# Pastures in Farming Systems —

Meet the Challenge







**GUNNEDAH 2004** 



# Pastures in Farming Systems — Meet the Challenge

Proceedings of the 19th Annual Conference of the Grassland Society of NSW Inc.

Invited, poster and contributed papers from the conference held at the Town Hall, Gunnedah Tuesday, 27 July to Thursday, 29 July 2004

Edited by Suzanne Boschma and Greg Lodge







# The Grassland Society of NSW Inc.

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 1100 members and associates, 70% of which are farmers and graziers. The balance is made up of agricultural scientists, farm advisers, consultants, and executives representatives of organisations concerned with fertilisers, seeds, chemicals and machinery.

The aims of the Society are to provide opportunities for members to meet in conference, at field days, or socially, to exchange information, ideas and experiences relating to grasslands.

Other aims of the Society are to advance the investigation of problems affecting grasslands 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 has established regional branches throughout the

Membership is open to any person or company interested in grassland management and the aims of the Society. Ordinary (including family or farm units), student and corporate membership is available.

### Committee Members 2003-04

Executive President John Coughlan Vice President Brett Upjohn Immediate Past President: Frank McRae Treasurer

Greg Condon

Secretary Nicole Griffin/Rosemary

Editor Haydn Lloyd-Davies

Committee Members

lim Dellow Mike Kevs Richard Bloomfield Hugh Dove Rob Eccles Libby Roesner Andrew Harborne John Ive

Branch Representatives

Central West Plains Katrina Watson Northern Tablelands Michael Duncan Northern Slopes Loretta Serafin Southern Tablelands Mike Keys

Greg Condon Riverina Central West Frank McRae

Honorary Life Members

Malcolm Campbell Peter Wrigley

### 2004 Conference Committee

Loretta Serafin Convenor Secretary/Treasurer Shannon Brooker Editor Suzanne Boschma

Editorial committee Greg Lodge, Carol Harris,

> Jim Scott, Haydn Lloyd Davies, Michael Duncan

Sponsorship/Trade displays

Robert Eccles, Todd Jones, Nicole Griffin, Lester McCormick and Nick

lenkins

Poster displays Suzanne Boschma Program Warren McDonald and

Ian Collett

Venues Sally Barrington Sally Barrington, Mark Catering Kesby, Shannon Brooker

Annette Cross

Publicity

Lester McCormick, Ian Tours Collett, Mark Kesby,

Hugh Price, Robert Eccles, Loretta Serafin, Russell Ison, Matthew

Monk

Robert Eccles and A/V presentations

Suzanne Boschma

Other members Tony McCumstie and

Clare Edwards

ISBN 0 7347 1601 X

Layout: Bill Noad, Information Delivery, NSW Agriculture, Dubbo

Cover Design: Design Services, Information Delivery, NSW Agriculture, Orange

Citation: Proceeding of the 19th Annual Conference of the Grasslands Society of NSW, Edited by S.P. Boschma and G.M.

© The Grassland Society of NSW Inc.

# Contents

The Grassland Society of NSW Inc.	2
Conference sponsors	3
Preface	7
Invited papers	8
Pastures have a key role in cropping systems	9
Use and improvement of tall fescue and phalaris for the North-West Slopes	15
Successful use of sub-tropical grasses on-farm	23
New and improved legumes for pastures and crop rotations	
Attempting to get the right balance	34
Soil water balance - what can pastures do for farming systems?	37
How a pasture phase improves soil health and sustainability	45
Soil organic matter and structure in vertosols - using pastures to make a difference	50
Maximising water use to solve dryland salinity - a producer's story	55
Improving feed efficiency of animals in your herd	57
Holding a measuring stick up to the Cicerone farmlets: how are they shaping up?	63
Virtual fencing and cyber herding	70
A cropping and livestock system	
A decision aid to assess the economic implications of ley pastures in crop rotations	78
Pastures and livestock in the cropping system – benchmarking trends in the wheat-sheep zone of the Central-West NSW and farming zone of North-West NSV	V 82
Successful integration of pastures in farming systems	87
Managing the pasture phase as a high value crop	93
Managing invasive weeds with pastures and livestock	
Was it a drought or just a dry spell?	103
Managing family relationships in a family business	109
Debate papers	111
Integrate or separate – the debate: separation case study 1	112
Integrate or separate – the debate: separation case study 2	
Integrate or separate – the debate: integration case study 1	
Integrate or separate – the debate: integration case study 2	

Poster and contributed papers 121
The role of time control grazed pastures in farming systems
The B.O.Z.O. lime movement study at Wollun on the Northern Tablelands
Pasture dynamics in western New South Wales saltbush rangelands:  Some results from 14 years of monitoring
Nitrogen fixation and cycling of pasture legumes – a review
Mapping native vegetation communities130
Leaf extension rates of some native perennial grasses in early spring on the Southern Tablelands of New South Wales
Soil earthworm numbers under native and sown perennial grass-based pastures in northern New South Wales
Ant theft of Sirosa phalaris pasture seeds in northern New South Wales
Evaluation of pasture plants for use in recharge areas in northern New South Wales
Preliminary studies comparing soil labile and microbial biomass carb on under native and sown perennial grass-based pastures in northern New South Wales
Numbers of nematodes and microbial activity of soils under a range of pastures in northern New South Wales
Re-colonisation patterns of native plants in cultivation paddocks at Gunnedah, NSW
Native grassland soils: How do they compare with cropping and remnant woodland soils? 148
2004 Grassland Society of NSW Conference Program, Gunnedah

### Disclaimers

The information contained in this publication is based on knowledge and understanding at the time of writing 1 July 2004. However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of NSW Department of Primary Industries or the user's independent adviser.

Recognising that some of the information in this document is provided by third parties, the State of New South Wales, the author and the publisher take no responsibility for the accuracy, currency, reliability and correctness of any information included in the document provided by third parties.

The product trade names in this publication are supplied on the understanding that no preference between equivalent products is intended and that the inclusion of a product does not imply endorsement by NSW Department of Primary Industries over any other equivalent product from another manufacturer.

Users of agricultural (or veterinary) chemical products must always read the label and any Permit before using the product, and strictly comply with the directions on the label and the condition of any Permit. Users are not absolved from compliance with the directions on the label or conditions of the permit by reason of any statement made or not made in this publication.

## Preface

I would like to extend a warm welcome to all our members and those delegates attending the 2004 Annual Conference of the Grassland Society of NSW. This is the first time Gunnedah has hosted our conference and we look forward to enjoying their hospitality and meeting many locals. In recent years the Society has tried to take the conference to members, as opposed to always holding the event at the largest centres around the state. I believe a good mix of the two is ideal as the inland cities may offer bigger venues, but so do a lot of larger towns and they also appreciate the opportunities that such an event gives the local district.

Unfortunately the drought has lingered in many districts but this does not change the need for new technologies and updated information. As a producer, I am fully aware that change is ongoing and that businesses which can adapt to change are the ones that have the greatest potential for success in the future. So even though many of us are in our third year of drought it is still critical to get about and be exposed to what researchers, consultants, agronomists and other producers have to offer. We may not be able to implement new ideas straight away, but they will never lose their impact and will still be effective when things turn around. This is one of the strengths I have found with all Grassland Conferences. Another advantage is the opportunity to network with all sections of the industry and make contacts that can be followed up later when further knowledge is needed. It is unique to see such diverse industry players in one location, working together for the improvement of the industry in a harmonious atmosphere.

This year's conference, "Pastures in Farming Systems – Meet the challenge", highlights the flexibility pastures offer in that they don't just benefit livestock but offer a range of advantages to crops and soil as well. It is always important to look at the big picture

when making business decisions because they not only have direct benefits, but indirect ones as well. Researchers and farmers are showing how the use of pastures that benefit crops and livestock are able to improve profitability with little more outlay. This is becoming even more important in an industry that is forever facing declining terms of trade and battling grasshoppers and the like. I encourage everyone to learn more about the challenge of pastures in farming systems at this year's conference by not just listening but asking questions and getting feedback so that the learning is two-way street between our sponsors, researchers, farmers and advisors etc.

I acknowledge the important role that our sponsors play to the Society and thank them for their valued support. Without their support such an event could not take place. Conferences offer a great opportunity to transfer information with sponsors, as we normally do not get the time to make contact throughout the year in such a non-pressured atmosphere.

On behalf of the Society I would like to sincerely thank Loretta Serafin and her team who have worked tirelessly to organise such an event and run it over three days. Being a voluntary organisation it is getting harder to encourage people to work on such committees and a lot of work is taken on by so few. So, we are all eternally indebted to those that have put in so many personal hours. Having helped organise several conferences, I personally know how much work some people put in and also how much assistance NSW Agriculture staff provide, and although at times their assistance can go unnoticed or unthanked, I can tell you the Society would not exist without them.

Thankyou

John Coughlan (President)