

INSIDE THIS ISSUE:

page 1

Australian Year of the Farmer

page 2

Soil Health is Critical

Pasture Kropper

page 3

Microbial Soil Testing at

CQUniversity

Successful Workshops

page 4

Adelaide Pk Field Day

Scattered trees are important

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In the paddock

Australian Year of the Farmer is a celebration of the vital role farmers' play in feeding, clothing and sheltering us all.



Year of the Farmer - Future of Agriculture

We hear lots about the management of the banking sector, its enormous profits and how the big 4 are set to close down many farming enterprises in the coming year, because their profits are not yet high enough. We hear lots about the large supermarkets screwing dairy farmers, cutting retail prices so that the dairy farming families have to leave the industry and then blame it on inefficiency. We hear about the huge profits of the mining industry, the loss of prime agricultural land and the inability to rehabilitate for future food production. And many other commodities are being purchased from farmers and graziers at cost of production or lower. And in the support industries, some big fertiliser manufacturers simply lift the price of fertiliser, when there is good rain for planting, or is that my imagination. These are the facts of life for the agricultural

industries. As they say, farmers are the "price taker, not the price maker".

I wonder if the real people in our communities across Australia understand the real costs to produce food and the plight of the family farm and agriculture. For that matter, if you are a farmer, do you understand the real position of your farm? Do you know what nutrient levels you have in your soils and the value of nutrients you are exporting in beef or grain each year? Are you allowing for this in your profit margin? Is the price you are receiving for beef, lamb, wool or crop paying you to replace those nutrients being used? In much of southern Australia, farmers have become accustomed to replacing phosphorous and in many cropping regions in the north, it is normal to fertilise to some degree.



The story of farming is that commodity prices are low and inputs keep increasing so that farming becomes a gamble every year. In my grandad's day,

in the 1960's most families in the towns and cities had a farm cousin and it was cool to be a farmer and also profitable. But today, it tends to be a risky business for many farmers and few young people are coming into agriculture. We need the Australian community to know that farming needs to be high on the political agenda, that food and fibre are critical for our future and that if it is lost or destroyed, it cannot be reinvented. Our soils are non renewable and possess the future for Australia.

Mining needs to be a well managed development which does not impact on the future productivity of our soils or the social fabric of our communities. This is the year to get our message out there to the urban electorate, when the focus is on the farmer. We need to be proactive, promoting the good news stories about the food and fibre industries which keep the world growing. We need to get the solutions across to the masses. Grazing BestPrac will be working with a number of other exciting organisations throughout the year to promote successful farming and grazing initiatives and to keep the urban community learning. If you have a good news story, please let us know. We will also be running cutting edge training and onground activities around Queensland and New South Wales. If you would like to be involved, please contact us to discuss.



SOIL HEALTH – CRITICAL

Soil health and carbon are becoming the catch cry of the decade,

as many organisations which have never thought about soil health or understand its importance, hop on the gravy train. Soil health is a bit like Landcare was a decade or two back, simply good for business. As producers, we need to really understand some of the parameters of soil and what has happened since our land was cleared. In many situations, production levels are reduced within 3 - 5 years of clearing.

In the past decade or so, I have seen many examples of reduced capacity of farming and grazing soil, crops, pastures and profitability. It has taken me many years to gain an understanding of the depth of complexity of soils and their management. In order to understand the situation today, we must know some facts. For a start, soil is made up of three key components –

- **Nutrients,**
- **Biology and**
- **Structural components.**

All of these components work together, to support plant growth. Think of the physical structure as the foundations, the minerals as the building blocks and the microbes as the life force cycling nutrients. Soil has a pool or a bank of nutrients which are mostly finite and are being used every day to sustain microbial populations, build structure, grow crops and pastures (whether native or introduced). On our better soils, the nutrient pool is quite large and will take many decades to run down and on poorer soils, it can be depleted quite rapidly (a few seasons). The nutrients, sometimes called minerals and are better known as “the chemistry of soil”, need to be replaced at some time now or in the future. Now when our soils were first cleared and developed, maybe 50 or 100 years ago, they were probably quite well balanced to facilitate a natural system. Then we overlaid this system with our need to produce crops or run livestock or some other farming endeavour.

Over a period of years or decades, the fundamentals within our soils have changed, but the way we manage it may have not. That is many farmers and graziers have adopted the best practices of rotational grazing or zero till farming or chemical fallows or even organic farming as they see fit. However, even under these systems, conventional wisdom often neglects the need to consider the balance of our soils.

Agriculture has to some degree been slowly mining the soil to grow food for the world and to provide an income for our nation. However, the farming and grazing enterprises need to be profitable enough that they can be replacing key nutrients as they become depleted. Yes, soils only have a finite number of kilograms of each nutrient and eventually become dependent on some outside inputs. Plants require at least 15 specific minerals in the correct amount from both biological and other sources to grow healthy pastures and crops. The higher the diversity of soil microbes, the more resistance the plants have to diseases. The higher the soil carbon levels, the greater drought resistance plants will have. And many crops such as wheat, barley and sorghum will require at least 4-5 kg of phosphorous, potassium and sulphur for every tonne of grain produced. In many situations, stock grazing can remove more than 4-5 kg phosphorous per hectare per year.

It is imperative that every primary producer become soil savvy to understand the most appropriate practices for the future. Take the time to attend some training during “Year of the Farmer” in 2012.

KEEP READING - FOR THE FIRST RELEASE OF

the PASTURE KROPPER

GBP, Multi-Farming Systems and Simplicity have developed an exciting new pasture cropping unit - 5 meter, Pasture Kropper for planting direct into existing pastures. And yes it is built strong, with the ability to apply pasture seeds down to 1 or 2 kg/ha, oats or wheat seed to 40 - 50 kg/ha, granular fertilisers and liquid injection of nutrients. This is the first of a new breed of planting unit to assist with pasture run-down, regeneration of degraded pastures, sowing oats into pastures for winter production and lots more. Units have press wheels for depth control, direct drill tyne assembly, air seeder for seed coverage and it is available for trials and contract. Call us.





Producers from Malanda assessing soil pH above and water pH below.



Microbial Soil Testing – send them in

Central Queensland University Microbiologist, Dr Sandrine Makiela is calling for soil samples from Farmers and Graziers in Queensland to be assessed under an exciting new innovation project based in Rockhampton. This week is the first week of the new project which will assist Queensland farmers and graziers to assess the health of their soils using the most accurate up to-date technologies.

CQUniversity and GBP partnership

The project is a joint venture between Grazing BestPrac (GBP) as the industry partner and the CQUniversity. GBP is a major sponsor providing cash support for the project as well as providing soil sampling support. Mick Alexander (GBP) said it has taken two years to



establish the project and prove the importance of measuring soil health. He added, now that we have a local technical specialist, we can have soils analysed and work more closely on solving soil problems.

Dr Makiela (pictured above) is leading the project with a goal to assess the most cost effective and efficient methodology for measuring soil microbial populations. Soil microbes are essential for cycling nutrients for pasture and crop uptake. Without healthy microbial populations, plants do not thrive. In the past, most farmers knew little about the life in the soil and specialists were difficult to source. Until now, all soil samples have needed to be sent interstate to either Adelaide or Lismore for analysis as only two laboratories test for soil microbial life. Anyone wanting to know more about monitoring soil health, measuring microbial populations or how to test for microbes, please call Mick Alexander on 0749 383919. We need primary producers from all around Queensland and NSW to be involved in this exciting project

Successful workshops from north to south

In the past three months, GBP has facilitated several workshops from Broken Hill, Brewarrina and Cobar in far western NSW (Broken hill) to Malanda in far north Queensland as well as Kingaroy, Toowoomba and Rockhampton. We wish to thank the wonderful host grazing families for their commitment and enthusiasm and the organisers and support staff for their involvement. In particular, thankyou to Anne Holst from Western CMA, Mark O'Connor, John and Rana Manns, Graham and Cathy Finlayson, Jane and Wayne Obrien and Peter Foxwell.

The programs have included both “Healthy Soils, Healthy Pastures” and “Property Planning for Grazing”. In the reviews, many people commented about these workshops being the best training they have ever attended and would welcome more programs in their own region. Key learnings included the practical knowledge that can be applied in the paddock on both large scale and smaller properties, importance of water quality and managing water, designing paddock layout around water circles, mapping on Phoenix, sessions on how grass grows and the role of carbon, how to build carbon in soil, soil health and managing microbes and enjoyed the paddock sessions.

If you would like to organise a workshop or field day this year, please give Cathe a call on 0749 383919.



Above - Bokhara Huts, Brewarrina PMP Workshop using water circles, centre “Nundooka” Broken Hill PMP workshop and bottom - Cobar PMP Workshop - assessing stock watering requirements with the Western CMA.



Above - Some of the group of participants at Toowoomba “HSHP” workshop in 2011.

"Adelaide Park" Field Day Success



Above - Andrew Lewis, "Balmoral" Yaamba and Mark Howard, "Trilogy" Yeppoon at the Field Day and Below - Dr Dianne Allen, Mick Alexander and Dr Ram Dalal at the Landcare Field Day.



Even a 30 mm storm at lunch time couldn't dampen the enthusiasm of the more than 35 local graziers and farmers who attended the first Healthy Soils, Healthy Pastures field day held at "Adelaide Park" Yeppoon on Monday. A severe storm provided relief to local producers who learnt the latest science of climate change, pastures and carbon. Host graziers, Paul and Adrienne McCosker took time to explain their grazing management practices and their trials to improve pasture nutrition. The McCoskers are using combinations of rotational grazing, liquid nutrients from Bio-Nutrient Solutions and Lime to improve protein production on native and improved pastures. Their aim is to balance the physical, nutritional and microbial requirements of the soil.

The day was organised by Capricorn Coast Landcare Group and Grazing BestPrac with support from Fitzroy Basin Association and DAFF. Many farmers agreed the day was the first time they had been exposed to the quality of speakers and new information available, linking management to healthy soils and carbon sequestration. For many it has signalled a change in grazing practices and a renewal in soil testing for both nutrition and microbial activity.

The key speakers on the day included, Mick Alexander, Grazing Specialist, (GBP QLD), Dr Ram Dalal (DERM) Senior Scientist on Soil Carbon and Dr Diane Allen (DERM) Senior Soil Carbon Scientist. Dr Dalal and Dr Allen were funded by DAFF to promote the importance of carbon in soil health, the role of DERM in guiding major research projects into soil carbon sequestration and the effect of grazing management systems. Mr Dalal said, we have a lot of research to do to really understand how various management systems affect carbon sequestration. He explained, Soils are so dynamic and changing and a certain practice may work on one soil, but not on another soil type. This forum has established a need to work with Dr Dalal to assess the impact of rotational grazing, managing nutrition and many other management systems. Local Landcare Chairman, Alby Wooler said, Capricorn Coast Landcare will host many more field days of this type in 2012. For more info contact FBA and Capricorn Coast Landcare Group.



Even Scattered Trees are important in your Grazing System

A number of studies have been undertaken in past decades to assess the value of scattered trees throughout the paddock in the grazed ecosystem. Most graziers agree they are important for shade purposes as long as the seedlings and regrowth are managed. However, a number of researchers have proven the scattered tree is far more important to maintain the fertility and health of the paddock and land-type than most people thought. Researchers, Wilson and Lemon sampled soils under *E. blakelyi* (Blakelys Red Gum) at Newholme (northern NSW) which showed a clear pattern at the soil surface where a clear canopy effect could be detected.

They measured a number of soil properties including pH, carbon and nutrient accumulation, inside and outside the tree canopy to assess any major differences. They found a significant difference in surface soils 'inside' compared with 'outside' the tree canopy. This outcome suggests that trees in these grazed landscapes are a focus around which higher soil pH and carbon and soil nutrient accumulation takes place. It has been suggested in some instances that such patterns in grazed paddocks result largely from animal camping. However, this is not always the case, as trees impose this pattern even in the absence of animals camping. These results support the notion that trees in these grazing landscapes promotes 'patches' or 'islands' of high pH, organic matter and nutrient accumulation.

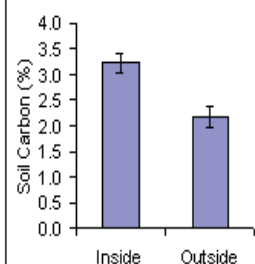
The measured canopy effect progressively decreased in most soil parameters with distance from the tree stem, reaching a minimum in the open paddock. The major difference between sites however was largely limited to the surface (0-5cm and 5-10cm) layers. Below this depth, little difference existed for most of soil parameters determined under the canopy or outside the canopy. For most soil properties the presence of trees and associated nutrient retention or soil enrichment would therefore seem to be restricted to the near surface layers and their effect on the bulk of the soil below these depths is limited.

Look at your trees from a new perspective.

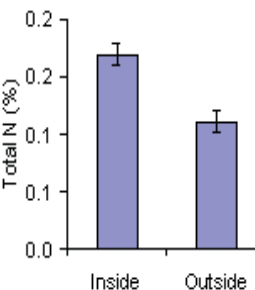
Reference: Brian Wilson and John Lemon (2002) Scattered native trees and soil heterogeneity in grazing land on the Northern Tablelands of NSW.

Figure 1a,b,c. Surface soil properties - Carbon, Nitrogen and pH (0-5cm) inside and outside the canopy of *E. blakelyi*.

Soil Carbon (%) (P<0.001)



Total soil nitrogen (P<0.001)



Soil pH (P=0.01)

