



Grazing Bestprac

In The Paddock

YOUR COMMUNITY NEWSLETTER UNITING ALL SEGMENTS OF THE RURAL INDUSTRY.

July 2011 - No 19



Moora Plains Field Day 13th July

Gogango district cattle producers, Andrew and Meagan Lawrie are new breed of primary producer who focus on pasture and soil health as a key to achieving success in the future. The Lawrie's operate a 3,400 ha beef enterprise, 80km from Rockhampton, which mostly grows stock out for backgrounding to feedlots. The family has just completed an extensive property development program on a 2,200 ha (5,500 acre) portion of "Moora Plains" which includes a reticulated watering system and subdivisional fencing to enable a rotational grazing program.

On the 13th July, the Lawrie's will open their property to local producers by hosting a field day with the focus on rotational grazing to improve pasture utilisation and health.

Andrew Lawrie has worked extensively with local specialists, Peter Hunt and Mick Alexander to develop the ideal plan to improve pasture health and production on "Moora Plains".

Mr Lawrie explained, the success of previous development has been a catalyst for this project. He said, In the past seven years, we have been operating a rotational grazing program across a 1200 ha (3,000 acre), 27 paddock section known as the "Island Paddock" to test the theory of rotational grazing and intensive development. The program has been so successful that Andrew and Meagan decided to continue to develop the rest of the property in a similar manner. Mr Lawrie explained, Our first development, the "Island Paddock" now consistently carries more than three times the numbers of stock it did prior to development and the average daily weight gains have also increased

from 0.45kg/hd/day to 0.6 - 0.7 kg/hd/day and higher. This success has driven us to complete the next development even faster, he said.

Mr Lawrie explained the need to design the grazing system to achieve a higher pasture utilisation percentage initially and then to focus on improving pasture and soil health. He said, prior to development, cattle were walking up to three and four kilometres to water from the backs of paddocks and walking weight off. He said, our previous experience has demonstrated that stock should not be walking any more than one kilometre to maximise pasture utilisation and production. The new system has been designed so that the backs of paddocks are less than one kilometre to water.

SIZE DOES MATTER

Visitors on the 13th July will have the opportunity to see the watering system, fencing program and animal control which the development has created. The plan was designed to incorporate two troughs per paddock with most troughs watering multiple paddocks through watering centres. Some watering centres have the ability to water four paddocks or more.

In total the new development on Moora has included 13 concrete troughs and 15 km poly with a minimum flow rate of 3 litres per second, at the trough. Mr Lawrie said, the volume of water we require shocks many people at first as we are generally not aware of the real watering needs. But, getting the watering system right is the most important step to success. We need a high flow rate to ensure stock do not run out of water during the hottest day of the year. He explained, we

estimate a large stock unit would need 70 – 80 litres per head per day at 40 degrees celcius and we will be running more than 1,000 LSU's or 1500 young cattle at any one time. Therefore the watering system would supply up to 120,000 litres per day to various troughs. That's a lot of stock to manage in a single watering system. He added, our storage is also important as we need a backup for at least a day or two in case of breakdown. Mr Lawrie explained, water is being pumped by a floating pump using solar power from an earth dam to two high storage tanks with storage of 213,000 litres and 123,000 litres and then gravity fed through fourteen kilometres of 75mm and one kilometre of 90 mm polypipe. The system has been specially developed by Peter Hunt of Thinkwater to achieve our goals.

BE QUICK TO BOOK IN TO THE Rotational Grazing Field Day being held at "Moora Plains" Gogango on the 13th July. For more information, on the field day and workshops or for more grazing management information, contact Cathe or Mick at Grazing BestPrac on 0749 383919 or 0438 395255.

The field day is being supported by

- FRCC (Fitzroy River and Coastal Catchments)
- Waratah fencing
- ThinkWater (Rockhampton)
- Observant Telemetry
- Selected Seeds (Rockhampton)
- Bimrose Oils

Some Tips on Regenerating Soils

Managing degraded soils and understanding soil microbial affects on the health of plants (pastures and crops) are extremely important topics to both farmers and graziers. In early April, a special training program, "Regenerating Soils in CQ" was hosted by the CQ BestPrac Group and CHRRUP in Springsure, Queensland with Dr Ashley Martin, CIAAF Adelaide and Bart Davidson, SaPN, Moree. Thirty five producers and extension staff attended the day to source more information about the importance of managing soil microbe populations and nutrition of their crops and pastures. Most attendees agreed the topics were even more relevant since the floods in early 2011 and the widespread loss of crops and pastures due to waterlogging and inundation.

The two presenters explained the basis of managing nutrients in soil to maximise the ability for plants to function effectively. Dr Martin enlightened the large group on the three key roles each species of Bacteria, Fungi, Protozoa and Nematode play in the cycling of nutrients, decomposing of trash and suppressing disease. He said, one gram of soil contains:

- More than 100,000,000 bacterial cells
- More than 11,000 species of bacteria and
- A myriad of Fungi and other microbes.

Dr Martin said, healthy soils can produce much of, if not all of the nitrogen our plants require for growth and production (including the fertiliser). He added, our atmosphere is 78% nitrogen and all we have to do is get our microbes to cycle it to the soil and the plants. He added, In fact healthy soils are able to fix up to 200 - 400 kg N/ ha per year, when well managed. That would mean, we would need little if any N based fertilisers in the production of crops or pasture, if soils are well managed. The primary microbes which facilitate this process include: Actinomycetes (free living bacteria) and Rhizobia (plant symbiotic bacteria).

He explained, it is important to reduce the impact on microbes before you can build healthy soils. That is to balance the nutrition, aerate the soil etc. Mr Martin, has conducted many microbial tests on soils all around Australia, which he used as examples to explain management practices. He continued, The water-logging in recent months had a serious impact initially on the microbe

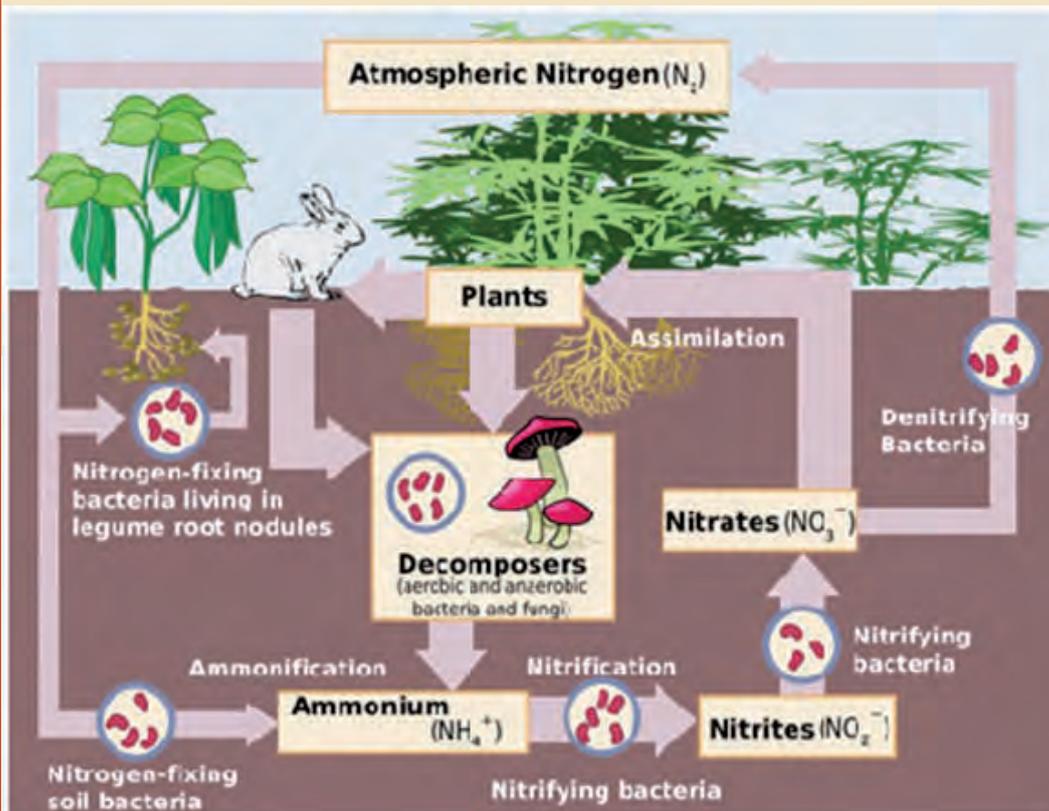
populations as good microbes are generally aerobic (requiring oxygen) and the oxygen in the soil would have been utilised within a couple of days. Therefore, extended water-logging will have caused large microbial deaths and loss of key some nutrients. The best solution to this issue is to aerate the soil as soon as possible by way of a form of renovation or getting a plant to grow in the soil. However, he explained, "Plants do it best".

Mr Davidson, explained the importance of understanding the balance of nutrients in the soil. As an example, if the soil had an excess of magnesium to calcium, then the magnesium can tie up many other nutrients and limit the ability of microbes to do their job. He explained the nutrient balance is like creating sound foundations for the microbes to live and cycle. Often this is overlooked in assessing nutrition or is deemed to be simply too hard to manage. However, if it is not managed, the crops will not achieve optimum yields. Mr Davidson said, nutrients such as nitrogen and phosphorous are the biggest cost for most producers, when they will most often not be the most limiting factor. These and all nutrients need to be better managed. The most important first step to creating a sustainable cropping or grazing system is to get a benchmark of your soils. That is, conduct a complete soil test, seek recommendations from a relevant specialist and monitor changes over time. Mr Davidson and Dr Martin, support the Best-Practice Groups program at www.best-practicegroups.com

DID YOU KNOW?

Nitrogen has to be fixed either by plants and microbes, microbes alone or by man made means. Even the fertiliser we may add to the soils is indeed managed by the correct microbes (living organisms), before the plant can utilise it.

Some fixation occurs in lightning strikes, but most fixation is done by free-living or symbiotic bacteria. These bacteria have the nitrogenase enzyme that combines gaseous nitrogen with hydrogen to produce ammonia, which is then further converted by the bacteria to make their own organic compounds. Nutrient-poor soils can be planted with legumes to enrich them with nitrogen. A few other plants can form such symbioses. Today, about 30% of the total fixed nitrogen is manufactured in ammonia chemical plants.



Nitrogen Cycle within Soil & Plants



Ruth & David Jones Somerby Comet at the workshop



Dr Ashley Martin

McDonalds Lead the Way in Grazing BMP

Central Queensland graziers Graeme and Susan McDonald are demonstrating best-practice grazing management (Grazing BMP) on their property "Albeni", 140 km west of Springsure. They are proving the many benefits of rotational grazing over the past decade and continue to trial different methods and applications to implement rest in their pastures, increase profitability and minimise the boom to bust, drought cycles.



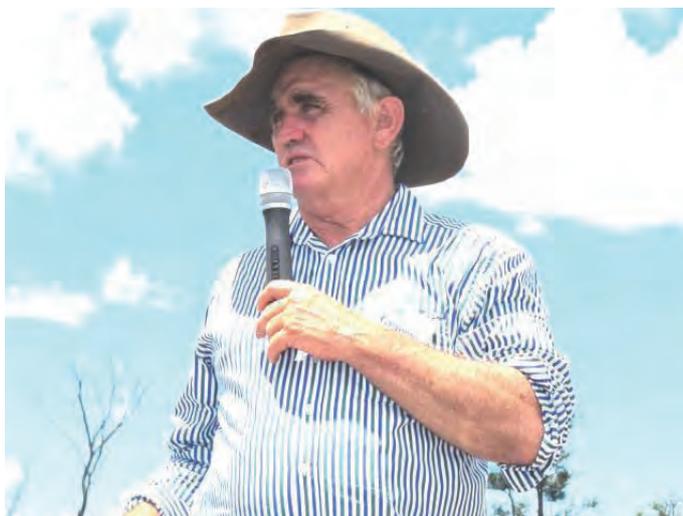
Graeme McDonald speaking at the Albeni Field Day.

Facts

- 16,000 ha (40,000 acres) –
- 140 km west of Springsure
- High density rotational grazing
- Organic certification
- 6,000 cattle
- 1,000 head breeder mobs

Well over 100 graziers and agribusiness specialists turned out for the much anticipated field day held on the McDonald's home property "Albeni" on the 21st February. The McDonald's discussed how they became involved in rotational grazing and demonstrated the benefits of continually moving cattle through small paddocks. Originally the day was programmed for October 2010 and has been postponed twice during the extreme wet conditions of the past four months.

"Albeni" is a 16,000 ha (40,000 acre) property situated at the head-waters of the Nogoa River and only a stones-throw from the top of the Barcoo and Warrego catchments. The long term average rainfall for the district is 600mm while rainfalls have varied from 240 mm in 2002 to 1,306 mm in 2010. Mr McDonald said, this highly variable climate requires sound management to enable any grazing family to be sustainable. The McDonald's purchased "Albeni" in 1985 as a raw Brigalow scrub and forest block running only 700 breeders and have transformed it into a highly productive property today running 2,000 breeders plus growing cattle and calves, totalling more than 6,000 cattle (7,000 LSU). The business is now a complete growing out operation with organic certification and supplying the 300kg dressed organic market.



Graeme McDonald has been running a rotational grazing system since 1994 and has adapted the concept to suit the land and the climate with the aim of achieving at least 80% ground cover.

The field day concentrated on two main paddock areas, (Red Roo and Devils Elbow) which demonstrated the difference between various rotations. The main paddocks were five to seven thousand acres (2,000 – 2,800ha) each and have been subdivided into many smaller paddocks, some as small as 60 acres (25 ha). Mr McDonald said, we run stock in mobs of up to 1,000 breeders and up to 2,000 weaners through small paddocks for only a short period of one or two days at a time. At this stage, this breeder mob is working through a total of 50 paddocks, but this changes each season, he added. What we are finding is that the pastures and soils are improving so well that we can drop paddocks out of the rotation and rest even more country. At the same time we continue to subdivide into smaller paddocks. That may mean it took 3,000 ha to run the mob in 2008 and the following year, the same mob requires only 2,500 ha. Our best country is being rested for up to 360 days per year and is only being grazed for 6 days, (that is 1 day graze for every 60 days rest on average) while our worst pasture is rested for only 250 days, he added. Right now, 49 paddocks of the 50 are resting at any one time in that rotation.

Mr McDonald continued, We are in the middle of a major development phase establishing watering systems and subdividing many paddocks. It is quite easy to visually see the difference between an intensive rotation and less intensive rotation as some areas are not so well developed as yet. He continued, The 900 head breeder mob working the Cattle Creek section are still patch grazing because the paddocks are too large at more than 400 ha (1,000 acres) and the graze period too long. We can visually see the difference in the colour and density of plants in each rotation. He added, The longer rest period gives the pasture a chance to recover and to build both root system, source nutrients and sequester carbon in the soil. *Continue on Page 4*

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Mr McDonald continued, Our aim is to have waters in every paddock so that the walking distance is no more than 500 – 700 metres to water. However, even when the waters are in place, it is essential to fence into small paddocks and to control the grazing, he added.

Mr McDonald said, All of the 5 mobs are moving at different speeds in various rotations as we assess the length of graze on the condition of the pasture. We aim at grazing the pastures in phase 2, when they are actively growing and phase 3 during the slow growth phase. Grazing control is the key to success as the fences and troughs are the tools to help us achieve higher yields and healthier pastures, he said.

There were many questions on the day about electric fencing, watering systems, timber control and rotational grazing. Mr McDonald pointed out the importance of the managed rotation, the density of animals to change the health of soils and pastures and the importance of rest in the system. When asked a question about managing regrowth, Mr McDonald said, I have blade ploughed more than 30,000 acres in the past, but have not ploughed any country for more than a decade.

He added, In fact, we have not got enough trees on "Albeni" today. Under the shadelines remaining, our soils are healthier and more productive than any of our open country. But remember, this is a grazing system and only works as a system of rest and rotation, he said. The large group of field day participants walked through two shadelines where the soil was soft and friable and pastures were a rich deep green

and the air was cool and crisp. Mr McDonald commented, It is interesting that we all want to stand under the trees on a hot day, but continue to clear much of the vegetation which cools our land and grows healthy pasture in hot conditions.

The McDonalds operate "Albeni" with one to two full-time employees and support from family members during busy periods. Mr McDonald explained the need to have staff, who understand why we use rotational grazing management and the enthusiasm for monitoring stock and pasture health. He added, I stay away from calling it cell grazing. I call it managed intensive grazing.

We wish to thank Graeme and Susan McDonald for their generosity and support in hosting the Rotational Grazing Field Day. The field day was organised by CQ Bestprac group and supported by CHRRUP and Farm Ready Industry Grants program.



CALENDAR OF EVENTS

HEALTHY SOILS, HEALTHY PASTURES TOGG (ONE DAY) Workshop

Jericho	18th July
Eidsvold	21st July
Rockhampton	8th August
Dingo	10th August
Monto	15th August
Biggenden	17th August
Kingaroy	19th August

SOIL & PLANT NUTRITION (One Day) Workshops

Mundubbera	13th July
Goolgowi	26th July
Leeton	9th August
Hilston	10th August
Narrabri	12th August
Dubbo	24th August
Warren	25th August

For more info phone 0749383475

The TOGG is now ONE DAY

Mick Alexander and Shane Krafft deliver the most stimulating and complete workshop on the science of growing pastures in Australia. You will learn about the importance of your management in managing plant nutrition, soil microbes, water holding capacity, vegetation and carbon. Gross margins can be increased - come and learn how? Call Cathe for more information and to book. 1300 780872

The SaPN Workshop

Bart Davidson delivers cutting edge technology for improving the health of soils and plants. This is the top Australian based soils workshop being delivered in the country and now available as a one day format on the science of soil nutrient, biology and structure. Practical, hands on solutions for you. Come and learn how? Call Cathe for more information and to book. 0749383475

ROTATIONAL GRAZING FIELD DAY

Wednesday 13th July

Book NOW to attend the Lawrie Families Rotational Grazing Field Day to be held at "Moora Plains", Gogango.

Key topics include:

Development planning, fencing, stock management, water design, funding projects, Training and much more. For more info, book at

0749 383919 / 1300780872