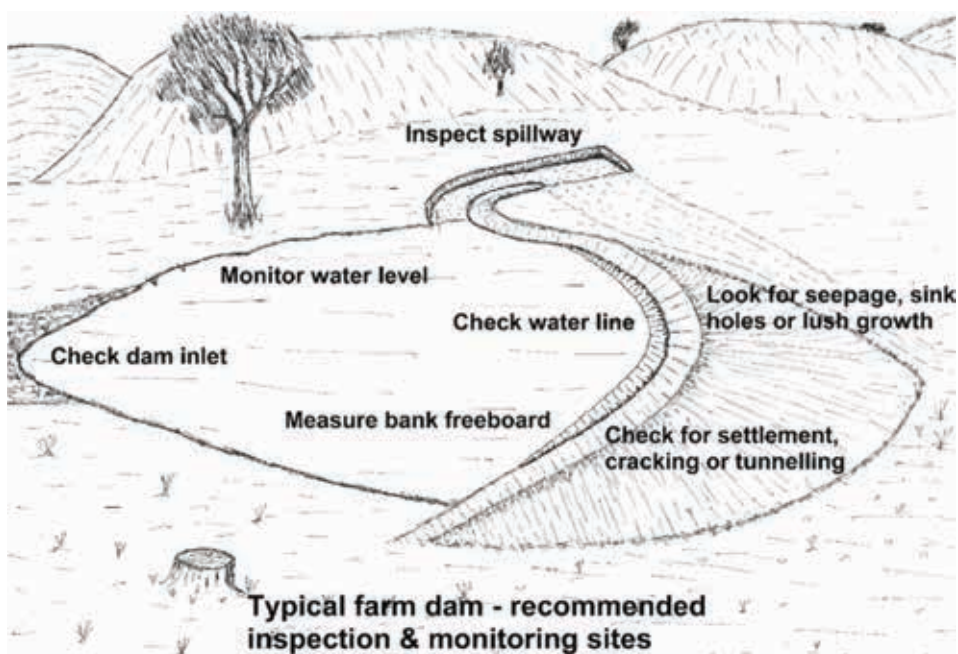
Clem Sturmfels, Agriculture Victoria

A detailed inspection of dams is recommended following significant storm or rain events which can impact the structural integrity of dams. The risk of dam failure increases significantly after big rains, due to the rapid rise in dam water levels, overtopping of dam walls and blocked spillways.

Regular inspections, checking and monitoring of gully dams, looking for signs of bank subsidence, cracking, leaks and or tunnelling are critical for upgrading and maintenance of dams. Check dam spillways and outlet pipes to ensure they have ample capacity and are free of sediment, debris and excessive vegetation. Gully dams are of particular concern as much of the water is stored above ground level, held back by an earthen bank. The sudden failure of a gully dam can pose a major safety issue to individuals and communities downstream as well as resulting in the loss of the water and added cost of repairs.

A systematic approach to a dam inspection.

Start by walking around the water line looking for signs of damage. Inspect the dam inlet checking for signs of undermining or collapse, making sure the dam excavation is completely covered with water when the dam is full. Take careful note of the water itself looking for signs of discolouration or small whirlpools that may indicate tunnelling or leakage through the dam wall. Move on to the dam wall itself checking the crest, upstream and downstream faces. The bank crest should have a well-rounded top to avoid ponding and be at least one metre above the dam's full supply level. The faces of the dam wall should be gently sloping and free of erosion. The entire bank should have good cover of topsoil and be well grassed. The dam spillway needs to be level, flat and stable with adequate capacity to handle major storm events.



Typical farm dam – recommended inspection and monitoring sites.



Peter Oddie inspects a crack in the back of a large dam on the family property at Ballyrogan

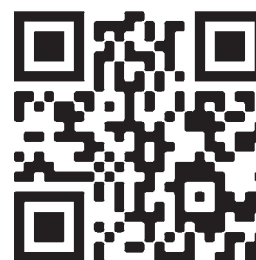
Lastly, do a thorough inspection immediately downstream of the dam wall looking for signs of seepage, tunnelling or erosion commonly indicated by wet, boggy areas or excessive vegetation.

A one meter by 12 millimetre steel probe makes a useful tool for checking the condition of dam walls and for locating wet patches downstream.

Contact your local water authority and council planning officer before undertaking repairs or maintenance activities.

Dam maintenance

Kerri Goshnick, Agriculture Victoria, walks through the major things to look for when checking your dam.



<https://youtu.be/RkUVIrefyBc>

Chronic Heliotrope Poisoning

Dr Jeff Cave, District Veterinary Officer, Agriculture Victoria

Do you have heliotrope in your pastures or stubble? Do you wonder what it might do to your sheep if they graze it?



Heliotrope

Heliotrope is commonly found in stubbles, fallows, and degraded pastures after summer rains. It contains a toxin known as a pyrrolizidine alkaloid. The same toxin is found in Paterson's curse.

Pyrrolizidine alkaloids cause liver damage. This may lead to liver failure or, more commonly, impaired copper metabolism leading to a build-up of copper in the liver. In many cases, limited exposure to heliotrope appears not to cause overt disease. In areas where heliotrope is abundant most old sheep have livers with changes consistent with pyrrolizidine alkaloid poisoning. Chronic copper poisoning, also known as toxaemic jaundice, generally occurs only in sheep which have ingested significant amounts of heliotrope, usually but not exclusively over a period of several years. In such cases chronic copper poisoning may kill 10–30 per cent of a flock.

Effective strategies for the control of pyrrolizidine alkaloidosis include grazing management, breed selection, the reduction of copper

absorption using molybdenum and sulphate, and chemical and biological control of the plants. On properties where heliotrope is resulting in chronic copper poisoning in older sheep, a common recommendation is to keep the older breeding stock off the worst affected paddocks and use those paddocks to graze lambs and other sheep that are going to be sold at a younger age.

Crossbred sheep are much more likely to be affected than merinos due presumably to their grazing habits. In some areas, producers limit their risk of disease by running merino sheep only (Salmon 2012). As cattle are much more susceptible to pyrrolizidine alkaloid intoxication than sheep, it is surprising that they are not affected more frequently. It may be that heliotrope is less palatable for cattle and it may also be because cattle are less likely to be grazed on heliotrope infested summer cropping paddocks.

Chronic copper poisoning is most likely to occur when feeding pasture with high copper levels such as clover dominant spring pastures, or when sheep are supplemented with copper. In such cases, stored copper is suddenly released from the liver leading to a haemorrhagic crisis. Chronic copper poisoning usually presents as sudden death with most affected animals usually dying within hours. Affected animals show severe jaundice seen as yellowing of the whites of the eyes, gums, and internally the fat – hence the more colloquial name of the condition "yellows". On post-mortem affected sheep also display a dark liver, black kidneys and red urine.

Molybdenum has been observed to reduce copper availability and a home brew of sodium molybdate and sodium sulphate has been used extremely successfully to prevent outbreaks of chronic copper poisoning and to almost immediately prevent further deaths in the face of an outbreak. A product for the treatment of your sheep can be obtained through your veterinarian by a permit found at <https://permits.apvma.gov.au/PER10752.PDF>

The control of heliotrope involves integrated pest management using a combination of pasture management, grazing management, cultivation, and chemical control, noting that it is difficult to eradicate. It is normal practice to control weeds on summer stubbles and fallows with herbicides as these weeds deplete soil nutrients and water prior to a winter crop.

In conclusion, on properties where heliotrope poisoning is an issue an integrated approach is needed to control its effects. For further information please contact your local veterinarian or Agriculture Victoria Veterinarian or Animal Health Officer, or in NSW your Local Land Services.

References

- Salmon, D. 2012. 'Pyrrolizidine alkaloid poisoning of sheep.' *Flock and Herd*.
- Watt, B, and Payten D. 2010. 'Pyrrolizidine alkaloid poisoning in cattle – case 2.' *Flock and Herd*.



Farming without a label

Fiona Baker and Jane Court, Agriculture Victoria

Every now and then a 'new' farming system comes along claiming to do better things for the land, people and animals. While it can be very helpful to have a process to follow or to hook up with a group of like-minded people, it is the core principles of good farming practice that are important and most have been around and used for some time. This article outlines some of the practices that support healthy soils, land, pasture and livestock while taking into account farming for profitability and individual goals.

Grazing management

Some form of rotational grazing that allows the desired plants to capture light, recover and build root reserves will help to optimize growth rates and persistence. The long-term grazing trial at Broadford, conducted by Agriculture Victoria from 1994–2003, demonstrated the benefits of rotational grazing and appropriate fertiliser use on profitability and sustainability. Correcting soil phosphorus deficiencies had a bigger impact on improving pasture growth than changing grazing method. However, rotationally grazing the pasture instead of continuous grazing allowed higher stock carrying capacity, while simultaneously improving persistence of phalaris. Other benefits included fewer broadleaf weeds, more groundcover over summer and autumn, less drought feeding costs, drier soil profiles, reduction of sheep camps, and lower maintenance rates of phosphorus fertiliser.

Use grazing techniques that suit your environment and system as not always does one way suit all. It is about giving plants adequate rest periods so they can maximise their leaf growth and root recovery and maintain good groundcover. Rest periods from grazing should not be too short or too long for the speed of growth of the plants in your system, as both impact on the resilience of the pasture. Using leaf appearance

rates to help set the rotations will also help to balance stock needs and pasture availability to ensure paddocks are not overgrazed.

Maximise tillering: Tillering is one of the main methods of reproduction for a perennial grass. To ensure good tillering, resulting in good plant density and groundcover, light needs to get to the base of the plant regularly. If the pasture is left for too long during the growing season and light can't get to the base, plants may still tiller, but they do what is called aerial tillering. Instead of the tiller growing from the base of the plant and eventually forming its own root system, the tiller will form part of the way up the parent plant stem.

Graze at the appropriate leaf stage: The leaf stage relates to the plants physiological readiness to be grazed. Grazing at the appropriate leaf stage allows growth of new leaves, allows new root growth, replenishment of the root and stem reserves and provides the plant enough energy to initiate and support additional tillers. The appropriate leaf stage for grazing some common grasses is:

- Ryegrass and fescues: 3–4 leaf stage
- Cocksfoot and Prairie grass: 4–5 leaf stage
- Phalaris: 4 leaf stage

Rest periods need to change throughout the seasons and can be based on the leaf emergence rates. If you allow additional leaves to grow past the recommended leaf stage, you can get an accumulation of dead material, which decreases the quality of the feed for stock. Animal performance does not increase linearly as the pasture gets taller. Accumulation of dead material can also cause shading to the base of the plants resulting in a reduction of tillering.

Note that managing native grasses may require specific management. Some key management points from a



Continued on page 11

native grass trial in East Gippsland showed:

- Rotationally graze native pastures to a minimum herbage mass (1200 kgDM/ha).
- Fertiliser application can increase the legume component and nutritive value of the pasture without reducing the native grasses.
- In spring, apply extra grazing pressure to ensure that clover does not smother native grasses.
- In summer, avoid long rest periods during the growing season because they result in standing dead material, but reduce grazing pressure in summer, allowing native seed set.
- In late summer, retain plant litter to minimise bare ground. (See also: Improving high country native pastures, SheepNotes Spring 2020)

Managing groundcover

Targets for maintaining adequate groundcover for soil protection and moisture retention have also been around for a while. Targets are suggested as 70 per cent groundcover but aim for 100 per cent in steeper paddocks. Having too much cover in the autumn will restrict germination of sub clovers which provide nitrogen for the grasses and also higher feed quality for stock. Reducing stocking rates to achieve targets does not have to mean selling stock. Stock containment areas are a useful tool to feed animals intensively and are used by some farmers annually to optimise growth at the autumn break (See also: Farmer Tips on Autumn Saving, SheepNotes Autumn 2021). How and what to destock is based on economics, personal choice and attitude to risk, feeding and infrastructure, etc.

Replace nutrients

Each time product (meat, wool, hay, etc.) is sold or moved from the farm, nutrients are removed. These need to be replaced to avoid mining the soil and reducing the health and vigour of the plants and soil environment. Much of the soil organic carbon comes from the growth and death of plant roots. It also happens via the transfer of carbon enriched compounds from the plant roots to soil microbes. Without adequate soil nutrient levels, good strong plant growth struggles to be supported, the soil biota which rely on the soil organic carbon as a feed source from the plant. Note that in the Broadford grazing trial, although rotational grazing reduced fertiliser requirements through better nutrient spread, it did not eliminate the need for adding nutrients.

Options to improve pastures by resowing

Grazing and nutrients will help to improve and maintain good pastures but there are situations when resowing a pasture may be a better option (See also: Getting the

most out of old perennial pastures, SheepNotes Spring 2018) due to a high prevalence of poor grass or weed species (e.g., bent grass). Productive plant species that grow well due to grazing and nutrients contribute to better animal performance with less methane emissions and soil carbon.

Managing in good years

Good seasons can be a challenge to manage all the surplus dry feed, which loses quality over summer and can limit clover germination in autumn. Cutting hay or silage can be an opportunistic strategy for storing fodder for future years, to help get regrowth if follow-up rains occur and for weed control. Other options include grazing paddocks that will drop in quality first. The Grasslands Productivity Program and Long Term Phosphate trial at Hamilton, showed the quality of dry feed was higher for longer in the well fertilized and grazed pastures. These ones will maintain stock later in the season and so may be grazed later.

Maintaining good groundcover, pasture persistence, grazing management and healthy soils are all achievable and part of good common farming practices. It is a matter of picking and using the best bits of any strategy that suits your situation with some evidence-based science behind it.

Did you know that electronic National Livestock Identification System (NLIS) tags are species-specific?

Sheep tags are usually wrap around tags colour coded based on birth year (breeder) or pink (post-breeder) and can be identified by the NLIS ID on the outside of the tag.

3DPI001— PIC
X — Manufacturer
S — Device type
N — Year of supply
00078 — Serial number



Device type:
'S' Sheep breeder / 'T' Sheep post-breeder
'K' Goat breeder / 'L' Goat post-breeder
'B' Cattle breeder / 'E' Cattle post-breeder

Visit the Agriculture Victoria website for further information on the National Livestock Identification System. **AGRICULTURE VICTORIA**

On the lookout: Sheep with neuro signs

Dr Paul Beltz, Senior Veterinary Officer, Agriculture Victoria

Transmissible spongiform encephalopathies (TSEs) are diseases of animals that cause a variety of nervous signs, which are particular to that disease in that species. Scrapie is the sheep TSE, just as bovine spongiform encephalopathy (BSE, or 'mad cow disease') is the TSE of cattle, and kuru (which is spread by cannibalism) was a TSE of humans on Papua New Guinea. All TSEs are thought to be spread by eating part of an infected animal, including meat and bone meal.

Australia remains free from TSEs, a status that is monitored and maintained through the National TSE Freedom Assurance Program (NTSEFAP). Part of the NTSEFAP is to test a number of animals exhibiting signs typical of a TSE every year.

Scrapie gets its name from the itchiness it produces in affected sheep — they scrape along walls and fences, just like sheep with lice. Affected sheep can show behavioural and gait changes, such as bunny hopping, or trotting with the forelimbs. They may have a tremor and show weight loss. If sheep have scrapie, they usually die within six weeks of the first signs appearing.

If you have an adult sheep showing any of these signs, they may be eligible for testing under the NTSEFAP, with the associated subsidies (see box right). Each year, about 110 sheep are examined under the NTSEFAP in Victoria, and about 600 across Australia. As well as ruling out scrapie, a full laboratory workup can be done to determine the actual cause of the neurologic signs. Commonly occurring conditions found during examination of sheep for TSEs in Victoria, include hypocalcaemia and pregnancy toxoemia, polioencephalomalacia (vitamin B1 deficiency) and plant poisonings. Listeriosis is a particular bacterial infection that affects sheep (and cattle), often causing a head tilt and circling gait (it also causes abortion in ewes). A number of other bacterial infections are sometimes seen, as well as sheep with lice.

We have found several cases of atypical scrapie, a non-infectious, spontaneously occurring TSE of sheep that

occurs in every population in Victoria at an extremely low frequency. This demonstrates that this program is working very well, as it is finding these cases that occur at very low rates but have identical clinical signs to the exotic scrapie.

The National Transmissible Spongiform Encephalopathy Surveillance Program

The National Transmissible Spongiform Encephalopathy Surveillance Program (NTSESP) demonstrates Australia's ongoing freedom from bovine spongiform encephalopathy ('mad cow disease') and scrapie. The NTSESP involves detailed examination of several hundred sheep and cattle nationally every year. Individual animals identified as eligible candidates for inclusion in the program must meet several specific criteria:

- Sheep must be at least 18 months of age.
- Cattle must be at least 30 months of age and no more than nine years of age.
- The animal must be displaying progressive clinical neurological signs (e.g. circling, blindness or abnormal behaviour).
- The animal must be alive at presentation to a veterinarian or Agriculture Victoria staff.
- A producer incentive of \$100 for sheep and \$300 for cattle is available (as well as incentives for the private veterinarian investigating), and a maximum of two animals per property is permitted each year.

Producers can become involved in the program by reporting their own animals that fit these criteria to their local veterinarian or by contacting their local DJPR Agriculture Victoria Animal Health staff (see list on final page), or by calling the Customer Call Centre on 136 186

Victorian traceability systems paying off

Marnie Campbell, Agriculture Victoria

Victoria has long maintained a global reputation for leadership in livestock identification.

People who enjoy red meat and dairy products that Victoria produces, trust that these products are safe to eat, that they have been ethically produced and are of a high quality. This trust has been earned over time and is the result of the foresight, leadership and commitment of our livestock industries with the development of robust, verifiable systems for identifying and tracking cattle, sheep, goats and pigs under the banner of the National Livestock Identification System (NLIS).

Those working within the Victorian livestock supply chain should be congratulated for their efforts during the implementation of the electronic tag-based NLIS (Sheep & Goats) system. Victoria's system is delivering excellent traceability as demonstrated by the 2020 SAFEMEAT sheep traceability evaluation that showed that electronically tagged sheep were 99 per cent traceable, compared to 70 per cent traceable for interstate sheep arriving in Victoria for processing that had been visually tagged. These findings are significant because the study was conducted independently.

During November and December 2021, Victorian saleyards successfully scanned and recorded the movement of about one million electronically tagged sheep. At one Hamilton sale, more than 59,000 electronically tagged sheep were successfully scanned. This is an outstanding achievement.

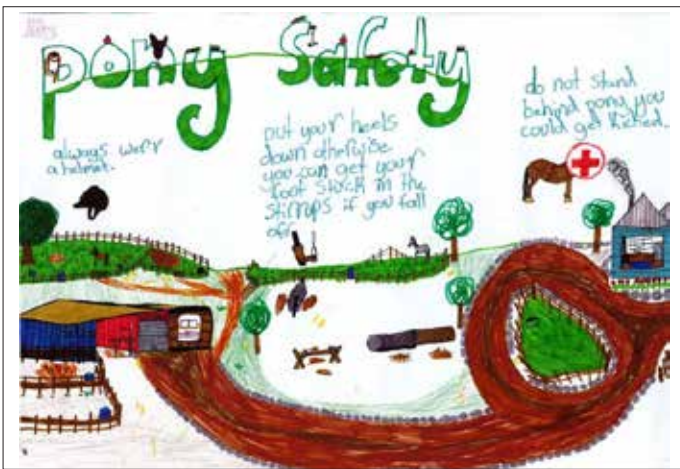
In response to these findings, SAFEMEAT (the national body responsible for red meat industry traceability and product integrity policy) has acknowledged that the visual tag and mob-based system still operating in other states is unlikely to be effective in a disease emergency and has submitted a number of recommendations regarding the future of the NLIS (Sheep & Goats) to the states. Decisions in relation to these recommendations are expected to be announced during 2022.

A copy of the NLIS (Sheep & Goats) Standards – 2022 edition outlining in detail the obligations on supply chain participants is available on-line at <https://agriculture.vic.gov.au/livestock-and-animals/national-livestock-identification-system/nlis-sheep-and-goats>



If you have any questions in relation to the operation of Victoria's NLIS (Sheep & Goats) system, please ring Agriculture Victoria's NLIS Helpline on 1800 678779 during business hours or visit <https://agriculture.vic.gov.au/livestock-and-animals/national-livestock-identification-system/nlis-sheep-and-goats>

Are you a 2022 farm safety hero?



Winning poster 2021

Agriculture Victoria is partnering with Kidsafe Victoria to deliver another year of the Farm Safety Creative Competition. The competition encourages all farm safety heroes to get creative and design educational materials that promote injury prevention on the farm. The theme for this year's competition 'Farm Safety Heroes,' focuses on how we can all play a part in making the farm a safe experience for everyone whether we live, work on, or visit a farm.

Although farms are wonderful places for children to learn and grow up, they can also be very dangerous. Farms are unique environments which are often both a workplace and a home, and children often intersect with the workplace environment, either by helping with jobs or using the property for recreation. Common injury

risks for children on farms include vehicles such as quad bikes, motorbikes and tractors, and incidents involving animals, water, machinery and poisons. According to the Victorian Injury Surveillance Unit, children under the age of 15 in Victoria's outer regional areas are four times more likely to die due to injury than children in major cities. In 2020–21, 441 Victorian children under the age of 15 presented to an Emergency Department as a result of an injury on farm.

This initiative encourages children and adults to take an active role in farm safety in an interactive and fun way. This year's farm safety heroes can submit their choice of creative entry, including a video, illustrated story, comic strip, poster, collage or a radio advertisement. The winners will feature in a state-wide farm safety education campaign designed to increase farm safety awareness among Victorian parents and carers.

The Farm Safety Creative Competition is open to all pre-school and primary school aged children in Victoria. The Farm Safety in Schools Campaign and Creative Competition is funded by Smarter, Safer Farms <https://agriculture.vic.gov.au/about/agriculture-in-victoria/smarter-safer-farms>, a \$20 million initiative to improve safety outcomes for Victorian farmers, their families, farm workers and visitors.

For more information about the competition and other learning resources, visit Kidsafe Victoria <https://www.kidsafevic.com.au/home-safety/farm-safety-creative-competition/> **Entries opened in March and close Friday 4 November.**

Annual grass control in perennial pastures

Tess McDougall, Agriculture Victoria and Rob Shea, Perennial Pasture Systems

This case study is produced from an Enhanced Producer Demonstration Site run by Perennial Pasture Systems (PPS) and Agriculture Victoria with co-funding from Meat & Livestock Association (MLA).

Over-sowing and weed control demonstration – ‘Marenda’

Wayne and Caterina are host producers for an Enhanced Producer Demonstration Site (EPDS) underway with PPS and Agriculture Victoria and co-funded by Meat and Livestock Australia (MLA).

The demonstration site is a 24-hectare paddock that was sown to a phalaris and sub clover mix in 2006. The paddock was selected for the trial because of its heavy infestation of barley grass and other weeds.

The site was set up in mid-May 2020 with the intention of controlling barley grass and at the same time, bulking up feed and extending the productive life of the paddock. The three-treatment trial included:

- Full Treatment: Over sowing, weed control and Nitrogen
- Partial Treatment 1: Over sowing and Nitrogen (no weed control)
- Partial Treatment 2: Weed control and Nitrogen (no over sowing)

Key results

A cost: benefit analysis was undertaken to compare the three treatments. The analysis included an estimate of the operational cost of treatments, inputs (including chemical and seed), hours of labour and the relative cost of the equipment. The impact of barley grass seed head contamination was beyond the scope of the project and was not included in the cost: benefit analysis. The Partial Treatment 2 (no over sowing) was used as the basis of comparison for the benefit: cost. (Refer to the full case study for cost: benefit breakdown).



Marenda site 2020, left of picture (cage) is partial treatment 1 (no weed control) right of picture is full treatment.

The analysis showed a clear benefit from using both weed control and over sowing and a lesser benefit when over sowing was undertaken without weed control. This highlights that the minimal cost of weed control was justified by the additional benefits it gives to production.

The benefits of the full treatment (over sowing, weed control and Nitrogen) is summarised in Table 3. The full treatment increased dry matter production throughout the season leading to the highest return per hectare, followed by partial treatment 1 (no weed control).

The effectiveness of controlling barley grass was measured five months after the treatments in May 2020 through seed head counts for the three treatments. The results showed that weed control was very effective on this site with both the full treatment and partial



See the full case study report on the Agriculture Victoria website.

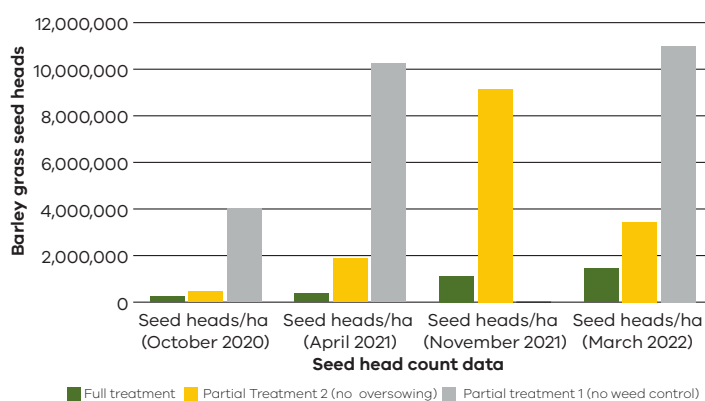


Figure 2. Barley grass seed heads after the three treatments (full, partial with over sowing and partial with no weed control) in spring 2020 and 2021 and autumn 2021 and 2022.

Continued on page 15

Table 3: Summary of treatment benefits

Treatment		Dry Matter Production	Seed head counts/ha	Extra benefits above Partial Treatment 2
Full Treatment	Over sown, weed control and Nitrogen	4851kgDM/ha	250,011	\$842/ ha
Partial Treatment 1 (no weed control)	Over sown and Nitrogen	3754 kgDM/ha	4,020,989	\$345/ ha
Partial Treatment 2 (no over sowing)	Weed control and Nitrogen	2194 kgDM/ha	464,305	N/A

treatment 1, however seed counts were high in partial treatment 2 (no weed control). Over-sowing without weed control did little to reduce the amount of barley grass present.

Producer feedback

Wayne is happy with the results and the comparative feedback from the different treatments. "Absolutely, I will do this again. The early break in 2020 meant the clover was big enough to spray, which was important too for the success."

Assessments in 2021 and 2022

The demonstration site continued to be assessed in 2021 and March 2022, with no further treatments undertaken. Figure 2 shows that the seed head numbers at the full treatment site had a threefold increase. This highlights the adaptability and vigour of barley grass populations. Results do indicate a reduction in barley grass where the full treatment occurred 24 months post the demonstration. The key outcome from the demonstration is the need to assess your pasture composition regularly to make timely management decisions.

Digital Tips

Making the FONT BIGGER on your phone

On an iPhone

- Open your settings (the cogwheel icon),
- Scroll down until you see 'accessibility',
- then 'display and text size',
- then start exploring
- For example, try Bold; Bigger font (slide at the bottom to get the size you want); Reduce Transparency

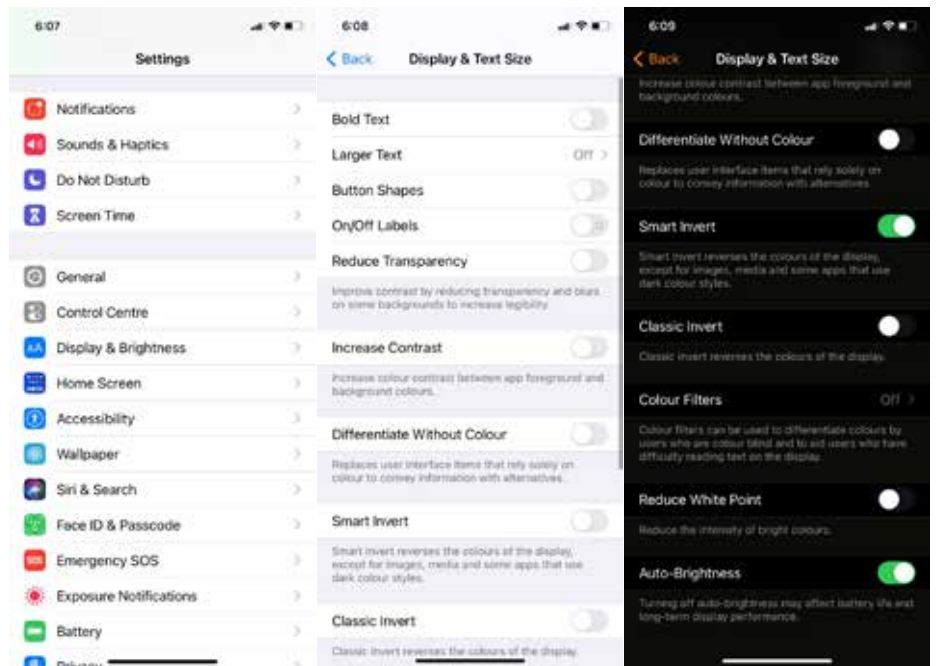
Android phone

The process is quite similar for android phones, for example:

- Go to 'Accessibility'
- Then 'Visibility enhancements'
- Options include
 - Magnifier window – magnifies the content on the screen and when turned on can use the Accessibility button of the screen to show/hide
 - High contrast fonts
 - Colour adjustment – if you have problems with some colours
 - Font style – use slide ruler to increase or decrease.

Voice to text

There are a number of free and



simple voice to text apps that will turn your speech into readable text. These voice recognition tools identify words, phrases and keywords and convert them to text. They can also be used to run searches on your web browser or other commands. There are a number available like Google Voice Typing; Speechnotes Dictation.io Windows Speech Recognition and more, so do your own search and find one that works for you.



Got a digital tip to share?

Send to jane.court@agriculture.vic.gov.au and get the mystery prize

Agriculture Victoria animal health and sheep industry contacts

Although our offices are currently closed, the office numbers provided below are diverted to staff who can assist you. Alternatively, you can contact Agriculture Victoria on 136 186.

Location	Office Contact	Meat and Wool Services		Animal health
		Livestock Industry Development Officers	Land Management Officers*	
South-West region				
Ararat	136 186	✓	✓	
Ballarat	5336 6856	✓	✓	✓
Colac	5233 5504			✓
Geelong	5226 4878		✓	✓
Hamilton	5573 0900	✓		✓
Horsham	0343 443 111			✓
Queenscliff	5258 0229			
Warrnambool	5561 9946	✓		✓
South-East region				
Attwood	9217 4200			✓
Bairnsdale	136186	✓	✓	✓
Cranbourne	136 186		✓	✓
Ellinbank	5624 2222	✓	✓	✓
Leongatha	5662 9900		✓	✓
Maffra	5147 0800	✓		✓
Swifts Creek	5159 5134	✓	✓	
Northern region				
Alexandra	5772 0200		✓	
Benalla	5761 1611	✓	✓	✓
Bendigo	5430 4444	✓	✓	✓
Echuca	5482 1922			✓
Rutherglen	02 6030 4500	✓		
Seymour	5735 4300			✓
Swan Hill	5036 4800		✓	✓
Tatura	5833 5222		✓	✓
Wangaratta	5723 8600			✓
Wodonga	02 6043 7900		✓	✓

*Farm planning, soil health advice, soil conservation advice, dryland farm water planning

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