

# Agricultural MEMO

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## SOUTH WEST AGRICULTURAL REGION

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## New South West Agricultural Regional Manager



**David Windsor** has been appointed as the new Department of Agriculture and Food South West Agricultural Regional Manager. He brings with him 20 years of agricultural research and industry development experience.

David grew up on the family farm in southern New South Wales, including six years at Yanco Agricultural High School, before undertaking an honours degree in

Rural Science at the University of New England.

He joined the Department as a research officer at Katanning soon after completing a PhD in reproductive physiology at the University of Sydney.

David's early career included research into artificial insemination and embryo transfer in sheep. He also collaborated in the Awassi importation program and the first use of identical twin sheep in wool production research. He spent several years working in sheep breeding and genetics before transferring to Bunbury in 1999.

David played a key role in the Protein Plu\$ project, which has helped south west dairy farmers to make important improvements in milk protein levels, before becoming the head of the Department's dairy research and development activities in 2000.

Seven years in that role have given him a strong familiarity with agricultural systems and issues in the South West.



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# Comings and goings

**Martine Combret** has been appointed Pome and Stone fruits Industry Development Officer. She is based at the Bunbury Office and will travel to all fruit growing areas in the South West.



Originally from the south of France, Martine grew up on a vineyard, completed a Bachelor of Science degree in Agronomy and came to Australia in 1986.

She has worked as an extension officer in irrigated horticulture in Swan Hill (Vic) and was recently a viticulturist on an 80 hectares property in Mildura (Vic).

With a rural background, she brings practical experience in horticultural enterprise.

Martine's role will be to assist growers in the adoption of new production techniques which will improve their economic sustainability.

Martine can be contacted in Bunbury on 9780 6272 or [mcombret@agric.wa.gov.au](mailto:mcombret@agric.wa.gov.au)

## Retired

### John Peirce

After four decades of dedicated service with the Department of Agriculture and Food, leading weed researcher John Peirce has announced his retirement. John was recognised as a leader in the field of agricultural and environmental weeds research both in Western Australia and nationally.

# Calving pattern: early calvers count

**John Lucey, Manjimup**

Achieving a tight calving pattern is the first step towards better fertility in seasonal or split calving dairy herds. In a seasonal or split calving herd, the Planned Start of Calving date automatically sets the Mating Start Date 12 weeks later.

To get back in calf, each cow needs time to recover from calving and for normal heat cycles to start. This is why cows calved in the first three weeks of calving are much easier to get back in calf than later calving cows. Cows that calve more than seven weeks after the start of calving have less than half the chance

of conceiving during the first six weeks of mating, and are twice as likely to remain empty at the end of mating, compared with cows calving in the first three weeks.

### Look at 3-week calving blocks

You can see how spread your calving pattern is by calculating the percentage of the herd (cows and first calvers) calved by weeks three, six and nine after the planned start of calving date. Make calving pattern a high priority if your results are well below the following InCalf recommended targets.

	Seek help	InCalf targets
Calved by week 3	<51%	61%
Calved by week 6	<77%	94%
Calved by week 9	<94%	100%

### Improving calving pattern

- Use pregnancy testing to identify predicted calving pattern.
- If a high percentage of first calvers are not due to calve in the first 3 and 6 weeks of calving, closely monitor the growth of calves and heifers to ensure they meet target mating weights.
- Consider mating heifers 2 weeks before the milking herd, if management is adequate to meet target mating weights earlier, to increase their chances of conceiving early in the next mating period.
- Maximise 3-week submission rate (InCalf target 86% - seek help if < 75%) and conception rate (InCalf target 53% - seek help if < 49%).

To find out more about using the InCalf program and tools to improve your herd's fertility, contact me on 9777 0124 or check out Dairy Australia's InCalf website [www.incalf.com.au](http://www.incalf.com.au)

# Special Permit to Move stock

**Evan Armstrong, Boyup Brook**

Moving animals between same ownership farms, blocks or just across the road requires documentation to accompany the consignment. This is usually in the form of a waybill however, a **Special Permit to Move** allowing such movement, eliminating the necessity to fill in the required waybill for each movement, may be obtained from your local Department of Agriculture and Food office.

The **Permit to Move** is valid only for the duration stated on the Permit. It is the owner's/manager's responsibility to reapply for a renewal. As with any movement, stock are required to be correctly identified with earmarks/brands and be NLIS compliant.

A **Special Permit to Move** can be obtained from Stock Inspectors in Bunbury, Boyup Brook and Manjimup offices.



# News from Greener Pastures

## *Out in the paddock*

After an indifferent start to the season, reasonable rainfall in June and July finally got pastures moving, although there were worrying bare patches in some of the heifer paddocks, most probably caused by salinity. The Management Committee adopted a fertiliser policy of no phosphorus fertiliser if the soil test is above 45 mg/kg and N, K and S applied after each grazing. In line with this, low soil P test paddocks received 20 kg/ha P – as triple super – after the break and all Innovation Farm paddocks receive about 130 kg/ha of a 45:8:6 N:K:S fertiliser after each grazing. All paddocks will be tissue tested in early August and the fertiliser program adjusted if necessary. Paddocks were sprayed as required in late June to manage broad-leaf weeds – mainly Capeweed – and Red-legged Earth Mite.

## *Where to with the Innovation Farms?*

The Innovation Farm Management Committee has decided to amalgamate the two Innovation Farm herds. This will:

- result in the two individual herds being combined into one larger herd, containing approximately 150 cows, that will be managed as a 40% autumn and 60% spring calving herd, as at present, or whatever ratio the Committee thinks beneficial in the future.
- better reflect current industry practice where the irrigated area generally covers about 30% of the farm area. The irrigation innovation farm was set up with 16 ha irrigation and 14 ha dryland.
- make management of the pasture easier in that, when cow numbers have been insufficient over summer, other stock, usually heifers, have

been brought in to tighten up the rotation. These animals have generally not had access to as balanced a ration as the milkers, leading to severe urine scald.

Combining the herds will bring some fresh management challenges but none which are thought to be insurmountable.

## *The pot trial*

A pot trial was established at Vasse to look at the interaction between defoliation interval [rotation speed] and the amount of nitrogen fertiliser applied after each defoliation. Perennial ryegrass plants growing in free-draining pots were cut to 5 cm when they had grown either 1.5, 2.0 or 2.5 leaves; this resulted in 10, 7 and 5 cuts respectively over the first 20 weeks of the trial. The pots also received either 1 or 2 kg/ha/day nitrogen fertiliser after each cut. At each cut, the amount harvested was recorded and analysed for quality, particularly crude protein and water soluble carbohydrate. At the end of 20 weeks, root dry matter was determined for 30 pots which had not been sacrificed during the trial. Some of the findings from this trial are:

- There was a 7% difference in pasture growth rate between pasture defoliated at 2.0 vs 1.5 leaves but a 23% difference between pasture defoliated at 2.5 vs 2.0 leaves.
- Leaf stage had a considerable impact on the composition of the ryegrass. The ratio of crude protein to water soluble carbohydrates (CP/WSC) changed from about 1.43 at 1.5 leaves to 0.67 g/g at 2.5 leaves. This was the result of a decline in crude protein content with increasing leaf stage and an increase in water soluble carbohydrates content. A ratio well in excess of about 1.0

**Bill Russell, Bunbury**

appears to impact adversely on how efficiently dietary nitrogen is utilised in the rumen and can lead to large losses of dietary nitrogen in urine. Ryegrass pasture that is consumed at 1.5 leaves is likely to lead to significant increases in urinary nitrogen loss, with potential adverse impacts on both cow and environmental health.

- Root biomass at the final defoliation was increased by both leaf stage and by nitrogen fertiliser rate. A greater root mass is likely to make the plants more persistent and will increase the uptake of nutrients.

These interrelationships between defoliation interval [rotation speed] and nitrogen fertiliser rates help explain some of the observations we have made over the last two years and highlight the complexities of fertiliser nitrogen use. This work leads us to question some of the current thinking around nitrogen fertiliser use. Specifically, we need to question the shortening of rotation speeds to two leaves per tiller or less to avoid canopy closure in pastures receiving high rates of nitrogen fertiliser. Grazing at an early leaf stage reduces the potential response of pasture to nitrogen fertiliser and is likely to produce pasture with an unfavourable CP to WSC ratio, which may adversely impact on both cow performance and environmental health. If avoiding canopy closure is important, and the rate of nitrogen fertiliser being used is causing it to happen at less than about 2.5 leaves, it may be better to reduce the rate of nitrogen used than to graze the pasture early.

**More information** from me on 9780 6264.

**Peta Richards, Manjimup**

Irrigation Management training will be delivered in a similar format, and fertigation courses and a one-day introductory course for small landholders are now in the pipeline.

So keep an eye out for updates, including the launch of the new website!

**More information** from me on 9777 0144.

## What's happening with "WaterWise"?

Another irrigation season is nearly on us – something to look forward to!

For us in the WaterWise team, this is an extremely busy period. Based on feedback received from past participants, the WaterWise program is being revamped.

The manual is being reviewed, to be provided in a new more user-friendly format. Previously developed evaluation tools and calculators are

being fine-tuned to be provided to all participants. A website is also being developed from which the tools will be available, along with a vast range of other useful tools and information. This site will also provide the opportunity for you to make suggestions about areas you might like to see covered in future training courses.

The project team is also looking to expand the area of training delivered.

# Development of the Australian beef industry through breeding strategy

Catherine Stockman, Bunbury

Strategic directions for the Australian beef industry for 2010 to 2020 have recently been reviewed. Strategic developments are needed to keep pace with competition. Increased variability in climate and reduction in soil moisture is likely to impact the economies of beef production, resulting in added economic pressure and some redistribution of the herd. Strategies need to be developed to take into account future changes such as these. Three major strategic targets were determined to be of particular importance to the Australian beef industry to maintain its competitive position and profitability.

The first of these is to increase the understanding of **functional biology** for the major beef production environments. One factor is to understand the effect of genotype x environment interaction. Understanding this will allow establishment of appropriate analytical procedures for genetic evaluation across and within breeds. It will also allow genetic potential to be matched with climate, feed resources and market opportunities during breeding.

The second is to maximise the rate of **genetic improvement** for each commercial production environment. In particular;

- for the processing sector, to purchase stock and market beef that consistently reaches the required market specification for factors such as eating quality.
- for the commercial beef production sector, to fit input-output elements that will enable processors to better meet market specifications
- for the breeding sector, to execute and maintain breeding plans that result in rapid genetic improvement, allowing gains to be quickly distributed within the commercial production sector.

The use of molecular genetics, artificial insemination technologies along with formal progeny testing and an extended BREEDPLAN system will become increasingly important to industry in maintaining a competitive edge.

The third is to retain and develop the **Beef CRC concept**. The Beef CRC offers industry a cost effective platform for further development of major strategic technological needs. Regular in-depth evaluations of each round of the CRC's operation have been strongly favourable. The Department of Agriculture and Food is strongly involved in Beef CRC research and development. In particular, Vasse

Research Station is conducting a Maternal Productivity trial funded by the Beef CRC. This project is investigating the effect of selection for carcass traits and feed efficiency on productivity of a female herd under a high and a low nutritional level. Also at Vasse, the 'Genes for Tenderness' project is investigating the effect of expression of genes for tenderness in Brahman cattle with or without HGP. The economic assessment of different growth paths is another study conducted by the Department of Agriculture and Food (DAFWA) and funded by the Beef CRC. This study examined how time of calving, weaning and nutritional management can impact on profits.

It is important that the beef industry as a whole takes more responsibility for genetic improvement by making sure genetic improvement gains are benefited across all sectors and that value based marketing systems are developed. It is important that DAFWA and industry continue to work together in research into genetic improvement and to generate genetic improvement by established breeding goals applied to particular production environments.

More information from me on 9780 6263.

## Healthy sheep sales

Ian Spicer, Bunbury, and Evan Armstrong, Boyup Brook

There was something new at the recent June sheep breeder sale at Katanning – most lines offered for sale had a Sheep Health Statement (SHS) completed and taped to the front of the pen. Stock agents are also looking to have SHSs at some of the forthcoming spring sales.

The SHS gives prospective buyers some vital information about the treatment and disease history of the stock. Treatments such as vaccination, worm drenching and lice treatments, and freedom from diseases such as footrot, brucellosis, lice and OJD. The SHS is a vendor declaration, so is a declaration to the best of the owner's knowledge rather than a guarantee.

Buyers of sheep accompanied by a SHS have peace of mind regarding disease

and have very important information regarding previous health treatments. For example, it is important to know if ewes have had their Pulpy Kidney vaccinations so you can plan on giving them either one or two shots before lambing.

Another important benefit is that the sheep appeal to buyers from the Eastern States who need a SHS to be able to take stock into any other State. Agents are able to complete such transactions quickly without having to chase up vendors to fill in more paperwork.

So next time you are looking to sell breeders or store stock, ask your agent to announce them as having a Sheep Health Statement.



Next time you are looking to buy sheep, ask for those with a SHS.

The SHS form can be downloaded from the website [www.agric.wa.gov.au](http://www.agric.wa.gov.au) and search for SHS, or from offices of the Department of Agriculture and Food.

**More information** from Ian on 9780 6299 or Evan on 9765 1478.

# Managing gully erosion problems below dam overflows

*Tilwin Westrup, Bunbury*

The recent turn in seasonal conditions has bolstered water levels in dams throughout the south west. If rainfall continues, dams should soon begin overflowing. In some cases, erosion is likely to occur due to inadequate (or non-existent) overflows, as happened in 2005.

This erosion can result in issues such as loss of fertile soil, reduced trafficability, sedimentation of drainage lines and eutrophication. In severe cases, the actively eroding gully head can work its way up the paddock and cause the dam wall to erode and collapse.

Actively eroding gullies below dams may form along stock tracks and along existing drainage lines that have been disturbed by cultivation or construction. Drainage lines that are unable to cope with the increased surface flows generated by the dam overflow are also at risk.

One approach to managing this issue involves four steps:

- Armour the dam overflow
- Modify the design of the dam overflow if necessary

- Divert overflow to a safe disposal point away from potential or actively eroding gullies

- Reshaping and stabilising the gully.

Armouring protects the dam wall by making the overflow more resistant to erosion. Armouring may include rock (grouted and non-grouted), concrete, rubber matting or even grass. A poorly constructed overflow may still erode, even though armoured. Where this is the case, the dam overflow may need to be redesigned.

A well designed dam overflow transports the water from the top of the dam wall to the bottom safely and is large enough to handle peak flow events. Dam overflows should be treated as a flume and include;

- An inlet, with wingwalls, a cutoff wall and an upstream apron
- The crest, conveying the water between the inlet and the chute
- The chute, conveying the water to the stilling basin floor
- The stilling basin, at the base of the chute, is where the energy (and erosive capacity) is dissipated as the overflow water hits water in the basin rather than the soil surface.

- The outlet downstream of the stilling basin (sill, cut-off wall and tail walls)

Overflow should be diverted away from the actively eroding gully before gully filling and stabilisation can occur. This can be done using conversion banks and grassed waterways. Gully filling involves stockpiling topsoil, filling the gully and spreading the topsoil over the filled gully.

In some cases, the filled gully will be weak for some time after it is filled. Spreading topsoil back over the reshaped gully helps with vegetation establishment and stabilising the gully site. This is especially important when the subsoil is infertile or dispersive. In these cases, failure to re-distribute the topsoil over the site will make it very difficult to stabilise the gully and it will continue eroding.

Overflow should be discharged to a safe disposal point. Structures must be properly designed and constructed, as failure to do this puts the area below the structure, and the filled gully, at risk of severe erosion.

**More information** from me on 9780 6165.

## Which irrigation system should I use?

*James Dee, Bunbury*

***The Harvey Water Expo may help answer this question***

What is the best irrigation system is a difficult question for farmers in the South West to answer. With increased climate variability affecting the amount of water available for irrigation and increased demand on this limited amount of water, there are mounting pressures on farmers to use water as efficiently and effectively as possible.

Farmers are asking "is surface irrigation the best system to use?". To help answer this question, Harvey Water and the Department of Agriculture and Food WA are organising an Expo to be held in the Harvey area on the **5<sup>th</sup> of September**.

We have been lucky enough to get Dr. Steven Raine from the CRC for Irrigation Futures to talk to us about his experiences with the cotton industry when those farmers were moving from surface irrigation to large pressurised systems. We will also have local farmers explaining their experiences in moving to pressurised systems.

The **Harvey Water Expo** will be held at the **Wokalup campus of the Harvey Agricultural College**; follow the signs from the South West Highway. The Expo will start at 10.00 am with people being able to inspect the latest developments in irrigation systems. The formal presentations will start at 11.00 am and conclude at around 12.30 pm.



You can catch up with the presenters and the suppliers over lunch, which will be provided.

**More information** from me in Bunbury on 9780 6285 or Richard Yates from Harvey Water in Waroona on 9733 7777.

# Water ponding on your paddocks?

Cengiz Erol and Tilwin Westrup, Bunbury

It's great to finally be getting some rain. Dams are filling and pastures and crops are looking fairly good through much of the Southwest. Along with benefits, the rain brings some challenges. Excess water ponding on poorly drained paddocks can cause waterlogging and salinity may form as ponded water evaporates, leaving salt behind.

There are a number of management tools to address ponding, waterlogging and salinity. Options may include re-vegetation with native or commercial species, adopting effective water management systems and conservation earthworks for surface water

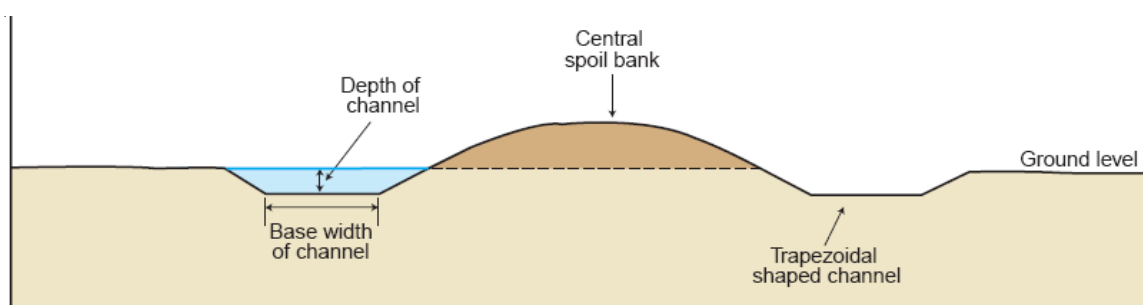
management. The effectiveness of engineering options will vary depending on site characteristics. W-drains work well in many sites where ponding is a problem.

## **What is a W-drain and how does it work?**

A W-drain has two parallel, flat-bottomed channels with spoil from the channels placed between them to form a bank, giving the structure a 'W' shape (as shown in the Figure). W-drains can be constructed on a grade by a grader or a bulldozer and surface water can enter the two channels on either side of the

common spoil bank. The spoil bank can be formed into an access road or track and, in some cases, cropped.

W-drains are shallow drains which are very effective at removing ponded water. They are used in small catchments and have a short length. They are located in the lower landscape where waterways would be ineffective because of low gradients and are used to intercept overland flow in low-lying areas. By providing a well defined flow path, excess surface water is removed faster than would occur under natural drainage conditions



## **Cross-section of a W-Drain**

The best time to plan drainage is after heavy rain when inundated areas are easily seen and the lowest points in the landscape can be located. These points can be pegged and levels surveyed later

to work out the best layout for the scheme.

We have developed guidelines for the construction of shallow relief drains (Misc.Pub. 30/2002). This provides information to assist with planning,

design, survey and construction of shallow relief drains or drainage schemes.

**More information** from Tilwin on 9780 6165.



## Yes! You can resolve financial and business issues

The Rural Financial Counselling Service WA can help farmers and small rural businesses identify ways to become more self reliant and better equipped to manage change and adjustment.

Rural Financial Counselling is:

- free from start to finish
- independent of financial institutions, welfare agencies and government departments
- a mobile service
- impartial
- confidential

Rural Financial Counsellors can help you to:

- Identify financial and business options for the future of your

enterprise, including adjustment out of agriculture.

- Assist with cash flow budgeting
- Assist with family decision making by exploring options
- Review contracts and loan applications with lending institutions
- Communicate with lenders and facilitate meetings with financial institutions
- Access information and referral to Centrelink and other professional service providers, including accountants, lawyers, agricultural advisers, farm succession planners, social counsellors and personal or family mediators
- Access information helpful to you, including available benefits and

business development grants and other Government programmes.

- You make the decisions: it's up to you to choose which option is right for you. The rural financial counsellor will help you develop some options and will provide support with your decision making.

Call the **Freecall number**  
**1800 612 004**

You will be transferred to the nearest counsellor and farm visits can be arranged.

The service is funded by the Australian Government and Government of Western Australia Department of Agriculture and Food, with support from Local Shires.

# Nutrients, algal blooms and water quality

*Dr Malcolm Robb, Manager of Water Science, Department of Water*

The waterways of our west and south coasts are plagued by water quality problems which have been exacerbated by the way we manage our land.

The primary cause of algal blooms is the removal of limitations to algal growth through runoff of nutrients from urban and agricultural land. In any aquatic system, algae will grow until they run out of something – light, temperature or a nutrient such as nitrogen or phosphorus.

Like legumes, algae can fix their own nitrogen from the air and, as such, it is not possible to starve them out by denying them nitrogen. So the approach is to try and limit their growth by restricting their access to phosphorus. This can be difficult, as substantial supplies of phosphorus have built up in sediment in the waterways. Because of this, it will take some years before algal blooms subside in response to changes in phosphorus input.

Also, algal growth in most of our estuaries is limited by nitrogen because they are awash with phosphorus - more nitrogen from fertiliser or sewage etc will grow more algae. It is not just about reducing phosphorus; while the sediments are full of phosphorus, reducing nitrogen, or at least not increasing it, is also important.

Algae are a problem for water quality and a number of very toxic algal blooms have developed in recent years, some of them of substantial size.

Our largest toxic algal bloom was recorded in late 2006 when most of the Serpentine River and lakes system were covered. These toxic algae can cause pathology from direct skin contact and

through breathing vapour and dust or if ingested in water supplies.

Algal growth occurs throughout the year but blooms start in Spring in response to catchment run off and increased light and temperature; these are often beneficial species. Harmful species tend to be more common from the beginning of summer as temperatures rise and phosphorus is released from sediments that were deposited in current and previous winters. At this time, oxygen levels actually rise (through photosynthesis) but, when the algal bloom collapses, oxygen is consumed as bacteria break down the carbon to produce carbon dioxide (respiration), sometimes generating substantial fish kills.

Deoxygenation is not only a function of nutrients growing algae which collapse and use oxygen. High organic loading from the catchment - carbon from pasture and manures etc - also consumes oxygen which then releases nitrogen and phosphorus for algal growth. Dissolved organic nitrogen and phosphorus from the catchment are also available for algal growth.

Oxygen demand in the estuary and sediment is driven by catchment derived organic matter and in situ growth from nutrients. Recent work is showing how rapidly available this dissolved organic carbon and nitrogen are. And, of course, all stuff in the sediments originally came from the catchment. This is important because we focus on nitrogen and phosphorus and sometimes forget organic matter.

Extreme organic loading, such as in the lower Murray, produces the same symptoms as acid sulphate discharges

- iron monosulphide oozes. Oxygen depletion and fish kills occur in areas such as this or where layering occurs between salt and fresh waters, such as the riverine portions of estuaries.

Increasing oxygen levels in river systems using mechanical means or oxygenation is very expensive, has limited effect further downstream and is only feasible at a few sites. Oxygenation does not remove the primary cause of algal blooms and will not stop toxic algal blooms. Some effort is being made to reduce the temperature of waterways by shading with trees and oxygenating naturally by re-introducing riffles which disturb the flow of water. However, the best solution is to remove one of the main causes - the loss of nutrients to the waterways.

The major sources of nutrients to waterways are fertilisers from agricultural catchments and fertilisers and human waste from urban areas.

The waterways around our coast vary in their condition from pristine to highly degraded. An alarming number are affected by algal blooms and the spread of toxic species is increasing. The degraded areas are associated with the greatest activity and clearing.

The Department of Water is working with the Department of Agriculture and Food WA, the Local Government Association, The Department of Environment and Conservation and the Department of Planning and Infrastructure, as well as a number of catchment groups, to improve our water quality and better manage nutrients.

**More information** from the Department of Water on 9726 4111.

## Perennial Pastures - want to know more ...? David Rogers, Waroona

A new bulletin, '**Perennial pastures for Western Australia**', plans to demystify growing perennial pastures. It is designed to become an essential tool for producers, farm advisers, agribusiness and students.

The editorial team of Geoff Moore, Paul Sanford and Tim Wiley have extensive experience with perennial pastures and have also brought in more than 20 leading pasture agronomists and researchers to contribute.

The comprehensive bulletin (248 pages) is written in a user-friendly style. It covers all of the current and future perennial options including: herbaceous perennial legumes, temperate grasses, sub-tropical grasses, herbs, native pastures, fodder shrubs and salt land pastures. For each species there is a comprehensive description of current and potential use, establishment, soil and climate requirements, management plus other details accompanied by high quality colour photographs.

The bulletin describes perennial pasture options for the south west region and perennial pasture management (e.g. grazing, animal production) in terms of both the potential benefits and disadvantages (e.g. animal toxicity, green bridge).

Copies are available for \$33.00 (incl. GST) per bulletin + \$5.50 postage and handling from Jo Brown, Department of Agriculture and Food WA, South Perth Ph: 9368 3710; FAX: 9474 2405; Email: [jbrown@agric.wa.gov.au](mailto:jbrown@agric.wa.gov.au)

# Establishing sub-tropical perennial grasses – some things to consider

David Rogers, Waroona

If you are considering sowing sub tropical perennial grasses like Rhodes Grass and Kikuyu, it pays to be well prepared. Sub tropical pastures need to be sown into warmer temperatures than temperate pasture varieties so the best time to establish them is generally in early spring. You need it to be warm enough for the pastures to germinate and grow and have enough confidence that you will receive at least a germinating rainfall event and significant follow up to ensure that you get good establishment. Good site preparation and early management is critical for successful establishment.

## Weed and pest control

Good weed control is critical for successful establishment. Perennial pasture seedlings are very poor competitors and weed competition will reduce your establishment success. Weed control should start in early to mid August, with the aim of 100% control of weeds. Around four weeks prior to sowing, apply a non selective herbicide (eg. glyphosate @ 2 L/Ha) or a full cultivation. This should be followed with a further application of herbicide just prior to sowing to remove any late germinating weeds. The follow up application should also include a bare-earth insecticide to remove pests like Red-legged Earth Mite that will predate upon your germinating seedlings, potentially affecting their density and establishment. This is **ESSENTIAL** for a good establishment.

## Sowing the pasture

In general, these pastures should be sown in early - around mid September - to ensure that the chances of significant rainfall to germinate and establish these plants are high. In wetter areas that are likely to remain moist for longer, early control of weeds maybe difficult and trafficability is likely to be poor. There is a larger window of opportunity on these sites and pasture can be sown later. However, you should get on to them as soon as you can.

Seeding depth is also critical. Seed needs to be sown around 5-10 mm deep. Sowing seed too deep can dramatically affect the number of seedlings that successfully establish. If you are not confident that your seeding gear is accurate enough to plant at this shallow depth, consider alternative sowing methods. Many growers have had success by dropping the seed on the surface, then following this with a light set of harrows to gently tickle the seed in. If possible, follow this with a roller to ensure good seed to soil contact.

## Early grazing management

Sub tropical perennial grasses are very susceptible to being pulled straight out the soil if grazed by livestock too early. After germination, plants are investing their energy into sending a long tap root down into the soil. At this stage they are easily plucked out of the ground, snapping the tap root off at the base of

the plant. The plant needs significant rainfall 6 – 8 weeks after germination to enable it to develop its lateral roots which lock it into the ground. Once this has occurred it is possible to graze the stand lightly.

## Other considerations

Kangaroos love these pastures and will come for miles once they find a stand to feed on. If there are many kangaroos feeding on the stand, particularly early in its development, it can have a severe impact, reducing plant density and the success of the establishment.

Almost all perennial pasture varieties require some form of rotational grazing to persist and be productive. If you set-stock, you will lose your perennials. If you are not prepared (or do not have the space) to rotate your livestock and spell the paddock regularly, consider other pasture options. The exception to this rule is Kikuyu which can be set stocked once it is well established, though it will perform better in a rotational grazing system.

There is likely to be an increased demand for seed of these pastures this year and seed availability may be limited. If you are planning to sow these pasture this season and you haven't already ordered your seed, do it now.

**More information** from me on 97337708.

## Boneseed Blitz

Andrew Reeves, Bunbury

Community groups and land managers are joining together to seek out and eradicate Boneseed during the Western Australian Boneseed Blitz, September 3<sup>rd</sup> - 14<sup>th</sup>. You can help by reporting any Boneseed in your region.

Boneseed is a Weed of National Significance that invades vast areas of native bushland in South Australia, Tasmania and Victoria. Boneseed threatens the survival of native plants, degrades native bushland and displaces food plants of native animals. It is a fast growing, aggressive plant that produces massive amounts of seeds. Fortunately, Boneseed is only known from around 35 small sites in WA.

Boneseed is a serious threat to the incredible diversity of southwest Western Australia but fortunately it is still in the early stages of invasion and can be eradicated.

Everyone is advised to be on the lookout for the bright yellow 'daisy' flowers of Boneseed that should be appearing on plants between August and October.

The entire southwest region of WA is very susceptible to invasion by Boneseed, but these infestations are still small enough to be controlled. We want to eradicate all infestations and stop the spread of Boneseed in WA.

Eradicating Boneseed from WA is a priority for the National Boneseed



Program. Everyone is encouraged to report Boneseed sightings to the DAFWA Pest Info line on 1800-084-881.

**More information** from me on 9780 6224.



# Blackberry containment zone for the South

## West

Andrew reeves, Bunbury

Blackberry is a Weed of National significance (WONS) and, as part of the fight against this invasive weed, the national blackberry taskforce has provided funding to the Department of Agriculture and Food to establish a containment zone along the Collie and Brunswick rivers.

The containment zone will extend from the coast to the edge of the wheatbelt and include the area between these rivers. The aim of this containment zone is to prevent the potential spread of the American Blackberry (*Rubus laudatus*), present in the Perth region, from spreading to areas where the Common Blackberry (*Rubus anglocandicans*) is established.

In an area south of the buffer zone, any American Blackberry that is detected will be treated to prevent its further spread.



Senior Weed Scientist John Moore with Brad Rayner and Brett Vukelic planning the location of the containment zone.

Landholders within the containment zone will be contacted by letter and personal visit once treatment within the area commences. All landholders will be asked to continue on the control work in future years to ensure the maintenance of the containment zone.

The Common Blackberry is subject to bio control with a rust fungus, while the

American Blackberry is not affected by this control agent. It is important that a barrier is maintained between these species so that as one species is reduced in vigor by the fungus, another species does not take over the ecological niche occupied by these species.

**More information** from me on 9780 6224.

## New publications

### **Climate change and adaptation in south west Western Australia: a report to the Western Australian Government and Australian Greenhouse Office – Phase 1: Bulletin 4706**

The Western Australian Government, in collaboration with the Australian Greenhouse Office, is undertaking a study to investigate the impact of climate change on South West Western Australia and past and potential responses to it. Phase One is concerned with how residents, organisations, institutions, industries and natural systems have responded to climate changes.

### **Mites in citrus: Farmnote 225**

Five species of mite are potential pests but, with the exception of Citrus Bud Mite, damage to citrus is rare. Depending on the species, damage ranges from feeding scars on leaves through to bronzing, scarring and deformation of fruit

### **Water salinity and plant irrigation: Farmnote 234**

Plants vary greatly in their tolerance to irrigation with saline water. Salty irrigation water can affect plant growth in two ways - the osmotic effect and specific ion effect.

### **Organic food and farming: introduction: Farmnote 199**

Modern organic farming is an integrated farm management system where biology and balanced soils are developed to give sustainable yields without synthetic chemicals or forced growth. Farmnote includes information on Australian standards for certifying organically produced foods and contact details of the accredited organic certification organisations.

### **Common diseases of native plants in home gardens: Garden note 230**

Describes the most common diseases of native plants in home gardens

### **Common insect pests of native plants in home gardens: Garden note 229**

Various insects and mites can damage native plants in home gardens at all stages of growth. A description of some of the more important insect pests is given, together with general methods for control.

### **Natural alternatives to synthetic chemicals: Garden note 228**

Covers commercially available alternative chemicals and kitchen remedies such as garlic spray, chilli spray, molasses, oils, Bordeaux spray, beer, coffee, milk and bicarbonate for those who like to avoid stronger chemicals.

### **Rabbit control in urban and semi-urban areas: Pest note 241**

Techniques for the control of rabbits using trapping, poisoning, fumigation, fencing, harbourage modification, ferrets and repellents.

### **Guide to tropical edible fruits for home gardens in cooler regions of Western Australia: Garden note 233**

Describes the cultural practices, varieties and common pests and diseases of edible, tropical plants which can be grown in the frost free, cooler climate of Western Australia.

### **Common pests of citrus in home gardens: Garden note 235**

Describes the most common insect pests of citrus trees occurring in home gardens and their control using natural or low toxic chemical controls

### **Using hormone-treated steers to aid in heat detection in artificial insemination programs: Farmnote 133**

Farmnote reports on the use of hormone-treated steers to aid in heat detection.

These publications can be downloaded from the Department's web site at [www.agric.wa.gov.au](http://www.agric.wa.gov.au) by entering the type of publication [Bulletin, FarmNote etc] and its number in the Search box. Only limited quantities are printed and held in district offices.



## Future Orchard 2012 - pruning monitoring blocks

**Future orchard 2012** is a project managed by Apple & Pear Australia Ltd which aims to lift the average productivity of Australian orchards from 20 tonnes to 45 tonnes/ha. Adoption of higher planting densities, associated with the use of dwarfing rootstocks and support trellis, is encouraged. With intensive orchards, setting up a target crop level (kg/tree and fruit size) becomes crucial. In winter, trees are pruned to the number of fruit buds required to achieve the targeted number of fruits per tree.

The ratio number of buds/fruit depends on the variety. This method should decrease the reliance on thinning sprays.

In collaboration with the WA Fruit Growers Association, monitoring blocks have been set up on properties in the Donnybrook/Kirup area to demonstrate these practices under local conditions. The average number of fruit buds per tree,

as well as other field measurements such as tree girth, height and volume, were recorded

These blocks, which are a mixture of low and high density orchards, will be monitored during the season. Assessment on the results of these new management techniques will be made post harvest.

**More information** from me on 9780 6272.

### Deciduous Fruit Tree Pest Monitoring Workshops

The Department of Agriculture and Food will hold another series of Pest Monitoring Workshops in September, November and June. The workshops will show growers and industry representatives how and when to monitor for various deciduous fruit tree pests.

Brief talks will be given on most of the major pests, along with field walks and some microscopic examination of smaller pests and eggs of pests. The cost for the three day series of workshops is \$50.00 and includes:

- pest monitoring manual.
- pest identification field handbook
- hand lens.
- relevant Farmnotes,
- spray guide
- monitoring sheets.
- Lunch daily

To register for the workshops, e-mail your details to - [sllearmonth@agric.wa.gov.au](mailto:sllearmonth@agric.wa.gov.au) or fax 9777 0001. The venues for the workshops will be Donnybrook and/or the Perth Hills. Depending on numbers, transport may be provided.



## The Dog Book for wine grape growers *Diana Fisher, Manjimup*

The **'Dog Book'**, officially titled *'Agrochemicals registered for use in Australian viticulture'* is produced by The Australian Wine Research Institute. An updated version is released each season. The current edition for the 2007/2008 season is blue. This book is a **must** for grape growers, winemakers and wineries growing/using grapes for export wine.

The **'Dog Book'** is available from:

- Australian Wine Research Institute  
Tel: (08) 8303 6600 Fax: (08) 8303 6601.

- Australian Wine Research Institute's website [www.awri.com.au](http://www.awri.com.au)
- Department of Agriculture and Food, Manjimup Horticultural Research Institute Tel: 9777 0000 Fax: 9777 0001

The information in the booklet was last updated on 18 May 2006. The most up-to-date information is available on the above website.



# NEW citrus varieties and bud wood

*Helen Ramsey, Waroona*

More than 26 new citrus varieties were on display at CITT group meetings held in Bindoon and Harvey during June. Variety specialist Graeme Sanderson from the NSW Department of Primary Industries presented new varieties from Israel, South Africa, Australia, California, Italy, Morocco and Spain. Samples of each variety were available for growers to see, feel and taste. WA variety specialist Kevin Lacey took everyone on a field walk to view varieties currently on trial. The focus of variety trials in recent years has been seedless or low seed mandarins (easy peels).

Tim Herrmann of Auscitrus gave an overview of their operations.

Auscitrus is the trading name of the Australian Citrus Propagation Association Incorporated (ACP), a national 'not for profit' industry organisation comprising citrus growers and nurserymen from each State.

Auscitrus supplies disease tested citrus bud wood and seed in Australia and operates under a Deed of Licence with NSW DPI. All bud wood trees are inspected routinely for off-types and sports and all new plantings are fruited to allow trueness to type to be proven before bud wood is harvested. Detailed records of each order are kept, allowing traceability of bud wood sources should questions arise.

Auscitrus responsibilities:

- Bud wood and rootstock seed production and distribution
- Pathogen indexing and elimination
- Maintenance of virus free and pre-immunised foundation trees in insect proof screen houses
- Importation of new citrus cultivars
- Horticultural screening of new varieties.



## Western Australian Avocados – 'The Quality Avocado'

*Alec McCarthy, Bunbury*

As the WA Hass avocado season starts up in earnest, it is timely to remind all those involved in the WA industry that the continued prosperity of our industry relies on the ongoing supply of quality fruit to the consumer. This can only be achieved if all stages of the supply chain, from grower to retailer, are mindful of quality and handling parameters, regularly monitor fruit for quality and provide feedback back down the line.

As this time of the year can often see strong winds or frosts, which have the potential to either knock fruit from the tree or result in stress to the fruit, it is important for growers, fruit handlers and retailers to remember some basic fruit quality parameters.

**Some basic issues to remember for avocados:**

- fallen fruit should not be picked up off the ground for marketing as they may have bruising and microbial related issues
- fruit suffering a stress event, such as frost, while maturing should be checked to ensure they will ripen without defects **before** being harvested and sent to market, (for

example, test ripen fruit - fruit suffering severe frost may ripen to have black skin patches or pulp that is grey or pink)

- fruit that has suffered a stress event before harvest, but still ripens without defects, will often ripen faster and not hold as long in cool storage as non stressed fruit, therefore will need to be handled appropriately
- it is generally held that Hass is best marketed at dry matter (DM) content of 24 % or higher - recent research highlighted that, at 24 % DM, only 30 % of purchases made a return purchase while fruit at 27 % DM resulted in 100 % of return purchases!
- After harvest, Hass fruit should be cooled within 24 hours and held at 6 to 7 °C for short storage of 1 to 2 weeks or 5 to 6 °C for longer storage of 2 to 4 weeks. Avocados do not keep well beyond four weeks in regular cool storage. This is for fruit that is mature, but still hard and not yet commenced ripening ready for eating,
- Ripe, ready to eat avocados continue to ripen rapidly at room temperature and will become too soft and may begin

to display body rots after a few days at room temperature – avoid having too many ripe avocados on display beyond the day's expected turn over.

- Ripe avocados - those that have softened ready for eating - should be stored at 2 to 4 °C if not being sold immediately. Final consumers should be encouraged to keep their ripe avocados in the fridge to slow down the continued ripening and body rot development.

If you push poor quality fruit onto the consumer, you may get away with it initially, BUT it will hurt you and your fellow industry participants down the track by eroding consumer confidence in our great product.

If growers, handlers and retailers want to continue to profit from the sale of avocados, they need to collectively ensure the consumer continues to have quality experience from eating avocados. This will ensure return sales and help to maintain good fruit throughput and profitable pricing levels.

**More information** from me on 9780 6273.

# Small Landholder Information Service

Yolande Jones, Waroona

The Small Landholder Information Service has been running a series of very successful events, throughout the southwest, with more events to come over the next couple of months.

## Workshops and Field Days

### 18<sup>th</sup> August Boyanup - Managing Soils, Pasture and Horses

Get to know your soils, fertiliser needs, pasture options and how to manage your horses.

### 25<sup>th</sup> August Brunswick - Managing Livestock

Weigh up the pros and cons of different stock. Learn about health, nutrition and registering your livestock.

### 15<sup>th</sup> September Williams - Alpaca and Sheep Information Day

Learn about health, nutrition, handling and NLIS for Alpaca and Sheep.

### 15<sup>th</sup> September Manjimup - Managing Soils and Pastures

Get to know your soil types, how pH affects your soil and what pastures would be suitable for your property.

### 13<sup>th</sup> October Margaret River – Revegetation

Learn the skills to implement successful revegetation and how to make it work on your block.

### 14<sup>th</sup> October Discovery Forest Centre - Forest Information Day

Learn how to manage your forest in a sustainable way and overcome the problems of weeds and more.

### Property Planning Workshops

Identify issues relating to your property and the natural environment and derive practical solutions. Learn how to manage erosion, salinity, dams, drains, pastures, trees and much more.

• 1 <sup>st</sup> September	- Donnybrook
• 22 <sup>nd</sup> September	- Nannup
• 20 <sup>th</sup> October	- Capel
• 3 <sup>rd</sup> November	- Burekup
• 24 <sup>th</sup> November	- Pemberton/ Northcliffe/ Walpole TBC

**More information** from me in Waroona on 9733 7716 or email [yjones@agric.wa.gov.au](mailto:yjones@agric.wa.gov.au) if you would like to register for one of the above events or if you require further information.

## AgMemo mailing list

Your South West Regional AgMemo is now direct mailed, rather than being delivered via Australia Post's 'Householder' service. Developing and maintaining a comprehensive mailing list is not easy and we need your assistance to keep it accurate. Please let us know if:

- The address on the label is not accurate
- You do not wish to receive future copies of the AgMemo
- You received more than one copy of the AgMemo
- You know someone who did not receive a copy and would like to

You can make required changes on this page and fax it to the Bunbury office of the Department of Agriculture and Food on 9780 6136 or phone 9780 6100.



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