



dairynews

ISSUE 11, SUMMER 2009

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EDITORIAL



Tim Burfitt

Manager Intensive Livestock Industry Development

Welcome to our summer edition of Dairynews, the fourth and last for 2009. Before launching into a promotion of the array of dairy articles in this newsletter, I would like to reflect quickly on the year that was.

One thing we can all say, regardless of what level we work in the dairy industry, it is never boring. 2009 has presented the industry with a series of challenges, fluctuating milk price, floods on the north coast of NSW through to the harrowing dry that affects our southern farmers. We are, in a small way, assisting with the support of a DPI climate specialist based at Deniliquin and a DPI team working with Dairy Australia on flood planning for river catchments. Despite all of the challenges, the dairy industry continues with an increase in NSW milk production over the past financial year.

Our small but enthusiastic team of Livestock Officers has also seen some significant changes. The retirement of Colin Griffiths (Kyogle) and Tony Dowman (Kempsey) in this year and Dick Buesnel (Bega) in the previous year has provided a loss and gain situation. We lost 121 years of dairy experience and three fine professionals, but gained with the average age of the team dropping into the 30's. So no retirement plans yet for some time let's hope. The recent appointment of Julie Dart to Coffs Harbour has also been a significant gain in this time of limited staffing opportunities.

In Dairynews in 2010, we plan to continue to bring to you our readers, topics that fit with the season, items from Australian and international dairy research relevant to NSW and those areas consistent with our agreement with Dairy Australia who provide significant funds for our operations.

I commend to you the great range of articles present in this edition with a focus on preparation for summer. To all our readers, on behalf of our team and our colleagues in the Division of Primary Industries, I wish you the compliments of the Christmas season and a happy, healthy and buoyant feed filled, well priced 2010.



From tree change to sea change



Julie Dart new Dairy Officer for Coffs Harbour

Industry and Investment NSW Dairy Extension Team has a new member, Julie Dart, based in Coffs Harbour and servicing the area from Kempsey to Murwillumbah.

Julie is fairly new to the dairy industry, but has been with the Department of Primary Industries since 2002, working mainly in horticulture with fruit growers in Southern NSW. She has experience with QA systems and chemical user training, managing natural disasters and droughts; pest, disease and weed management, running field days and farmer workshops.

She has had some experience with the dairy industry and milking cows, whilst attending Hurlstone Agricultural High School. Julie later went on to study Agricultural Science at Sydney University, and did some work experience on the Hurlstone dairy during that time.

Julie writes: "I enjoy watching the dairy judging at the local show. One year I became an "emergency judge" with the honorary vet when the Jersey judge did not arrive on show day. We later found out that we placed the animals in the same order as at the Sydney Royal the week before, so we weren't too bad after all- even if we didn't quite have the correct ring procedures and explanations. I don't think I will ever fully understand what makes a cow "stylish, with a silky udder", but maybe I can be educated!"

Julie is looking forward to learning about dairying in the subtropics and helping out with farmer enquiries and industry issues. She will be working part time on alternate Mondays, Tuesday and Friday. Her contact details are: phone: 66503111, or mobile 0427 007501. email: julie.dart@industry.nsw.gov.au

New Dairy Landcare Project in 2010

Tim Burfitt

Manager Intensive Livestock Industry Development

The Division of Primary Industries working in conjunction with the Dairy NSW Regional Development Program and Landcare Australia are looking for a total of 30 dairy farmers in the Berry, Lower and Upper Hunter dairying districts to volunteer for an energy and water use efficiency audit on their farms.

The dairy farmers involved will receive a farm visit by an accredited Department of Environment Climate Change and Water consultant to assess the efficiency of energy and water systems on-farm, with a focus on the dairy and the milk harvesting process.

After the visit, farmers will receive a report with proposals for improving upon their systems including access to rebates for system improvements that save energy and water.

Other farmers in these districts will benefit from field days where the findings from the 30 farm audits will be discussed along with proposals for accessing energy and water efficient systems and corresponding rebates.

If you are interested in participating, contact Anthea Lisle, Kerry Kempton or Vicki Smart.

See the back page for contact details.

Stock water quality this summer

Tim Burfitt

Manager Intensive Livestock Industry Development

The onset of summer brings with it the need to check on your stock water supplies, both for quantity and quality.

In hot weather, milking cows can drink up to double their normal water intake, so you need to allow for 200 -250 litres per cow per day in summer. Check that troughs are large enough and flow rates fast enough to keep up with the demand when the cows want to drink.

Water quality is also important for cow health and comfort. It should be cool and clear and fit for human consumption. High levels of algae in troughs and dams can present a risk to animal health.

For more information on stock water visit www.dpi.nsw.gov.au and search on stock water. Also try the Cool Cows website: www.coolcows.com.au

Give your heifers some tender loving care

Vicki Smart

Livestock Officer (Dairy) Berry

Good heifer raising practices are a sound investment in the future of your dairy herd and your business. And when those first time calvers are getting close to calving, they'll need a little extra TLC to get off to a flying start to their lives as milking cows.

Here are some tips for management of heifers around calving time:

Early pregnancy diagnosis will allow you to estimate calving dates, so you can then carefully monitor those close to term and reduce calving complications

Introduce lead feeding between 14 – 21 days pre-calving to get them accustomed to the milker diet. Make sure there is enough room at the feed trough so they get their fair share.

Provide shade and shelter in the springer paddock, especially in hot and extreme weather conditions, and prevent access to muddy areas

Avoid over crowding in calving area - a guide is that there should be no more than 1 cow pad / square meter

Consider training the heifers in the dairy before calving, to familiarise them with the surroundings and the sights, sounds and smells.

Treat them gently and quietly and take your time moving them around

Well grown heifers return more profit and compete better when they enter the herd. Live weight of heifers drives both fertility and milk production. One way to check on whether your heifers are performing to their potential is to compare their milk yield at the end of the first lactation with that of the mature cows in the herd. They should be doing at least 83% of mature cow production; which means if your mature cows averaged 7000 litres, the heifers should be doing at least 5800 litres in their first lactation.

By focusing on the following areas you can make a difference to heifer performance:

Size and weight at calving has a major impact on lifetime milk production, as well as health and fertility. Heifers should calve in to the herd having grown to at least 85% of their mature weight and be in good condition (in the range of condition Score 4.5 – 5.5). However over conditioned heifers tend to have more calving and metabolic difficulties.

Age at first calving – whilst not as important as weight and size, if you can achieve the target weights then calving them at around 24 months old means they start paying back their rearing costs sooner. Calving heifers at older ages also means you'll have more replacement heifers running around, and often these animals have lower fertility and more calving difficulties than their younger herd mates.

Calving heifers into to the herd well grown and in good condition sets them up to:

- Need less help calving, and have less health complications and vet attention
- Get in calf quicker after calving
- Produce more milk in the first lactation, and for the rest of their life
- Cope better with herd competition and stay in the herd longer

I&I NSW Dairy Team will deliver a series of events called "Rev-up Replacements" during 2010, with a focus on achieving better performance and returns from your heifers. So watch out for that in your area, and contact your nearest Dairy Officer for more details.

Dairy
Australia
Your Levy
at Work



The People in Dairy

People Basics: the place to start

Getting the people management part of a dairy farm sorted, and keeping it up to date, can be a sizeable task especially if you are starting from scratch.

Now there's an easy place to start: People Basics on The People in Dairy website.

Project leader Dr Pauline Brightling said People Basics was designed to help dairy employers take a first step into addressing people issues, without being overwhelmed by the details.

"People often ask 'where do we start and what do we do?' People Basics is a new tool that quickly directs you to the 'must have' online resources and templates on The People in Dairy website," said Pauline.

People Basics guides the user through the issues that usually come up when an employer starts looking at people management. For example what does the law require us to do in terms of pay rates, time off, safety, etc? How do I get staff to perform well all the time?

"People Basics is the place to start. Once farmers start working through these issues, they become interested in related topics, or want to look at a particular issue in more detail. And from People Basics it is usually just a click or two to get to the relevant information" said Pauline.

For more information, visit www.thepeopleindairy.org.au and click on People Basics on the home page.



People Basics is a simple way for dairy employers take a first step into addressing people issues.

Farmer Targets for Climate Change

How to Keep Cows Cool in
hot temperatures



Industry: Dairy Farming

John Stanham
Camden Park
Menagle, NSW,

About the farm

Location: Camden Park

Nearest Major Town: Cam-
den

Land Area: 400ha

Topography: undulating to
flat

Elevation: 70-100m

Catchment: Nepean River

Rainfall: 900mm/year aver-
age

Water Sources: Nepean River

Herd Size: 240 milkers

Herd Breed: Mixed

John Stanham operates a 240 cow dairy herd at Camden Park.

In 2005 John was looking for a practical, simple, robust solution for cooling hot cows waiting to be milked at the dairy. The system he installed comprises:

- Shade cloth
- Sprays
- Fans

This combination has proven flexible as temperatures increase over spring and summer, and has sufficient capacity to cool the herd on the hottest days.

Shade cloth structure at the dairy

John chose a shade cloth structure manufactured by "VP Structures" for a number of reasons:

- The low cost (a special deal at the time)
- It came in kit form, which farm staff were able to install, keeping costs down
- It is fully engineered for local conditions to Australian standards (with certificates for council approvals).

The kit came with all fittings and a complete instruction manual. In practice it was straightforward to install.

Span: 10m

Length: 36m

Area: 360 m²

Capacity: 240 cows

Height: 2.7m (side), 4.6m (centre)

Shadecloth 70% shade

A similar sized kit would now cost \$16,800 (Oct 2009)

<http://www.vpstructures.com.au>

The shade structure is aligned east-west which is ideal for maximising shade, particularly during the heat of the day.

John has been pleased with the results over the last 4 years: "The cooling systems we have at the dairy have proved to be very cost effective at cooling cows on hot days, not just in the summer.



(Pt cont'd)

During hot afternoons cows come in to the dairy up to an hour earlier than milking times to cool down."



Fans in the dairy

Two large volume fans been installed to provide additional cooling in the dairy itself. The fans have been recycled from chicken sheds.

Large diameter tube fans can deliver up to 4-6 m³/ minute and have a power rating of approx 550 W.

On Camden Park the fans are used to cool cows on extremely hot days.

Large volume tube fans cost approx \$600 - \$1000 and can be single or three phase. Installation

costs for 3 phase can be significant.

Tips: Locate fans carefully to provide air flow but keep them out of the way. Fans can be noisy when in operation

Adapting to increasing temperatures

The shade-cloth structure provides shade all year for

the milking herd. The sprays are turned on when temperatures increase and cows start to show signs of heat-stress.

The fans are used on extremely hot days for extra cooling.

Drinking water

Providing cool drinking water to the herd is essential for milk production but can assist in cooling cows.

Cows need 120 litres/day drinking water. For hot weather this can double.

Adequate water trough space is needed at the dairy with sufficient flow rate into the troughs.

As a guide: 20 L/cow/hour for peak demand with 0.75 m/cow trough space.



Other suppliers:

Redpath cow housing systems:

Maximum 10.65m span, up to 3.5m side height.

<http://www.standoffshelters.co.nz>

Sprinklers in the dairy

The sprinkler system at Camden Park is set up with a timer so that it can be set to an automatic on/off cycle or turned on manually.

The system delivers enough water to wet the cows' skin down to their midriff. The on/off cycle allows the moisture on the cows' skin time to evaporate, to give a cooling effect.

Half circle sprays have been installed on the northern side of the yards below the shade cloth structure. The sprays have a large droplet size and operate at low pressure (25 psi). This prevents

misting which can increase humidity during the summer.

The sprays plug into a rigid galvanised 32 mm pipe running approx 300mm below the side of the shade cloth structure.

The sprays are placed at 6 m centres and can wet a radius of 10 m to cover the yard width, and deliver 25 L/minute over the yards with overlap between sprays.

The automatic timer control system can be adjusted to provide the right amount of wetting depending on the time of year. In extreme heat the sprays are left

on during milking.

Other spans and sizes:

VP Structures have 3 standard spans: 8 m, 10, 12 m

Length: modular with 4 m bays

Shade options: 30, 50, 70, 80, 90% shade.

Other materials for cover are available

Height options: up to 4 m side and 6 m centre of yard.

More information on cooling cows can be found on the web see: www.coolcows.com.au



Industry & Investment

Autumn rain – What’s happening?

Michael Cashen

Livestock Officer Dairy, Deniliquin

Despite the welcome rain that has occurred during 2009 the ‘big dry’ continues in the southern winter rainfall areas.

A number of leading Australian climatologists are now focusing their attention on trying to understand the drivers of the recent drought in south eastern Australia. Of particular interest to this group is the significant decline in autumn rainfall in south eastern Australia since 1991.

Not only has the amount of rainfall received during autumn decreased, but the likelihood of receiving a good autumn break has also changed. Research indicates that the ideal autumn break is now more likely to be later in the season and less reliable than it used to be.

This shift in the amount and timeliness of autumn rainfall has had a dramatic effect on dryland and irrigation farming systems in winter rainfall regions of south eastern Australia. Research undertaken by CSIRO has shown that a small reduction in rainfall means huge loss of runoff in the Murray Darling Basin during autumn, contributing to the current dire situation many irrigators face in the Southern Murray Darling Basin.

The driving force behind the change in autumn rainfall appears to be an intensification of the high pressure ridge, better known as the Subtropical Ridge. This dominates our synoptic pattern in winter rainfall regions of southern Australia and moves with the change of season, as indicated in the synoptic images below. The most likely cause of the autumn rainfall decline is not the position of the ridge in autumn but rather the strength of it. This has increased significantly since the late 1950’s creating more stable drier air masses during the critical period.

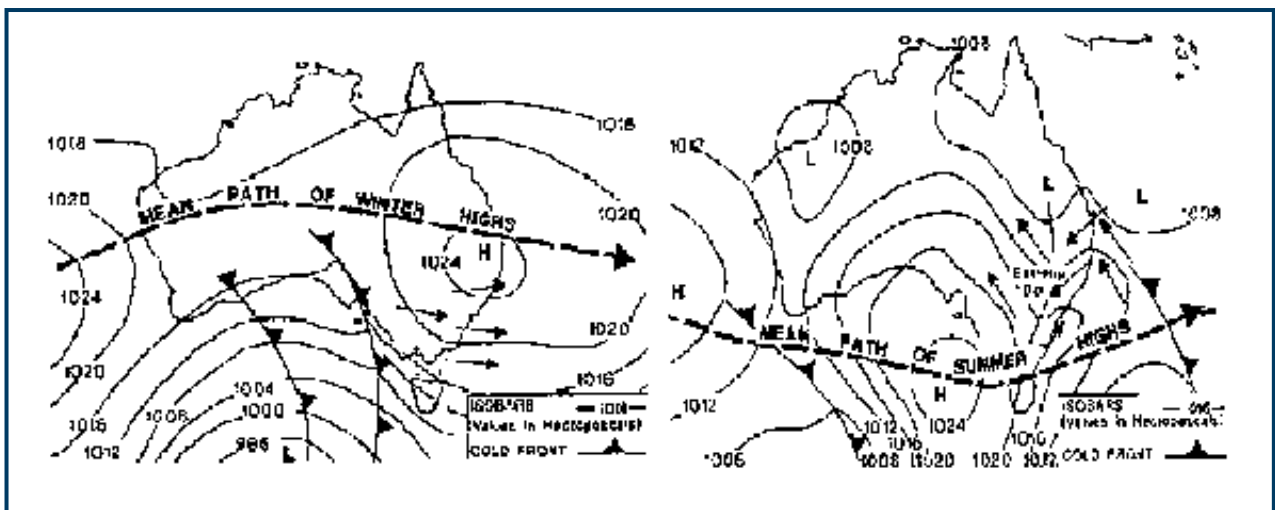


Fig 1: Approximate Seasonal Position of the Sub Tropical Ridge (Winter and Summer)

So what can farmers do about this changing weather pattern? Review how exposed your farm systems is to the recent autumn rainfall decline. If your current farming system is exposed to a dry autumn, you should discuss alternate strategies with your advisors and carefully consider your options. Or better still, come along to a DPI workshop.....

The more you understand about the weather, climate variability and climate change, the better your ability to manage through it. NSW Department of Industry and Investment together with Dairy NSW will be running some events throughout the dairy areas of NSW in 2010, entitled “A dairy farmers’ guide to managing climatic risk”. To register your interest in attending one of these events contact: Michael Cashen by email: michael.cashen@industry.nsw.gov.au. Or phone 03 58819922

References and further reading

Nicholls, N (2008): Drought in Southern Australia: Trends, Causes, Impacts. School of Geography and Environmental Science, Monash University, Clayton, Victoria

Pook, Michael et al 2008: The autumn break for cropping in southeast Australia trend, synoptic influences and impacts on wheat yields, International Journal of Climatology

Comparing the cost of poultry litter: part 2

Neil Griffiths

District Agronomist, Tocal

Where poultry litter is available it provides a cheap but variable source of essential soil nutrients and organic matter. The nutrient and moisture content of poultry litter will vary depending mainly on the relative proportion of manure to bedding material. Nutrients will also vary due to changes in what is being fed, stocking rate of birds, time they are in the shed and the way the shed is managed.

An average nutrient analysis for poultry litter of 2.6% nitrogen (N), 1.8% phosphorus (P) and 1.0% potassium (K) is used for budgeting purposes based on previous surveys conducted by the author and others. Poultry litter used in the trial reported in part 1 mostly had average or higher nutrient levels.

Method

A trial described in part 1 of this paper (Spring Edition) was monitored from 2002 to 2008. All poultry litter and fertilisers applied were recorded and pasture production estimated using pasture

cages. Trial consisted of 3 treatments, 2 replications, plot size 15m x 100m, 3 cages per plot.

Treatment 1: Received annual poultry litter 15m³/ha/year being spread in one application in Dec each year. First application December 2001.

Treatment 2: For the first 3 years received fertilisers applying the same nutrients as applied in treatment 1. These fertilisers were applied in split applications every 3 months. From year 4 to present this treatment has only received 100 kg/ha urea/month applied when the pasture was actively growing. In years 4 and 5 urea was applied in 7 months each year. In years 6 and 7 it was applied every month.

Treatment 3: Received poultry litter 15m³/ha/ year every 2nd year (4 times) in total. Also 100 kg/ha urea applied every 3 months except in years 1 and 3 when no urea was applied.

Control: A 20 metre wide nil fertiliser "buffer" was located at the bottom of each of the treatment 3 plots.

Results

Cost of fertiliser

Fertiliser costs have varied widely during the time of the trial. Costs used are those available in the Lower Hunter in February 2009.



FEEDING

Table 1. Fertiliser costs

Treatment	Fertiliser applied	Cost	Total cost
1.	Poultry litter 15m ³ /year x 7 years	\$20/m ³	\$2,100
2.	DAP 555 kg/ha x 3 years	\$1,080/t	
	Urea 142 kg/ha x 3 years	\$810/t	
	Muriate of Potash 124 kg/ha x 3 years	\$1,370/t	
	Urea 100 kg/ha/month x 7 months x 2 years	\$810/t	
	Urea 100 kg/ha/month x 12 months x 2 years	\$810/t	\$5,794
3.	Poultry litter 15 m ³ /year x 4 years (years 1, 3, 5, 6)	\$20/m ³	
	Urea 100 kg/ha 4 times per year in years 2, 4, 5, 6, 7	\$810/t	\$3,200

Note: Price of poultry litter is delivered and spread. Price of fertiliser is delivered only.

Table 2. Cost of pasture produced 2002 – 2008 (fertiliser cost only)

Treatment	Total pasture produced in 7 years – tonnes of dry matter/ha	Total cost of fertiliser \$/ha	Cost of pasture \$/tonne dry matter
1. Poultry litter only	109	\$2,100	\$19.30
2. Fertiliser only	121	\$5,794	\$47.85
3. Combination poultry litter plus nitrogen (Urea)	121	\$3,200	\$26.48

Over the 7 years that the trial has been monitored, annual poultry litter applications cost a total of \$2100 or \$19.30/tDM produced, the fertiliser treatment produced the most dry matter but cost a total of \$5794 or \$47.85/tDM. The combination of poultry litter every second year plus urea every 3 months cost a total of \$3200 or \$26.48/tDM.

Table 3. Cost of pasture produced in 2008 (fertiliser cost only)

Treatment	Total pasture produced tonnes of dry matter/ha	Total cost of fertiliser \$/ha	Cost of pasture \$/tonne dry matter
1. Poultry litter 15m ³ /ha	17.8	\$300	\$16.83
2. Urea 100 kg/ha/month	22.4	\$972	\$43.27
3. Urea 100 kg/ha every 3 rd month	19.6	\$324	\$16.45

2008 was the highest production year so far with favourable weather and successful oversowing of ryegrass. The annual poultry litter treatment again produced over 17tDM/ha costing \$16.83/tDM. The monthly urea produced 22.5tDM/ha but this worked out at \$43.27/tDM at prices available in February 2009. 100kg/ha urea every 3 months produced 19.7tDM which worked out at \$16.45/t DM.

Discussion

Poultry litter applies a range of nutrients which are best used where a soil test indicates that all these nutrients, especially N, P, and K are required.

Monitoring pasture production on this high fertility site shows that poultry litter may be cost effective even when pasture response is only expected from nitrogen depending on the relative cost of poultry litter and other fertilisers.

In this situation we are concerned that excessive poultry litter will increase the risk of nutrients especially phosphorus in runoff and therefore recommend a combination of poultry litter once every 2 or 3 years (depending on soil test) and additional nitrogen fertiliser as required.

Further information

See Primefact 534 Best practice guidelines for using poultry litter on pastures. NSW DPI website www.dpi.nsw.gov.au/agriculture

Maize silage – give it time to ferment

Anthea Lisle & Neil Griffiths

Livestock Officer (Dairy) Scone & District Agronomist, Tocal



Cover and seal silage stacks quickly after compaction

Maize is a crop that can be fairly unstable in a silage pit, meaning that any exposure to air can cause the undoing of all your hard work in growing and harvesting the crop. Any heating of the face of the silage pit means wasted energy and foregone milk.

When a crop is harvested and put into a pit, there are a few stages that the crop goes through before it is considered a stable silage.

Stage 1: is the aerobic stage, where all the air is used up after sealing the pit. Ideally this period

should be as short as possible, as during this time sugars and proteins are broken down. So, plenty of rolling to achieve a good compaction, followed by covering and sealing will shorten the aerobic phase.

Stage 2: is the fermentation stage, which can only occur after all the air is out of the stack. Acids are produced, lowering the pH and preserving the silage.

Stage 3: is stable phase. As long as no oxygen enters the stack, there will be little or no change to the quality of a silage during this period, allowing silage to be stored for several years if necessary.

The fermentation of a silage usually takes around 3 – 4 weeks. But if air is entering the stack it can take much longer, or it may not be completed at all, resulting in spoilage. So properly covering and sealing the stack or bunker is very important.

If you think you will need to use your maize silage soon after making the pit or bunker (ie less than a month from harvest), consider making a small stack that can be fed out sooner if required. Then make the larger main stack that can be left undisturbed until Stage 3 is reached.

Take care with compacting and sealing both the smaller temporary stack and the main one, and this way you will be giving the main stack of silage the best chance of achieving a good quick fermentation and a very stable end product.



Well preserved silage stack after opening, with very little spoilage

Low risk summer feed

Anthea Lisle & Neil Griffiths

Livestock Officer (Dairy), Scone & District Agronomist, Tocal

If you have limited water over the summer, or if you are unwilling to risk a hot February for early ryegrass planting, a quick low cost summer crop could be a winner for you.

The Future Dairy project has identified some low-cost, low-risk options to plant now:

1. Summer legumes: cowpeas, lablab or soybeans can yield around 8tDM/ha, at good energy and protein levels (10.6ME, 24% crude protein for cowpeas). They have the added benefit of being able to recover well from a dry spell, however some cowpea varieties are very susceptible to root rot in wet weather. Plant between mid November and mid January across NSW. They will be slower to graze than forage sorghum, millet and most brassicas. Rongi lab lab will continue to grow until frosted in autumn.
2. Brassica: Forage brassicas can provide quick and abundant feed, with high digestibility, energy and protein. Energy can range from 11.4 – 14ME. Brassicas have not been popular on dairies in most of NSW for a number of reasons. However, if they are fed at less than 30% of the dry matter of the ration, there is no danger of photosensitisation. If cows are allowed a few days to get used to the taste, they will readily graze and produce very well on the forage brassicas. Some leafy turnips or forage brassica hybrids are ready to graze 6 weeks from planting, and will give 2-3 good grazings in late summer and early autumn before sowing ryegrass. Yields of up to 10tDM/ha can be expected, with good water use and nitrogen use efficiency. They require good soil fertility and water to grow well and may need to be treated for cabbage moth.
3. Intercropping brassica with a feed-maize crop: If you can access some feed corn (any old sort) to sow as an opportunity forage, consider planting the maize at a higher than normal sowing rate, with rows 70cm apart. Once the maize is up, broadcast the forage brassica seed with fertiliser. Grazing this mix when the

maize is around 1.2m high will give a very digestible feed. The maize will not come back after grazing but the forage brassica will then continue growing into the autumn until you are ready to sow ryegrasses.

4. Japanese millet (Shirohie) is well known as a cheap option normally used for early spring sowing but can still be sown in the new year for a quick grazing before sowing winter ryegrass or oats.
5. Forage sorghums can still be sown in the new year but will already have missed a couple of grazings and therefore will give a lower overall yield.

So, in summary there are a number of relatively cheap low risk options for quick summer crops. Rather than leaving areas fallow or waiting for a long planting to grazing period on other species, try one of these options on 3 or 4 hectares – you never know if you don't give it a go.

See the Future Dairy website for more information on grazing strategies for these crops:
www.futuredairy.com.au



Cows grazing forage sorghum

COMING EVENTS

Proposed Topfodder Silage courses for 2010:		Dairy Farmers Guide to Climate Risk Management	
Late May	Casino	3 rd - 7 th May	Day 1 in Hunter, Central West and Southern Highlands
June	1, 2 & 3 Tocal	24 th – 28 th May	Day 2 in Hunter, Central West and Southern Highlands
June	29, 30 & 1 July Tamworth		More details later.
August	17, 18 & 19 Tumut		
August	24, 25 & 26 Dubbo		
Early September	Finley and Wakool		

Date to be set for Canowindra and other locations on request. Topfodder silage is registered with FarmReady and dairy farmers will be reimbursed the full cost of the course. Course details available through PROfarm section of the DPI website. Contact your local Dairy Officer, District Agronomist or Tocal (1800 025 520) to register.

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www.dpi.nsw.gov.au/dairy-news

ISSN 1834-948X (Print)

ISSN 1843-9498 (Online)

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