

Grassland Society of NSW Inc

Newsletter

Well another year is almost over and it has been a busy one for the Grassland Society of NSW, which has branched out into a number of new activities in 2011.

The first being the pasture updates, that were held in spring at 5 locations across the state. Articles from a number of these updates feature in this edition of the newsletter and related articles will appear in subsequent newsletters. Material from the updates including video clips of talks will appear on the website over the next couple of months.

The website has continued to evolve over 2011 with more information available than ever for our members and the general public – check out the article on page 3 to find out what you can now access. Also don't forget we are now on Facebook – so search for us and hit the "Like" button.

Another new direction for the society is the Pasture Innovations Research Series under the Australian Grasslands Association (AGA) banner. The Australian Grasslands Association is a partnership between the Grassland Society of Southern Australia and the Grassland Society of NSW and will undertake a comprehensive and critical review of an aspect of pasture research each year.

These conferences will set the scene, detail completed and ongoing research projects,

identify gaps in research, and develop commendations for future research investment. The first of the conferences – the Australian Legume Symposium to be held in Melbourne will concentrate on forage legumes in permanent pastures and farming systems – more details can be found on page 9

It doesn't seem like a year since I last said this, but the calendar doesn't lie. I wish you and your families a restful festive season and a productive prosperous New Year.

Carol Harris Editor



Need a present for someone who has everything?

Why not a years membership to the Grassland Society of NSW.

Membership forms and payment details are available at the website



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Successful Spring pasture updates

The Grassland Society of NSW (GS NSW) hosted five regional producer workshops in September and October 2011. The workshops focused on up-to-date sustainable productive pasture systems technology.

Topics covered at the workshops included; matching pastures to livestock targets, farming the grass curve, hardseed legumes, tropical perennial grass options and management, water use efficiency of tropical grasses, developments with endophytes, soil carbon, plant nutrition, alternative fertilisers, grazing management, managing pastures in a variable climate and what is new in pasture cultivars.

The workshops attracted 307 attendees across the state. They were held at Goolma (September 13), Tocal (September 22), Glen Innes (October

11), Gundagai (October 12) and Nyngan (October 13).

Over the next few months articles, transcripts and YouTube clips from the pasture updates will appear in the newsletter and at the GS NSW website www.grasslandnsw.com.au

The GS NSW was supported by NSW Department of Primary Industries, Meat and Livestock Australia, Woolworths, Pastures Australia and Landcare in running these events and their assistance is greatly appreciated.

This is the first time GS NSW has been sponsored through the Fresh Food Future program.

Pat McEntee, Woolworths General Manager Fresh Food, believes that the grants provided through the Fresh Food Future program will provide excellent opportunities across a diverse range of agricultural sectors for farmers to learn more about new technology and practices that are available to help improve the sustainability of their businesses.

"The projects that are being funded through the Woolworths Fresh Food Future program are fantastic examples of what farming groups across Australia are doing in the sustainable agriculture sector," he commented.

"Investing in the future of Australia's food production and supply is hugely important to Woolworths, and an investment like this enables knowledge to be shared and improvements to be made that will have a lasting effect on agricultural operations around the country," he added.

There are plans to hold more regional Pasture Updates in 2012

The Grassland Society of NSW wishes to thank the sponsors of the 2011 Pasture Updates











About Woolworths Fresh Food Future

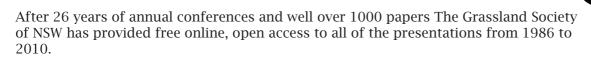
Woolworths has partnered with Landcare Australia since 2007 to support the Woolworths Sustainable Agriculture program, which has delivered funding to over 175 projects around Australia.

These include projects across many rural industries that have engaged large numbers of farmers through training, developing new technology, and/ or validating farm management options. A wide range of issues have been addressed including improved grazing management in beef production, better climate adaptation responses in mixed farming, new crop and orchard species, evaluation of low-rainfall pasture cultivars, better fertiliser decisions, cereal stubble management, improved fallow efficiency in dryland cropping, precision agriculture, and carbon mitigation in horticulture and dairying.

In 2010, Woolworths reviewed their Sustainable Agriculture program to align it more closely with the future needs of sustainable food supply. Woolworths recognised that higher input costs, climate change and a rising population have the potential to impact on food supply and consumption. The Fresh Food Future Program is an ongoing investment from Woolworths to fund and promote new projects that improve the sustainability of the food supply chain

The Fresh Food Future Program will address the important issues that impact on the supply of fresh food to Australian consumers, with particular relevance for Woolworths suppliers and the Woolworths "Fresh" supply chain. Woolworths pledged an additional \$3.25m for 2011 financial year for its Fresh Food Future program to identify risks and trends impacting on the sustainability of the supply chain, increase productivity, provide training and leadership, and improve consumer awareness about sustainable food production

Grassland Society of NSW lifts the lid on a treasure chest of information





This treasure chest of informative ideas, practical tips, producer opinions, subject reviews and reports from leading research outcomes is now available from The Grassland Society of NSW website for use by graziers, farmers, advisors, researchers and students. It covers a diverse range of topics from pasture species selection and performance, establishment, utilisation and management to animal husbandry, health and management as well as marketing, economics, soil health, soil carbon, weed management and fertiliser and herbicide use.

For more information on the Grassland Society of NSW and to view and download these valuable resources go to http://grasslandnsw.com.au/news/







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A joint initiative of





Farming the grass curve - a new approach to matching feed supply and animal demand

Greg Lodge, Principal Research Scientist, NSW DPI Tamworth

At the 2011 Grassland Society of NSW Conference, Geoff and Gillian Salmon talked about their experiences over 25 years as pasture-based lamb producers at Oberon, NSW. While their production is based on improved perennial pastures, it has evolved over the years and changed from breeding ewes to buying in lambs to buying in ewes and from selling prime lambs to selling feeder lambs.

They described what they do in terms of 'farming the grass curve' – a simple, but effective concept that has worked for them over the years. It involves setting out to match their lamb production to the main periods of pasture growth by working with the natural feed curve, not against it.

In Prograze terms, the key points on the grass curve for spring lamb production are; 600 kg/ha of green feed for maintenance and early pregnancy; 1200 kg/ha of green feed in late pregnancy and 1700 kg/ha for lactation. For cows and calves, the green feed requirements are even higher (1100, 1700 and 2200 kg/ha, respectively). Importantly, this green feed needs to be high quality (>68% digestibility), which can only be provided by actively growing leaves.

Pasture type and climate are two main factors that have a big influence on how effectively you can farm the grass curve. Grass pastures dominated by frost susceptible, warm season native perennial grasses such as redgrass, wiregrass and Sporobolus spp. are not capable of producing the required amount of green feed in winter and early spring that is required for breeding, without the addition of a legume and fertiliser. While native pastures based on yearlong green species such as wallaby grass and Microlaena may approach the green feed targets in some years,

they will also generally need fertiliser and legume inputs. The bottom line is that for most breeding and fattening enterprises legume and fertiliser inputs are required, together with sown pastures and/or forage crops.

The effects of climate are two-fold. Firstly, in many environments low temperatures in winter prevent the growth of any pastures or forage crops. This period of low or no growth of green feed often corresponds with mid to late pregnancy, when animal requirements for protein and energy are increasing. In severe environments, this invariably means that a period of supplementary feeding is required to meet animal requirements. With only dry feed and no supplementation pregnant animals can quickly lose condition, leading to lower birth weights and lower weaning percentages and growth rates.

Secondly, climate is rarely constant over time and so its impacts on the grass curve are constantly changing. In recent years, the failure of the '

break-of-season' or low autumn rainfall in the winter rainfall zone of southern NSW have had devastating effects on the normally reliable grass curve. However, the effects can often be more subtle. On the northern Slopes and Tablelands of NSW, for example, the last 10 years have seen a change in rainfall distribution to a

wetter than normal November-December period, which has favoured the establishment and growth of tropical perennial grasses and summer forages. In many areas of the northern Slopes, this wetter period has coincided with drier than average conditions in May in the past decade or so. This has meant that late sown winter forage crops have failed or established poorly before cold conditions in winter limit growth, and oversown legumes such as subterranean clover have not been successful as they were in the 1980s and 1990s. This variation in climate has greatly affected the feed curve by reducing the availability of green feed in the critical winter-early spring

For sheep and beef producers, the concept of farming the grass curve provides a different way for them to think about the pastures and forages that they need to grow and how well they meet animal requirements at different times of the year.



period.

New Perennial Ryegrass Endophytes

Endophytes are a special fungus which can grow within perennial ryegrass (not annual or biennial types of ryegrass) and can produce alkaloids to give protection from insect attack. Unfortunately some endophytes can also cause animal health problems.

James Sewell from PGGWrightson Seeds spoke at a NSW Grassland Society "Pasture Update" organised with NSW DPI Tocal back in September to outline recent developments with "novel" endophytes which can help perennial ryegrass establishment and persistence without causing animal health problems.

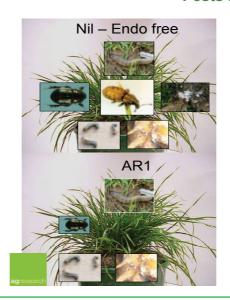
James said the original or wild type endophytes occurred naturally in many perennial ryegrass pastures improving insect tolerance and production. They also produced alkaloids called Lolitrem B and Ergovaline which could cause ryegrass staggers, heat stress and other animal health problems resulting

in reduced milk production and liveweight gains.

ARI was the first "safe" endophyte to be widely sold. It remains the safest option from an animal health perspective and persists well where there is not major insect pressure.

Newer endophytes Endo5 and AR37 are providing better insect protection and are more productive and persistent than AR1 and wild-type. Ergovaline levels in Endo 5 and epoxy-janthritrems in AR37 may cause some animal health problems but these are less severe than those caused by wild-type.

Pests not controlled





Different endophytes produce different chemistry (alkaloids)

	Grazing / toxii		bolites (alka	loids)	
Endophyte strain	Lolitrem B	Ergovaline	Peramine	Epoxy- janthitrems	Lolines
Standard (Wild-type / High)	Yes	Yes	Yes	-	-
AR1	-	-	Yes	-	-
Endo5	-	1/2	Yes	-	-
AR37	-	-	-	Yes	-
NEA2	1/4	1/4	1/4	-	-
Tall Fescue					
MaxP	-	-	Yes	_	Yes

All are designed to protect the plant against predators

Some affect animals & some are 'safe' - its all about risk: benefit

Pasture Real Estate

POSITION plays a significant role in the productivity and persistence of perennial grasses according to NSW Department of Primary Industries research.

Trials on the Central Tablelands which compared cocksfoot, phalaris and tall fescue pastures showed that the survival of perennial grasses was significantly higher on cooler and moister east-facing slopes compared with the west-facing slopes.

NSW DPI agronomist, Belinda Hackney, said farmers need to consider aspect, along with soil conditions, in choosing the most appropriate species to grow.

"Microclimates created by variable topography can create different conditions in the same paddock," Dr Hackney said.

"In medium to high rainfall areas with hilly and undulating topography, we can generally say that north and west facing slopes will be hotter and drier while south and east facing slopes lead to cooler, moister conditions. "Add differences that may exist in the depth and moisture-holding capacity of soil and you can expect the productivity and persistence of plants to be affected.

"In some instances, take cocksfoot, it may be possible to target summer dormant varieties in areas of the landscape with harsher microclimates to improve persistence."

In the past, plant varieties with higher levels of summer dormancy have been found to favour hotter, drier conditions, but those trials focussed on differences between agricultural zones, tablelands compared with slopes, rather than landscape variation differences within the same agricultural zone.

Dr Hackney said in the three-year Central Tablelands' trial, soils on the east and west facing slopes were identical in pH, exchangeable aluminium and available phosphorus.

"Soil temperature on the west-facing slope was 0.2 to 1.5 degrees Celsius warmer than the east facing slope, with the greatest difference occurring from mid-spring to late summer and least difference in winter," she said.

"The consistently higher temperature of the west-facing slope also meant that moisture levels were lower throughout the mid-spring and summer period."

"Trial results clearly showed that aspect and microclimate can have a significant impact on the persistence of perennial grasses."

Contact: Belinda Hackney, (02) 63301217, belinda.hackney@industry. nsw.gov.au

(Figure 1). Within the cocksfoot group, varieties with higher levels of summer dormancy (Kasbah and Uplands) had higher survival levels than the more summer active varieties such as Porto. Within the tall fescue group, the Mediterranean varieties (Resolute and Fraydo) showed no better persistence than the temperate varieties on the west-facing slope and all tall fescues were inferior to the best cocksfoot varieties in persistence on the west-facing slope.

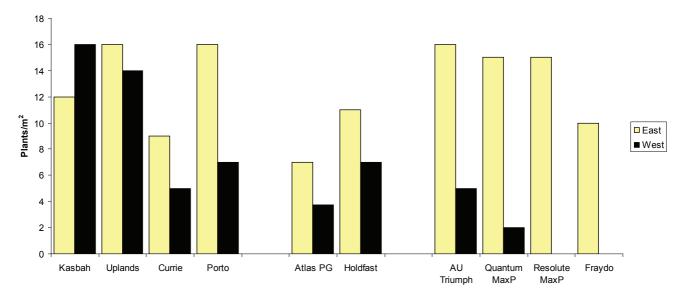


Figure 1 The density of several varieties of cocksfoot, phalaris and tall fescue 2.5 years after sowing on an east and west aspect.

Pasture Nutrition Basics

Mick Duncan, Agronomist Northern Agriculture

The following is a brief summary of an address given at a Grassland Society of NSW funded Pasture Update Meeting held at Glen Innes on October 11 2011

- * Soil fertility embraces physical, chemical and biological factors. It is important to achieve a balance among all three factors.
- * There are 17 essential plant nutrients (depending on the text book you consult!) The emphasis in this address was on phosphorus (P) and sulphur (S) as these are generally the most widespread deficiencies (excluding nitrogen) across livestock producing areas. But, remember the law of the minimum if one nutrient is missing or deficient, plant growth will be poor, even if the other elements are abundant.
- * P is a major deficiency and frequently an ongoing one even after many years of topdressing due to its chemistry and "locking up "in inorganic forms.
- *P exists in a number of "pools" in the soil, mostly unavailable with only around 2% in a plant available pool.

- Organic matter releases P gradually and as OM builds, the supply of P slowly improves.
- *S is also a widespread deficiency. As it builds up in organic matter, S becomes less scarce and releases more quickly from this source than P.
- *There are two main forms of S sulphate and elemental S. Sulphate S is readily available for plant growth, but capable of high losses from leaching. Elemental S, resists leaching and provided particle size is adequate represents a more efficient means of supplying S in Northern Tableland and many other pasture locations.
- *Data from several nutrient soil surveys since the 1960's clearly indicate that approx. 90 % of Northern Tableland soils are deficient in P, while nearly 40 % likely to be deficient in S (currently) or a higher percentage where fertiliser has been withheld in recent years.
- *In deciding on fertiliser topdressings, consider both product removal and the need to supply "capital" P to raise inherent low P soil test levels.

- *Soil acidity is a common restraint for pasture growth causing many problems including; aluminium (Al) toxicity, nutrient "tie up", legume failure, reduced microbial activity and significant loss of productivity. Lime is a must where low pH and Al. toxicity exist and acid sensitive plants are present. In addition to improved pasture quantity and quality, local research indicates animal production increases resulting from lime application.
- *Fertiliser serves many purposes; increased pasture dry matter, improved feed quality, increased pasture competition against weeds and increased water efficiency.
- *To achieve efficient use of fertiliser you must identify nutrient deficiencies with soil analysis. Once you know this you can calculate appropriate rate (within your budget) to cover product removal and need for capital P. Select the best product according to dollars per unit of nutrient, and utilise pasture with appropriate grazing management.
- *Soil testing is important but has limitations. It will indicate major
 - (generally not trace) nutrient deficiencies, assist in choosing fertiliser type and need for lime, assist with plant species selection, enable monitoring of nutrient status over time and assist with diagnosis of poor plant growth.



Landscape position determines productivity

Graziers attending the EverGraze field day, at the Panuara trial site, this spring found that the true value of their farms is governed by the landscape.

According to research conducted by NSW Department of Primary Industries (DPI), landscape played a major role in determining productivity and natural resource management outcomes.

Comparing set stocking with 20 and four paddock rotational grazing systems, EverGraze results have shown that differences between the systems were not as large as those determined by the landscape.

NSW DPI research agronomist, Warwick Badgery, said pasture growth and composition was strongly influenced by productions zones, based on landscape position.

"Water infiltration, runoff and storage, sediment movement and groundcover were all governed by landscape position," Dr Badgery said.

"The EverGraze site at Panuara has a highly variable landscape with a large difference in the capacity for pasture production.

"These differences are mainly due to soil depth and water holding capacity."

Position in the landscape strongly influenced pasture composition and capacity of production in the three production zones mapped at the site:

- * high production zone, lower slope
- * medium production zone, mid-slope
- * low production zone, upper slope

Species composition was very different between production zones with Microlaena, annual ryegrass and sub clover initially dominating the high production zone and wallaby grass (Austrodanthonia spp.) dominating the low production zone.

On average, the annual total herbage production was:

- * high production zone 9.9 tonnes per hectare (t/ha)
- * medium production zone 5.5 t/ha
- * low production zone 3.4 t/ha

Dr Badgery said there were positive lessons for farmers in these findings.

"Farmers can save on fertiliser use in the low and medium production zones and target superphosphate treatments to the high production zone," he said.

"Soil tests this year confirmed that phosphorous levels were still in excess in the low production zone and adequate in the medium and high production zones, prompting our decision not to fertilise this year."

Prior to setting up the trial, Panuara has a history of superphosphate application. This past history is reflected in the high levels of phosphorus still being recorded in the low production zones.

The low production zones do not have the soil depth, water holding capacity and the responsive species to take advantage of the phosphorus.

Research has suggested that subdivision of the site along landscape lines would help improve use of productive areas and reduce degradation in this variable landscape.

Contact: Tony Cox. (02) 6391 3885 tony.cox@industry.nsw.gov.au



Table 1. Dominant species of the low, medium and high production zones

Production Zone	Dominant species	
Low (LPZ)	Austrodanthonia spp. (Wallaby grass) Austrostipa spp. (Corkscrew) Bothriochloa macra (Redgrass) Poa bulbosa Acetosella vulgaris (Sorrel) Hypochaeris radicata (Catsear)	
Medium (MPZ)	Austrodanthonia spp. (Wallaby grass) Microlaena stipoides (Weeping grass) Elymus scaber (Common wheat grass) Bothriochloa macra (Redgrass) Poa bulbosa Lolium rigidium (Annual ryegrass) Hypochaeris radicata (Catsear)	
High (HPZ)	Microlaena stipoides (Weeping grass) Holcus lanatus (Yorkshire fog grass) Lolium rigidium (Annual ryegrass) Trifolium subterranean (Sub clover) Juncus spp. (Pin rush)	



The Australian Grasslands Association



A partnership between the Grassland Society of Southern Australia and the Grassland Society of NSW

The Australian Legume Symposium

William Angliss Conference Centre, Melbourne Victoria - 8th and 9th February 2012

Setting the agenda for investment in legume R, D & E in Australia for the next 10 years and providing a forum for researchers to interact, exchange ideas, and to debate how to take the next quantum leap in legume research?

Themes include;

- 1. Role of legumes in Australian Farming Systems,
- 2. Current legume research to address gaps (in cropping and permanent pasture zones),
- 3. Addressing specific gaps/problems and
- 4. Directions for future legume research –what happens next?

FOR MORE INFORMATION AND REGISTRATION DETAILS GO TO - www.australiangrasslands.org.au



Photos from the Grassland Society of NSW Pasture Updates



The Goolma pasture update



Bob Freebairn entertaining the crowd at the Nygan update



The pasture update at Glen Innes Agricultural Research and Advisory Station





From the President

At the time of putting these notes together, spring pasture growth was looking excellent across much of the state, especially northern areas. Rainfall, always welcome, but sometimes a frustration for crop harvest and fodder conservation was maintaining fresh growth and is predicted to be better than average over the approaching summer period.

Those members who keep an eye on the Society internet site will have noticed that we now have all our past proceedings available for perusal. This is a great development, with many thanks to Greg Lodge and Leah Lane for their work in making this happen. Proceedings

from the current conference will not appear for 12 months.

With 26 conferences since our beginnings, there is a wealth of information available, much of which is as relevant to-day as it was at the time of writing.

Planning for the 2012 conference is underway under the guidance of Nathan Ferguson and a group consisting of industry representatives and local producers. The venue is yet to be decided with Wagga, Gundagai and Tumut all under consideration. If you have any preferences, I'm sure your suggestions would be very welcome.

The recent series of pasture updates were very well received. Funded by MLA and Woolworths and held at 5 locations across the state, these updates are likely to become an annual event. They are not designed to replace the annual conference, rather to provide locally relevant information in an informal session, using local speakers.

Best wishes to all our members and their families for Christmas and new year and a continuation of good

Best Wishes Mick Duncan

seasonal conditions.



The Grassland Society of NSW wishes all its members a

MERRY CHRISTMAS

and a

VERY PROSPEROUS NEW YEAR

Disclaimer

While every effort is made to publish accurate information the Grassland Society of NSW does not accept responsibility for statements made or opinion expressed in this newsletter.

Inclusion of an advertisement in this publication does not necessarily imply an endorsement of the company or product of the Grassland Society of NSW.

The Grassland Society of NSW Inc is a unique blend of people with a common interest in developing our most important resource - our Grasslands

The Grassland Society of NSW was formed in March 1985. The Society now has approx 500 members and associates, 75% of whom are farmers and graziers. The balance of membership is made up of agricultural scientists, farm advisers, consultants, and or executives or representatives of organisations concerned with fertilisers, seeds, chemicals and machinery.

The aims of the Society are to advance the investigation of problems affecting grassland husbandry and to encourage the adoption into practice of results of research and practical experience. The Society holds an annual conference, publishes a quarterly newsletter, holds field days and is establishing regional branches throughout the state.

Membership is open to any person or company interested in grassland management and the aims of the Society. For membership details go to www.grasslandnsw.com.au or contact the Secretary at secretary@grasslandnsw.com.au or at PO Box 471 Orange 2800

Office Bearers of the Grassland Society of NSW - 2011-2012

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John Coughlan (Central)
Hugh Dove (Southern Tablelands)
Mick Duncan (Northern Tablelands)
Cathy Waters (Central West Slopes and Plains)
Hayley Rutherford & Nathan Ferguson (South Western Slopes & Riverina)

If you are interested in reactivating an old branch or forming a new branch please contact the Secretary at secretary@grasslandnsw. com.au or by mail at PO Box 471 Orange NSW 2800

Grassland Society of NSW News



New Members: Welcome to our new members - Julie Brien Greenethorpe, Lloyd Coleman Mudgee, P B & J Carter Wellington, Frances Russell Adelong, R W & C E Hoare Nyngan and Laurie & Lesley Bishop Armidale.



Are you having problems with the website?: A few weeks ago we had a few technical hitches with the website. Although it is all up and running okay now some of you maybe having troubles connecting from a bookmark, favorites or shortcut. If you are go to www.grasslandnsw.com.au/news/ and re-establish shortcuts.



Next Newsletter: The first issue of the newsletter for 2012 will be circulated in late February. If you wish to submit an article, short item or letter to the editor for the next newsletter please contact the Editor - Carol Harris at carol.harris@industry.nsw.gov.au or DPI NSW 444 Strathbogie Road Glen Innes NSW 2370. The deadline for contributions to the next newsletter will be <u>February 20 2012</u>.

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