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FEATURES

- The importance of Soil Carbon and Green Farming
- A Green Future: DVD launch



Jamie Beard

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New office/ staff in Rockhampton

The past month has been an exciting one with the opening of the Rockhampton Grazing BestPrac Office. We have also welcomed a new staff member to the team, Jamie Beard. Jamie is our Customer Service/ Administration Officer, who is studying for her Certificate 3 in Business Administration. Jamie, originally from Longreach will be the first face you see as you walk in the office. Please feel free to drop in for a chat at the corporate Business centre, suite 6, 214 Quay St Rockhampton (On the river) or give us a call about any enquiries (49276790).

We have a lot of activity in the next 3 months with Grazing BestPrac Workshops, Goals n Visions Workshops, Computer Mapping Workshops and GPS Workshops as well as grazing management field days and the MLA Annual general Meeting being held in Rocky.

Transforming Mick's Block

Kim and Lucy House "Anabank" Baralaba have taken on a dynamic new project, whereby they are transforming a conventionally grazed property to a rotational grazing system. Just to show you how it can be done, check out their starting point at <http://www.grazingbestprac.com.au/>

We will be updating this site as new photos and data become available. If you have a great story you would like to be told or you would like this newsletter to be sent to, please give Jamie a call or email us.

Welcome!!!

To the first issue of the Grazing BestPrac Newsletter "Over the fence" for 2007. We have had many requests for a newsletter to keep the grazing community up to speed with what's new with innovations, projects and funding. As you can see, this edition is brimming with exciting activities for the future of the grazing industry. Please read on and let us know your thoughts on how we can make this even more relevant to your needs.

Mick Alexander

Grazing Industry: World's Best-Practice

A section of this newsletter will always be devoted to discussing the exciting innovative people and activities of the northern grazing industry. Every day we are learning more about the "Technology of Growing Grass" and right now the science is beginning to meet the needs of the innovators.

We began believing the most important part of our business was the animal and then we shifted to a focus on grass and only in recent years, the focus has gone onto or into the soil.

In this issue,

we have a story from Dr Christine Jones www.amazingcarbon.com who has researched and proven the importance of managing the soil and the Organic Carbon as a base to all life and our business. It also discusses the need to use the animal and the grazing system as the major tools to create more soil, more organic matter and more profits. We also have a story about managing your dung beetles. Enjoy!!



A GREEN FUTURE



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Mick Alexander - the Trainer

Mick Alexander is an experienced property consultant in Northern Australia. After working with many land holders and producers the **Technology of Growing Grass** has evolved. Mick began working on the family farm in southern Queensland in 1980 and graduated to a support role working with rural families who want to make a difference in the industry in the early 1990's. He was one of the first Property Management Planning facilitators in Queensland in 1990 and then worked for RQs in the early 2000's. Mick and Nicki Alexander and Kim and Lucy House established the rural consultancies M.A. Rural and Lucy Grazing BestPrac as a vehicle for programs to their grazing community.

...son - McCracken's Water Services



Prices for the DVD:

\$20.00 for 1 copy + incl Postage
 \$15.00 per multiple Copies

This DVD has been made possible with the support of the following:



A GREEN FUTURE

SUSTAINABLE GRAZING IN AUSTRALIA

The real story ... Five Queensland families discuss the exciting journey they have undergone while changing their thinking and focus on Natural Resource Management with the application of the "technology of growing grass"



Presented by:
 Bruce Honeywill Rural Journalist

THE TECHNOLOGY OF GROWING GRASS

A GREEN FUTURE SUSTAINABLE GRAZING IN AUSTRALIA

A Green Future: DVD Launch

A Green Future is a series of short factual case studies of grazing families throughout Queensland who have improved their natural resource base (vegetation/land/water) along landcare principles and are living proof of the value of clear vision and taking action. These five exceptional families have used innovation, instinct and grit to go against the grain to develop their pastures, watering systems, production (beef and wool), profitability and families.

The DVD was launched on the 23rd August at the Qld Landcare Conference at Mackay. It is a collaboration between the National Landcare Program, NHT, Grazing BestPrac, Waratah, McCrackens, FRCC, FBA as well as Morinish and wycarbah Landcare Groups.

The open honest comments from the Mills, Lawrie, Walker, Inslay, Tindall and House families is refreshing and challenging. Their success has acted to inspire many other graziers in their local districts. These are the real Landcarers, in the grazing industry. The "Technology of Growing grass" is explained by various graziers in their own way and how it has worked for them.

Participants at
 Rockhampton
 Goals n Visions in
 March 07



DVD's are available from Waratah outlets, McCrackens stores and Queensland Landcare or direct from Grazing BestPrac in Rockhampton.

Are You DRIFTING?? NO GOALS or VISION

Drought, low production, no rain, high prices, family conflict can all create a negative view of the world. Unless you take control and decide on your future. We constantly hear about the negatives, but rarely hear of the positives.

Join the groups of successful farming and grazing families who have gotten a new zest for life and belief in the grazing industry.

We have had 3 highly successful Goals n Visions workshops run in Richmond, Julia Creek and Rockhampton in the past few months. The two day FarmBis supported workshop will help you to understand how to communicate with family and staff, develop a vision for the future and begin to live life.

For more info, check the back page and the www.grazingbestprac.com.au or call Mick on 49276790.

Special section featuring an NRM Group each newsletter.

This month it's the F.R.C.C

Fitzroy River & Coastal Catchments, near Rockhampton is a community group which represents; Landcare, Grazing, Horticulture, Pest Management, Fishing, Government, Water, Cultural Heritage, Industry, Tourism, Conservation and Forestry.

FRCC with the Fitzroy Basin Association engages landholders in Priority Neighbourhood Catchments; the recent focus being the Raglan and the Styx-Herbert areas. The uptake of Property Action Plans indicates a strong commitment to economically and environmentally sustainable grazing and horticulture. Since 2005, the value of projects, incentives plus landholder's contribution is ~\$4M.

FRCC works with Landcare in delivering a Capacity Building program, (e.g. GPS/Mapping, Grazing Land Management, weed workshops, water use efficiency.)

The field staff, Moira, Murray, Chantelle and Darcy are committed to engagement and partnerships, with a hands-on approach to ensure quality projects, and assistance to achieve positive practice changes.

For more information:
Ph: (07) 4921 0573
E: info@frcc.org.au



WOOL BESTPRAC

Around the yards

BestPrac is an industry funded MLA and AWI program, which supports individual wool growing families, to be more sustainable, productive and profitable. Central Western coordinator is Mick Alexander

Blackall BestPrac Group:

- Meeting and field day on Springleigh to assess the final stages of the Envirofund project.
- Group members applied for an Agfund Project (Wool/ sheep technology)

Group Contact: Jack Banks
Phone: 0746575958

Tambo BestPrac Group

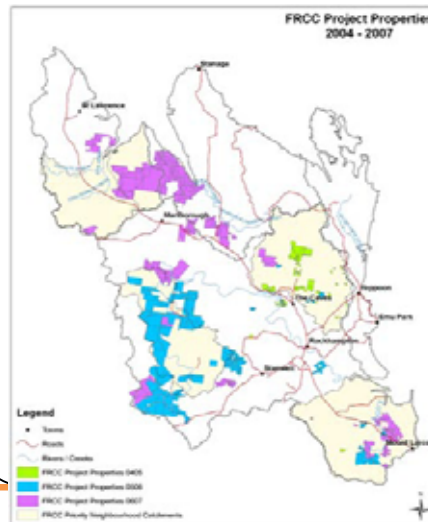
- Held property planning and compute rmapping days
- Focussed on implementing property plans.

Group Contact: Hume Turnbull
Phone: 0746546163

Muttaborra BestPrac Group

- Held an investment day to update the financial market with Brian Costello.(NIFS)
- Planning a study tour to NSW to inspect wool processing and on farm management.
- Implementing property development programs.

Group Contact: John Secombe
Phone: 0746587198



ENVIROFUND UPDATE

Congratulations to those of you who were successful in gaining a share of the \$20 million **Envirofund** Support. It is an exciting process to be involved with when, Federal Government, community groups and individual primary producer families are all working together for the same goal – “A healthier ecosystem”.

If you have not heard if your application has been successful, please have a look on the website www.nht.gov.au/envirofund/ or give Grazing BestPrac a call on 49276790. If you have been successful, however, securing the funding is only the first step to achieving these wonderful outcomes. Good Luck and have fun building your dreams.

Tom O'Toole is coming to QLD in Dec 07.

The most successful family baker and small businessman in Australia, Tom O'toole is coming to Rockhampton and possibly the Richmond/ Julia Creek areas. Tom is famous for the Beechworth Bakery and turning a little country town around from DYING to THRIVING. You too can be part of Tom's inspirational life, and learn about the tools to Tom's success. We are running a series of one day workshops across Qld about goal setting and motivation. Tom's session will inspire, excite and be thoroughly enjoyable. Please call us to show your interest (Jamie 49276790) WHEN: (10th – 14th December)



If Sustainability is simply “Keeping it the same”
Then we need to aim for “Continuous Improvement”

Building Soil Carbon With Year-long Green Farming

The capacity for appropriately managed soils to sequester atmospheric carbon is enormous. The world's soils hold around three times as much carbon as the atmosphere and over four times as much carbon as the vegetation.

Soil represents the largest carbon sink over which we have control.

When atmospheric carbon is sequestered in topsoil as organic carbon, it brings with it a wealth of environmental, productivity and quality of life benefits. An understanding of the 'carbon cycle' and the role of carbon in soils is essential to our understanding of life on earth. Building soil carbon requires green plants and soil microbes.

There are 4 steps to 'turning air into soil'

- i) **Photosynthesis**
- ii) **Resynthesis**
- iii) **Exudation**
- iv) **Humification**

It's about turning carbon
loss into carbon gain

Photosynthesis is a two-step endothermic reaction (i.e. a **cooling process**) which takes place in the chloroplasts of green leaves. Incoming light energy (sunlight) is captured and stored as biochemical energy in the form of a simple sugar - glucose (C₆H₁₂O₆), using carbon dioxide (CO₂) from the air and water (H₂O) from the soil. Oxygen is released to the atmosphere. Photosynthesis requires 15 MJ of sunlight energy for every kilogram of glucose produced. If the same 15 MJ of incoming light energy makes contact with a bare surface, such as bare ground, it is reflected, absorbed or radiated - as **heat**, usually accompanied by moisture. The respective area of the earth's surface covered by either actively growing crops and pastures, or bare ground, has a significant effect on global climate.

Resynthesis: Through a myriad of chemical reactions, the glucose formed during photosynthesis is resynthesised to a wide variety of carbon compounds, including carbohydrates, proteins, organic acids, waxes and oils. Carbon atoms can link together to form long chains, branched chains and rings, to which other elements, such as hydrogen and oxygen, can join. The energy captured during photosynthesis and stored in carbon compounds serves as 'fuel' for life on earth. Carbohydrates such as cellulose provide energy for grazing animals, the starch in grains provides energy for livestock and people. The carbon stored in previous eras as 'fossil fuels' (hydrocarbons) such as coal, oil and gas provides energy for vehicles, machinery and industry.

Exudation: Around 30-40% of the carbon fixed by grass plants during photosynthesis is exuded into soil to form a microbial bridge (to feed the microbes that enhance the availability of essential plant nutrients). In this way, actively growing crops and pastures provide 'fuel' for the soil engine. Carbon compounds are essential to the creation of topsoil from the structureless, lifeless mineral soil produced by the weathering of rocks. Organic carbon additions are governed by the volume of plant roots per unit of soil and their rate of growth. The more active green leaves there are, the more roots there are, the more carbon is added. It's as simple as that (Fig 1). The breakdown of fibrous roots pruned into soil through rest-rotation grazing is also an important source of carbon in soils.

Humification: Adding organic carbon to soil is one thing, keeping it there is another. Organic carbon moves between various 'pools' in the soil, some of which are short lived while others may persist for thousands of years. Carbon additions need to be combined with land management practices that foster the conversion of relatively transient forms of organic carbon to more stable complexes within the soil.

In the humification process, soil microbes resynthesise and polymerise labile carbon (exuded from plant roots) into high molecular weight stable humic substances. Humus, a gel-like substance that forms an integral component of the soil matrix, is the best known of the stable organic fractions. Humification cannot proceed unless there is a continuous supply of 'fuel' for soil microbes. If humification does not occur, the carbon exuded from plant roots at Step 3 (or added to soil as plant residues or manure) simply oxidises and recycles back to the atmosphere as carbon dioxide. Humic substances have significance beyond the relatively long term sequestration of atmospheric carbon. They are extremely important in pH buffering, inactivation of pesticides and other pollutants, improved plant nutrition and increased soil-water holding capacity. By chelating salts, humic substances can also effectively ameliorate the symptoms of dry land salinity. Increasing the rate of humification has highly significant effects on health and productivity of agricultural land.

Importance of soil fungi

Most perennial grasses are excellent hosts for mycorrhizal fungi, with up to 100 metres of microscopic fungi forming per gram of soil under healthy grassland. Glomalin is a glycoprotein (contains both protein and carbohydrate) produced by arbuscular mycorrhizal fungi living on plant roots. Glomalin can persist for several decades and may account for one third of the stable organic carbon stored in agricultural soils. Mycorrhizal fungi and glomalin production are inhibited by bare soil, intensive tillage, the application of phosphorus fertiliser and the presence of plants from the Brassica family such as canola, which do not form mycorrhizal associations.

Building Soil Carbon With Year-long Green Farming (cont).

Maintaining Soil Structure

“Aggregation” is part of the humification and soil carbon building process and is essential for maintaining soil structure. Glues and gums from fungal hyphae in the rhizosphere enable the information of peds or lumps (which can be seen with the naked eye, often attached to plant roots). The presence of these aggregates creates macropores (spaces between the aggregates) which markedly improve the infiltration of water. After rain less water sits on the soil surface and waterlogging is reduced. As structure continues to improve, smaller and smaller aggregates are formed, along with soils micropores, dramatically improving soil function, aeration, levels of biological activity and resilience.

Soil structure is not permanent. Aggregates made from microbial substances are continually breaking down and rebuilding. An ongoing supply of energy in the form of carbon from actively growing plant roots will maintain soil structure. If soils are left without green cover for long periods they can become compacted, blow or wash away.

Under conventional cropping or set-stocked annual pastures, the stimulatory exudates produced by short-lived species are negated by bare earth at other times of the year. The result is a decline in levels of soil carbon, soil structure and soil function. Soil building requires green plants and soil cover for as much of the year as possible. In seasonal rainfall environments, a mix of perennial groundcover species enables response to rain at any time. In grazing enterprises, rest-rotation grazing is absolutely essential. For broad acre cropping, the presence of out-of-season groundcover ensures stability, long term productivity and soil building rather than soil destruction.

Any Farming Practice that improves soil structure is building soil carbon. Water, energy, life nutrients and profit will increase on-farm as soil organic carbon levels rise. The alternative is evaporation of water, energy, life nutrients and profit if carbon is mismanaged and goes into the air.

Yearlong Green Farming (YGF) is any practice turning bare soil into soil covered with green plants. YGF increases quality, quantity and perenniality of green groundcover in broad acre cropping, horticultural, forestry and grazing enterprises.

Many benefits of Pasture Cropping, for example can be attributed to having perennial grasses and cereals together side by side in space and time. Ongoing carbon additions from the perennial grass component evolve into highly stable forms of soil carbon while the short-term, high sugar forms of carbon exuded by the cereal crop roots stimulate microbial activity.

As a bonus, regenerative farming practices such as Pasture Cropping result in the production of food much higher in vitamin and mineral content and lower in herbicide and pesticide residues than conventionally produced foods.

Rewarding landholders for Yearlong Green Farming practices that build new topsoil and raise levels of organic carbon would have significant impact on vitality and productivity on Australia’s rural industries. YGF would also reduce evaporation and heat radiation from bare soil surfaces, reduce the incidence of dry land salinity and counteract soil acidity.

Under **regenerative** regimes, soil carbon and soil life are restored, conferring multiple ecological and production benefits in terms of nutrient cycling, soil water storage, soil structural integrity and disease suppression. Benefits extend well beyond the paddock gate. Improved soil and water quality are the 'key' to catchment health, while YGF represents the most potent mechanism available for mitigating climate change.

It’s about turning carbon loss into carbon gain.

Getting started in lifeless, compacted soils where the soil engine has shut down is the hard part. The longer we delay, the more difficult it will be to re-quester soil carbon and rebalance the green house equation.

Written by Dr. Christine Jones, Founder of Carbon for Life Inc.

For more information go to

www.amazingcarbon.com

www.grazingbestprac.com.au



Fig 1. Root volume, rhizosphere surface area, exudation of carbon, microbial activity, humification and soil building are highly correlated with the perenniality and vigour of groundcover plants.





Peter Attard, grazier from Moura, spoke at the Qld Landcare Conference in Mackay in August 2007.

What the heck is a “COMPOST TEA”?

The most potent natural fertilizer in the world and most of us don't even know about it. Compost teas are the next big breakthrough for the grazing industry. Let's see what the excitement is all about. Don't Miss this one: FRCC and the Wycarbah and Morinish Landcare Groups are hosting a field day on Peter Attard's property "Shingle Hut" Moura on the 16th October to compare and discuss the success of Compost Tea's in increasing production of grass and beef. For more info call Murray Bullock on 49210573

Moora Plains Field Day: 31st October (To set stock or rotate???)

The debate between rotational grazing and set stocking has gone on for many years and few people have any real knowledge or data to compare the 2 production systems. Andrew and Meagen Lawrie are hosting a field day with the FRCC to look at the results since 2004, comparing "the old way with the new way". For more info call 49210573 (Chantelle)

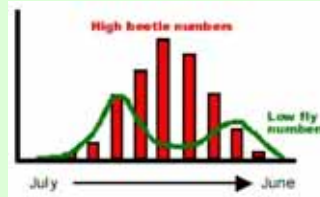
Dung Beetles – and buffalo fly - (Which chemical to use??)

Your management in the next two months will either promote dung beetle populations or decimate them. And so, your choices will either save you money or cost you throughout summer. This next two month period is the most important period of the year for developing our biological control of Buffalo Fly. More next issue <http://www.dungbeetle.com.au/parasiticides.html>



CALENDAR OF EVENTS FOR OCT/ NOV 2007

Date	Activity
October 2007	
8 th / 9 th	Grazing BestPrac - (FarmBis Approved) Rockhampton
13 th / 14 th	Goals n Visions – (FarmBis Approved) Rockhampton
16 th	Compost Tea Field day "Shingle Hut" Moura. (Contact Peter Attard 49957244)
TBA	GPS Training – Marlborough (FRCC)
31 st	Grazing Management Field Day (FRCC) – Moora Plains, Gogango. Ph 0749 210573
November 2007	
1 st / 2 nd	Goals n Visions – (FarmBis Approved) Rockhampton
TBA	Tom O'toole Workshops (ph 0749276790)
7 th	Property Planning and Computer Mapping – Wycarbah Landcare Group
8 th / 9 th	Grazing BestPrac - (FarmBis Approved) Rockhampton
19 th / 20 th	Grazing BestPrac - (FarmBis Approved) Rockhampton
21 st	MLA Beef Forum (Paradise Lagoons Rockhampton)
22 nd	MLA Annual General Meeting
23 rd	FRCC Annual General Meeting Rockhampton
December 10-14th	Tom O'toole Workshops- Rockhampton and Julia Ck.



IDEAL BEETLE BREEDING SEASON – WET SEASON.

When there is adequate summer rain to promote good beetle activity, buffalo fly numbers are kept down to a more acceptable level.

<http://www.dungbeetle.com.au/strategicparasiticides.html>

Euoniticellus intermedius



For more information about the articles or activities in this issue or to order a copy of the hit DVD, please call Jamie on 49276790 or 0438 395255 or go to www.grazingbestprac.com.au or email mick@grazingbestprac.com.au