

RED MEAT UPDATES

TASMANIA







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PROGRAM

9.30am Proceedings commence

SESSION 1

Welcome

Hon Bryan Green MP, Minister for Primary Industries, Parks, Water & Environment

Keynote Address: The value of science to today's farm business

Steve Wyn-Harris, NZ sheep stud owner, beef producer and NZ's '2012 Agricultural Communicator of the Year'

Global red meat outlook

Lachlan Bowtell, Regional Manager - Australia, MLA

10.45 - 11.10am Morning tea

SESSION 2: CONCURRENT SESSIONS		
SHEEP UPDATES	BEEF UPDATES	
Sheep foot rot – the emerging issue in irrigated systems Bruce Jackson, DPIPWE	Our beef production story Scott Anderson, Killara Pastoral	
Lucerne – is it right for your system? James Sewell, PGG Wrightsons	A processor's perspective of MSA Peter Greenham, Greenham Tasmania	
The latest in eating quality science Sam Gill, MLA	Autumn ill-thrift project findings John Bruce, Western Plains & Basil Doonan, Macquarie Franklin	
Producing lamb for today's consumer Georgie Bond, Eastfield	Ryegrass endophyte toxins John Webb-Ware, Mackinnon Group	

12.50 - 1.35pm Lunch

Master Butcher presentation: Economic impacts of lamb size and condition on producing cuts that meet market demand

Lachlan Bowtell and Gary McPherson, MLA

SESSION 3: CONCURRENT SESSIONS		
IRRIGATED PASTURE UPDATES	NON-IRRIGATED PASTURE UPDATES	
Our irrigation story Richard Gardner, Annandale	Getting the right pasture plant in the right place Dr Ralph Behrendt, VIC DPI	
The economics of pasture irrigation Lance Davey, Macquarie Franklin	Maximising pasture production throughout the year Jason Lynch, Serve-Ag	
Strategic irrigation and dormancy – the penalty for not irrigating pasture properly Richard Rawnsley, TIA	Ringarooma Towards 2000 with Legumes Peter Ball, TIA	
Ryegrass endophyte toxins John Webb-Ware, Mackinnon Group	Lucerne – is it right for your system? James Sewell, PGG Wrightsons	

4.15pm Networking drinks

5.00pm Producer buses depart Launceston

WELCOME



Hon Bryan Green MP, Minister for Primary Industries, Parks, Water & Environment

Bryan began work as an apprentice fitter and machinist at the Burnie paper mill where he worked for close to 20 years.

He first stood for State Parliament in 1996, narrowly missing out on winning a seat in Braddon. Not deterred he stood again at the 1998 election and was successful. Under the leadership of then Premier Jim Bacon, Bryan served as Government Whip and as a Parliamentary Secretary.

Bryan topped the poll in Braddon at the 2002 election and was appointed Minister for Primary Industries, Water and Environment. Following the resignation of Premier Bacon due to ill health Bryan was promoted to Minister for Infrastructure, Energy and Resources.

Bryan again topped the poll in Braddon in 2006 and became Deputy Premier, Minister for Economic Development, Minister for Resources and Minister for Sport and Recreation.

Bryan topped the poll yet again in Braddon at the recent State election and is now Deputy Premier, Minister for Primary Industries and Water, Minister for Energy and Resources, Minister for Local Government, Minister for Planning, Minister for Racing and Minister for Veterans' Affairs.

Bryan has three daughters and is a proud grandfather to a little girl. He is a keen fly fisherman and enjoys hunting and archery as well as bushwalking and scuba diving although his personal interests have taken a back seat to his busy Parliamentary schedule.

Welcome to Red Meat Updates

The Tasmanian Red Meat Updates event has been developed in collaboration with producers, researchers and industry representatives. It will showcase the latest research and development, and the many innovative practices being developed by Tasmania's producers and processors.

Tasmania's red meat industry plays a vital role in our economy, with beef and sheep meat contributing almost half a billion dollars to the State annually. In the latest Tasmanian Food and Beverage Scorecard, beef sales accounted for over \$120 million of export earnings, the single largest category of food exports.

The sector has great potential for further growth. The place that Tasmania's beef now holds in the domestic and international market has been built on the back of a highly superior product. The development of brands that capitalise on that quality, such as Cape Grim and King Island beef, are also important to ensure a premium price is captured for such a premium product.

Events such as this one provide a wonderful opportunity for the industry to collaborate together, to find new and innovative ways to make the industry even stronger.

KEYNOTE ADDRESS

The value of science to today's farm business

Steve Wyn-Harris

Steve Wyn-Harris is a farmer, columnist, broadcaster and non-executive director of agricultural companies (Landcorp and Farmlands). Steve has a Bachelor of Commerce (Agricultural) from Lincoln. The farming property is 350ha of easy rolling summer dry hill country in the Central Hawkes Bay area on the north island of New Zealand. The farm runs Coopworth breeding ewes including a sheep stud and a commercial flock. 40% of the remaining stock units are Friesian bull beef and 15% of the farm is planted in trees. The farm is an intensive and profitable business and employs a wide range of science to achieve this goal. It was a monitor farm for four years in the early 2000's for Meat and Wool NZ which involved technology transfer to fellow farmers.



Abstract:

R&D generates science-based data and this is used to create new technologies and improved management practices. I have no idea as to the types or level of technology employed upon Tasmanian sheep and beef farms so some or maybe much of the following is likely to be familiar to many here. But what is interesting when one is asked to talk about the R&D generated technology in use on farm is how much of it we do use and how much we take it for granted. Even in my thirty year farming career, there have been many changes and additions to assist us to make red meat production more profitable.

My own farming business I consider based on a four legged table.

- 1) The resource itself land, and soil and water.
- 2) The infrastructure required to run the business successfully.
- 3) The animals which are required to turn the pasture into protein.
- 4) The management required to bring all strands together by employing the best science available.

The first leg is the property made up of the land and soil and water. The traditional model in NZ has been to buy a farm and spend your career developing it. Unless capital is constrained or extra borrowing not possible, with returns on investment being 15% or more, it is smart to front end load the development program and achieve earlier returns. The lowest hanging fruit is improving soil fertility by applying appropriate nutrients through a well managed fertiliser programme. To be able to do this, regular soil testing is required to monitor trends in fertility levels. Land enhancement such as drainage may also be required.

In most farming environments shade and shelter for crops, pastures and stock might have a longer lead into a return, but in the future will increasingly become a requirement by consumers in terms of animal welfare.

Once soil fertility has been improved, new and improved pastures can be established. At an establishment cost of \$800/ha, it is important to get this one right as this can become a cost rather than an investment. I have some concerns about the persistence of some modern cultivars and would happily trade off some production for persistence if it meant a modern well managed sward would last more than ten years rather than the five many of us see now. I believe the novel endophytes have greatly improved animal performance and health but could be contributing to this persistence problem.

KEYNOTE ADDRESS continued...

The second leg of my table is the infrastructure required to harvest the extra pasture grown as a result of the above. Increased subdivision is required to effectively and efficiently harvest this extra feed otherwise money is being wasted and opportunities lost. We have seen our number of paddocks increase from 60 to 130. The average size has fallen to 2.5ha which provides the opportunity to manage pastures and stock closer to the optimum. However that is a lot of infrastructure not just to invest in and install but also to maintain.

The third leg of my table are the animals that are being asked to turn that dry matter on offer into protein. We have made very good gains in terms of improved genetics and thus better productivity outcomes and I use my stud sheep breeding experience to show examples of what many breeders are doing to deliver these gains to commercial clients. An extensive amount of information is gathered on stud animals and sent to Sheep Improvement Limited (SIL) in order to create selection lists from whence the very best are selected for breeding purposes. At lambing and tagging parentage, birth and rear rank, birth weight and observations on dam behaviour and teat placement are recorded. Weaning, 6 month, 12 month and annual weights are undertaken. Ultrasound scanning of all ram lambs and CT scanning of selected ones are done for carcass selection. Wool weights and various procedures for selecting for animal health are done. And now we are also sending in tissue samples in search of genes of interest or genes we wish to identify and eliminate. We are now also using SNP chip technology which allows us to select animals based on their genome before any physical data or progeny testing is done.

Finally the fourth leg of the table is the improved management required to bring all strands together to ensure a productive and profitable enterprise. An important tool is formalised feed budgeting. Perhaps only 10% of NZ sheep and beef farmers and less than 50% of dairy farmers use this useful science. I use a bureau service where I update the model each month and send it in for my consultant to consider and comment. I update the monthly starting average feed cover (feed supply), animals and their weights (hence feed demand) on hand and sales and purchases. The output allows me to make timely and informed decisions and also the ability to do some sensitivity analysis.

The business of farming is a complex equation. This is more so now than ever but there are many tools provided by science to assist us do a better job than we are currently doing. The uncertainties of climate and season are our greatest challenge but using tools that help mitigate Mother Nature's vagaries and to make timely and informed decisions are there now. It's just up to farmers whether they make full use of them or not.

For more information contact Steve Wyn-Harris via email swyn@xtra.co.nz

Global red meat outlook

Lachlan Bowtell, Regional Manager Australia, Meat and Livestock Australia

Lachlan Bowtell has been employed by Meat and Livestock Australia for over 18 years and during this time has had a significant impact across the red meat industry. Over the years, Lachlan has been instrumental in the commercialisation of several key industry programs, such as Meat Standards Australia, various beef and sheep eating quality programs, significant retailer specific programs and has developed many key relationships across the retail and foodservice industries.

Lachlan was a chef for thirteen years before moving into sales and marketing in the foodservice industry, and was involved in the development of the first "private label" products for supermarkets and other retail channels at the



time. In 1994, Lachlan moved into the seafood industry and specialised in value added lines for retail and foodservice and exports of products into Asia and other destinations. Following this, Lachlan then joined the red meat industry.

Lachlan returned to Australia in 2012 after a three year posting in the Middle East North African region as Regional Manager for MLA. During his tenure, Lachlan was involved in numerous activities addressing technical market access issues and promotion of Australian red meat across the region which has seen significant gains for industry with the region becoming the second largest (USA being the largest) sheepmeat export region for the Australian industry.

Upon his return to Australia in 2012, Lachlan took up his current position of Regional Manager Australia for MLA. As Regional Manager Australia, Lachlan is responsible for all marketing and business development programs to drive demand for red meat from paddock to plate.

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SHEEP UPDATES

Chair: Brian Field, Tasmanian Institute of Agriculture

Brian Field is the Leader of the Extensive Agriculture Centre of TIA, a role he has undertaken since 2011. Brian grew up in Northern Tasmania on the family farm, and when he finished school worked in many diverse farming businesses across the north. He returned to study in the early 1990's obtaining a Bachelor of Applied Science Degree in 1994. Brian commenced his professional career in DPIPWE in 1994, where he worked across a range of RD&E areas including extending pasture research results, assisting with pastures and grains RD&E, and conducting a range



of canola activities from field trials, discussion groups and managing summer breeding nurseries for the National Brassica Improvement Program. Following the introduction of the GMO moratorium in the early 2000's, Brian was required to undertake a regulatory monitoring program of the old GMO crop sites in Tasmania. Concurrently, he played a lead role in developing expansion of canola production in Tasmania targeting GMO free markets in Japan.

In late 2009 Brian accepted a secondment to TIA as an opportunity to focus on delivering RD&E to Tasmanian producers, and was appointed Centre Leader in 2011. A major component of Brian's activities currently involve developing and supporting staff to provide RD&E relevant to Tasmania's beef, sheep and grain industries.

Notes	

SHEEP UPDATES

Sheep foot rot - the emerging issue in irrigated systems

Bruce Jackson, Manager - Animal Services, Department of Primary Industries, Parks, Water and Environment

Bruce Jackson is a veterinarian currently employed as Manager, Animal Services within DPIPWE. Bruce graduated with a Bachelor of Veterinary Science with Honours from Sydney University in 1975 and gained entry to the Australian College of Veterinary Surgeons Epidemiology Chapter by examination in 1989. Bruce grew up on a sheep and cattle property near Walcha in the Northern Tablelands of NSW, and after graduation worked at Coffs Harbour, Warren (NSW), Oatlands (Tas), and Zimbabwe as a clinical veterinarian, mainly with cattle, sheep and other production



animals, returning to a Veterinary Officer position with DPIPWE in 1986. Bruce has been involved with many programs such as de-regulating sheep body lice control, Emergency Animal Disease preparedness, research into transaction ID for sheep, residues work including the ban on the use of HGPs in cattle in Tasmania, and has conducted footrot vaccine and footbathing trials.

Abstract:

Footrot has become a major economic and animal welfare problem for the sheep industry in Tasmania since the 10-strain footrot vaccine was withdrawn from the market. There has been a lot of interest in the use of specific footrot vaccines (SFV) to eradicate footrot.

SFVs are customized vaccines, using vaccine containing only 1 or 2 strains that have been identified as present in a particular flock, per a course of 2 shots, 4 weeks apart. DPIPWE is working with TFGA and Sydney University to refine the use of these vaccines in Tasmania. The challenges are firstly to detect all the strains present on a property - currently we believe that taking a total of 20 scrapings from a number of mobs during a spread period may be most effective. Costs of strain typing are currently high, and subculturing to get 'clean' samples takes about a month, but we hope to work with MLA and Sydney University to reduce those costs and speed the process up. A proposal has been made to AWI for funding to further progress our knowledge in this area.

The vaccine is currently used under an APVMA Research permit but hopefully a commercial vaccine firm should soon be able to produce vaccine under an APVMA Minor Use permit. Sydney University hopes to obtain MLA funding to refine vaccine manufacturing to contain vaccine costs.

Currently 9 properties have been approved under a DPIPWE Animal Ethics approval and 5 of these are currently inspecting and culling sheep. Some have administered vaccine prior to lambing and some at weaning. It is too early to say how successful they have been.

While the SFVs are a useful aid in getting the prevalence down so that all infected sheep can be culled, and delaying onset of the next spread period due to the 6 month's protective period, the key to eradication is still accurate diagnosis at repeated summer/autumn foot inspections.

For more information contact Bruce Jackson: bruce.jackson@dpiw.tas.gov.au or 0407 872 520

Lucerne - is it right for your system?

James Sewell, PGG Wrightson Seeds, Ballarat Research Station

James was raised on a family mixed grazing and mixed cropping property at Smeaton (central west Victoria) and spent many school and tertiary holidays assisting on the farm and at a local seed production and processing facility. James took on a position of graduate research agronomist under the guidance of Reg Hill after graduating from La Trobe University in 2006. Working in a large research and development organisation, James quickly developed a strong interest in lucerne and the plant breeding discipline and soon found himself carrying out some Australian species specific breeding programs. Currently James is half-way through completing post-graduate Masters of Science,



majoring in Plant Breeding at Lincoln University, New Zealand. James co-ordinates the early stage evaluation trials based at the Leigh Creek research facility and at the key regional supporting sites across Australia, concentrating on the evaluation of temperature pasture grasses and legumes, herbs and forage brassica and adoption in systems for the diverse Australian environment. The most exciting part of James' work is to see first-hand the new improvements in both pasture technology and systems that are coming through, that provide real benefits and deliver increased productivity to producers.

Abstract:

Lucerne is a perennial legume and a valuable crop worldwide, often referred to as the "King of Fodders". It is also known as 'Alfalfa', which is derived from the Arabic word "best fodder". It has this reputation for a number of reasons - its high nutritional quality, high yield, persistence under dry conditions, ability to fix atmospheric nitrogen and flexibility of being a dual purpose crop for both grazing and hay, or for specialty hay and silage crops. It is estimated to be adapted to over 30 million hectares in Australia, but the area currently sown is approximately 3.2 million hectares. So the question often asked is 'why isn't everyone growing it?' The role it can play and suitability on each individual farm will be different from region to region. There are some limitations, but it could be argued many of the limitations are often perceptions when it comes to growing lucerne. Some of these include that it is hard to establish, there are limited places or areas of sowing, it requires occasional herbicide applications, limited winter growth, it doesn't persist and occasionally some animal health challenges such as poor lamb growth rates and cattle bloat. However, sound agronomic advice and practice during paddock selection/preparation, establishment and grazing management for the life of stand will go a long way in mitigating some of these limitations.

Lucerne has a deep taproot which can extract available water from the soil profile and also has a high water use efficiency, both which make it a very drought tolerant species. It can fix its own nitrogen and is proportional to the foliage grown (approximately 25 kg N/t above ground dry matter). Numerous studies have shown the benefits of lucerne based pastures for improvement in red meat production in southern Australia through increased growth rates and live-weight gain attributed to increases in forage production and quality over the spring-autumn months. Its high nutritional quality at critical times of the year in comparison to dry annual pastures over summer which contain less than 8% protein and low digestibility (well below animal requirements), whereas lucerne can be as high as 20% protein with high digestibility. Lucerne responds well to summer rains and is very productive under irrigation. Research has also shown that increasing distribution of feed over longer periods can be achieved by sowing lucerne with companion species with different seasonal growth patterns such as phalaris, cocksfoot, tall fescue and chicory. These practices also help to overcome some of the associated animal health issues that can occur in pure swards.

Persistence of the stand is affected by a number of factors which include dormancy group, grazing and/or hay management, soil fertility, drought and weed invasion. Choosing the right lucerne is about selecting the right characteristics for the environment and management system required, with the aim to ensure the stand produces well for as long as it is needed As lucerne relies on its stored energy in its roots to regrow new foliage following grazing/cutting, a simple grazing rotation with minimum recovery periods of 35 days (dependent on seasons) and short grazing periods (5 – 7 days) will ensure a good compromise between quality, yield, animal safety and persistence is achieved. However, often the 'ideal' grazing management techniques can be difficult because of various factors such as size of paddocks or mobs, infrastructure and time required and during dry periods when the only feed available may be the lucerne paddocks, therefore at times lucerne can be over-grazed and stand life depleted. However, the recent release of grazing tolerant lucerne cultivars which have been developed to withstand continuous and less than ideal grazing practices offers a significant benefit to red meat producers.







For all the latest information relevant to the Tasmanian sheep and wool industry, go to:

http://sheepconnecttas.com.au

You'll find our latest e-newsletters, quarterly hardcopy newsletters, disease factsheets, upcoming events, and much more.

Or simply contact:

James Tyson BAgrSc MBA Coordinator, Sheep Connect Tasmania M: 0409 006 774 E: James.Tyson@utas.edu.au





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The latest in eating quality science

Sam Gill, Genetics R&D Project Manager, Meat & Livestock Australia

Sam Gill is the Genetics R&D Project Manager for Meat & Livestock Australia, managing genetic and genomic research projects for the lamb and beef industries. Prior to this, Sam worked for 9 years in Sheep Genetics, first as the MERINOSELECT Project Officer and then as Manager, which delivered Australian Sheep Breeding Values to the Australian sheep industry. More recently, this involved the piloting of breeding values using DNA information. Sam is based at Armidale, NSW.



Abstract:

The current recommendations for managing the eating quality of lamb meat are captured in the Meat Standards Australia (MSA) lamb system. The key elements of the recommended pathway for best practice require meeting recommended growth rates, carcase and fat specifications, curfew and lairage times, electrical stimulation and meat aging. The Sheep CRC has also investigated 3 key aspects of eating quality, being intramuscular fat, shear force tenderness and consumer taste panel responses to lamb and their application to genetics.

Intramuscular fat (IMF) is the amount of fat within the meat and is called marbling in beef. Intramuscular fat effects tenderness, flavour and juiciness of lamb and ideally should be in the range of 4-6%. The current mean level in Australian lamb is 4.2%. This trait is highly heritable, has a large range (1.5-9.1%) and is favourably genetically correlated to shear force tenderness making it a key target trait for managing eating quality into the future.

Shear force tenderness (SF) is a laboratory measure of tenderness and is based on the kg of force required to pass a blade through a cooked piece of lamb and a higher value means tougher meat. The trait has a moderate heritability in sheep and 2 genes effecting tenderness have tough and tender variants in a similar manner to beef cattle.

The MSA consumer taste panels system for assessing the eating quality of lamb is used to quantify or calibrate the true effects of the laboratory measures (shear force tenderness, intramuscular fat) on eating quality. The average lamb loin grades as a 4 star but there are also loins that achieve 3 and 5 star grades. The taste panel work clearly shows the eating quality of the loin and topside is influenced by the level of intramuscular fat and shear force and also by the sire of the lamb.

The modern genetic tools currently available - both traditional and genomic - can easily be used to develop an eating quality index that can be used to manage simultaneous genetic improvement of lean meat yield and eating quality. It is proposed that the simplest and most cost effective way is to use an eating quality index predicted for the sire and maintain integrity/traceability of this through the supply chain. Testing is underway to see if a sire with an eating quality index sufficient to assure a 4 star loin and 3 star topside can indeed consistently deliver this outcome and be used in a new MSA lamb model.



MLA's Producer toolbox Cost of production calculators beef and lamb



Tool kits to help beef and lamb producers determine their cost of production and compare their performance annually.

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Determines the number of cattle or sheep you should put into a paddock based on its carrying capacity.

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Allows producers and advisors to understand the value of soil testing and how to use soil test information to plan fertiliser and livestock investments.

www.mla.com.au/ fiveeasysteps

Feed demand calculator



Allows producers to gain an appreciation of the pattern of feed supply and demand over a twelve-month period, the location of 'feed gaps' and how modifying the livestock enterprise might help to close these gaps.

www.mla.com.au/ feeddemand

Tools for a profitable enterprise

MLA provides a range of tools and calculators to assist cattle and sheep producers in making decisions in their business. These tools are available to use online or can be downloaded.

www.mla.com.au/tools

Producing lamb for today's consumer

Georgie Bond, Eastfield, Cressy

Georgie is a lamb producer from Eastfield at Cressy in northern Tasmania. Georgie studied Agricultural Science at the University of Tasmania before spending several years working in beef and lamb feedlots in eastern Australia. She has been back on the family farm for two years and manages Eastfield's lamb feedlot.

Eastfield's major enterprises are cropping (crops include poppies, canning peas, onions, broccoli, white and red clover seed, carrot seed, grass seed and harvesting oats), lambs (6000 Coopworth/Corridale/Dorset lambs bred on farm, 13-14,000 first and second cross lambs traded) and cattle (run a 250 head breeding cow herd



- Red Angus composite breeding). A major focus at Eastfield is integrating intensive cropping with lamb production. A lamb feedlot has become part of the operation and is now turning off 20,000 lambs per annum. Eastfield is turning off finished lambs every 2 weeks year round which has been an integral part of developing both domestic and export markets for its product.

Abstract:

This presentation will be based around identifying who today's domestic consumer is and what they want when they buy lamb at the supermarket. The right product on the supermarket shelf sells quickly however characteristics perceived by the consumer as undesirable or bad eating experiences will reduce overall demand for lamb. This is then passed on to producers with regard to demand for lamb carcasses and the grid price.

As a producer we cannot directly control grid prices or markets however there are steps we can take to produce the right lamb for the right market. Topics covered will include;

- Breeding the right lamb for the right market
- Selection of traded lambs
- Feeding for meat eating quality
- Selection of lambs for exit
- Animal health and handling

For more information contact Georgie Bond: georgie-bond@hotmail.com

BEEF UPDATES

Chair: Chris Thompson, Managing Director, Macquarie Franklint

Chris Thompson is the Managing Director of Macquarie Franklin. He has over 35 years of experience in water resource development, management and measurement and had been involved in number of significant irrigation schemes developments across the State, including the construction of Craigbourne and Meander Dams. Chris is currently a specialist consultant to Tasmanian Irrigation and is working on the supervision of the construction of the Midlands Water Scheme. He has worked as an independent expert in water resource management across Australia, with



particular expertise in system development, irrigation scheme design, rural water policy and planning. Chris is a member of the National Irrigation Efficiency Stakeholder Reference Panel and has held a range of leadership roles within Irrigation Australia Limited. Whilst Chris enjoys a good steak or roast lamb, he is a passionate fisherman and loves heading offshore after stripey trumpeter.

Notes		

Our beef production and farming story



Scott Anderson, Killara Pastoral Co Pty Ltd

Scott lives on Flinders Island with wife Anna and 2 children, Alexandra & Hamish. The family runs a 30,000 DSE dryland beef & lamb grazing operation, over 2 properties - 1700ha Killara on Flinders

Island and 200ha Bispham at Springfield near Scottsdale.

Scott has been involved with industry representation at local, state & federal levels, since the mid 1990s through the TFGA meat council and Sheepmeat Council of Australia. Scott was vice president of the Sheepmeat Council of Australia in 2009, 2010 & resigned in 2012 to concentrate on his farming operation of 1050 beef cows and 2600 Coopworth ewes, plus trading of lambs and cattle.

Locally, Scott has being heavily involved in natural resource management and helped instigate the "Flinders Island Productivity Group" over 10 years ago. The group formed with the aim of continual education and business development, on the mantle "it is easier to be green when you're in the black". This included a group benchmarking program which still forms the basis for the group. Scott first started benchmarking in 1996 with "The Wool Profit Map" and continues to do so now with 12 years of continuous data from Holmes Sackett.

Abstract:

Enterprises

Both enterprises are dryland – in 2013 there are currently 1050 breeding cows calving mid-August, 940 weaners & 50 trading cattle (weaners). Aim to finish 50 % at 500 kg plus and balance 400 kg plus store steers. Killara Pastoral run 2600 Coopworth ewes – 1400 July lambing to Dorset, 1200 August lambing to composite & 700 ewe lambs joined for September. Lamb trading is opportunistic depending on the season.

Targets for Farm

Mid-winter 16 DSE/ha (reality 12 – 19 past 6 years). To achieve 400kg/ha beef (reality 280 – 450) but consistently around 50kg liveweight per 100mm rainfall.

Nutrient – maintenance 0.8 kg of P/DSE in addition to Potassium & trace elements. Both enterprises use same point soil testing every 3 years. Summer fertiliser applications are decided by combining soil tests with past stocking rate, future stocking rate and seasonal conditions. If you are going to grow it, you must eat it.

Bench Marking and Group Therapy

- Critical to business
- Continual leaning
- Cost of production and margin between cost and price received
- Return on assets
- kg/ha
- Mid-winter stocking rate
- Labour utilization
- Feed budgeting

Flinders Island Issues/Changing climate

- Unreliable high rainfall
- · Farm for rain, but be prepared for drought
- · Stocking rate based around pasture growth rates
- Flexible production system i.e. July lambing, spring calving, finish verses stores, & stock trading

Pasture management, grazing and pastures

Pasture species primarily (60%) rye grass, sub clover as sown when developed in 1960's. Balance is fog grass, strawberry clover, fescue, cocksfoot and weedy annuals (e.g. barley grass).

- Aiming always to optimise pasture use. Loose rotation (250 – 300 weaners), 4 – 6 paddock rotations
- · Set stock for lambing & calving
- Drift calve heifers
- Tough years use Nitrogen, Gibberalic Acid, bush/ scrub and early weaning
- · Little annual hay usage, mainly a drought reserve

Beef targets

Calving mid-August for 8 weeks, weaning at 200kg+ and aim to wean late February/early March

Replacement heifers – aim around 300kg average at joining end October, weight around 250kg end August 70% of heifers drop and aim to achieve 75% of those as ptic. Surplus heifers are culled in autumn/early winter – either by finishing or selling as stores. Steers – aim 50% of drop 500 kg plus early February. Balance sold from December onwards depending on season.

For more information contact Scott Anderson: 0427 799 776

Putting Tasmanian beef on the map

Tasmanian grass fed beef is amongst the world's best. In fact, many leading chefs claim it is the best.

But until recently it's also been one of the world's best kept secrets. But not any longer!

Our promotional activity, spearheaded by the development of our premium Cape Grim brand, is giving your beef the recognition it deserves - and a price premium that rewards your hard work and careful management.

Cape Grim is now found in leading restaurants right across Australia, and increasingly around the world. Tasmania is on the 'must include' list for television food shows and a growing number of chefs want to see where this amazing product comes from.

Your Tasmanian beef is gaining its rightful place in the world of food.

So sell your cattle to the family-owned Australian company that's putting your beef industry on the world map.

0419 131 458



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Contact:

Peter Ball (TIA) 62 336810



A processor's perspective of MSA

Peter Greenham, Managing Director, Greenham Tasmania Pty Ltd

Peter Greenham joined the family business after completing a mechanical engineering degree at Monash University. He is the sixth generation of the family to work in the meat industry. The company operates abattoirs at Tongala, Victoria and Smithton. Peter is responsible for the Tasmanian operation which processes up to 450 cattle per day. Greenham Tasmania's premium grass fed beef brand, Cape Grim, features in leading restaurants across Australia and its rising profile is also leading to growing retail sales. Peter Greenham and his staff work closely with Tasmanian farmers to maintain the ready supply of top quality cattle required for the Cape Grim program.

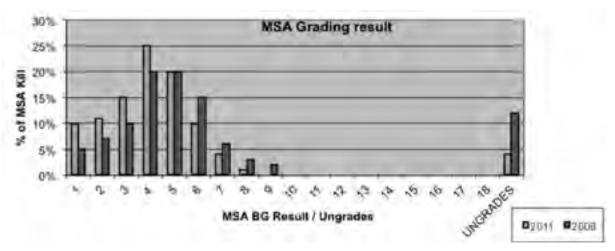


Abstract:

Greenham Tasmania began MSA Grading in 2007 and throughout the following years built various brands to enable them to extract value from the supply chain in both foodservice and retail industries. One of these brands, Cape Grim, bases its name on an area on the north-western tip of Tasmania. This area boasts the 'cleanest air in the world'. Cattle from this program have to be included in the highest eating quality grades which brings with it challenges for supply and variability between months of the year.

Producer feedback and working with a core group of dedicated beef producers to enable better grading has enabled Greenhams to increase over the years the numbers of cattle eligible for the brand.

Further work with MSA and different techniques within the plant will generate more efficiency for the brand going forward.



The graph above illustrates that working with producers can have a large net benefit on quality delivered to the plant.

MSA Optimisation - What is it and what will it mean for producers?

- What will change on our producer feedback sheets and how can I now use this feedback to better my cattle genetics/returns?
- If I send cattle to various processors how can I still benchmark my cattle and will the index be the same?
- · Is this new optimisation a good step for the industry and how will it benefit the producer?
- How can I increase my grades and my net benefit by suppling Greenhams with prime stock?

For more information contact Peter Greenham: 0408 578 919 or PGreenham@greenham.com.au





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Autumn ill-thrift project findings

John Bruce, Western Plains, Stanley

John Bruce and his family has been farming at Western Plains since 1975. John is chairman of the Circular Head Beef Producers Group. During this time his family have grown vegetable and poppy crops, bred Border Leicester ram lambs in addition to breeding and finishing beef cattle. For about the last 20 years they have exclusively produced cattle. Western Plains are Cape Grim, Never Ever and Aleph suppliers to Greenham Tasmania. The farm is 580 ha, 540ha effective grazing area. Western Plains is run by John and his wife, Angela. John's father, David, farmed at Exton before moving to the north west coast, and he was an extension officer with the Department of Agriculture for 20 years also in the NW.



Basil Doonan, Principal Consultant, Macquarie Franklin

Basil has over 18 years experience in farm business management, training and consultancy. He has worked extensively in Australia and overseas in grazing industries primarily in the development and delivery of farmer training and follow-up consulting. He has consulted to many farm business owners and managers and has developed business strategies that have ensured the success of these individual businesses.

Abstract:

Many Tasmanian beef producers have reported that animals appear to underperform during the summer/autumn period, and this is supported by data from on-farm trials at two locations in Tasmania. Underperformance is expressed primarily through cattle not putting on the expected live weight given the quality and quantity of feed on offer. Autumn ill-thrift is a phenomenon recognised globally in temperate regions as affecting liveweight gains of both cattle and sheep. Whilst to some extent the causes of ill-thrift are multifactorial and can be uncertain, three key factors have been identified as being clearly linked with ill-thrift: 1. mycotoxins (produced by endophytes in pasture and cereal species); 2 pasture quality; and 3 parasites. The Tasmanian beef industry is dominated by ryegrass pastures (80% of pastures are ryegrass) and very little use is made of fodder crops. There is a large prevalence of ryegrass staggers (64%) and photosensitation (47%) reported by Tasmanian producers – these conditions are symptoms of mycotoxins. It is likely that subclinical effects of mycotoxins (underperformance) are even more prevalent than Tasmanian producers are aware of. Ryegrass pastures are also known to be poor quality in autumn, which is supported by the fact that improvements in grazing/feed management do assist with managing ill-thrift. Further work to understand fully the extent of mycotoxins and the impact they are having on Tasmanian beef production is recommended.

For more information contact:

John Bruce jda.bruce@bigpond.com

Basil Doonan bdoonan@macfrank.com.au OR 0400 455 158

Ryegrass endophyte toxins

John Webb-Ware, Senior Consultant, Mackinnon Project, University of Melbourne

John Webb-Ware is currently Senior Consultant with the Mackinnon Project at the University of Melbourne. He advises to beef and sheep producers (with enterprise sizes ranging from 4,000 DSE to over 130,000 DSE) throughout south eastern Australia on all aspect of farm management and production where the objective is to maximise profitability. In addition to consulting to farming businesses he also consults widely to agribusiness, including large funds investing in Agriculture. In addition to farm consulting he is a member of the Red Meat Co-Investment Committee and



Serrated Tussock Working Party and undertakes teaching of undergraduate and postgraduate Veterinary and Agriculture students and is involved in a number of on farm research projects. John Webb-Ware also jointly runs a 5,500 DSE sheep and beef property on Melbourne's fringe in partnership with his wife and family in his spare time.

Abstract:

Perennial ryegrass toxicosis (PRGT) is a major cause of economic loss in grazing livestock in high rainfall regions of south east Australia. The financial impact of PRGT was calculated to be approximately \$64.7 million in 2006 (Sackett et al). With higher commodity prices the estimated cost of PRGT was estimated to be \$71.4 million. With additional subclinical impacts included the cost of PRGT was calculated to be \$97 million in 2012 (Webb Ware).

Perennial ryegrass infected with endophytes tends to potentially produce higher yields, resist insect attack and be more persistent. However, alkaloids including ergovaline and lolitrem B present in endophytes cause significant animal production effects on livestock when alkaloid levels exceed critical levels, usually in late summer and autumn. Sheep and beef producers with high endophyte perennial ryegrass pastures are at risk of production losses. Consumption of dangerous alkaloids may cause decreased feed intake, heat intolerance, poor weight gain and ill-thrift, scouring, nervous behaviour and staggers. Losses associated with poor fertility, neonatal losses and poor milk production have also been reported. In severe outbreaks, significant deaths may occur and major disruptions to management causing additions financial losses.

The paper will discuss some of the results of trials conducted at Dookie in north east Victoria where the performance of livestock grazing wild type (WT) endophyte pastures with ryegrass grazing AR1 and AR37. Crossbred ewes grazing AR37 endophyte ryegrass were about 5 kg heavier over 300 days compared with sheep grazing AR1 and WT endophyte. Merino weaners were 1.6 and 0.8 kg heavier over 3 months for AR37 and AR1 compared with WT endophyte respectively. Merino ewes grazing AR1 and AR37 were about 1.5kg heavier than ewes grazing WT endophyte pasture over 56 days. The differences of staggers and milk production of ewes grazing different endophytes was also recorded.

To reduce the impact of PRGT during high risk periods stock must be removed from toxic pastures to prevent losses. Several products have been developed to reduce the toxic effects of alkaloids such as Elitox® that work as a rumen alkaloid binder and deactivator. These products may have a role in reducing the effects of toxic alkaloids when grazing livestock cannot avoid dangerous pastures and may also reduce subclinical effects of PRGT. Research is ongoing to quantify the benefits. In the long term either changing pasture species or introducing perennial ryegrass with safe endophytes is often the best long term solution with the added benefit that improved cultivars are more productive with higher feed quality resulting in more beef production and wool production. The financial consequences of different management strategies are discussed.

For more information contact John Webb-Ware: 0418 748 600 or j.webbware@unimelb.edu.au

MASTER BUTCHER PRESENTATION

Economic impacts of lamb size and condition on producing cuts that meet market demand

Gary McPherson, Master Butcher, Meat and Livestock Australia

Butcher Gary McPherson has over four decades in the meat industry. After leaving school Gary completed his apprenticeship at Bowraville Butchery before moving to Sydney in the early 70's.

What Gary doesn't know about meat isn't worth knowing – he has done it all - from managing retail butcher shops through to working as a foodservice representative. Gary has worked with both Meat & Livestock Australia and Australian Pork Limited which means he's an expert in all things beef, lamb, veal, goat and pork.

In the 15 years that Gary has worked for Meat & Livestock Australia he has been involved in countless activities that span paddock to plate.





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IRRIGATED PASTURE UPDATES

Chair: Terry Horan, Agronomic Services Manager, Roberts Ltd

Terry is based in Launceston and has worked with Roberts in Tasmania for 12 years. Terry is the Agronomic Services Manager for Roberts, which is a state wide role, working with producers and Roberts (and wider Ruralco business) staff, with emphasis on production agronomy, education and extension. Prior to this role, Terry ran an agricultural supply and agronomy consultancy in Southern NSW (Tidd & Horan Rural -Temora, Ariah Park & Ardlethan). Prior to that, Terry worked for the NSW Department of Agriculture in livestock research and cereal and canola trials



programs around central/southern NSW. Terry also had a stint with a multi-national company in research and sales across north east Victoria and most of NSW. Terry has post Tertiary qualifications from Wagga Ag College, and is from a cropping, sheep and beef property in Central NSW. He still has family interests in this area and owns land on the southern tablelands NSW.

Notes		

Our irrigation story

Richard Gardner, Annandale, Tunbridge

Richard and Emily Gardener's Annandale property at Tunbridge comprises broad acre cropping, prime lamb and wool production. When Annandale was purchased in 1995 there was no irrigation infrastructure. The introduction of irrigation at Annandale allowed Richard to diversify from wool and dry-land cropping, to poppies and other irrigated crops. He now has 1000ML of storage, 650ha irrigable land and irrigates 200ha of poppies per annum. The drought from 2006 to 2008 led Richard to diversify his business and in 2009 he established the Seed House. This business contract cleans seed and manufactures poultry and birdseed grain mixes for sale to



retailers such as Animal Tuckerbox. Richard aims to implement "best practice" in every facet of the business and has been an early adopter in areas such as centre pivot irrigation, precision agriculture, objective measurement for merino genetic improvement, conservation management and pasture management. By being innovative Richard focusses on trialling and testing new technologies and practises. His next step is to diversify the business again with the arrival of high surety water from the Midlands Water Scheme with plans to construct a dairy.

The economics of pasture irrigation

Lance Davey, Principal Consultant, Macquarie Franklin

Lance is a Principal Consultant with Macquarie Franklin, specialising in economics. Primary roles within the company include agricultural and resource economics, and business management and planning. Lance works with farm businesses and government clients to better understand the financial implications of agricultural developments at both a property and regional level.



Abstract:

Recent irrigation developments in Tasmania have focussed attention on the benefits of pasture irrigation for livestock finishing. To some extent this has been brought about by a reduction in crop prices. But at the same time livestock prices have also fallen. So, is it possible to buy water and install irrigation infrastructure for pasture irrigation and make a profit?

On the surface, the economics of pasture irrigation is fairly straight forward - just a few simple questions:

- 1. How much water is required per hectare?
- 2. What is the pasture response?
- 3. How much extra livestock production is produced?
- 4. What is the value of the extra livestock production?, and
- 5. What is the cost of the water?

Apart from the fact that some of these questions can be quite complex in themselves, and that the answers will vary from farm to farm, there are also some related issues to consider. For example:

- 1. How does the cost of the extra feed compare with other options such as grain?
- 2. Does irrigated pasture have a place in a crop rotation?
- 3. Might it be worthwhile as an insurance policy?
- 4. Can it be justified on the basis that it allows the non-irrigated part of the farm to be more fully utilised?

For more information contact Lance Davey: Idavey@macfrank.com.au or 0438 139 401

Strategic irrigation and dormancy – the penalty for not irrigating pasture properly

Richard Rawnsley, Tasmanian Institute of Agriculture

Richard Rawnsley is the leader of the Tasmanian institute of Agriculture's (TIA) Dairy Centre at Elliot on Tasmania's northwest coast. The TIA Dairy Centre objective is to undertake research, development and extension activities to assist the dairy industry achieve growth and development in a profitable and sustainable manner. The Research Facility is a fully operational 350-head dairy farming operation and is home to structured experiments based on a wide range of key industry issues. Richard completed a bachelor of Agricultural Science with Honours in 2000 through the University of Tasmania and went on to study his PhD in 2004. Richard has worked



for the TIA dairy centre for eight years and his main research interests are pasture agronomy, biophysical modelling, precision agriculture and dairy farm systems. Whilst working predominantly in the dairy sector, Richard's research skills and knowledge of pasture production extend across all livestock industries.

Abstract:

It is important to think of water as a nutrient. To have water constantly available for plant use is critical. Water is highly mobile and soil levels can and do decline rapidly particularly in porous soils. Water can also be thought of as a ration supplement, as it influences both the quantity and nutritive value of the feed grown. Soil moisture availability also controls response rates to other inputs, such as, nitrogen. It is therefore important to minimise other possible nutrient, soil or grazing stresses in order to achieve the best response to irrigation. Extra fertiliser is required on irrigated pastures to compensate for the nutrients removed in the extra grass grown and to compensate for a potential increase in nutrient leaching. Nitrogenous fertilisers can be applied to boost the growth of irrigated pastures in summer when prevailing temperature and moisture conditions result in nitrogen efficiency response rates of 20 kg DM of pasture per 1 kg of nitrogen fertiliser applied.

Irrigation start-up times that are late in comparison to the prevailing seasonal conditions result in plants being moisture stressed. Research and modelling work has shown; for every day delay in irrigation start-up time there is ~100kg DM/ha reduction in pasture grown. For a 100 ha irrigated farm that has a 5 day delay in irrigation start up this delay would equate to 0.5t DM/ha or 50t DM reduction in pasture grown across the farm.

It is critical to start irrigating when the pasture requires water, not just when it is convenient to start. To schedule irrigation start-up and subsequent irrigation events, it is important to understand how much water your soil holds (Figure 1) and how much water is then available for your pasture or crop. Readily available water (RAW) is the soil moisture that is present between field capacity (soil is full of water) and refill point. It is the soil moisture available to the plant in the root zone that requires the least amount of energy expenditure to obtain and therefore allows for the maximum "partitioning" of energy for growth. When water is available in the root zone highest growth rates are achieved. RAW is influenced by both the soil type and plant rooting depth. For example, the RAW value of a clay loam soil is 0.9mm per cm. Perennial ryegrass pasture growing with a rooting depth of 25cm has a raw value of 22.5mm (0.9mm/cm x 25cm). If there were plant evapotranspiration rates of 4.5mm per day, to maintain RAW, we would need to have an irrigation interval of no more than 5 days (22.5/4.5) otherwise the soil moisture deficit would lead to reduced growth rates.



Figure 1: Relationship between soil water and crop stress, taken from http://www.agric.wa.gov.au/PC_95247.html?s=1001 (sourced May 2013).

NON-IRRIGATED PASTURE UPDATES

Chair: Jane Weatherley, R&D Communication & Adoption Manager, Meat and Livestock Australia

Jane Weatherley currently manages the on-farm R&D communications and extension programs at Meat and Livestock Australia. She returned to MLA after a 12 month break where she went back to Tasmania to gain experience in rural finance with Rabobank. Prior to this, Jane has worked in the area of extension research and as a red meat extension officer for the Department of Agriculture in Tasmania. While Jane has worked in various roles spanning red meat extension



program development, delivery and evaluation, she also maintains an active role in her family beef breeding operation in Tasmania. She has a PhD in farming systems RD&E and is extremely passionate about supporting producers to improve their business profitability and maximise the benefits received from their levy investment.

Getting the right pasture plant in the right place

Dr Ralph Behrendt, Senior Research Scientist - Livestock Systems, Department of Environment and Primary Industries, Victoria

Ralph is a Senior Research Scientist with the Department of Environment and Primary Industries at Hamilton. He has more than 20 years experience in research, development and extension within the wool and sheep industry. Research areas have included wool and sheep production from pasture, wool metrology, processing and wool marketing. Ralph worked within the team that delivered the nationally recognised Lifetime wool project that provided new management guidelines for Merino ewes. His current work is focused on improving Victorian lamb and sheep



meat production systems. Ralph is the Proof Site Leader for the EverGraze Hamilton research site evaluating different perennial pasture systems for livestock production within the Future Farm Industries CRC. He is also a supervising scientist for the Sheep CRC Information Nucleus Flocks at Hamilton and Rutherglen in Victoria, and involved in work improving weaner survival within the Sheep CRC. Other research is investigating the interaction between genetic selection for lean meat yield and the impact of ewe nutrition and lamb finishing on lamb carcass composition and meat quality. Other work is also investigating the influence of different pastures/forages and pasture systems on sheep nutrition and reproduction.

Abstract:

Results from the EverGraze Hamilton Proof Site

EverGraze has developed adaptive and productive pasture based livestock grazing systems that are 50% more profitable than current systems while also significantly improving catchment health through improved groundcover, soil health and reduced recharge. These systems were also resilient to climate variability.

EverGraze used modern perennial pasture species and cultivars matched to different parts of the landscape to extend the growing season and increase profit from livestock production. In particular, the Hamilton proof site assessed summer active species such as Lucerne, Tall Fescue, Chicory and Kikuyu. Pasture systems incorporating these species were compared with a 'Best Practice' winter active perennial ryegrass system that used early, mid and late flowering cultivars. The systems had been designed to be 50% more profitable than 'current practice' performance drawn from the top 20% of South West Farm Monitor Project (FMP) farms. Analyses at the completion of the project confirmed that the EverGraze sheep systems were able to produce gross margins up to 50% greater than the Top 20% FMP and between 1.5 and 2 times the average benchmarked farm.

The pasture systems on EverGraze performed well growing between 7t dry matter/ha and 15t dry matter/ha including high winter growth rates up to 50kg dry matter/ha/day and 1-2t dry matter/ha of summer feed from some of the pastures. This allowed some of the livestock systems to achieve improvements in productivity that were 50% greater than the performance of the top 20% of lamb, beef and wool enterprises benchmarked in the FMP. The Triple pasture system utilising summer active pastures also saved up to \$20/head in drought feeding costs compared to the Best Practice Perennial Ryegrass pasture system in 2006/07. Whole farm case study modelling has shown that implementing EverGraze pasture systems on 10% of the farm area for typical livestock farm in South West Victoria is an attractive investment with a return on capital invested of between 10% to 28% and 6 to 10 year payback period. The highest returns and quickest payback were achieved when stocking rate was increased to utilise extra feed grown.

Implementing your own EverGraze system

It is important to recognise that every farm and farming environment is unique and it is therefore necessary to tailor the principles of EverGraze pasture system design to the specific criteria that define your farm. To do this consider the following points;

- Start with the "purpose" in mind. What will the pasture be used for within your farming system? For example, is the aim to provide green out of season feed or feed for late winter lambing ewes?
- Estimate the likely economic impact of the pasture on your farm and consider other issues important to your farm system. For example, will the new pasture/s require extra grazing management or are there possible animal health issues that may need different management?
- · Right place understand your farm resources (e.g. soil type, topography, climate, soil fertility).
- Right plant do the homework on pasture selection, ensuring that the species/cultivar selected is well suited to the purpose and environment on your farm.
- Right purpose Once the pasture is established ensure it is well utilised by increasing stocking rate or production from key classes of animals (e.g. weaners, pregnant/lactating ewes).
- Right management Look after the investment for the long term by using grazing management suited to the species/cultivar, maintain levels of ground cover and feed on offer and use de-stocking of pastures with feeding in containment areas to ensure pasture persistence.
- Evaluate the impact on your bottom line calculate the economic benefits and assess the natural resource gains from your pasture improvements.

Further information go to www.evergraze.com.au or contact Dr Ralph Behrendt: 0407 506 519 or ralph. behrendt@dpi.vic.gov.au

Maximising pasture production throughout the year

Jason Lynch, Senior Agronomist, Serve-Ag

Jason Lynch is a senior agronomist at Serve-Ag Pty Ltd, and works with clients to improve the profitability and sustainability of various agricultural production systems. He is based in northwest Tasmania, possesses extensive agronomic experience working in both pasture and horticultural based enterprises, and has a key role in Serve-Ag's pasture and biofumigation business development program. Jason is well travelled throughout New Zealand, Europe and North America, and is particularly keen to assess and exploit new technology and knowledge. He is actively involved in a number of grower extension/discussion groups across Tasmania.





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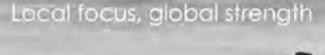
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Ringarooma Towards 2000 with Legumes

Peter Ball, Tasmanian Institute of Agriculture

Peter is an Industry Development and Extension Officer in the Tasmanian Institute of Agriculture's Extensive Agriculture Centre. Over the last 20 years Peter has worked on a wide variety of pasture management and grazing systems projects within Tasmania's sheep and beef industries. This work has included pasture surveys, pasture establishment trials, grazing methods and management trials, and farmlet studies. After developing a sweet tooth and appreciation of coffee, work as an extension officer soon dominated, including delivering Prograze training in MLA's Sustainable Grazing Systems program. Peter currently works with the MLA More



Beef from Pastures program and has a producer demonstration site at Ringarooma exploring the value of legume based pastures.

Abstract:

Towards 2000 with Legumes is an MLA producer demonstration site situated at Ringarooma in Tasmania's North East. Together the Tasmanian Institute of Agriculture and North East discussion group are seeking to develop the value proposition for more effective legume composition in pastures.

This work builds on the achievement of earlier trials at Winnaleah that demonstrated producing up to 2000 kg of beef live-weight gain per ha per year was biologically possible. Pastures at the Winnaleah site proved very responsive to nitrogen and were historically low in legumes, like many across Tasmania.

The Ringarooma site seeks to explore how much of this biological potential can be realised from the less costly input of nitrogen and improved feed quality that can flow from more effective legume compositions, taking account of the associated costs which may include lower total pasture production.

The trial established five new pastures in autumn 2010. Each were sown to Banquet II ryegrass sown at a rate of 20kg/ha. Two of these pastures were sown only to Banquet, one to become a no nitrogen control and the other to allow a urea application comparison.

Three pastures were sown with a legume companion, either Bounty white clover, Stamina GT6 lucerne, or Astred red clover.

All pastures were rotationally grazed to establish and facilitate development of legume composition. The trial comparison commenced in August 2011 with legume compositions of between 26 and 40% recorded that spring. The lucerne did not effectively establish so this pasture is now based on volunteer white clover as the companion legume.

Early observations are illustrated in Table 1 - 2011/12 Ringarooma Live-weight gain

Pasture	Live-weight gain per ha per year
Ryegrass only, no nitrogen	759
Ryegrass/ Bounty white clover	932
Ryegrass/ volunteer white clover	935
Ryegrass/red/volunteer white clover	1052
Ryegrass only plus 60 kg urea	797

These results are encouraging first indicators of legume benefit, with pasture 4, characterised by the highest legume composition, achieving the highest live-weight yield per ha.



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