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Over The Fence Newsletter

Farming and Grazing Best-Practice

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Grass and stubble fires have unseen future costs $$$.

A single hot grass fire may be costing you as much $90/ha ($36/ acre) in lost nutrients according to the latest GBP economic analysis. This is more than the average gross margin (profit) of most grazing enterprises. And if we continue to use fire as a tool to reduce dry grass, the nutrients being lost to the atmosphere will need to be replaced by our grandchildren in future years. The common practice of burning old grass every one or two years may be the reason our pastures have reduced production and could be an extremely costly exercise in future years.

CSIRO scientists continue to look into the declining state of our pastures, attempting to find new wonder plants that will grow in poorer soils and more extreme conditions without changing the management that has gotten us to this point. Most graziers have noticed that grass pastures are not yielding like they did a decade or two ago. However, few specialists have actually considered that the management we are using to date may be leading to our pasture decline.

Reports from as early as the 1970's and 1980's have linked the continual burning of native and improved pastures and stubbles, to the lower production and reduced fertility of soils. Studies in 1982 in a Buffel and Siratro pasture measured the loss of nutrients from a hot fire, to be equivalent to 100 kg of Urea and 40kg of Superphosphate per hectare. In today's values, this equates to $65 for urea and $26 for superphosphate in nutrient losses. And if we are burning every two or three years, the losses are multiplied.

Many graziers and farmers have complained that the grass does not grow as high as it used to and the crop yields just continue to fall. Some of the major nutrients being lost include Nitrogen, Phosphorous, Potassium and carbon, and have been falling for the past two decades. Latest reports have shown our soils have a finite amount of nutrients, which are being mined every year as we produce pasture, crops and animals for sale. If we are farming, it is generally frowned upon to burn the stubble, as there is nothing to protect the soil, stop erosion, reduce evaporation or feed the microbes. However, it is common to believe it is still a good thing to burn the grass, (get rid of the old dry feed) to get green pick. The reality is the dry grass is a carbon source, holds fertility and provides energy for soil microbes to cycle nutrients. Continual burning of this dry grass will eventually lead to scalding and desertification of our land.

If we don't have enough livestock to utilise or eat the grass, then we could endeavour to get the grass back on the ground anyway we can. That may mean using livestock to walk it down or if possible a slasher, mulcher or some other method. The above table shows the cost of nutrients which are lost in a hot stubble fire.

Every time a grass or stubble fire is lit, it may be losing $30, $50 or $90 per hectare or more, depending on the cost of nutrients at the time and the severity of the fire. And since the cost of nitrogen is ever increasing and the issues with peak phosphorous and peak oil, future replacement costs will be even higher. That means it may cost our families or the future stewards of the land a high price to continue the management. We continue to hear comment about food security for future generations, reducing emissions and managing for droughts/ climate variability but few consider the implications of managing our pastures more effectively. We spend all year growing healthy pastures only to burn it at the end of the dry season.

Before, you use the red steer again, consider the real cost if you had to replace the nutrients you are losing. If you had to write a cheque for $90,000 for every 1000 ha that you were burning, would you still do it or would you find a better way? Is the future of our grazing businesses and families worth considering?

Continued on next page..

Grass fires have unseen future costs $$$.

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Figure 16a: Stubble nutrients and amounts lost from a hot burn (for a wheat crop – yielding 5 t/Ha, produces 7.5 t stubble per Ha)

	Nutrient	Amount
Amount nutrients in stubble (kg/Ha)	N P K Carbon	56 5.9 109 3450
Amount lost during a hot burn (kg/Ha)	N P K Carbon	46 2.6 44 2760
Percentage lost (%)	N P K Carbon	82% 44% 40% 80%
Amount fertiliser to replace lost nutrients (kg/Ha)	Urea Single Super Muriate of potash	100 30 87

The above table shows the cost of nutrients which are lost in a hot stubble fire.

PASTURE CROPPING—looks good for CENTRAL QUEENSLAND

Pasture cropping is a simple adaptation of zero-till farming technology which can be utilised to assist in the regeneration of degraded pastures. Pasture cropping training is one of a suite of practices which are being supported by the Australian Government and CHRRUP working closely with CQ BestPrac Group and GBP over the next 12 months. On the 16th and 18th August, renowned pasture cropping specialist, Colin Seis from Gulgong, NSW delivered 2 one day workshops on pasture cropping in CQ.

The workshops were held at Rockhampton with a farm visit to Trevor Jones property "Bindaree", Garnant, and at Springsure with a farm visit to Fred Wheeler's property, Mountain View, Springsure. There were nearly 60 people attending in total and support from Robert Fry of selected seeds to demonstrate the value of choosing the right pasture for the soil type. The success of the two days surprised the organising team as a number of people have asked for more information and have committed to undertaking pasture cropping programs in the next 12 months.

Staff from the Fitzroy Basin association and CHRRUP also attended to learn how the practices could assist in repairing degraded grasslands. A full report will be in the next newsletter. The above photos are from the 2 field days.

BioNutrient Solutions PTY LTD
Carbon Farming Systems®

BOOK EARLY to ATTEND THE SAPN WORKSHOPS.

Rural industries in Australia are rapidly moving towards next generation farming and grazing systems, with a focus on healthy plants and soils. This belief has been supported by the large numbers of growers and graziers who have undertaken soil and plant management training with BNS in the past few months. Many producers are frustrated by the lack of options for improving soil health from conventional thinking and are searching for understanding.

Soils specialist, Bart Davidson, has delivered an exciting mix of science and practical hands on application of the latest plant and soil technology. In a recent series of workshops held in New South Wales and Queensland, more than 80 producers attended 4 workshops. The participants included graziers, cotton growers, dryland croppers, sugar cane, irrigation and horticultural producers. Clearly, producers can see the need to better understand the science of soil and plant management. The latest workshop was held at Goondiwindi with 35 participants and a second workshop is being arranged for the 25th and 26th November at Goondiwindi. To book please call 0749 383919 (Cathe or Noela)

Be QUICK TO BOOK for the next SPN...

Innovators meet at Biloela, Bundaberg, Hillston and Goondiwindi SAPN Workshops -

Bart Davidson discussing potential application methods at Biloela in August.

Other ways of breaking down your trash in a hurry (6-8 weeks)

In a season like this where we get real opportunity to grow a second crop on the same paddock, it is worth knowing just how to manage the trash load from the winter crop.

Yes, there is a way of breaking down the straw from you still standing Wheat or Barley crop extremely fast if you plan for it before harvest. In the past few years, many innovative farmers have been working with various spray formulations containing Saprophytic Fungi. These are a microbiological organism which can be seen a white mass on the straw when it is really active. In many of our management systems, we destroy this fungi and so need to reintroduce it when required. The following photo shows the fungi on hay. If you would like to know more, call Bart on 0428740337

Cost Effective Regrowth Control

BY SHANE KRAFFT

It's possible to control regrowth without blade-ploughing. Bill and Beth Hamilton and their son Scott of " Calingunee" have been thinking outside the square and looking past conventional methods for regrowth control on their Moonie property. Their 8,300 acre property is situated 35 km south of Moonie on the Leichardt Highway. The main soil types on Calingunee range from good Brigalow Belah soils to Ironbark ridges with the predominant timber and regrowth of Brigalow, Box, Hop Bush, Wattle and False Sandalwood.

The Hamilton's have been slashing 20 % to 25 % of their property every year so that suitable paddocks have been slashed every 4 to 5 years. Mr Hamilton said they started slashing regrowth in 1993 and have continued slashing every year. Box regrowth is the most aggressive growing tree on Calingunee and is the main indicator to the time frame between slashing.

Mr Hamilton uses a 4.5 metre Schulte slasher powered by the properties 120 HP Chamberlain 4480 tractor. This slasher can handle regrowth with stems up to 75mm in diameter. Mr Hamilton has added a railway iron pusher to the front of the tractor, fitted a belly guard and changed the tyre configuration on the tractor to avoid tyres being punctured. Heavy walled Logger tyres have been fitted on the back and truck tyres fitted to the steering. In all the years the Hamilton's have been treating regrowth this way they've only ever had one flat rear tyre from a piece of wire.

Mr Hamilton commences their slashing program late winter each year. The timing of this treatment ensures their livestock have been able to utilise the best of the pasture before the old unpalatable Phase three feed is put back on the ground. By knocking down the regrowth and unused pasture in this manner the Hamilton's are increasing their ground cover and have less bare exposed soil. This increases soil water absorption and reduces evaporation rates. This mulch layer also provides a food source for soil microbes Bacteria, Fungi and Nematoades. Combined with grazing management all these factors lead to a continued improvement in Soil Health.

Mr Hamilton is able to slash eight acres (3.2 ha) per hour with the cost of Diesel and Labour at six dollars ($6.00) per acre. The Schulte slasher has given the Hamilton's twelve years of reliable service. This cost compares very favourably compared to Blade Ploughing. In the last two years the Hamilton's have completed some Blade Ploughing as part of a project. This work cost Ninety Five dollars ($95) per acre compared to Six dollars per acre for slashing. Without favourable rain after Blade Ploughing a percentage of the pasture has died and these paddocks are now too rough to drive vehicles over.

In 1994 the Hamilton's developed a Rotational Grazing system on Calingunee. This allowed them to control where stock graze and by resting their paddocks gave plants adequate time to recover before they are grazed again. Mr Hamilton said they run up to 1200LSU (Large Stock Units) adjusting stock numbers as the seasons vary. Calingunee is considered to be in a 24 inch (600mm) rainfall belt. The last fifteen years has averaged seventeen to eighteen inches (450mm). This has meant that the Hamilton's have had a strong focus on managing their stock numbers to match Carrying Capacity (available pasture) to Stocking Rate (number of animals on hand).

Combining the use of Slashing and Rotational Grazing Mr Hamilton said they have more than doubled their carrying capacity. Using a grazing benchmark in 1994 Calingunee carried 8 SDH/100mm. (Stock days per hectare per 100mm rain) by 2009 the grazing benchmark is 17SDH/ 100mm.

By using these management practices the Hamilton's are making better use of the rainfall they receive and are improving their plant species diversity above the ground and the microbe diversity below the ground. Diversity leads to a more resilient grazing system for the long term. To learn and understand more on building these resilient grazing systems Grazing Bestprac run Technology of Growing Grass workshops in your area. For bookings and information contact Noela or Cathe on 07 4938 3919 or 0749 383219/ 0438 395255.

What is Strategic Cropping Land (SCL)

Strategic Cropping Land is a term which has been used for some months when discussing the protection of our prime farming land and reducing the possibility of these areas being mined. The Queensland Government has stated, it considers that the best cropping land, defined as strategic cropping land, is a finite resource that must be conserved and managed for the longer term. In the latest planning document, they have agreed as a general aim, the exercise of planning and approval powers should be used to protect such land from those developments that lead to its permanent alienation or diminished productivity.

I believe all farming land is valuable for food production (food security) in the future, as populations grow and nutritional requirements increase. We should be aiming to develop a best practice management for all farming and grazing land and ensuring that any mining is regenerative, before being approved or started. According to reports, the agriculture and agri-food industries generated $22.7 billion in to the Queensland economy in 2006-07 and employed nearly 273,000 Queenslanders, while the resource sector also contributed $26.3 billion to the Queensland economy including $1.3 billion in royalties used by the state to fund essential services. That makes our two industries just about equal to the economy and so should have equal input into policy about the future.

However, it has taken a long haul for organisations such as Future Food Queensland to get policy established. The latest comments about "Strategic Cropping Land" are focussing on the best of the best, a total of only 4% of agricultural land in Queensland. At last, the Queensland Government has drawn up maps, called Trigger Maps, which identify 4 per cent of the state as having the potential to be declared Strategic Cropping Land, from the Darling Downs, through Central Queensland and into the Far North. This would mean resource extraction activity which would permanently alienate the land would be prohibited, but operations such as coal seam gas activity may be accommodated.

This brings up two questions:

- What is the basis for choosing the prime land?

What is the guarantee for the remaining 96% of land in the future? This is especially important with the term "Permanently alienate the land" being used. Is it simply expected that all the approved land will be low productivity after extraction. If so, who is allowing for even more reduced productivity in the future. Has the Queensland Government established a plan to have reduced productivity from farming and grazing enterprises in the future?

And yes, climate has a big bearing on production, as the soil nutritional balance dictates the difference between achieving a high or low potential production in any given season. Two paddocks side by side can have two different yields with the same crop, simply due to soil balance. Prime land in our minds is land which has an ideal Calcium to Magnesium ratio, high cation exchange capacity, high clay content, high macro nutrient availability, low sodium and many other measurable factors. However, many soil tests do not show the information required to measure an ideal soil. Many of the soils (some cropping and some grazing) which are not ideal soils certainly have the capacity to be more productive if well managed. In the past few years, biological agronomist, Bart Davidson (Bio-Nutrient Solutions), Moree has been assisting many growers and graziers to better understand the limitations of their soils and the crops being grown on various soils. More than 100 farmers and graziers have attended training workshops and field days throughout Queensland and New South Wales in recent months. Bart is keen to work with the innovators in the industry to help train cutting edge science which is not being used by conventional agronomists.

Bart Davidson will be running two day "Soil and Plant Nutrition" workshops at Goondiwindi on 25th and 26th November to explore this and many other issues. *For more information, contact 0749 383919 and 0438361100 or Mick on 0438 395255.*

What's on

Soil and Plant Nutrition Workshops
25th & 26th November— Goondiwindi

Technology of Growing Grass Workshops
25th & 26th October— Hughenden
27th & 28th October—Rockhampton
29th & 30th October—Mt Surprise
11th & 12th November —Bundaberg
9th & 10th November—Maryborough
2nd & 3rd December— Emerald
15th & 16th December— Goondiwindi

Blackall Climate Change Forum— with Peter Andrews and Dr Maarten Stapper
3rd November - Blackall

Rotational Grazing Field Day
25th November — Albeni, Springsure