



Organics in Canterbury

Issue No 26: July, 2004

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This newsletter is published by the Canterbury Commercial Organics Group, in association with Heinz Watties, MAF SFF Central Canterbury Organic Growers Discussion Group, Canterbury Organics and the Biological Husbandry Unit, Lincoln University.

www.organics.org.nz/ccog/ccog.html

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Articles, letters to the editor and advertisements are welcome.

Risk Management Workshop for Organic Farmers

Organic Farmers and Growers are invited to register for a two part Risk Management Workshop to be presented by Jon Manhire and Sue Cumberworth of The AgriBusiness Group.

Part 1 - Thursday 29 July

Part 2 - Monday 2 August

Time: 9.45 am coffee, 10.00am to 2.00pm workshop including lunch

Venue: at Lincoln, to be advised

Fee: \$35.00 per property for the 2 workshops, lunches and teas provided

The aim of the workshops is to upskill participants so their businesses can become more resilient and sustainable financially. The process will be for participants to improve their knowledge and skills in risk management and to then develop and apply new techniques so they can better monitor and manage their key risk areas and achieve improved results.

Part 1 will introduce and explore the subject of Risk Management. At the workshop farmers will commence a process to identify the key risk areas in their own business.

Home Play - between workshops farmers will take time at home to consider and complete exercises on risk management as it applies to their own business.

Part 2 will support farmers to develop individual and joint monitoring programmes and action plans to better understand and manage their risks.

These workshops are the first activity of a three year project to assist organic farmers and growers to better manage their farming business risks and in so doing become more sustainable. The project, which is funded by MAF Sustainable Farming Fund, Heinz Watties and FAR (Foundation for Arable Research) will include workshops, on-farm monitoring, extension and networking. Please also pass this invitation on to (PTO)





farmers outside Canterbury who may be interested.

Registration for the workshops is essential by contacting Sue Cumberworth (Please note Sue's change of phone and fax numbers and address. Mobile number and email remain the same.)

Phone/Fax 03 329.6456
Mobile 025 628 6110
Email sue@agribusinessgroup.com
Postal 43 Gerkins Road, RD 2, Christchurch

WE WOULD LIKE EARLY EXPRESSIONS OF INTEREST PLEASE **SO WE CAN CONFIRM THE VENUE AND CATERING**

Enquiries: Sue Cumberworth
The AgriBusiness Group
43 Gerkins Road, RD 2, Christchurch

Phone & Fax: 03 329 6456
Mobile: 025 628 6110
Email: sue@agribusinessgroup.com
Web: www.agribusinessgroup.com

Part Time Organic Horticulture Courses at CPIT Seven Oaks

Composting for Free

4 Hrs, Starts: 11 Sep, 6 Nov. Fee: FREE

On completion of this workshop students will have attained a basic level of skill necessary to establish a compost heap and worm compost on their own property.

Earth & Straw Building Workshop

2 Days, Starts: 30 Oct 04 Fee: FREE

This course provides students with an introduction to working with the alternative building materials of straw and earth. Students will learn to select suitable materials and create simple walls using earth blocks or straw bales and identify the most important building design features necessary for successful earth or straw bale construction.

Effective Microorganisms for Home, Garden and Farm

4 Hours, Starts: 24 Jul 04, 6 Nov 04 Fee: FREE

Introduces students to the principles and practice of using beneficial effective microorganisms or EM cultures to improve soil health and the quality and yield of crops.

Native Plants Workshop

8 Hours, Starts: 5 Oct 04 Fee: FREE

Identify a range of native plants growing in Canterbury (field visit) and identify native habitats.

Organic Horticulture

10 Weeks, Starts: 6 Oct 04 Fee: FREE

This course will enable students to grow plants in an environmentally friendly and sustainable way without the aid of pesticides or chemical fertilisers.

Permaculture Design

12 Hours, Starts: 27 Oct 04, Fee: FREE

Permaculture (permanent agriculture) uses ecology as the basis for designing efficient, sustainable systems that produce food, fibre, energy and wildlife.

Pruning Workshop

5 Hrs, Starts 11 Sep 04, Fee: FREE

On completion students will have attained a basic level of skill necessary to prune a range of fruit trees and landscape plants.

Viticulture

20 Hours, starts: 4 Oct 04, Fee: FREE

The principles and practices associated with grape production with topics ranging from vineyard establishment to harvesting.

Wind, Water, Earth & Sun – Sustainable Living Using Alternative Technologies Seminar

6.5 Hours, Starts: 16 Oct 04, Fee: FREE

Topics covered include: energy efficient buildings, solar cells, wind generation, alternative building materials and recovered building materials.

Certificate in Certified Organic Production

The programme is delivered by distance learning so you can study from anywhere in NZ. Contact is maintained via email, an 0800 number, regional mentors and student networks.

Topics covered include principles of organic production, soil, composting and green manuring, rotations, weed and pest management. Develop production and certification plans and learn about the basics of organic animal husbandry.

For more information about any of these courses, please contact CPIT:



Ph: 0800 24 24 76 or 03-940 8074
Email: info@cpit.ac.nz www.cpit.ac.nz

Calendar of Events

15, 17 July BHU workshop, Lincoln University
Soil Management and Fertiliser Use: Choices and planning for the next season

29 July Risk Management Workshop (see notice front page)

31 July BHU Working bee (details below)

3 Aug Risk Management Workshop (see notice front page)

12, 14 August BHU workshop
Pruning and Orchard Design - healthy fruit, fit arms

16-17 August Holistic Management Conference, Lincoln University (more details in Notices, page 10)

16, 18 September BHU workshop
Propagation - including options for working with seed (and saving seed)

14, 16 October BHU workshop
Rotation design - design the system right to avoid weed, pest and disease issues and improve the soil)

28, 30 October BHU workshop
Effective Microorganisms (EM) Workshop on using EM for kitchen bokashi, composting and fermentation. See applications on plant health and soil fertility.

11, 13 November BHU workshop
Summer Propagation - plants for "free" including large-scale methods.

News from the BHU

1)The BHU is starting up "Friends of the BHU" for people who want to be actively involved in BHU goings on. Phone Tim, Don or Ivan at the BHU on 3253684 or email thebhu@quicksilver.net.nz to be on our Friends emailing list. The next working bee is...
Friends of the BHU Working Bee, 31 July Saturday: Planting out our new entrance. Constructing our new worm farm. Planting around the visitor area and forage harvesting area (trees

supplied by Trees for Canterbury). Planting out cow parsley into the further reaches of the BHU. Mulching - some material provided by Christchurch City Council. Starts at 10am - goes on to 4pm - bring lunch and there will be a guided tour of model systems and experiments just after lunch. Spades provided, bring forks, rakes and boots.

Working Bee Directions: Enter in Gate 2 of Lincoln University, follow signs up Farm Road, into the Horticulture Research Area and down to the BHU. Park as indicated.

2) BHU Workshops - see list under Calendar of Events

How Much: Fee \$10 per family, Bring own lunch. No need to book.

Where: Lincoln University Horticulture Teaching Laboratory. Enter Lincoln University through Gate 2. Keep going down Calder Drive and turn right into Farm Road. Drive just past the nursery and a sign will indicate the Horticulture Teaching Laboratory (in the building just next to the Nursery). Signposts will be up. Running 10am to 2pm on Thursdays and Saturdays.

BHU Contact details: Tim Jenkins, BHU Manager, Phone 3253684 (Lincoln Univ extn 7684), www.bhu.co.nz. email thebhu@quicksilver.net.nz

News From Canterbury Organic (OFNZ Canterbury & Nelson Bays) - July 2004

The third Annual General Meeting of Canterbury Organic Inc. was held on 24th June, attended by a small group of dedicated committee and others. Never mind, in Jared White's talk to the meeting he advised that one element of success in organics is a focus on quality not quantity! We were delighted to have both auditors for OFNZ Canterbury and Nelson Bays with us at the meeting and enjoyed the opportunity to hear their insights onto the certification rules and processes. A report on progress of the OrganicFarmNZ scheme nationally made reference to the recent award of a grant from Trade and Enterprise NZ to continue development of the scheme. The National Committee (NCC) are using the grant to update documentation (including standards based on IFOAM's) and create training courses and manuals. The survey of national membership for the grant application shows that 115



members have been certified and membership is expected to double during the next year, mainly by growth in new and developing regions.

A few changes were made to the committee membership at the AGM – Matt Morris retired from his position as representative to the NCC (to be replaced by Scott Titheridge) and Jackie Maxwell and Hugh Mingard swapped roles (Hugh is now the Chairperson and Jackie the Treasurer). No change to the focus of the committee, which continues to be to provide an affordable certification scheme for small to medium sized producers either within peer groups (“Pods”) or as individuals.

We are looking forward to a renewed, positive relationship with Bio-Gro, following recent changes in their management. Bio-Gro announced plans at their own recent AGM to develop closer links with OFNZ to allow growers to migrate between the two schemes as their scale of production and/or markets change. In the immediate future, a number of Bio-Gro’s smaller scale growers are considering moving to OFNZ certification following the removal of Bio-Gro’s lowest level of fees.

A survey of potential new producer membership was sent out recently. This had several objectives:

- to update our database, which covers a wide variety of contacts made over more than three years
- to find out how many of our contacts are considering certification in the future
- and to find out what, if any, factors are putting off new applications.

There are still a large number of replies yet to be received. A big thank you to those who have already sent them back and especially to those who have made a donation or joined as Supporter Members. If you have one sitting in your “to-do” pile, please try to dig it out, it really should only take a minute to complete! So far the majority of replies indicate a continuing interest in the scheme, but a variety of reasons for not applying at present – most commonly either lack of knowledge of organic practices or no current crop/property planning at an early stage. To my surprise, “daunted by paperwork” has not been a common explanation! Canterbury is well provided in opportunities to learn about organics, notably at the BHU’s workshops and courses at CPIT; and of course participating in an OFNZ peer group can be an excellent way to learn from others. These are encouraging signs for the future growth of the scheme.

Hugh Mingard, Administrator, OFNZ (Canterbury and Nelson Bays Regions), c/o Ngahuru, Ahuriri Road, RD2 Christchurch

Tel: 03 329 6569, Fax: 03 329 6568
Email: corganic@organics.org.nz

Weed management in organic crops Final Report

This research was carried out by Dr. Farhad Dastgheib, IWM Consultancy, who welcomes comments and queries about the project or other weed management issues. His contact numbers are: 03-325 2132, Mobile: 021-1549317, Email: farhad@inet.net.nz

The main method of weed control in organic arable crops during the growing season is mechanical weeding mostly performed with spring-tine harrows, also known as tine weeder. For farmers to make a better judgement on timing and frequency of tine weeding, information on its impact on weeds and crops is needed.

In the past three years, field trials were conducted in organic wheat and pea crops in Central Canterbury to compare different times and numbers of tine weeding. The results from the first two years were reported in the previous issues of this newsletter, latest results from experiments in 2003-04 and a summary is given here.

TINE WEEDING IN ORGANIC WHEAT

The results of three years of study showed that early passes of tine weeding control weeds better but also cause more crop damage. As an average, early post-emergence tine weeding (at 2-3 leaf stage) caused between 12 to 18% mortality in wheat plants, while tine weeding at 5-leaf stage showed only 5% crop mortality. To compensate for the loss, higher sowing rate than conventional crops should be considered. However, a good wheat crop is able to tolerate some loss without yield penalty.

In the Rakaia trial in 2003, pre-emergence tine weeding gave 53% reduction in weed density as measured early in the season (Table 1). However, new flushes of weeds appeared in these plots and there was no difference between this treatment and the control towards the end of the season. When pre-emergence tine weeding was followed by an early post tine weeding at the 3-leaf stage, the low weed density was maintained throughout the season. This treatment also gave the highest reduction (93%) in weed dry matter (DM). Late post-emergence weeding on its own did not control large weeds, but following a pre-emergence or early post tine, it had some effect as the weeds were smaller.



Table 1: Effect of tine weeding treatments on weed density (No. /m²) during the season in Rakaia (2003) and dry matter (DM) measured on 3/11/03.

Treatment	Date of tine	29/08	6/10	16/10	Weed DM (g/m ²)
Nil		136	83	97	52.4
Pre	17/06	64	68	92	7.25
Early post	29/08	--	51	84	13.3
Late post	6/10	--	--	88	23.1
Pre+Early		--	43	46	3.5
Pre+Late		--	--	56	9.8
Early+Late		--	--	67	21.2
LSD _{0.05}		49.4	23.5	35.9	15.4

Grain yield data from four trials are presented in Table 2. Grain yield in Dunsandel was extremely low due to poor establishment of the crop and invasion of perennial weeds later in the season. The site in Aylesbury was rainfed and serious drought conditions in the summer of 2003 resulted in low yields. Wheat grain yield did not show any significant difference between treatments in any of these trials. This is mainly due to excellent ability of wheat to compete with annual weeds once the canopy closure starts. Nevertheless, a statistically non-significant increase of 1.7 T/ha in grain yield achieved in Rakaia in 2003, by two passes of tine weeding at pre-emergence + early post indicates a promising treatment. It is understood that apart from yield increase, one of grower's goals in weed control is preventing weed seed build up in the soil. In most cases it can be recommended to avoid more than two passes of tine and tine weeding at late stage of crop growth.

Table 2: Effect of tine weeding treatments on final grain yield in four experiments over three seasons.

Tine weeding	Grain Yield T/ha			
	Rakaia 01	Dunsandel 02	Aylesbury 03	Rakaia 03
Nil	4.23	1.41	2.45	5.25
Pre-emerg	4.39	--	--	5.87
Early post	4.49	1.59	2.85	5.42
Late post	4.27	1.27	2.55	5.54
Pre + Early	--	--	--	6.99

Pre + Late	4.36	--	--	6.48
Early + Late	--	1.83	2.51	4.83
LSD _{0.05}	ns	ns	ns	ns

SUMMARY

- Tine weeding at the right time can reduce weed numbers, but it does not necessarily result in grain yield increase.
- The best time for tine weeding wheat in most situations is pre-emergence followed by a post-emergence pass at 2- or 3-leaf stage depending on weed presence.
- Tine weeding at or after the 5-leaf stage is unlikely to be helpful.
- Good farming practices to boost crop growth is very important in suppressing weeds.
- Tine weeding can result in crop loss. Higher sowing rates than conventional crops are needed to achieve a good population.

EFFECT OF TINE WEEDING IN ORGANIC PEAS

In 2001, weed density at the Rakaia and Hororata sites were similar (370 plants/m²), while the Lincoln site had approximately 180 weeds/m². Pooled results from the three trials in 2001 are presented in Table 3. A single tine weeding at early post-emergence (peas at 2-leaf stage) was the most successful treatment in reducing weed density across the three farms and gave more than 70% reduction in weed numbers. All tine weeding treatments significantly increased pea yield with the highest increase in the pre-emergence tine weeding. Both trials in 2002 showed that the best treatment was two passes of tine, pre-emergence + early post at 3-leaf stage of the crop. Moreover, late post-emergence weeding at 5-leaf stage was not an effective treatment.

TABLE 3: Reduction in weed density (%) and average pea yield (T/ha) for the tine weeding treatments. Values are the mean of the three sites in 2001.

Tine weeding	% weed control ¹	Pea yield
Nil	0.0	4.19
Pre-emergence	40.2	6.47
Early post	70.5	5.89
Late post	53.2	6.10
Pre + Late	58.3	5.45
LSD _{0.05}	15.4	1.56

¹Weed control percentages are based on reductions in weed density relative to the nil treatment.



Southbridge in 2003

A more detailed experiment was conducted in 2003 to find the optimum time for early post-emergence tine weeding. Average pea population in the control plots was 118 plants/m². Tine weeding pre-emergence or early post-emergence at the 2-leaf stage did not affect the number of pea plants compared to the control. Post-emergence tine weeding at the 3-leaf stage caused a significant reduction in pea population whether alone (77 plants/m²) or following a pre-emergence or early post-emergence tine (73 plants/m²). Late post-emergence tine at the 5-leaf stage caused a small reduction in pea population (88 plants/m²), but following a pre-emergence tine weeding, this treatment caused a significant reduction (82 plants/m²).

One pass of tine weeding pre-emergence caused a significant reduction of 57% in weed density (Table 4) while post-emergence tine at the 2-leaf stage gave 91% reduction in weed numbers. When this treatment followed a pre-emergence tine, the reduction in weed density rose to 95%. Post-emergence tine at 3- and 5-leaf stage caused weed reductions of 74% and 72%, respectively. The greatest reduction in weed density (98%) was achieved by two passes of tine at 2- and 3-leaf stage.

TABLE 4: Weed density (no./m²) in tine weeding treatments at different assessment dates in the pea experiment at Southbridge in 2003.

Tine weeding	Date of tine	5/12	12/12	18/12	29/12
Nil		1115	905	912	912
Pre-emergence	26/11	482	472	456	456
2-leaf	5/12	--	85	113	113
3-leaf	12/12	--	--	237	245
2+3-leaf	--	--	--	16	38
5-leaf	18/12	--	--	--	258
Pre+2-leaf	--	--	42	75	85
Pre+3-leaf	--	--	--	170	117
Pre+5-leaf	--	--	--	--	196
LSD _{0.05}		234.7	167.9	162.5	150.8

Measurements at the end of the season showed that all tine weeding treatments caused significant reductions in weed DM (Table 5). The greatest reductions in weed DM were obtained by two passes of tine at 2- and 3-leaf stage (96%) or two passes of tine at pre-emergence and 2-leaf stage (90%). One pass of tine at 2-leaf stage caused a significant reduction of 80% in weed DM.

Most tine weeding treatments gave significant increases in pea yield. The greatest yield increase of 1.6 T/ha (95%) was obtained in plots which had a pre-emergence and a post-emergence tine weeding at 2-leaf stage (Table 5). Pea yield was not significantly different from the control in treatments with one pass of tine at 3- or 5-leaf stage or two passes at pre-emergence and 3-leaf stage. Tenderometre readings (TR values) show the maturity of peas and ranged from 95 to 120 with no significant difference between treatments.

TABLE 5: Weed dry matter (DM) at harvest and pea yield in tine weeding treatments at Southbridge in 2003.

Tine weeding	Weed DM g/ m ²	Pea yield T/ha
Nil	311	1.692
Pre-emergence	153	2.675
2-leaf	62	3.195
3-leaf	140	2.006
2+3-leaf	13	3.161
5-leaf	130	1.952
Pre+2-leaf	31	3.293
Pre+3-leaf	93	2.431
Pre+5-leaf	82	3.001
LSD (P=0.05)	73.7	0.893

SUMMARY

- The best treatments, both for reduction in weed biomass and improving pea yield, were two passes of tine either at pre-emergence and 2-leaf stage or at both 2- and 3-leaf stage of the crop. If for soil conservation or economic reasons one pass only is preferred, a post-emergence weeding should be done as early as peas can withstand the implement, i.e. 2-leaf stage.
- Late post-emergence tine weeding (5-leaf stage) is not advantageous. This treatment on its own does not control weeds before the critical period of weed competition in peas. Following earlier weeding operations, this treatment may be redundant.
- Passing through a crop older than 5-leaf stage may cause damage to some pea cultivars. Results indicate that semi-leafless cultivars may be more sensitive to pulling by tine than conventional cultivars.
- Uniform planting is critical in producing a pea crop with as few gaps as possible to minimise opportunities for weed growth.

ACKNOWLEDGEMENTS

The study was jointly funded by AGMARDT, Foundation for Arable Research (FAR) and Heinz Watties. Philip Rushton, Andrew Brooker, John



Christey, John and Kelvin Hicks offered fields, machinery and help for running the experiments. Their contributions were crucial to the progress of this project.

A Few Words on Potassium

Tim Jenkins Biological Husbandry Unit, Lincoln University

Potassium is important for water relations in plants and animals. Indirectly it is therefore vital for a wide range of functions from stem rigidity to protein formation. It can be taken up in luxury amounts as it easily passes into the root but ideally it should be in balance with the other base cations, calcium, magnesium and sodium.

Addressing potassium requirements

Although the total potassium content in a New Zealand soil would often be in excess of 30,000 tonnes per hectare in the top 75 mm, most of this is in a very fixed mineral form. In extensive livestock production many farms get by without maintenance application of potassium. But in dairying, cropping and hay/silage paddocks, potassium is more commonly limiting.

Potassium levels can be monitored in soil tests and in clover-only foliage tests. White clover is more prone to potassium deficiency than pasture grasses and one visual sign of potassium is where there are obvious urine patches in a pasture with clover only growing well within the urine patches. (Urine patches that are mainly grass with clover growing alright outside the patches are more a sign of nitrogen deficiency.) Another potential visual sign of deficiency is a general lack of pasture growth and increasing levels of daisy (though this is also a sign of winter overgrazing).

The main problem seen with application of this potassium is probably its effect on livestock metabolism and performance. Potassium application should not be made to areas that are just about to be grazed. One approach is to apply it to hay/silage areas after shutting up to ensure good growth and a spreading around of potassium when the hay/silage paddocks are rotated or through feeding out on other paddocks. Salt (sodium chloride) can also be added to the potassium to reduce some of its potential negative effects on stock performance.

Forms of potassium

(Note: K= potassium, Mg = magnesium, S= sulphur)

The main form of potassium applied in New Zealand is muriate or potassium chloride (45-50% K). Many

crop roots are sensitive to the excess chloride added with this fertiliser – species include blueberry, corn (maize and sweetcorn), capsicum, cucumber, potato, strawberry and tomato. And the chloride levels have a negative effect on soil life and soil acidity if applied in excess (can generally limit applications to 60kg/ha or less at one time).

Potassium sulphate (40-42% K, 17-18% S) is a more expensive form of potassium although the application of sulphur at the same time goes a small way towards compensating for that expense. This form of potassium has the advantage of being safe for horticultural crops and more beneficial for soil life.

A new fertiliser type available in New Zealand is patenkali (25% K, 6% Mg, 17% S) which contains potassium mainly in the sulphate (fast available, root and soil safe) form and also has the advantage of adding magnesium.

Other forms of potassium available to a lesser extent are rock sources such as potassic feldspar. These forms are slow release and have a low potassium percentage and are generally confined to organic type operations.

Organically allowable inputs

A major change has happened in Bio-Gro certification with a decision to allow only mined forms of potassium fertiliser and not the manufactured potassium sulphate. Mined potassium sulphate is pretty much unavailable in New Zealand and Bio-Gro certified farmers are now allowed to use mined potassium chloride. Its use (along with the use of patenkali and other fast available salt forms of potassium) is subject to permission being granted, a justifiable reason (e.g. soil test) being given for its use and restrictions on the amount used.

While this removes the past issue of organic farmers being unable to apply mined potassium chloride while being able to apply potassium sulphate that had been chemically manufactured from potassium chloride, it does introduce a new restricted fertiliser to many organic farms that can be detrimental to soil and root life (and stock health) if used in excess and/or at the wrong time. It should be used in moderation and with care.

A Question of Balance

Tim Jenkins Biological Husbandry Unit, Lincoln University



As we anticipate spring we might look forward to the lengthening days and the new growing season ahead. But spare a thought for poor old magnesium. This article looks at the balance between magnesium and other elements with which it competes or has synergies. The first section on background theory is of academic interest and can be leapfrogged but avoid the practical section at your peril.

Background theory

Many alternative agriculture consultants and practitioners worldwide adhere to an idea that there is an ideal balance between calcium, magnesium, potassium and sodium. These elements are base cations (base being the opposite of acid and cation meaning positively charged).

The positive charges on these elements attract them to the cation exchange sites on clay minerals and humus. But there are other cation elements attracted to these sites and they are acid ones, mostly hydrogen and aluminium. The pH of the soil, contrary to many people's impression, is not just to do with whether there is sufficient calcium or lime present, it is the overall balance of cations that are present. In fact many Canterbury soils have quite high potassium levels and therefore have a reasonable natural soil pH (e.g. 6.2) even though calcium availability may be suboptimal for soil biological activity and clover nitrogen fixation.

The idea that there is some ideal balance stems largely from the teachings of Albrecht, a US soil scientist from earlier on last century who extensively studied the importance of cation balance. There is much talk about base saturation percentages (i.e. the percentage that each cation makes up of total active cations present in the soil or essentially of the total amount of cation exchange sites present in the soil). And there is the belief that the uptake and effect of each of these base cations is influenced by its relative level. This runs contrary to the old school belief in **nutrient sufficiency**. This taught that you simply needed sufficient levels of each element including calcium, magnesium and potassium for there to be plant growth unhindered by nutrient levels; the idea was that balance doesn't matter.

Nowadays most New Zealand soil testing laboratories (and the several US and Australian ones available) will measure Base Saturation ratios though calibration between any two laboratories will have its difficulties. Many New Zealand labs will measure at a pH of 7 rather than at field pH which has advantages and disadvantages. The disadvantages are that the measurements do not reflect real field levels of availability and that some soils have a very variable

number of cation exchange sites depending on pH (most common in volcanic soils) – and the results will look different compared to US lab findings. The advantages are less effect of seasonal pH fluctuations on the soil test result and more consistent testing if liming is planned. In any event the most important thing is to have indicative target levels specific to the laboratory and its methods and calibrations.

Many soil scientists would argue that there is insufficient evidence for the base saturation approach. In many ways they have a point. It is hard to find any convincing non-anecdotal evidence that there is an ideal balance of percentages. It is however clear that the old nutrient sufficiency approach is actually **insufficient** to explain what is going on in our soils, our plants and our animals.

It is now long proven that the balance between these base cation elements has a major effect on uptake of each of the elements. The problem is this is a complex relationship and I suggest that the balance found should be treated as an indication of possible high or low levels (and general imbalances) and that we don't go looking for magic numbers.

Although calcium and magnesium tend to behave something like what the original base saturation percentage theory would suggest, potassium itself is less affected by the whole balance of cations. Potassium is taken up by all manner of roots anytime water is taken up, this is called passive uptake. Calcium and magnesium are mostly uptaken by feeder roots and the process is active and affected by competition.

Other complications are that the level of some other elements can influence relative uptake and utilisation of the base cations. The main example is boron where adequate to good levels of boron will assist the uptake of calcium and magnesium even in the face of problem levels of high potassium.

There is no final answer on the base saturation approach. There are, however, definite benefits in looking at these percentages as indications and in accepting the concept that balances between elements and not just a sufficiency approach is necessary for strategic and effective approaches to soil fertility.

In the practical section, we will look at magnesium deficiency in Canterbury: What causes it and how it may be overcome.



The practical bit

Most Canterbury soils have plenty of magnesium if you look at a soil test level in its own right. But potassium all too often causes problems with the availability and uptake of this vital element. Without a balanced level of magnesium, plants will not grow well and livestock will have ill thrift, metabolic problems, dirty back ends and even go "loopy" (e.g. walk into fences). Magnesium deficiency is more common than most people think. For those without a farm, recognising magnesium deficiency is still only as far away as seeing the yellowness on your lemon tree leaves when the veins are still green. On a pine shelterbelt it's the golden yellow colouring of last seasons growing tips.

We should all be watching out for seasonal deficiencies of magnesium which will largely show up in the spring. Magnesium availability will remain low with low soil temperatures but potassium is more highly available and outcompetes the magnesium. With the pseudo spring we've just gone through, there has been some evidence of a magnesium shortage in growing pasture and a few crops. Magnesium fertiliser could be a critical part of your fertiliser strategy in many parts of Canterbury – a spring application of fast available magnesium is usually the most efficient approach as it is a seasonal problem. Calcined magnesite is allowable and can be applied at 20 to 40 kg per hectare; kieserite at roughly double the level is also beneficial. Dolomite might work in the long term if large amounts are applied.

In a pasture, addressing the magnesium deficiency will largely help the clover, which pushes the rest of the pasture along. It may be the missing link also in fixing seasonal chronic animal performance problems. It is a common issue in the performance of tree crops and many vegetable crops and can be exacerbated by the regular use of compost or chicken manure, both of which tend to elevate potassium levels. Here we might consider incorporating magnesium fertiliser in the composting procedure at a rate to result in applying 40 kg/ha of calcined magnesite equivalent. Or it may be a case of reducing the compost application rate to something a bit more reasonable.

Notices

FAMILY BARNDANCE

Steiner School Hall, Ombersley Terrace, Opawa, 8.00 - 11.30 p.m. Saturday 31 July. Music and calling by Trevor Bycroft and the Barnstormers, and other entertainment. Adult entry \$10, Child \$5,

Family (or adult double) \$18 plus bring a rug or blanket for your prickly strawbale-seat and a plate of food for the shared supper. It'll be thirsty action so you might also like to bring your own drinking vessel and beverage (it must be non-alcoholic in this venue).

GARDENZ 2004

There is a proposal circulating and gathering support to have a significant organic presence at this year's Gardenz show in Hagley Park, October 22-25. Hohepa will have an allotment garden there and so far there's support for a surrounding larger display from Kid's Edible Gardens, the permaculture / alternative technology group, the polytech (Seven Oaks) and Soil and Health Association. Good Gardeners, the BHU, BioDynamic Association, BioGro, Canterbury Organic and the various community gardens and their parent body are being approached. This is an opportunity to wave the organic flag in front of a large number of consumers and potential practitioners and producers. More than PR and publicity, it is also an opportunity to sell produce, products and services. By coordinating and/or combining our contributions we can have a more impressive and effective presence for less cost and effort. If there are any other groupings or individuals who might be interested in participating they should contact Rex Verity, 377 8566 (afternoons), 981 4544 (evenings).

Tree Crops Field Days

Sunday 27 June: The farm of Nigel and Jenny Fraser, Greta Valley, which won the Ballance Habitat Improvement Farm Environment Award. The contribution of trees to the farm environment.

Contact person: Barbara Nicholas, ph. 377-1214

Time: 1pm **Location:** The farm of Nigel and Jenny Fraser, Greta Valley. Turn off State Highway 1 onto Motunau Rd, then left onto Glendhu Rd. From this intersection, it is a further 11km. From Glendhu Road, turn right onto Happy Valley Rd, then left onto the no-exit road. Take a driveway on your left that has one silver, and two green, letterboxes. The 517 ha farm is a mixed cattle and sheep property. Gully planting, woodlots, shelter and fenced-off native bush are integrated into the management of this successful farm.

Sunday 25 July: Hazelnut Growers of New Zealand (HGNZ) AGM

Contact person: Bill Ellery, ph. 03-312-6730
2pm at JOHN KNOX HALL, corner High & King



Streets, Rangiora.

31 July – 1 August: WEEKEND CELEBRATION of 30th Anniversary of first meeting National Tree Crops Association Advisory Committee. For a programme contact: *Mike Caldwell, ph. 03-318-1373.*
m.m.caldwell@xtra.co.nz.

Holistic management conference

August 16th and 17th 2004

Entrepreneurial Farming and the Environment

Being **GREEN** and in the **BLACK**

Farming families and businesses interested in exploring ideas involving entrepreneurship and regenerating the land are invited to join Holistic Management practitioners at their annual gathering at Lincoln University on August 16th and 17th. As the wealth of farming families and rural businesses is dependant on the land, the purpose of the two day gathering is to bring together speakers to show how relationships, profitability, and nature can be balanced together rather than at the expense of one another. Many Holistic Management® practitioners become more entrepreneurial as their operations work more closely with nature. Similarly, many others also aspire to this path and have done so using other thinking and techniques. So celebrate this unique opportunity, ignite your inspiration, and learn about how primary production is embracing the idea of being green and in the black.

Speakers include:

Barrie Ridler from GSL Technologies will be exploring avenues to low cost and low stress operations. Optimising profit rather than maximising income. Leaps in farm profitability come from changing the way we do business, not from incremental increases in efficiencies.

Ewan Campbell from Cambrian Meats will relate how grass raised meat with high omega 3 is creating a competitive edge in the market place. Linking human health to land regeneration. Moving from producer to entrepreneur requires some idea about marketing. Furthermore, there is increasing pressure from regional bodies and consumers for farming practices to change and reflect the capacity of the land rather than desires of industry.

David Musgrave from Aoraki Organic Farms will talk about his efforts to produce strong producer

networks to ensure a supply of linseed for Waihi Bush organic flaxseed oil.

Peter Gaul from Farm Right and the South Island Dairy Development Centre at Lincoln will be talking about his observations of entrepreneurial types from 20 years in the dairy industry. Developing the entrepreneurial spirit. The whereabouts of innovation and commitment to the business and the self belief to drive on despite challenging circumstances. Building a business takes time, commitment, and passion, often resulting in personal sacrifices.

Bruce Ward from Holistic Results, a global knowledge/ local solutions advocate, will give a run down on recent visits to North America, South Africa, and Australia about operations using Holistic Management. Hear about regenerating land, improving profits, and developing a greater sense of community in parts of the world where environmental issues have prominence because resource use is the primary point of conflict.

John King from Succession will explore how to frame decisions that balance financials with the farm and the family. With the increasing complexity of farming, how can farming families and businesses achieve simplicity, diversity, and flexibility in their operations so that they can explore entrepreneurial ideas that reflect their values, commitment, and level of risk?

The second day will involve a field trip to three local entrepreneurial businesses striving for triple bottom line success.

For further details on the conference and to register see www.succession.co.nz or contact John King 03 547.6347.

Advertising

Advertising rates are \$1 a line (8 words a line) up to a quarter page, \$25 per quarter page, \$50 half pg, \$90 page. Enquires to Mary, kem@xtra.co.nz, or phone 03 3029202.

Seed Growers Wanted

I am looking for growers who are willing to try organic seed production of culinary herbs, flower seed and vegetable seeds. Please contact Jack Bodger, CEO, Environmental Seed Producers, P.O. Box 2709, Lompoc, CA 93438 USA. www.espseeds.com
jbodger@espseeds.com
phone 805.735.8888 x105, fax 805.735.8798

For Sale

Organics in Canterbury Newsletter July 2004



For Sale - about 60 small bales good quality meadow hay from untreated pasture (affidavit available) in Tai Tapu area - \$4.50 + GST each.

Contact Hugh - 329 6569

Support the organics industry in Canterbury!

CCOG not only produces the "Organics in Canterbury" newsletter: our fundamental objective is to promote organics in Canterbury. We are a voluntary organisation that supports and liaises with organic researchers and promotes organics to the public at events such as the Small Farm Field Day. Current projects that CCOG is involved with include:

- research into the production of organic strawberry runners by HortResearch;
- research into weed management of arable crops by AGMARDT researcher Farhad Dastgeib;
- investigation into an organic processing facility.

The "Organics in Canterbury" newsletter reaches over 300 people and organisations across the spectrum of organic interests in Canterbury. This reduces duplication of effort in publicising events and keeps more people informed of what's happening in organics. So, please subscribe to the CCOG organisation so that support for organics can continue in 2004.

Subscription Form: GST# 69-458-645

First name _____ Last name _____

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Email. **Please print!** _____

CCOG has charitable status. Donations to CCOG do not attract GST and if over \$5.00 you can claim a tax rebate. For donations of \$5 or more a receipt will be sent if you require one.

Please tick the following, as appropriate:

- I wish to make a donation of \$10, \$20, \$30, \$50, \$_____ (amount of your choice).
- Please tick if you want a receipt
- I **DO NOT** wish to receive occasional forwarded email messages from third parties.
- My details are **NOT** to be released to third parties.

- Please make all cheques payable to the Canterbury Commercial Organics Group, and return with this form to: CCOG, C/- Rex Verity, PO Box 327, Christchurch.
- If you receive more than one copy of the newsletter please let us know.
- If you receive the newsletter by post and have email, please let us know your email address so we can save sending out a printed copy.
- Please visit the CCOG website for more information: www.organics.org.nz/ccog/ccog.html

Signature _____ If you are GST registered and require a receipt please make a photocopy of this completed form for your records.

Organics in Canterbury Newsletter July 2004



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Canterbury Commercial Organics Group - Newsletter

C/- Mary Ralston
Back Track
RD 12 Rakaia

If any of your details are incorrect please contact Mary at the return address.

Disclaimer. While every effort has been made to ensure that the information in this publication is accurate, the Organic Garden City Trust, its committees including the Canterbury Commercial Organics Group, and the members thereof, do not accept any responsibility or liability for error of fact, omission, interpretation or opinion which may be present, nor for the consequences of any decision based on this information.