

# Sustainable Update

SUMMER 05/06

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# Rapid Results at Keith

In a single season Peter Cook and son Michael have seen many exciting changes and subtle improvements on their 400 hectare cropping property "Bexley" near Keith, since they decided to adopt a biological farming program under LawrieCo guidance in 2005. The Cooks have farmed the property for over four generations. In recent years declining returns and higher levels of chemical inputs prompted concern that the level of production was not sustainable for their soil, nor profitable. Despite ongoing increases in fertiliser and chemical inputs, some paddocks had seen production decreasing. The personal health affects associated with farming are being questioned also.

Peter's initial introduction to biological farming was hearing Dr Maarten Stapper (CSIRO) speak on the topic at Tintinara in March 2005; this sparked his enthusiasm for learning new ways to improve farming techniques and take a less toxic approach. Many small changes have been implemented to integrate biological methods into their production, in order to improve soils and profit. Before farming decisions are now made, an important question is asked: **Does nature approve?** If there is a non toxic option, to farm practices, that solution is pursued as a preference.

Michael comments; 'this season we have used many products that we had not previously heard of. From digesting stubble with fungi to brewing microbes to foliar spray our crops, we have worked out the practical steps of handling products. It has not been difficult, but more enjoyable using biologically friendly products that lead to reduced chemical inputs.'

The Cook family noticed small and big improvements in many areas of their production in 2005, including



stock health, reduced herbicide applications, crop uniformity and screenings, stubble breakdown, snails and disease management.

**Stock Health:** 2005 was the first year that the Cook property marketed an entire drop of lambs with no tail enders. Livestock were maintained right through autumn (the toughest time of year especially with a late break) with supplementary feeding of: faba beans, grazing on cereal stubble treated with the Stubble Digestion Program and a humate based mineral lick ("Cookie's Lick"). Peter comments; "the stock maintained good health in this tough period, put on condition as well as rearing a lamb. Interestingly, the lick's were mobbed and sheep became agitated when it wasn't available." The Cooks received favourable comments from David Cox (Landmark stock agent) who commented; "they were the best lambs I had handled this year."

With ewes and lambs thriving, the Cooks decided not to drench or vaccinate, also a first time for the property and there were no deaths from pulpy kidney or stock health problems.

## HAPPY NEW YEAR!!! From LawrieCo

The team at LawrieCo hope you had an enjoyable and safe festive season and great start to 2006. The year of 2005 represented a ray of hope after a run of dry years with mostly average rainfalls and reasonable yields, albeit a late start .

In 2006 look out for the long awaited single product seed dressing VAM-Seed: which at least compares to the Four Pack in results, but surpasses in ease of application – no more mixing...

Taking on biological farming is new and exciting, but can also be daunting. Sharing the experiences of other biological farmers is a great way to gain confidence. Our page 1 and 2 article about the Cook family's journey over the past 10 months is a great read for those starting out in biological farming. The many improvements on their property over a short period are astounding; Peter had thought he "might see results within five years"!

Thank you to our customers for your ongoing support in 2005 and a special thanks to those willing to share their story in our newsletters. We hope you enjoy the Summer 05/06 Sustainable Update (in between fishing, swimming or just relaxing) and the hints and tips for biological farming in the year ahead.

Kind regards,  
Adrian Lawrie



LawrieCo

# Rapid Results at Keith... Continued

A few body strike lambs in the wet spring, were treated with a non-toxic recipe including Neem oil and Cloak Spray oil (see below). The lambs did not appear to suffer from shock as they do with organo phosphate dressing and there were no losses, also the operator is not handling toxic chemicals.

**Herbicide Spraying:** After following the Sustainable Herbicide guidelines with knockdown sprays, the Cooks comment "the spray did an excellent job and averaged a 33% reduction in chemical rate".

**Stubble Digest:** By seeding time, where the stubble digestion program was applied, Michael noted: "the majority of stubble had become brittle and easily broke up in machinery. We had one comparison paddock, where the stubble clumped in machinery. This paddock was sown to barley on barley stubble (not normal practice) and was the only crop that showed a nitrogen deficiency. It showed us an example of nitrogen tie up from stubble that had not broken down properly and how we can easily avoid it. A biological and nutrition foliar spray (see below) turned the deficiency around."

**Crop Quality:** The Cook's followed prescription Broadcast recommendations on their weakest cropping paddocks, applied the full Seeding Program including trace elements and foliar sprays (see below) to all crops. Early in the season, it was observed that paddocks that had become patchy in recent years, established evenly and uniformly. Peter also observes that "the wheat appears to be the best grown on this property for 8 years, while

Barley grew exceptionally well with average yield of 4-5 t/ha". The Cooks fertiliser cost per hectare for the season increased by 25% (including capital mineral costs), however

around the edge of the paddock not in the crop, and we have had no blocking issues." Snails and other pests are attracted by alcohol produced from anaerobic soil

applications of fungicide were applied, plants remained badly infected. With bad fungal infection lentils are graded down to feed quality at \$100/t from \$400/t for Grade 1 quality. The Cook's lentils in 2005 had the biological approach in the soil and two applications of foliar spray. Their lentils made Grade 1 quality. There was no fungus present and no fungicides were used. Peter also comments, "the lentils stayed upright while reaping, we had never seen that before. We were also told our lentils were the best received this season, for colour and lack of fungal disease."

**Soil Changes:** Generally the soil type on the Cook's property is a darkish loam over clay and limestone, which becomes hard and cracks in the summer. Already the soil has become softer and spongier and the Cook's have observed better water infiltration in the irrigated lucerne.

Peter concludes: "moving toward sustainable methods in 2005 was a breath of fresh air for all of us, not the least my wife Pam who has been taking some of our broadcast fertiliser and microbe and nutrient sprays for her garden, producing some of the best vegetables we have ever had. With straw and microbes the garden soil has improved rapidly. Since learning about biological farming from Dr Stapper and LawrieCo programs from Adrian, we have come a long way in a short time and are very pleased to have made a start. After working on this property for 44 years, the crops we grew in 2005 were the best we had ever seen."



Michael Cook: comparison barley plant left and biological barley plant right

**" The crops we grew in 2005 were the best we had ever seen. "**

- Peter Cook

with crop uniformity evident the extra cost, will more than return and the expectation is for soil fertility to improve in future years from the program.

**Snails:** The Cooks have observed there were very few snails in their crops this season. Peter comments, "in 2004 snails were through all the crops and caused blockages at harvest. This season they were only

conditions; these are common when incomplete degradation of plant residue occurs.

**Disease Management:** Peter reports: "in previous years the main problem with growing lentils has been the infection of fungal disease that is difficult to control." In the 2005 season fungus presented a huge problem for growers in the district. Even when up to five

## Cropping Foliar Spray

Urea (dissolved)	7 kg/ha
Phos-Life	2 L/ha
4/20 Microbes	30 L/ha
Wheat-Tech Triple Ten	2 L/ha
Molasses	1 L/ha
Soluble Fulvic Powder	120 g/ha

## Cookies Fly Strike Recipe

Neem Oil	150 ml
Cloak Spray Oil	450ml
Water	4.4L
(makes 5 litres)	

Process: trim fly struck area, paint on above mixture making sure to saturate the area.

# Waikerie Cropping Trial

In conjunction with Low Banks Ag Bureau Trial, at Allen Buckley's property, Waikerie 2005

## Site History

The 90 hectare paddock used for the trial has been continuously cropped for 10 years, rotations included wheat, oats, canola and peas. Frame wheat was grown in 2004 and again in 2005. Total rainfall recorded from April to October 2005 (growth period) was 207mm, with much of this falling later in the spring.

District practice was compared with LawrieCo biological programs for cropping, including Stubble Digestion, Seeding and Foliar programs. Herbicide treatments were the same over both plots.

## Control: District Practice

MAP 50kg/ha  
Fungicide applied 7 October 2005 to address stripe rust infection

## Comparison: LawrieCo Programs

### Stubble Digestion

Brewed onsite and applied with a boom spray at light stubble rates in March 2005

### Seeding Program

Down the Tube

MAP	41.25 kg/ha
Boron Humate Granules	5 kg/ha
Zinc Sulphate Granules	2.5 kg/ha
Copper Sulfate Granules	1.25 kg/ha

Seed Dressing

VAM-Seed	10 L/t of seed
Liquid Humus	2 L/t of seed
(Humus to buffer toxicity of pickle)	

## Foliar Program

Two foliar sprays were applied including nutrition, fulvic acid and beneficial biology, one standard and one specifically to address stripe rust infection. First spray was applied 20 August 2005, second applied 7 October 2005

## Results

**Root Growth:** Greater root growth was evident early in the biological plot. The VAM-Seed and down the tube inputs promoted early root vigour; compare the larger primary root systems of the LawrieCo plot as

against those of the conventional treatment (pictured). Good strong roots better cope with stressful environmental conditions (drought, frost, etc.).



Plants from control plot on left and biological plot on right - with early root vigour.



**Disease Management:** Stripe rust infection was controlled in both the control (using fungicide) and comparison (using biology and nutrition) plots in a susceptible variety of wheat, after infection had occurred.

**Yield:** Both plots averaged yield 1.35 t/ha, which was determined using a yield monitor, from equal size portions of each plot and excluded headlands etc... Other qualitative measurements have not yet been conducted on the grain.

James Butler

# Seeding Program Minimises Pests and Disease

Rowan Turner has been trying his hand at biological farming techniques for three years on his 800 hectare cropping and livestock property near Berry Bank Victoria.

In a paddock of oats in the 2005 season Rowan observed minimal impact from grubs and rust, without the application of conventional control measures.

The paddock had not received any biological treatments in the past, but in 2005 oats were sown with:

MAP	65 kg/ha
Soluble Humate Granules	4.5 kg/ha
Raw Brown sugar	3 kg/ha
Four Pack	10 L/t of seed

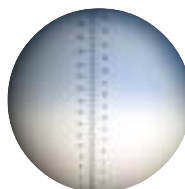
Normally Rowan would sow with MAP only at 100 kg/ha.

No other inputs were applied and the following results were observed:

**Disease management:** A small amount of stripe rust was evident, however extent of infection did not warrant control spray. Rowan comments: "other farmers spray for rust in the district in their wheat and it is now considered standard practice."

**Pests:** Other farmers nearby sprayed for grubs; however Rowan found grub numbers in his crop were very low and did not warrant a control method.

**Brix:** The brix picture was up to 18 through seed setting (ideally brix will be above 12 for good health and and response to pest and disease pressure)



Rowan Turner on the right in his paddock of oats and farm manager Alistar Clarke

**Yield:** The crop was late sown and yielded 2.9 t/ha.

Tim Watt

# Seeding 2006: Si



## Introducing VAM-Seed

Research, development and crop results in NSW, QLD, Vic and SA regarding VAM function in plant roots provides the background for the LawrieCo team decision to provide VAM-Seed single product seed dressing for 2006 plantings. Benefits include:

- One dressing at seeding, multiple profit at harvest
- Rapid emergence with nutrient and growth stimulants
- Specific bacteria accumulate nitrogen in root mass
- VAM access phosphorus and zinc
- VAM filaments extend nutrient access beyond roots
- VAM spores can carry over to improve soil bio fertility
- Seven day survival on seed after application
- Increase fertiliser efficiency; maintain yield with reduced fertiliser rate

### What is VAM-Seed?

VAM-Seed is a nutritional and biological seed dressing all-in-one. It was designed to establish VAM colonisation in crops economically and effectively, for stimulating root growth and seedling vigour. Produced in Australia as a stable microbial culture that includes microbials: VAM spores, Azotobacter for Nitrogen fixing and phosphorus solubilising, Trichoderma, Bacillus subtilis and Pseudomonas fluorescens for plant protection. Along with

supporting nutrients; phosphorus, calcium, potassium, zinc, over 70 trace elements, 17 amino acids and microbe foods including natural growth stimulants, auxins, cytokinins, indole acetic acid and gibberellins for root growth stimulation. This culture provides robust seed applied bacteria and fungi in high concentration for up to seven days survival on seed after application. VAM-Seed is suitable for ALL crops. When applied in cereals, it assists the plant to access phosphorus and accumulate nitrogen in the

root mass up until early-mid spring. VAM-Seed provides adequate nitrogen and nutrition for the crop to reach its potential as seasonal rainfall permits, without wasting winter rainfall and expense on excessive growth from high nitrogen fertilisation. Applying VAM-Seed at seeding initiates rebuilding a natural component of your soil, also benefiting following crops.

### Application

VAM-Seed is applied direct to the seed prior to sowing. Once applied the seed should be

sown within 7 days. Application rate between 600 - 800 ml/ha or 8 - 12 L/t of seed, depending on crop and seeding rate. Cost range will be \$7 - \$10 /ha. LawrieCo recommend to apply with 3-7 kg/ha of Soluble Humate Granules and a reduced rate of fertiliser, to gain full benefits.

### Ordering

VAM-Seed will only be supplied with orders placed pre-season, contact the office to place your order. Available in 20L, 200L, 1000L containers.

## What is VAM Fungi?

### VAM: Vesicular Arbuscular Mycorrhizal Fungi

Naturally occurring VAM fungi form a symbiotic association with plant roots. The hyphae explore the soil for moisture and nutrients – accessing 100-1000 times more soil volume than plant roots alone.

Beneficial soil fungi, including VAM are a casualty of our Industrial Agriculture methods that include repeated chemical applications. Research including the Better Soils program identified a decade ago that luxury levels of soluble P, as in our now typical fertiliser rates, do in fact suppress the activity and development of VAM, growing out of roots, seeking phosphorus, zinc and other nutrients.



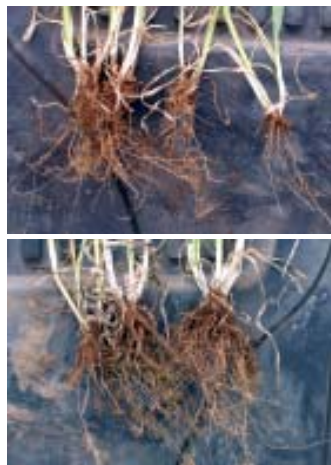
# Single Seed Dressing

## VAM-Seed in the Field

To ensure the benefits of applying VAM-Seed are at least those of Four Pack (detailed below), LawrieCo implemented on-farm trials throughout SA and Vic



Wheat trial Willaura Vic, plants on left from Four Pack trial plot, plants on right from VAM-Seed trial plot.



Wheat trial Pinnaroo SA, above plants from Four Pack trial plot, below plants from VAM-Seed plot.

The pictures taken above demonstrate the extra root growth evident where VAM-Seed was applied, compared to Four Pack seed dressing. Extra root growth enables plants to resist environmental stresses such as drought, frost, wind etc....

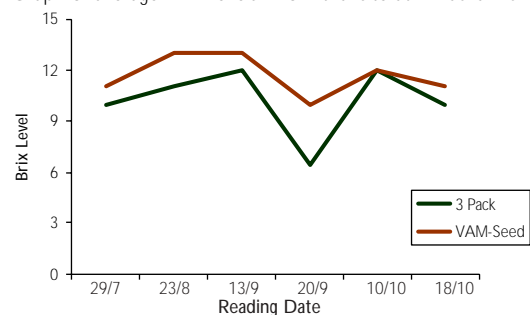
## Trial Findings

### VAM-Seed compared to Three or Four Pack:

Root Growth	Equivalent or more extensive
Colour	Similar or better
Germination time	Similar
Growth rate	Equivalent or earlier
Brix level	Averaged higher
Yield*	Averaged equivalent
Grain quality*	Less screenings

\*Further results for yield and grain quality are pending

Graph of average Brix Levels\* from trial site at Willaura Vic.



\*Brix levels are a simple on-farm guide to mineral & carbohydrate levels, also plant health and potential yield

## Past Success of Four Pack

The combination of Wheat-Tech Triple Ten, Nutri-Life Bio N, Nutri-Life Bio P and Seed-Tech applied as a seed dressing has produced good results in the field over five years. The Four Pack combined with Granular Soluble Humates and reduced fertiliser, has been reliable in the field; many clients consistently achieve

district average yields with up to 50% reduced fertiliser, providing improved gross margins. The soil tests show levels of phosphorus are not being depleted, the average trend is increasing available P on these properties and improving soil structure. The Four Pack remains available for 2006 seeding.

## Seed Dressings Compared

Product	VAM-Seed	Four Pack
Balanced Nutrition	All-in-One	3-4 Products
Beneficial Biology	✓	✓
N Fixing Bacteria	✓	✓
VAM Spores	✓	✗
Growth Hormones	✓	✓

## Early Bird Offer Extended!

LawrieCo's Early Bird Offer for Seeding Program has been extended to Pre-Made Broadcast Blends for 2006. Now you can get free stuff for early payment and delivery of your blend too!

### To Qualify:

Make payment and take delivery before 31st March 2006.

### Conditions:

- Spend amount does not include cost of freight
- VAM-Seed may be delivered after 31/3/06 due to shelf-life restrictions
- Seeding Program includes Soluble/Boron Humate Granules, Guano Granules, Copper, Manganese & Zinc Sulphate Granules, Four Pack Seed Dressing & VAM-Seed only.
- Pre-made blends are only prescription blends or Nutri-Blend produced at a LawrieCo Blending Site (may exclude some prescription blend components)

### Spend Over (on Seeding Program and/or Pre-Made Blends ex GST):

- \$1,500 for a free Soils Alive book
- \$3,000 for a free Life Line 127 or Alkalize or Die book
- \$4,000 for a free Tissue Test or Real Medicine Real Health book
- \$6,000 for a free Soil Test or Brewing Accessory Kit
- \$8,000 for a free Refractometer and Sap Extractor
- \$15,000 for a free Sap pH Meter
- \$25,000 for free admission to Soils Alive 2006 with Dr Arden Andersen (3 Day Soil Course)

# Gains for Stock, Crop and Soil

- Mundoo Pastoral Co.
- Cattle gain up to 2.38kg/day
- Best barley crop ever
- Soil structure transformed

Cattle producers **Colin and Sally Grundy** of Mundoo and Hindmarsh Islands at the Murray mouth are fourth generation on their 2,600 hectare property. Open and improved pasture, together with lucerne, oats and barley production provide the feed for their 600 head breeding herd of Angus cattle. Average annual rainfall is 400mm.

Soil tests on cropping paddocks revealed good phosphorus levels and above average fertility, but the soil was low in Manganese, Copper and Zinc. This is typical for many South Australian soils. Compaction indicated room for improvement from a biological and physical assessment.

A paddock selected to grow next year's seed was sprayed with Round Up and direct drilled with 60kg/ha of barley treated with the Four Pack seed treatment, 60kg/ha DAP, 5kg/ha Soluble Humate Granules, and traces zinc, manganese and copper on 3 July 2005.

"With the seed dressing the crop seemed to jump out of the ground and never looked back! I intended to apply a biology and nutrient foliar mix but couldn't

bring myself to drive over the crop. The wet spring had an instant impact on our other paddocks but this paddock appeared to have a constant growth regardless of spring rain."

"We were not able to commence harvesting until 14 December, 2005 because of weather conditions and the contractor's other commitments. We were fortunate that the strength of the stalk prevented lodging from occurring, even under very windy conditions. We harvested 3.5t/ha with a good full seed for next year's cropping. My only complaint is that we have had to buy two new silos!" says Colin.

A lucerne paddock was also given the biological farming treatment. Previously, compaction had stunted the growth in some areas. Although plant numbers were evident, after 2 years growth was severely checked. A soil test was taken and a prescription Broadcast blend consisting of 300 kg/ha of Nutri-Blend along with trace elements was applied in Autumn. A foliar spray was applied on 23 September 2005 with 4/20 Microbes, Big Four, Molasses and Fulvic 1400. Colin comments: "the biologically treated paddock appeared to have healthier plants and the top



50mm of soil has definitely become more friable." Steers were turned onto a biologically treated paddock of pasture that was direct drilled with oats (not sprayed) for a period of 6 weeks to 19 September, 2005. The steers averaged a daily weight gain of 1.7kg. These steers were then turned onto a barley crop at flowering stage and achieved an

average daily weight gain of 2.38kg for the next month. "Our decision to experiment with biological farming in a few paddocks has given us pleasing results and we will definitely continue along this path. It is an exciting and challenging era for our farming enterprise and one which biological farming has a major role to play. Our next step is to return the stubble to the soil for next year", says Colin.

## Looking at Wine Quality from the Ground Up

*Pirramimma Family Estate Wines recently reported in their newsletter:* "Pirramimma has over more recent years taken a closer look at our soils. After growing vines for more than 110 years, one

would expect some degradation of both microbial biomass and available minerals over time. In turn, this affects vine performance in both quality and yield. We established the normal

inorganic program wasn't working, so with the help of LawrieCo, we implemented a biological farming program to address our soil issues. We applied prescription broadcast blend inoculated with

four fungi and twenty bacteria. What does this mean? Well, our 2005 Chardonnay not only increased substantially in wine quality and flavour, but also increased in yield by 280%!"

### LawrieCo: Events Calendar

- **Soils Alive 2006** with Dr Arden Andersen, Mundulla SA  
13-15 February 2006
- **Wimmera Field Day**, Horsham Vic  
28 February - 2 March 2006
- **Biological Farming Workshops** with Graeme Sait and Southern Farming Systems, Lismore and Dunkeld Vic  
7-8 March 2006
- **South East Field Days**, Lucindale SA  
17-18 March 2006
- **Swan-Hill Murray Downs Field Day**  
9-10 March 2006
- **Mildura Horticultural Field Day**  
30-31 May 2006

### LawrieCo: Field Advisors

- Adrian Lawrie 0418 811 127 SA & Vic
- Tim Watt 0428 568 684 SE SA & West Vic
- Vivek Bhat 0427 557 789 Central SA
- James Butler 0427 557 789 SA & Sunraysia
- Tom Pickhaver 0429 811 002 SE SA & West Vic
- Matt Clarke 0427 045 827 West Vic
- Vaughn Maroske 0418 530 369 Wimmera Vic
- Adrian Howden 0402 811 005 Nth Vic & Sth Riverina NSW
- Agents**
- Leigh Croser 0408 828 628 Mid North
- David Smith 0429 393 153 Lower SE SA
- Jason Fullston 0408 828 628 Lower Murray SA

# Herbicide Savings... Cost and Biology!

- Andrew Harrison, Balaklava SA
- Reduced cost of herbicide spray by 25%
- Increased yield average by 0.17 t/ha
- Minimised toxic effect to biology
- Added Fulvic Acid and Citric Acid

Two low cost farm inputs are attracting Andrew Harrison's attention for spraying his 1800 hectare cropping properties near Balaklava and Port Arthur SA: Fulvic and Citric Acid. After attending a LawrieCo biological farming course in September 2005 where sustainable herbicide techniques were presented, Andrew elected to put the theory to test on his own property with cost saving results.

**Fulvic acid** is a soluble fine carbon powder derived from humates (brown coal) and a natural uptake agent. When included with foliar applied herbicides, fulvic acid aids chemical biodegradation in soil and reduces toxicity to soil biology. Included with any foliar applied product it improves plant absorption by cell sensitizing.

**Citric acid** as soluble granules, is very effective at reducing the pH of spray water, which for some commonly used farm chemicals, can reduce antagonism from impurities in water (including rain water).

## On-Farm Comparisons

A: Paraquat spray, a 'knock-down' chemical applied prior to pea harvesting to reduce weed seed set and affect snails.

A	Paraquat	Wetter	Water pH	Fulvic	Andrew's Comment
Normal	1 L/ha	0.1%	no change	none	Achieved satisfactory outcome on weeds & snails
Comparison 1	0.65 L/ha	0.1%	5.5	none	Outcome was OK, not our best result
Comparison 2	0.45 L/ha	0.1%	5.5	60 g/ha	As effective as normal on weeds & snails

**Saving: Comparison 2 cost/ha was 25% less than Normal.**

B: Broadleaf spray Amine 625 on barley to control mainly mustard and turnip

B	Amine 625	Fulvic	Andrew's Comment
Normal	1.2 L/ha	none	Achieved satisfactory outcome on weeds
Comparison 1	0.3 L/ha	120 g/ha	Spray did fair job, slightly slower, however no weeds found at harvest

**Saving: Comparison 1 had a 25% reduction in cost/ha (\$1.22/ha saving) and average 0.17 t/ha yield increase compared to Normal.**

Thank you Andrew for conducting, monitoring and reporting spraying comparisons. Since introduction six years ago, Fulvic Acid has become a standard additive on many biological farms with knockdown sprays. Feed back varies from much improved weed kill results to 50% reduction in applied chemical.

Recently Soluble Fulvic Powder has reduced in price by 30% !!! At current price all farms can use and benefit. Please record rates used, observations and pass on feedback, we will share this information. Protecting soil life, reducing chemicals and costs is Win Win Win.

*Adrian Lawrie*

## Soluble Fulvic Acid Powder

Soluble, yellow-brown powder containing 70% fulvic acid. Fulvic acids can detoxify pollutants in the soil. They absorb poisons (reducing soil-life damage) and catalyse the rapid breakdown of the toxins.

Fulvic acid is also a powerful uptake and chelating agent.

Application rate for Sustainable Herbicide application: 40 g/ha

**NEW Price** (inc GST ex Wingfield)

25kg \$375.10



## TIP: Sustainable Herbicide Use

Every step you take toward reducing the negative effects on soil biology makes a difference.

The purpose of the following guidelines is to help you reduce the impact herbicide use has on your soil's beneficial biology.

1. Fill spray tank with 3/4 water required (as per chemical label)
2. Add citric acid granules to reduce pH to 4-5
  - Use a pH meter or litmus paper to check water pH
  - Between 250g-1kg citric acid is usually required per 1000L water
  - Ensure citric acid is dissolved fully before re-testing water pH
3. Add glyphosate (as per label)
4. Add Soluble Fulvic Acid Powder at 40 g/ha (or liquid Fulvic 1400 at 300 ml/ha)
5. Add remaining water required

### Caution:

- Do not follow these guidelines with soil residual chemicals
- Be cautious with above guidelines with selective chemicals

### Compatibility

- Always jar test for compatibility prior to use

### Pricing (inc GST, ex Wingfield)

Citric Acid Anhydrous	25kg	\$63.80
Soluble Fulvic Acid Powder	25kg	\$375.10
Fulvic 1400 (liquid)	20L	\$141.90
	200L	\$1,237.5
Sharp pocket pH meter		\$141.90

# Soils Alive 2006

with Dr Arden Andersen  
 3 Day Soil Course  
 13-15 February 2006



### Course Info

- Learn how effective farm management requires the best of conventional methods and natural farming.
- Learn practical management based on bio-chemistry, physics and plant biology.
- Discover what weeds can tell you about your soil health.
- Find out how beneficial soil biology and plant balance reduce environmental stress on plants.
- Learn the affect farm practices have on beneficial soil biology.
- Learn soil and foliar fertility programs for maximum plant production.
- Assess testing and crop evaluation methods.

### Details

**13-15 February, 8am to 5pm**  
**Mundulla Sports & Recreation Centre**  
 Mundulla Oval, Mundulla SA  
 (7km from Bordertown SA)  
**Cost \$550** (inc GST) includes 3 day workshop, notes, lunch, morning and afternoon tea.  
**Course Dinner 7pm Tuesday 14 February**  
 Old Mundulla Hotel, cost \$40 pp (inc GST)  
**Accomodation available:** Dukes Motor Inn  
 Dukes Highway, Bordertown 1800 088 109  
 or 08 8752 1177 (advise you are with LawrieCo course)

### Who is Dr Arden Andersen?

Arden is a US based consultant in agriculture and medicine, he holds an agricultural education degree, a PhD in biophysics and a medical degree. He is dedicated to promoting the management of soils, crops and animals in an economically and environmentally sustainable manner and directly bridges the gap between soil and plant balance. Author of books: *Science in Agriculture, Life & Energy in Agriculture and Real Medicine Real Health.*

***Gain a unique understanding of the relationship between healthy soils, healthy plants, crops and livestock production.***

REPLY SLIP: Post or Fax to LawrieCo with payment by Friday 3rd February 2006.

FAX: 08 8244 8557

Trading Name:	Phone:	
Attendee Name(s):	Mobile:	
Address:	Fax:	
	Email:	
3 Day Course, 13-15 February	___ No. Attending @ \$550pp (inc GST)	\$
Dinner 7pm 14 February	___ No. Attending @ \$40pp (inc GST)	\$
Special Dietary Needs?		\$
		_____ Total Payment

Direct Debit Details: Commonwealth Bank – BSB: 065 509 – Acc No: 100 691 69

Make Cheques payable to: LawrieCo

Credit Card Payment:

Name on Card: \_\_\_\_\_ Card: Visa / Mastercard / Bankcard (please circle)

Card No: \_\_\_\_\_ Expires: \_\_\_\_ / \_\_\_\_

Signature: \_\_\_\_\_