

# Agricultural MEMO

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## SOUTH WEST AGRICULTURAL REGION

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## French Apricot Specialist visits WA

*Kesi Kesavan, Manjimup*

Dr Jean-Marc Audergon, an apricot breeder from France, visited the South West recently. Jean-Marc's work is breeding, developing and evaluating new apricot cultivars for the fresh market in Europe, climatic adaptation of apricots and apricot production systems. He has bred and developed several new apricot varieties.

Apricots have been identified as a potential new crop for WA by the 'New Futures' project. Apricots currently account for less than 5% of the state's stone fruit production, with no exports. Preliminary research has identified an opportunity to expand production seasonally and into new growing areas, to target increasing domestic consumption and the high value markets in Europe and the Middle East.

Jean-Marc met with apricot growers to provide advice on new varieties, rootstocks, pruning and training

techniques and on quality of fruits and marketing and consumer requirements. He worked with the stone fruit industry through meetings, farm visits and field walks with NOAH's Apricot Champions Group, and marketers. There were a series of grower meetings and workshops in Manjimup and Perth Hills. Jean-Marc's work with industry focused on reviewing current apricot varieties, production systems and areas in WA, providing the latest information on varieties, rootstocks, climatic suitability and the European market for fresh apricots.

Dr Audergon's visit was supported by DAFWA through its 'Visiting Specialist Program' and by the Apricot Champions Group in Manjimup. He will help WA apricot growers establish networks in Europe. Dr Audergon is also willing to exchange new varieties and selections from INRA for testing by DAFWA.

### In this issue...

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- Summer weeds respond to summer rainfall
- Computer Farm Mapping
- Inspection program for broadacre farms underway
- New Publications
- What's happening in Greener Pastures

Dr Audergon indicated there was a potential to establish a significant fresh apricot industry in Western Australia. To realize the potential, the industry would need a plan and a systematic approach. A number of suitable varieties would be adaptable to the range of climates in WA and could be tested on a range of improved rootstocks. Simple changes could be made to tree training and management of apricots that would improve economics of production and fruit quality. Dr Audergon was keen to collaborate with MHRI in a global apricot variety evaluation network in which INRA's and other breeder's common domain varieties could be tested locally.

**More information** from me on 9777 0120.



*Jean-Marc discussing tree vigour control with apricot growers in Manjimup*

## Want more technical information on beef issues?

**"The Hind Quarter"** is a free quarterly newsletter, produced by the Department of Agriculture and Food's beef team, for people working within the beef industry.

Each edition provides research updates and relevant industry information, a calendar of events, as well as articles with a timely technical focus.

For your free subscription, please contact Emma Giurelli'

egiurelli@agric.wa.gov.au or phone 9780 6181



greenerpastures

## GREENER PASTURES on the web

**Robert Rouda, Bunbury**

Greener Pastures is pleased to announce the establishment of its webpage. You can access the Greener Pastures webpage at any time by going to the DAFWA website ([www.agric.wa.gov.au](http://www.agric.wa.gov.au)) and typing the words "greener pastures" in the search box. Selecting the first Greener Pastures listing provides you with an overview of the various project activities. There is also an index of links to other project information which includes monthly progress reports, regularly-updated Fact Sheets on project activities and other project publications. Current twelve-month management plans for both the Dryland and Irrigated Innovation Farms are also provided. A listing of upcoming project events and links to other relevant information, such as Dairy Notes and the DairyCatch environmental best practice guidelines, are also provided.

Enjoy!

## Calling all Avocado growers

**Alec McCarthy, Bunbury**

The avocado industry in WA has been rapidly expanding over the last number of years and this will result in increased production and therefore market pressure.

The industry has suffered from some untimely weather events such as frost and low winter rainfall. Despite this, avocado production has been a healthy and profitable industry for several years.

Much of this has been the result of the efforts of you the growers via your state industry peak body – Avocado Growers Association of WA (AGAWA). The continuation of this profitability rests on the shoulders of you, the growers to continue to work together to map out the future of your industry. It is important that ALL avocado growers take the time to have input into how your industry develops into tomorrow. Through AGAWA, you can have a say in future product promotion, research and development activities and learn about new developments that can impact on your industry.

**Avocado Growers Association of WA next meeting  
Tuesday March 20, 12:30 pm to 4:30 pm**

**Department of Agriculture and Food (back Conference room)  
Corner Dodson Road and South West Highway, Bunbury**

ALL growers are welcome and encouraged to attend.

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

# Alternative feeds in times of shortage

**Emma Giumelli, Bunbury**

In times of low feed reserves and accompanying high feed prices, producers often look to cheaper, unconventional or 'second rate' feeds to satisfy animal demand. On occasions, mouldy or weather damaged grain can be available as an option when more traditional feeds have been expended. It is important to understand the effect that these feeds can have on animal health and production.

## **Frosted grain**

A severe frost that occurs late in the growing season will reduce both the yield and quality of cereal crops. Frost during grain fill may prevent a proportion of the sugars being converted into starch. Therefore frost damaged grain generally has a higher sugar and lower starch concentration. The fibre content can also be higher due to a higher proportion of seed coat and a lower proportion of endosperm (nutritive tissue in the seed). Generally this grain is downgraded to stock feed and discounted accordingly. Despite its poor appearance, the nutritional value of frost damaged grains is only slightly lower than normal grain.

The Department of Primary Industry in NSW found that frost had a relatively small effect on the nutritive value of wheat grain. The energy content was about 1 MJ/kg DM or 6% less than non frosted wheat but the energy of all the samples still fell within the normal observed energy content for wheat grain. Ideally, grains should be tested prior to feeding to glean an exact understanding of the nutritive value and thus suitable inclusion rates.

## **Estimated digestibility and metabolisable energy content of grain with varying frost damage**

<i>Wheat Grain</i>	<i>Digestibility (%)</i>	<i>Estimated Energy (MJ/kg DM)</i>
Unfrosted Wheat	91	14.3
Lightly Frosted	89	14.0
Severely Frosted	86	13.5

Richardson, E.C. et al. (2001) *The Nutritive Value of Frosted Wheat for Sheep* Australian Journal of Experimental Agriculture 41 205-210

Whilst the nutritional quality may not be as poor as expected, a limitation in using frost damaged grain is the difference in grain size, shape and hardness. Adjustments to milling equipment may be necessary to ensure adequate processing.

## **Frosted hay**

Hay made from a frosted crop may be of reasonable protein and energy content if it is not allowed to deteriorate before being cut. Frosted crops may produce hay that is readily eaten by stock; when the plant is frosted, the sugars are trapped in the plant material making it very palatable. As it is difficult to predict the nutritive value of these hays, testing is strongly recommended.

## **Sprouted grain**

Adverse weather conditions that cause harvesting problems can cause grain to sprout, making it unsuitable for milling, brewing and food production. However, it can be suitable for livestock. The performance of livestock fed sprouted grain is similar to livestock fed undamaged grain. Severely sprouted grain will have lower energy and digestibility levels than undamaged grain but levels will still be within the acceptable range for livestock feed.

## **Mouldy hay and grain**

Moulds can grow on feed and produce mycotoxins, either pre harvest or post harvest, during storage, transport, processing or feeding. Sprouted grain, grain stored at high moisture contents, grain suffering water damage during post harvest storage and hay that is baled too damp all have a good chance of developing mould growth which can pose

an animal health risk. Mouldy grain has a propensity to develop mycotoxins, the toxins produced by fungi. These often occur in animal feed and, in most cases, no adverse effects are noticed either because the mycotoxins are not in sufficiently high concentration, the mycotoxin is not fed for long enough or a good balance of nutrients allow the animal to withstand the toxicity. In some cases, the amount of mould/fungi is high enough to produce mycotoxins in concentrations that can cause animal deaths or impaired growth.

When dealing with mouldy feeds, you should;

- Discard severely mouldy grain.
- If possible, keep inclusion rates at low levels and feed for the shortest time practical.
- Monitor stock closely and avoid feeding to young or pregnant/lactating animals.
- Test for mould type and the presence of toxins.

Grain with a high level of deterioration will be lighter in weight, discoloured and darkened. The endosperm is likely to have a chalky appearance.

## **Palatability**

Damaged grain and hay that has undergone fungal invasion may exhibit 'off' aromas and flavours and be unpalatable to stock. Any depression in food intake due to unpalatability of the diet is undesirable. Other things that cause feeds to become unpalatable to stock include rancidity and the presence of naturally occurring toxins such as tannins and alkaloids. There are methods that can be employed to overcome poor palatability and these include the use of salt, molasses and flavour enhancers in the diet.

**More information** from me on 9780 6181.

## **REMINDER**

Australia enjoys a global reputation for being free of bovine spongiform encephalopathy (BSE), also known as mad cow disease. To protect our BSE free status, livestock producers need to adhere to the Ruminant Feed Ban. This means a total ban on the feeding of 'restricted animal material' or RAM to ruminants. RAM is any material taken from a vertebrate animal and includes blood meal, meat and bone meal, fish meal, poultry meal, feather meal and compounded feeds made from these products. Gelatin, milk products, oils extracted from fish, treated tallow or treated cooking oil may be still be used.

## Sadly Missed



**Bill Smart**, beef development officer in Bunbury, died in December after a long illness. Bill started with the Department in Merredin in 1977 then moved to Lake Grace where he became Officer in Charge. He moved to Bunbury in 1992 to work on various beef industry projects, including Sustainable Grazing Systems. He had a great interest on the effect of seasonal conditions on farming and was a regular commentator on rainfall and other weather related issues on local radio and in the general press. We extend our condolences to his wife Pat and their three daughters.

## Summer weeds respond to summer rainfall

*Andrew Reeves, Bunbury*

Recent summer rains can be expected to allow significant germination of summer weeds. Farmers with an active summer weed control program will be able to treat these weeds while they are actively growing which will achieve a greater kill of adult plants. Germination of new weed seedlings will allow you to kill new seedlings and help reduce the seed bank.

The only way to control weed species is by a commitment to a long term weed control program. Neglecting summer weed growth may allow plants to prolong flowering and seed twice over the summer period. New seedlings will become adult plants, increasing the weed burden on your property.

**Narrow Leaf Cotton Bush** is toxic and found along the coastal plain and Darling scarp. It is a prolific seeder and is able to quickly infest and shade out pasture. There have been several germinations this summer so heavy autumn and winter infestations are predicted.

**Apple of Sodom** is a native of South Africa. It is toxic and grows to form thorny woody bushes. The mature plant will restrict stock and vehicle movement and provide shelter for vermin such as rabbits and foxes. Early control is recommended as this weed is costly to treat once the plant reaches maturity.

**Blackberry Nightshade** is a herb, suspected to be toxic to stock. The plant produces a large number of small black/purple berries after rainfall which can be spread over a large area by birds and foxes. Blackberry Nightshade can be effectively controlled with the application of glyphosate and metsulfuron-methyl

**Blackberry** plants from dense thickets with long flexible thorny canes. The infestations spread mainly in creek lines and damp gully areas. The additional summer rain has allowed these plants to continue flowering and it is likely that seeds will continue to be produced.

Control is best achieved while plants are flowering however a two – three year program will be required to remove dead canes and treat new germinations and cane strikes. Care should be taken when applying herbicide around waterways.

**Paterson's Curse** is more commonly a winter/spring weed however germinations have been reported over summer. This weed can cause problems with cattle and horses that graze the plants over summer and winter when a build up of toxic pyrrolizidine alkaloids can cause liver damage.

**Heliotrope** belongs to the same family as Paterson's Curse and contains the

same alkaloids. Heliotrope is a summer growing weed so care must be taken if Paterson's Curse and Heliotrope exist on the same property as stock may continually ingest the alkaloids that may lead to liver damage.

**Doublegee/Caltrop** Both of these hard seeded prickles can make rapid growth after summer rain and will start to form new burrs while conditions are suitable. Control is desirable to prevent the establishment of a long term seed bank and locations on properties that have areas of prickly seeds that impede movement.

**Afghan Thistle** Although called a thistle, this plant actually belongs to the family which includes tomatoes and potatoes. It is a summer growing, spiny plant with a strong underground root system. Like all summer weeds, it competes for soil moisture and nutrients.

**More information** about summer weed control that is specific for your property and situation can be obtained from:

Brett Vukelic in Bunbury on 9780 6161, Brian Smith in Bunbury on 9780 6175, Brad Raynor at Vasse on 9753 0310, Ray Kerslake in Waroona on 9733 7717 or Dale Spencer in Manjimup on 9777 0142.

# Computer Farm Mapping

The fGIS computer program is a farm planning tool which allows landholders to prepare an accurate farm plan from aerial photography. The program is **FREE** and available from the Waroona Landcare Centre or it can be downloaded from the internet.

**At the workshop:** \* Learn how to use the program \* See an aerial photo of your property \* Create a plan of your property including paddocks, fence lines and vegetation etc \* Have accurate measurements of paddock areas and fence lengths to assist with correct fertiliser and chemical application rates \* Plan for future improvements such as fencing, landcare, rivercare or agroforestry \* Print off your plan and aerial photo \* Take the program home to use as needed \* Learn how to access the Landonline and Landgate websites to view aerial photos and Landcare information.

**Workshops are FREE.** Available to all landholders in the Peel - Harvey Catchment. Suitable for small and large farming properties and for lifestyle properties with a minimum size of 2 ha. Held at your local Telecentre

## Workshop Dates

Wed March 7	Serpentine Jarrahdale	9526 0199
Tues March 13	Waroona	9733 2628
Wed March 21	Harvey	9733 2628
TBA	Pinjarra	9733 2628
TBA	Boddington	9883 9710

9.30 am — 2.00 pm  
Morning tea and lunch supplied  
Please book early as places are limited  
Other dates and times can be arranged if required

*This project is funded by the Natural Heritage Trust (NHT) which is an initiative of the West Australian and Australian Governments, and managed by the South West Catchments Council*



## **Peter Gardiner**

Peter is part of Client and Resource Information Systems (CRIS) which handles the Department's geographic information requests. They produce maps, databases and analysis and process spatial data. The other main role is to update and download data from our property database which contains property boundaries and owner details. This is used mainly for biosecurity programs and emergencies. They also have access to a wide range of data including soils data, catchments, rivers, roads, aerial etc. and can provide some information and maps to the public.

Peter is originally from the Ferguson Valley and has a background in dairy and beef after growing up on his parent's farm.



## **Hamish Downs**

Hamish is working as part of the Natural Resource Management Team (NRM) as a Technical Officer. The two main projects in which Hamish will be working in are the Greener Pastures and Water Wise projects. In the Greener Pasture project he will be assisting in the collection of groundwater and surface water data which will be used in analysing the nutrient loss and run off through surface and subsurface flows. In the Water Wise project he will be assisting in collection and monitoring of different irrigation experiments looking into water and nutrient efficiency.

Hamish has come over from Kerang, Victoria, where he worked for the Department of Primary Industries working on salinity monitoring of surface and subsurface water.

# Inspection program for broadacre farms underway

WorkSafe has launched an inspection campaign to visit broadacre farms in regional areas that have reported injuries in recent years.

The project will involve inspectors visiting a sample group of broadacre properties to identify any common safety risks and provide information to farmers on how to comply with occupational safety and health requirements.

Agriculture industry stakeholders, including the Pastoralists and Graziers Association, WA Farmers Federation and Australian Workers Union, have been consulted on the project.

Injury rates in the agriculture sector remain high and this inspection campaign is part of addressing this. Broadacre farms that have reported an injury over recent years that has resulted in a worker needing 10 or more days off work have been identified. Inspectors will visit a sample group of these properties

and report back to stakeholders, then visit a further sample group and report to stakeholders again.

They will follow the 15 Minute Farm Safety Checklist when conducting inspections. Farmers can get a copy of the checklist from the various industry associations or on the WorkSafe website.

A very successful inspection campaign was recently run in the shearing industry and we are confident that, with the support we have received from the agriculture industry, this project will be equally successful.

The 15 Minute Farm Safety Checklist covers areas such as tractors and other farm equipment, silos and field bins, chemicals and general farm safety.

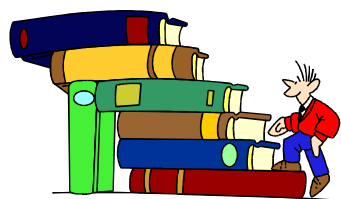
Because of the high injury rate among the farming community, it is important to make sure farmers are aware of what

safety measures and work practices should be in place to guard against further injuries and illness.

Whether farmers become part of this program or not, they are encouraged to use the 15 Minute Farm Safety Checklist to ensure their workplaces are as safe as possible. They can either work through the checklist or submit an application for the ThinkSafe Small Business Assistance Program. This offers a free, three-hour visit from an independent professional occupational safety and health consultant who will then prepare a simple action plan that will help improve safety in the workplace.

**More information** on farm safety, copies of the 15 Minute Farm Safety Checklist and application forms for the ThinkSafe Small Business Assistance Program from WorkSafe on 9327 8777 or on the website at [www.worksafe.wa.gov.au](http://www.worksafe.wa.gov.au).

## New publications



### **Evaluation of cauliflower and broccoli varieties - spring planting: Bulletin 4700**

This is the final report on the evaluation of cauliflower and broccoli varieties conducted at the Manjimup Horticultural Research Institute during 2005 and 2006.

### **Quarantine traveller's guide**

Describes quarantine restrictions relevant to travellers.

### **Potato Spindle Tuber viroid: Factsheet 162**

The Potato Spindle Tuber viroid is the agent of a disease found in potato, tomato and eggplant. Blackberry Nightshade and other Solanum spp. can also be hosts. Factsheet covers geographical distribution of the virus, potential impact, plants affected, season of occurrence and symptoms.

### **Using miticides in Western Australian deciduous fruit tree crops 2006-2007: Farmnote 191**

Registered miticides for controlling Two-spotted Mite, European Red Mite and Bryobia Mite in pome fruit and stone fruit trees.

### **Big-headed Ants: Garden note 173**

Big-headed Ants, also called Coastal Brown Ants, are a major nuisance species. They are an urban pest and are often seen in lawns and in brick paving, which they tend to undermine. This Garden note describes ways to identify Big-headed Ants, discusses their biology and advises on effective control methods.

### **Garden plants that become bushland weeds: Garden note 185**

Many exotic plants escape and cause great environmental damage. This note describes some common invasive plants.

### **Soil pH and plant health in the home garden: Garden note 174**

This note outlines the effect of soil pH on plant health and consequently the susceptibility of plants to pests and diseases.

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.

# What's happening in Greener Pastures?

John Lucey, Manjimup

## **Innovation farms and nitrogen farmlets**

### **Dryland herds**

Almost all milkers in the five Nitrogen farmlet herds and the Dryland Innovation herds have been dried off and will start calving in late March.

The herds are being rotated around their respective farmlet paddocks to eat out the dry feed to ensure good natural germination in those paddocks we managed in late spring to set seed. Once again, our late spring pasture management enabled us to strategically graze regrowth, gradually restricting the herds to those paddocks that had the poorest natural seed set. This has ensured that we will only need to re-seed about 25% of each Farmlet, providing a significant cost saving from our previous practice of reseeding 100% of each Farmlet.

### **Irrigation Herd**

This spring calving herd is receiving about 7 kg/cow/day of a 60:40 wheat:barley mix. As part of the component research associated with Greener Pastures, we are also feeding 4.5 kg DM/cow/day of maize silage which is reducing the overall protein content of the total ration (see below). We are still providing access to hay at 2 kg/cow/day to ensure adequate fibre in the ration.

Our irrigation scheduling is being determined by our Aquaflex soil moisture monitoring system and weather forecasts. We are applying about 6 mm/day but this varies dependent on our monitoring and weather patterns.

At the recommendation of our Innovation Farm Management Committee, we have maintained our nitrogen at 1.5 kg /ha/day to "push the system". When we see pasture "getting away from the herd" we use our heifers to clean up paddocks after the cows.

### **Maize Silage**

We are trialling the use of maize silage with our Irrigation Innovation herd as a high energy low-nitrogen forage source to complement the high energy – high nitrogen pasture. The increase in efficiency of nitrogen use by the cow is reducing urinary nitrogen losses as evidenced by much less urine scalding this season compared to last summer when the cows were on pasture and grain only.

Efficiency of dietary nitrogen use by dairy cows is determined in large part by the ratio of energy to protein in the rumen. Intensively managed pasture is high in nitrogen content and also has high rumen degradability, particularly when liberal amounts of fertiliser nitrogen are applied. The ratio of readily fermentable carbohydrates (energy) to rumen degradable protein in nitrogen-fertilised

pastures can be 10 times lower than what is considered the optimum. Efficiency of pasture nitrogen use in the cow can be improved by increasing the supply of readily fermentable carbohydrates in the rumen.

Maize silage is now an integral part of nitrogen management on Dutch and UK dairy farms, as it provides a high energy – low nitrogen forage source to complement high energy – high nitrogen pasture, thus "balancing the ration" and reducing urinary nitrogen losses.

### **Partner Farms**

While all Partner Farms have experienced higher feed costs this summer, their feedback has been that the milk price rises make it still profitable to feed cows well over summer. The Partner Farmers will be used as case study stories as part of the Western Dairy coordinated Dry Season Response program funded by Dairy Australia.

A field day will be held on Victor Rodwell's on 23 February in conjunction with Water Wise to demonstrate the benefits to Victor's irrigation water scheduling using his soil moisture monitoring system.

All four farms been soil tested and nutrient maps prepared. These results, the trends from last year's results, together with the early results from Mike Bolland's trials on their properties will be used to develop each Partner Farm's fertiliser program for 2007.

## **Comings and goings**

**Geoff Tudor** – senior beef research officer in Bunbury – has retired.

**Hamish Downs** has moved to Bunbury from Victoria to join the catchment hydrology team as a technical officer.

**Peter Gardiner** has joined Bunbury office as a GIS research officer – one of our 'mapping' men.

**Andrew Taylor** has moved to Bunbury from Manjimup to continue his horticulture work.

**Linda Coetzee**, one of the administration officers in Bunbury, has resigned to join the Department of Environment and Conservation in Bunbury.



# Free water salinity testing at Woolorama

**Sarah Glauert, Bunbury**



The department will be offering free water salinity testing at Wagin Woolorama this year.

If you would like your dam, tank or stream water tested, bring in a 500 ml sample in a plastic or glass container which, including the lid, has been rinsed three times in the water to be tested.

We will also provide free advice, including a 'Soil and Water Salinity Calculator', which outlines salinity tolerance levels for crops and animals. There will be an hydrologist on site from 11:00 am Friday, March 9 and all day on Saturday, March 10.

Other farm water information kits will also be available. The testing is available at the 'Natural Resource Management in the South West' DAFWA display.

**More information** from me on 9780 6153.

## 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:

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## TO THE FARMER

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