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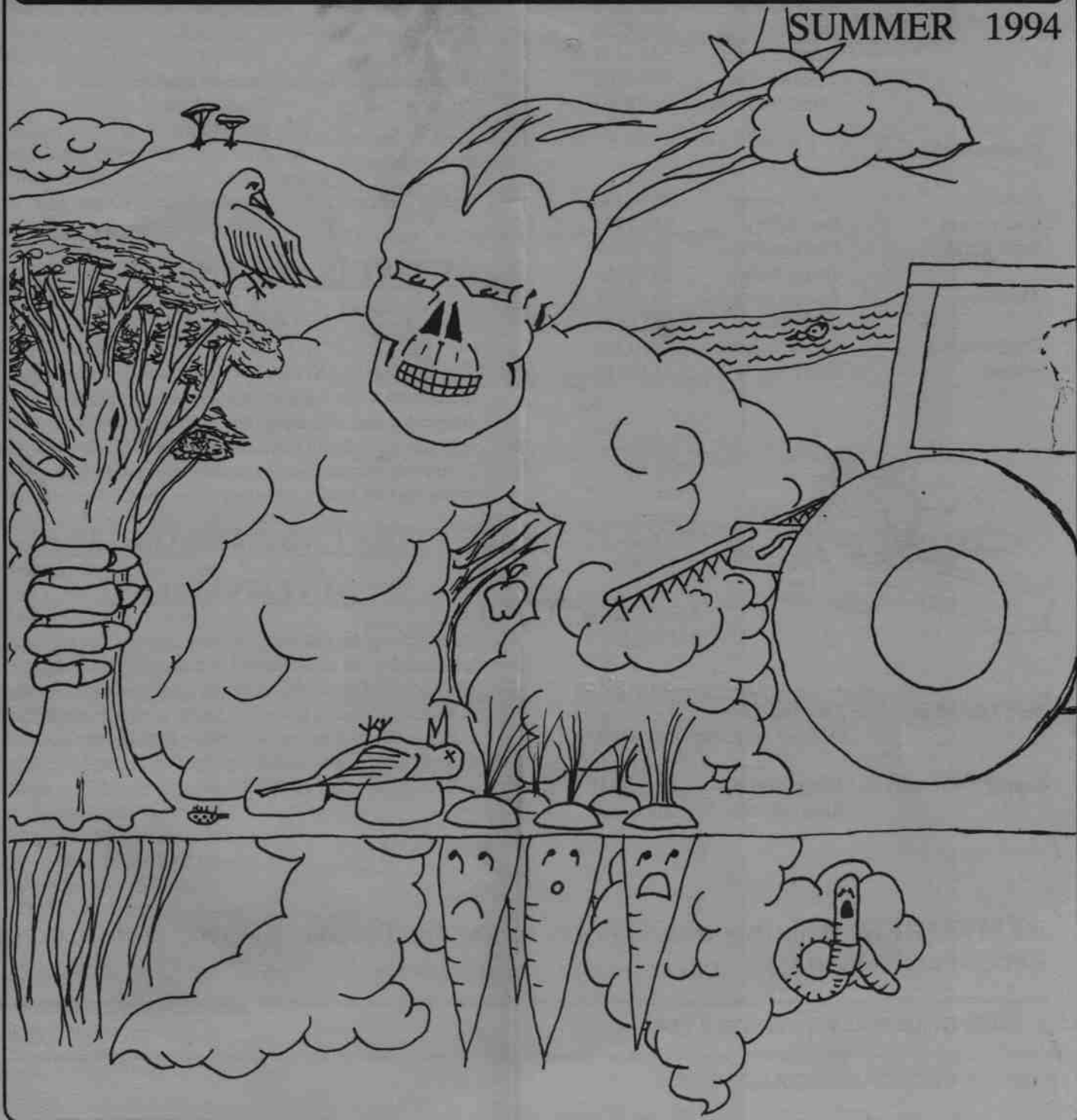
# COGS

## QUARTERLY

VOL 2 no. 4

ORGANIC GROWING IN THE CANBERRA REGION

SUMMER 1994



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## WHAT IS ORGANIC GROWING ABOUT?

The ORGANIC MOVEMENT endeavours to provide an alternative to the mass of toxic chemicals, fertilisers, fungicides and herbicides used in modern agricultural methods by utilising more natural means of improving and preserving our soils and to produce nutritious, less contaminated food.

## WHAT ARE THE ORGANIC ALTERNATIVES?

By enriching the soil with compost, manure, green manure and mulches we avoid disease and control pests through non-chemical methods, including encouraging the presence of beneficial insects to feed on pests, growing companion plants to discourage pest attacks, by growing healthy plants to resist pest attacks and disease and by tuning in to nature with love, harmony and gratitude.

**REMEMBER: Monthly meetings are on the 4th Tuesday of every month, except December & January.**

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## NEWS BRIEFS...

by Michelle Johnson

### AROUND THE WORLD

#### THE VALUE OF COMPOST

Organic growers have long known the benefits of adding compost to the soil. Now scientific research is bearing out the truth of this empirical knowledge.

At the Connecticut Agricultural Experiment Station in America, a 12 year ongoing study of different fertilising regimes has been under way. They examine the benefits of amending plots with:-

1. 1 inch of compost a year;
2. 1 inch of compost plus the recommended dose of fertiliser and lime;
3. the chemical fertiliser and lime alone;
4. & 5. the compost combined with smaller amounts of fertiliser and lime (1/3 and 2/3).

Results show the plots which received compost alone had total yields equal to the plot with chemical fertiliser and lime, and there was an improvement in the pH of the soil in the test plot and a large increase in the organic matter in the soil.

The compost used was based only on leaves. Results would most probably have been better if the compost had been made from mixed ingredients.

Source: "Organic Gardening", Rodale Press, September/October 1994, p18

#### UPDATE: THE GREEN GUERRILLAS OF NEW YORK

Readers of the Spring, 1993 Issue of the COGS Quarterly may remember the article "Green Guerrillas of New

York" by Phil Tietz outlining the work of the Guerrillas in greening the city and setting up a series of community gardens. In an update of this story, Phil reports that, while in general their programs are doing well, there have been some very disappointing setbacks.

One of the most frustrating happenings was the bulldozing of the Dome Garden for a housing project, at the same time as a legal case to halt its demolition was pending!

The greening of the city has been set back by the deaths of hundreds of trees by a combination of causes - some by the drought last summer, others by the salting of sidewalks in an unusually cold winter.

However the spirit of the Guerrillas still seems strong and they plan to continue their vital work.

Source: *PIJ*, Issue No52, p5

#### WATER QUALITY IN TEXAS

Too many people think of chemical pollution of soil and water as a rural problem, with the blame squarely laid on farmers "out there". Well, remarks by Edward Hillier, Vice Chancellor of the College of Agriculture and Life Sciences at Texas A&M University, may make us pause and consider the effect of the actions of people in their homes and gardens in the cities.

He says "Texas cities face a pollution problem with a large price tag unless every household drastically curtails pesticide use. Diazinon (*see opposite*), a commonly used pesticide, is turning up in the discharge water of many Texas cities. So far, 14 are failing water quality tests.

Studies show the culprit is us: Our homes, our lawns. Approximately 70 million pounds of pesticides are applied annually to turf areas in the US. We reach for the spray too quickly and use pesticides when we don't need to.

The City of Fort Worth faces fines of \$US25,000 a day if it doesn't eliminate diazinon discharges. A new treatment plant to eliminate diazinon would cost the city \$US 50 million to \$US 60 million....A less costly alternative is to eliminate the source of the contamination."

Source: *Organic Gardening*, September/October 1994, p20

#### WHY LAWNS?

In America, even more than in Australia, there appears to be an obsession with green turf. It is estimated that America has some 50,000 square miles of lawn under cultivation, and that they spend an estimated \$US30 billion a year on them. Why?

In his amusing and insightful book, *Second Nature, A Gardener's Education*, a Delta Trade paperback, author Michael Pollan explores (amongst other gardening concepts) some of the underlying reasons for this - reasons that have nothing to do with the virtues of grass as a ground cover, or its cooling and aesthetic properties.

Its attraction, he believes, lies in its the effect of unifying the American landscape, of creating the impression that everyone lives together in a large park.

Looking at the history of lawns in America, he outlines how he sees they have become a symbol of democracy and how maintaining

your own lawn has become a serious civic responsibility - one you shirk at the risk of being labelled unneighbourly, selfish and even unchristian! One's land then is not a vehicle for self expression, but an expression of consensus. Interesting idea!

## IN AUSTRALIA

### THE NEW ORGAA

The Organic Retailers and Growers Association of Victoria (ORGAV), has now become a national organisation - The Organic Retailers and Growers Association of Australia. They have a business plan to give services and support to their members and they also operate the Organic Advisory Service which gives information on organic growing to farmers, students and the general public.

Source: *Acres Vol 2, No 3, p2*

### NASAA BOARD

At the AGM of NASAA in September, Rod May was returned for his third term as NASAA Chairman, Jan Denham for her third term as Treasurer, and new member Mark Uchich was elected Vice Chairman. NASAA reiterated its desire to form reciprocity arrangements with other organisations, a good sign that more cohesiveness will develop in the organic movement in Australia.

Source: *Acres Vol 2, No 3, p4*

### DIAZINON

Diazinon is an organophosphate insecticide. In Australia it is now banned for use in agriculture, but is still a popular pesticide to use in

and around people's homes for common pests:<sup>1</sup> eg ants, spiders, cockroaches and fleas.

The Maximum Residue Levels (MRL) for Diazinon (mg/kg) (=ppm) in foodstuffs are given in the Table below, taken from *MRL Standard Maximum Residue Limits in Food and Animal Foodstuffs* Nov 1992, Australian Government Publishing Service.

Cereal grains	0.1
Citrus fruits	0.7
Edible Offal (mammalian)	0.7
Eggs	0.05
Fruit (except citrus fruits, olives, peach)	0.5
Kiwifruit	0.5
Meat (mammalian) (in the fat)	0.7
Milks (in the fat)	0.5
Olive Oil, crude	2
Olives (unprocessed)	2
Peach	0.7
Poultry, Edible offal of	0.05
Poultry meat	0.05
Sugar Cane	0.5
Sweet Corn (corn-on-the-cob)	0.7
Tree Nuts	0.1
Vegetable Oils, crude (except olive oil, crude)	0.1
Vegetables	0.7

While these figures may have little significance for the reader, they serve to illustrate the variable nature of MRL's. Why is 20 times more diazinon permitted in olive oils than in other oils?

A MRL is defined "as the maximum concentration of a residue of an agricultural or veterinary chemical,

which is recognised as acceptable, or which is legally permissible in or on food, agricultural commodity or animal feed"<sup>2</sup>. There is a standard for each commodity-chemical combination. These limits have been accepted by the National Health and Medical Research Council (NHMRC) on the advice of the Pesticide and Agricultural Chemicals Standing Committee.

An important point to know when examining these levels is that agricultural needs<sup>2</sup> are taken into account when setting MRL's. The level must be set high enough to control the pest or disease against which the chemical is used 'in accordance with good agricultural practice'. As you can imagine, the application of this criterion is extremely controversial. An example of the political nature of setting MRLs is given in Kate Short's book *Quick Poison Slow Poison*, p202, when looking at the MRL for BHC on peanuts. It's well worth the read (see other articles and book review in this issue).

References 1. "Quick Poison Slow Poison" Kate Short 1994

2. Report on the National Residue Survey 1989-1990 Results BRR

### SNAIL CONTROL

In an article on snail and slug control, Tim Marshall notes that if handpicking snails from the garden, they should not merely be crushed and left there.

Mature eggs in the body may still hatch, contributing to future snail populations. He suggests disposing of their bodies by feeding them to the chooks, or by eating them yourself!

Recipes, anyone?

Source: *Acres Vol 2, No 3, p 28*

## The Launching of the National Toxic Network Information System

*Text of a talk given by Mariann Grinter at the July 1994 COGS general meeting*

Thankyou for asking me to speak tonight on the work of the National Toxic Network and the Community Information System developed by Bio-Region Computer to support the campaigns surrounding toxic risk issues. I'm often asked to talk to people who don't understand the severity of the chemical crisis that we are experiencing. But, by definition, organic growers, be they commercial or backyard growers, do understand the real ramifications of the toxic threat and, even more importantly, have taken positive practical steps to address at least one facet of the chemical load: food.

Many of the NTN campaigns regarding clean food, air and water have been initiated by organic growers fighting for their rights, particularly in relation to Council weed control, feral animal baiting and power utilities' pesticide treatments. On the north coast of NSW, campaigns for the right to farm organically have drawn some of the most intense and threatening debate. And there are other issues affecting organic farming and certification standards, such as contaminated agricultural land and groundwater standards.

But first an introduction. **John Wickens** and I are members of Bio-Region Computer Mapping & Research, the research arm of the **North Coast Environment Council**. In 1990 we recieved grant funding from the then Dept of Arts, Sports, Environment, Tourism & Territories (DASETT), to develop low-cost computerised decision support systems for the management and assessment of pollution and toxic sites at a local government level.

The DASETT brief was:

- to examine the feasibility of using remote sensing data in local scale Geographic Information Systems (GIS) in identifying land usage;
- to map chemical usage and identify potentially polluting land use practises; and
- to develop a community chemical information system.

The information system was to provide the community with data on the toxicology and the environmental fate of the chemicals that are present in a distinct area allowing them to make a personal risk assessment. Coffs Harbour on the North Coast of NSW was chosen as a test region for the pilot GIS.

The completed system clearly shows in graphic form, patterns of land usage (eg banana plantations), related to their specific chemical application and known soil residues and their subsequent relationship to environmental factors. The computer system, complemented by the text information system, encompassing regional use of chemicals, proved to be a very efficient low cost tool to monitor the adverse effects of chemicals in the environment.

Since then we have been involved in a number of database projects, including the Dip-Site Community Information System for Regional NSW Agriculture. Our latest project is to develop and implement a community information system for national use.

National Toxic Network supports groups and campaigners who are actively involved in toxic risk and pollution issues. In simple terms it is a computerised system of maps and databases which provides a communication link that can disseminate mapped spatial data, databases and text reports to all Australian participants in the National Toxic Network. The GIS is supported with an Australian chemical information database on priority pesticides and chemicals and overseas databases such as the Canadian Centre for Occupational Health database, CCINFO, plus CHEMWATCH.

We consider that regional groups and communities across Australia, with their detailed local knowledge, have a significant role in alerting Federal and State regulatory agencies to issues and problems with water and air pollution, site contamination, wildlife residues and human health problems. The system functions as an '**on-the-ground community feed-back mechanism**' which can be used to convince authorities to address the serious pollution and chemical threats to our environment and health.

The NTN Information system is a way of graphically showing incidences which has proven to be far more powerful than letters and reports. The worth of the computerised community information system has been proven with a recent \$2.3 million buy-out offer by the NSW Government to affected residents living on contaminated cattle dip sites in northern NSW.

Some of the issues that have been highlighted by the community and environmental groups are :

- \* the role of DDT in breast cancer;
- \* contaminated residential land;
- \* occupational exposure, eg hairdressers, mechanics, teachers, nurses, agricultural workers, firemen;
- \* residues in wildlife and children;
- \* Radioactive Waste Storage in the Brisbane "Valley of the Lakes";
- \* aerial spraying in TAS, NSW, of pesticides which are banned, restricted or not registered in other developed countries;
- \* many hundreds of chemically affected individuals (Aust. Chemical Trauma Alliance);
- \* thousands of contaminated sites across Australia; and
- \* illegal toxic dumping and industrial pollution.

Well over a hundred community and environmental groups

nationwide have registered with the National Toxic Network Information System, which represents quite a few Australians concerned enough for the future health of their children and their country that they are actively involved in chemical and pollution issues. Registration forms are used by groups to record details about toxic and environmental health issues in their region and these are then mapped and databased.

Currently, the NTN Information system receives no government funding and is supported by donation from participants and users of the system. The system has been created out of a real community need. The hardware and software use has been provided by Bio-region Computer Mapping & Research and the North Coast Environment Council. We are presently looking for sponsorship and support.

Many members of the network are actively campaigning on food residue issues, trying both to keep up with the submission on new food standards and new chemicals, and to realign the regulatory process to understand and regulate for both additive and synergistic effects as well as the effects of individual chemicals.

The 1992 Australian Market Basket Survey by the National Food Authority, as skimpy as it is, makes interesting reading on residues found on individual products. On page 92: *lettuce carried residues of – three organophosphates, three different forms of endosulfan, a carbamate and two other insecticides – 9 in all. Tomatoes don't fare much better, with residues of 12 pesticides all up. Celery, chicken nuggets, pears and oats all carried a nasty bunch of residues.*

All of the residue levels were below the currently set Maximum Residue Limits (MRLs), but the political and commercial involvement in the setting of MRLs doesn't fill me with confidence in their scientific validity.

Most organic farmers would feel reasonably good when they read a document like this. They have made the right decision and taken the organic way.

But on the North Coast of NSW one organic farmer found his cows rejected for both milk and meat consumption because of contamination with dieldrin. He believed he had a clean bill of health chemical-wise, going back into the early 1970s. Unfortunately what he wasn't aware of was that the electricity authority for the region annually treated all power poles with insecticides, typically dieldrin, up into the late 1980s.

The cows had become contaminated from the uptake of soil from around a dozen poles on his property. This farmer has spent years trying to alert others and force the electricity authorities to clean up their contaminated soil. He has successfully sealed the soil around each pole at his own cost. The Department of Agriculture showed no interest in either his plight or any clean up.

But in a way, one can't quite blame the Department of Agriculture for not wanting to get involved in yet another contaminated land issue. In NSW, 1,647 highly contaminated cattle-tick dip sites are keeping the Department of Agriculture well occupied. After nearly four years, not one site is cleaned up and many families still live on gardens contaminated with thousands of ppm of DDT.



Cattle tick dip sites on the NSW North Coast

These sites are on a two mile grid all over northern NSW, making it certain that eventually produce would be grown on these contaminated sites, cattle would graze them and people would build homes on them. While the region went through the greatest development boom, agricultural officials kept silent about the potential contamination.

Testing carried out in the 1980s showed that the residues left from the dipping process were unbelievably high and should have been immediately managed as hazardous waste. Ten years of further inaction was finally broken in 1990 with a Freedom of Information action. The DIPMAC Committee was formed to attempt to solve the problem of a decade of neglect.

And as I'm sure many of you know, dip-sites are also making their presence felt in Canberra. The site on Tuggeranong homestead was recently sampled, and 5000 ppm of arsenic, well over the suggested 100 ppm for health, was detected.

Interestingly, while Federal politicians are willing to spend millions on campaigns about "Clean, Green Agriculture", they are willing to spend little on ensuring that produce is *actually* clean. The issue of contaminated land is considered a State issue and the Federal Minister for the Environment is told contaminated land and its remediation is not a priority issue.

In Coffs Harbour, trials are currently being carried out to test a remediation option for contaminated agricultural land called vertical integration. A more simple name for this type of remediation would be "ploughing it in".

While only last year the NSW EPA held to the belief that dilution was not the solution, when it came to contaminated land, development pressures in Coffs Harbour ensured overnight that this became that State's solution. Coffs Harbour is now hailed as leading the way in the decontamination of agricultural land. **This form of remediation is often capable of mobilising contaminants and further stressing wildlife species already carrying significant loads of man-made chemicals.**

In 1991 a group of scientists, eco-toxicologists and wildlife researchers released what was called the Wingspread Report. The report alerted the world to its increasing production of man-made chemicals which can mimic the effects of oestrogen and severely affect the world's wildlife. Chemicals such as DDT, synthetic pyrethroids, triazine herbicides, detergent surfactants, heavy metals and soya products can disrupt the endocrine system of animals and humans.

The more recent work of Professor Louis Guillette has basically confirmed that broadscale contamination is impacting significantly on wildlife. A study of alligators in Florida showed that in one lake, 25-30% of male alligators had significant abnormalities to their reproductive organs and their production of oestrogen was above that of female alligators. Their testosterone production was significantly decreased and they were incapable of reproducing.

Surveys carried out later on the surrounding remaining population of black panthers could not find one male animal without some form of reproductive abnormality such as undescended testicles and over-production of oestrogen.

Already in Australia there is enough evidence of wildlife contamination to set off alarm bells over small isolated surviving populations. Koalas on the north coast have been shown to have residues of surfactant-like chemicals, the birds of prey have significant loads of organochlorines and heavy metals, and small marsupials living around dip sites carried significant loads of DDE.

Little terns and pelicans on the Central Coast of NSW have been shown to have residues of an organophosphate called chlorpyrifos. The organophosphates were presented by the industry and regulatory authorities as the non residual, non bioaccumulating alternative to the organochlorines. **The analysis of these birds and their eggs was forwarded to both state and federal EPAs and the Agricultural and Veterinary regulatory authorities, yet we recieved not one reply!**

The effects of the chemical contamination are being felt just as hard in the human population with significant reductions in the last 40 years of both sperm production and viability, let alone the suffering of those ever growing numbers of people including children with significant chemical loads and sensitivities.

Organic growers have such a significant role in the provision of clean food. As the numbers of chemically sensitive grow so does the demand for organic food, but so do the pressures on the environment and growers.

The need for clean water is universal but for an organically certified grower it is essential. As has happened in many parts of the country, organic farmers have taken on the fight to preserve the quality and quantity of their water supplies and to control and limit drift. We all share the same air shed and water catchments. Contaminants know no political boundaries and the community and regulatory agencies must accept our urgent need for an overall reduction in the chemical load of this planet.

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## Fyshwick Garden Centre

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## Adapting Pastures and Crops to Changing Times

by Owen Whitaker, "Kimvale", Eurongilly, via Junee NSW 2663

Taken in part from a paper presented at the 1994 Conference of the Grasslands Society of NSW.

Eight years ago I made a fundamental decision to radically change the way I ran my properties. Coming to this decision was a challenging and even frightening experience because it necessitated some critical scrutiny of the way I approached agriculture.

This decision was not of the nature that almost every mixed farmer churns over in his mind at least once or twice a week, such as "should I run a few more sheep or cattle, or put in an extra paddock of crop?". It is the one we all avoid, push into the background or, I dare say, in some cases don't think about it at all, namely "What is my relevance to agriculture today?" For too long we have taken for granted that most forms of agriculture have an almost sacred reason for existence. No wonder we ignore the issue. It is a pretty scary one.

### Recognising the problem

The main points that impacted on myself were:

- No longer is there always a viable market for the commodities we produce: i.e. the old bulk, minimum standard items are harder to sell even at discounts, or are not wanted at all.
- In static and real terms, falling commodity prices combined with steadily escalating costs means that to keep in the black one has to either produce more and more per hectare, or get efficiency of scale by accumulating more land.
- Production-associated land degradation such as soil acidity, tree decline and rising water tables, are demanding remedies that are becoming less and less affordable.
- There is lack of control and flexibility as one is pushed into courses of action not considered in the past, such as being locked into a program because of input costs when that program is no longer profitable.
- As a fourth-generation farmer, it is a daunting prospect to consider that continuity of land use is no longer relevant to today's mainstream agriculture. That is, the land, though well-cared for in its time, can no longer support purchase and/or transfer to the next generation.
- To sum it up, a holding that would have amply supported a family in the past may simply no longer be viable in the near future.

As I saw it, to maintain viability in conventional terms I would have to go into greater debt:

- (1) to counter production-associated degradation (e.g. by liming), and
- (2) to accumulate more land and infrastructure to achieve economy of scale.

### Developing solutions

A lifelong interest in sustainable farming, coupled with my current aim to produce specific high quality products enabled me to come to the following conclusions:

To be relevant to agriculture today, I needed to more positively manage and benefit from natural fertility and production instead of buying it by the bag, drum or semi-trailer load.

At the same time I needed to be producing products that I could sell on my terms, not waiting for a buyer to appear and take what was on offer.

One of the biggest hurdles facing alternate sustainable farming, is not so much the limited amount of information available, but the total absence of it from official sources. Until recently it was a matter of working with bits and pieces of hearsay and anecdotal evidence. A big help to me was an acquaintance with some CSIRO researchers working in the fields of soil hydrology and biochemistry. Their scientific knowledge filled a lot of gaps in the jigsaw puzzle.

The picture that emerged for me was that although our soils were naturally acid, we were significantly contributing to this acidity and disrupting the natural nutrient recycling process done so effectively by soil organisms, deep-rooted native plants and non-intensive grazing animals. Gradually I formed the conviction that we needed to approach farm management in a more holistic way.

All the problems we were encountering, while seemingly random, were developing interconnecting factors. Therefore any plan to overcome these problems must itself consider the interconnection of all aspects of soil fertility and general farm well-being.

A great insight into the world of balanced sustainable systems was gained by observations on my other property. "Oakley", a 300 acre bush block in nearby foothills, always had seemed an unruly wild place with native pastures and heathlands watered by spring-fed creeks. Over the years, however, I came to the conclusion that this "unruly" block of land was in fact more ordered and in balance than our other intensive, highly managed "neat and tidy" farm below.

"Oakley" is capable of moderate production with almost no input or management. The key to this self sufficiency is, I believe, the biodiversity inherent in the 300-plus native plants identified there so far. The complex interactions of the vegetation and animals there, while almost unfathomable, simply works – producing livestock which are healthy, free of disease and parasites with good weight gains and excellent fertility.

This insight helped me overcome the largest hurdle encountered by anyone contemplating alternative sustainable farming practice, i.e. the state of mind an individual acquires when influenced by peer pressure, rural advisory bodies, government regulation, and persuasive company advertising.

What emerged was a self-enhancing system to tap into natural fertility instead of relying on artificial inputs. While a return to pre-European conditions was not feasible, somewhere in between seemed about right. To do this a "whole farm" plan was needed, with the priorities on:

- Trees - for shelter, windbreaks, fodder reserves and predator habitat;
- Water self-sufficiency;
- Re-mineralisation of soil; and
- Conservative stocking with cattle.

### Implementation and Benefits

With the help of Warren Walker of Wariapendi Trees, we planted shelter belts, concentrating first on north-south internal fence lines, then intersecting those with east-west plots, which doubled as subdivision fences to provide better rotational grazing and management.

The tree plots were designed as balanced ecosystems, with a central row of dominant eucalypts and casuarinas with two outer rows of mostly leguminous understorey species, such as acacias, melaleucas and tagasaste (lucerne tree). This formed a diverse community of trees and provided a tapered profile which is more effective as a windbreak.

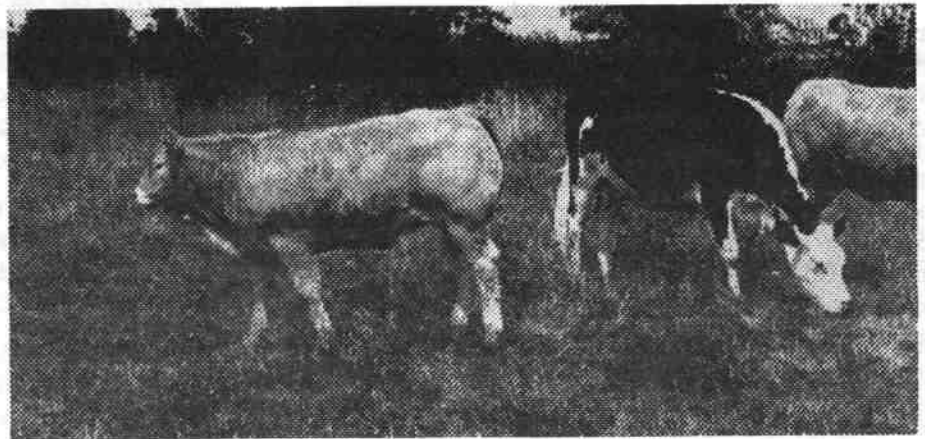
I did not realise just how quickly we would benefit from these plantations. We obtained a good windbreak effect after two to three years and shade in four to five years. Also the fodder potential of 2,000 lucerne trees provided three to five months of drought rations without harvest, storage or transport costs.

Increasing diversity was also the key to our pasture program. We replaced the clover-dominant annuals with a multi-species mixture of cocksfoot, phalaris, lucerne and rye, plus anything else that wanted to grow naturally and was not noxious.

The decision to establish the perennial-dominant pasture mix was made for several reasons:

- to provide a balance of nutrient release and uptake with the grasses using the nitrogen from the legumes;
- to bring up nutrients leached from the topsoil zone and out of reach of the shallow-rooted annuals;
- to begin to reverse soil acidification by drying up the soil profile and preventing nitrate leaching;

- to hold the soil surface together, preventing erosion and stock pugging in wet weather;
- to close the green-feed gap in summer months and take advantage of summer rain to provide green pick;
- to provide natural control by competition with shallow-rooted weeds.



*"Kimvale" calves grazing mixed perennial pasture: 4 YO trees in background*

The mixture was sown with a slow-release reactive rock-phosphate fertiliser in a dolomite base. This was used to build up a slow release reservoir of phosphates and the calcium and magnesium so essential for plant and animal health and previously depleted by 80 years of farming.

While this fertiliser was low in analysis (less than single superphosphate) and lacked water solubility, it produced results that indicated we were on the right track.

Our water problem was tackled by construction of a large dam with ponded "mini-wetland" inlet, pumping (with solar power) to a header tank, and gravity reticulation to a network of troughs.

The decision to use cattle as our major livestock enterprise was based on much more than personal preference. In fact, cattle have the ability to be front-line troops in sustainable agriculture. They are by far the least-intensive grazing animals, leaving a good ground cover to counter erosion and insulate the ground from temperature extremes, enhancing soil biological life and facilitating water permeation and retention.

They are great recyclers, randomly spreading manure instead of concentrating it around camps as with sheep. This increased ground cover and recycling of organic material was exactly what our soils needed to increase humus, biological life and, ultimately, topsoil. Some people are of the opinion that you cannot make new topsoil. But if conventional land use is depleting it as fast as official research indicates, we have to find a way of replacing it, and cattle grazing may be part of the process.

*...continued on p. 12*

## Pesticides and Sustainable Agriculture

*A report by Betty Cornhill of talks presented by Kate Short and Gil Wahlquist in August to the Organic Producers Council NSW/ACT Forum at the University of Western Sydney*

**Kate Short**, co-convenor of the National Toxic Network, is one of the most hard-hitting and dynamic speakers I have heard. Not only is she hard-hitting, but she knows her stuff!

Having heard her speak before at a Natural Health Society Convention, I knew what to expect, so I was determined to get to the Organic Producers Council meeting in August, and I wasn't disappointed.

Before Kate, and as a gentle contrast, was **Gil Wahlquist**, who told us about why he decided to undertake organic and biodynamic growing on his "Botobolar" vineyard near Mudgee. Gil was growing organically before certification became available, and was one of the first NASAA certified organic farmers, and a long-time member of the Henry Doubleday Research Association Inc.

The forum was attended by about 30 people, including several students from the Agriculture Department at Hawkesbury, University of Western Sydney. I was delighted to see and talk to one of our COGS ex-members, Oliver Slezak, who is studying agriculture there.

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Gil told us about his experience in establishing an organic vineyard and why he had made the decision to do so. He showed it was possible to grow grapes organically, despite the conventional wisdom from agricultural advisors that you couldn't do without chemicals.

He related an anecdote about the caterpillars which appeared on his newly planted vines when he first started out. The Department didn't know what they were, but advised spraying with DDT anyway. Gil didn't spray, and when the pasture which had been cleared prior to planting vines started to regenerate, the caterpillars (lucerne cutworms) moved off the vines onto the lucerne. He had unwittingly removed their food source by clearing, so they had no alternative but to chew on the vines.

### Adapting Pastures and Crops to Changing Times

*continued from p. 11*

Implementing a holistic management plan to convert to organic, low-input sustainable farming was difficult at the time because of a lack of knowledge, help and encouragement by agricultural authorities, and a reluctance to disturb the "status quo".

It is only now that I see, from outside the system, the amount of restriction, control and negative forces that are at play in mainstream farming today. To change the way you practise agriculture is to change fundamentally your aspirations, expectations and state of mind.

He emphasised that there is no set recipe for conversion to organics. Every property is different, particularly in Australia. There is no right or wrong way.

Surviving on your farm is the important thing. He advised new organic growers to go "softly softly" at first, and take careful note of what their neighbours were growing and what sprays, drenches etc. they were using. About three years should be allowed to wean a system which is propped up by chemicals.

Farmers who find they have residues in their soils need not give up hope, as certain biodynamic preparations and some commercially available bacteria are capable of breaking down many pesticide residues.

In order to be viable, you need to export your produce out of the district. Gil sells wines in both Sydney and in England. He said that while it is harder to sell in England than in Sydney, there are so many more potential customers in England!

You must also be oriented towards overseas markets and have an export strategy because in Australia there is little demand for organic products, unlike Europe, where quality and purity of food is very much on the political and economic agenda.

The welfare of citizens is not considered here. In England there is now criticism of the food industry by the political opposition. This arose fortuitously because Maggie Thatcher was a food scientist, and her political opponents saw this as an opportunity to attack her over food standards.

The fat content and sugar content of food have never been debated in Australia. There is no emphasis on producing a nutritious product in Australia. The National Health & Medical Research Council is mildly interested in that, but has done little to further this aim. We should get a couple of politicians to take it up!

Look what happened when Uncle Tobys put out their Organic Vita Brits. It was mentioned on TV, and was promptly sold out. There was not enough. You couldn't get it. If only we had a few more products like that. For a while, other food companies tried to ignore organics after this breakthrough, but eventually demand made them take notice.

Nothing has had more impact on producers in Australia than the import restrictions of countries such as Germany and Britain. We need more of these standards to apply to the domestic market.

It's no good growing stuff and going broke in the process. Gil offered a few rules on survival. When you're out there, **don't race out and buy machinery** -- have a think about it

and see if you can try to make it yourself. **Don't borrow money** in agriculture. You have to pay it back and also pay interest on it. **Go for export markets.** And as a last resort, make sure that you grow something you can eat yourself!

Someone asked a question about birds. Birds are like the earth and the rain – they're there and part of the system. Gil said if you don't keep them from getting settled in your grapes you will get hundreds of them and you'll get no crop, so don't let them get in there. The first half-hour or so is critical. He uses gas guns of the type used at airports, every ten minutes, at the first sign of a bird flock. If the birds get established in a crop before the guns are used, they will ignore the noise, however, and keep on feeding.

Netting a crop to keep birds away can be cost-effective, especially with a good price for fruit. There is a better type of netting out, and relatively cheap. Colour is important, with white netting better for some birds than black.

Permanent netting is counter-productive, however, since it keeps insect-eating birds out. Starlings nesting around the winery fly into the vineyard and come back with caterpillars. The territorial behaviour of ten or so nesting pairs can protect the crop from wandering flocks, which consist largely of unmated juveniles. So there are no hard rules for bird control.

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After a break for tea, organic fruit and delicious cake, we came back to hear Kate, who is author of the new book *Quick Poison, Slow Poison. Pesticide Risk in the Lucky Country.*

Kate was also responsible for the concept of the book *The A-Z of Chemicals in the Home*, which lists many of the chemicals encountered either in the home or in the garden or on the farm, how toxic they are, what they may do to your body or the environment, and some safer alternatives. It is a good cheap little book and should be in every home. COGS library contains a copy. A third edition is due in 1995.

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Kate began by saying there are massive areas of land and gardens which are polluted by pesticides. As recently as 1982 dieldrin and heptachlor, persistent fat-soluble organochlorines which by then had been banned in 30 other countries, were still available in supermarkets and being legally sprayed around people's kitchens and back yards. This only stopped about 6 years ago. Imagine the level of residues still in the Sydney environment.

The majority of Australians don't care because they don't understand the pollution issues. If they knew the truth they would be much more frightened.

It is important, however, for organic growers to know about pesticides and residues, otherwise they might start growing organically, and then find their land is already contaminated with chemical residues. This can be a shock,

so it is better to know something about the chemicals, and how long they persist in the soil.

Farmers need to change, and to know why they are changing. They need to be able to provide facts about pesticide residues in order to promote organics.

Unfortunately, it is not the corporations and governments who will bear the brunt of any campaign against pesticides. It will be farmers who are going to cop it.

**The risks and persistence of pesticide chemical usage are consistently understated by chemical companies.** Farmers are being given wrong information by pesticide companies. Government authorities do little to redress this situation.

The Trade Practices Commission should be rigorously pursuing these claims by manufacturers, because they can so easily be shown to be false.

Moreover, the agencies that should be testing for residue levels in food are severely hampered by budgetary restraints. Post-harvest fungicides, for example, which are the closest in the production-marketing chain to the consumer, are not tested for.

### Some facts about pesticides

Kate gave some examples from her chapter on "Australia's Pesticide Profile".

*Paraquat*, for example, is labelled as a non-persistent pesticide by ICI, and their brochure stresses how soil residues of this pesticide are made biologically inactive on contact with the soil. A NSW government brochure describes paraquat as having "little mobility in soil, air or water and breaks down to form harmless products very soon after application". *Paraquat is in fact highly persistent in clay soils, and under certain weather conditions, can be 'mobilised' and become a water pollutant months or even years after use.*

Another interesting point was about "metabolites" (breakdown products) of pesticides. *In the cases of DDT and Heptachlor, these products are much more toxic than either of the parent compounds (70-fold in the case of heptachlor).*

*Endosulfan*, which is an organochlorine, is *aerially sprayed on cotton crops*. This is said to last only 4 days in water, but in reality it lasts much longer in lagoon water (40 days) and up to 5 months in river sediments. This chemical is responsible for fish kills if "accidentally" spilled into rivers or used "inappropriately". It has been detected in the sediments at the mouth of the Murray.

*There are 9 more Endosulfan products sold for use in home gardens, and it is also used on many commercial food crops.*

**Chlorpyrifos.** On the label and in technical information known as Material Safety Data Sheets, the makers say it

is benign -- nothing about the environmental impacts and nothing about persistence in the environment. It is said to be completely biodegradable. In the body the phosphorus part breaks down, and is expelled from the body fairly quickly, but the chlorine part (30% of the chemical by molecular weight) remains, and is stored in the fatty tissues. They say it takes 60 days to be removed, but in fact it can take 249 days, depending on physical conditions.

Some organophosphate insecticides are sufficiently fat-soluble to cross the blood-brain barrier. They repeatedly assault specific sites in the brain, indicating that 'non-residual' OPs have potential as slow poisons of the brain and central nervous system. This is very important for farmers who constantly use OPs.

In 1989 Chinese peanuts were imported into Australia and they were sometimes found to have 20-100 times more residues than the domestic product. This was mainly of BHC, an organochlorine now banned for use on Australian crops. So to facilitate the imports the Australian Quarantine and Inspection Service (AQIS) set an unofficial detection limit of 0.05 ppm, but later lowered it to 0.01 after protests from the Peanut Marketing Board (PMB).

Further testing by the PMB indicated that AQIS were routinely allowing the import of peanuts contaminated with BHC residues of more than 0.01 ppm.

A lot of lobbying was done at Canberra by the peanut importers to ensure that permissible residue levels were set which did not interfere with imports of peanuts from China -- levels that would not be permitted in Australian-grown products.

For the sake of international trade this was all kept out of the headlines, but we would be well advised to buy Crown brand peanut butter, which is the only brand clearly labelled as made from Australian grown peanuts. Health-food shops who grind their own may use Australian grown peanuts -- why don't people ask them if they do?

Children under the age of 5 and teenage boys are probably under the greatest risk from ingesting toxic chemicals.

American research shows that children aged 1-5 eat more fruit than adults, and thus get a lot more pesticides. Moreover, because of their lower body weight they get a proportionately greater effective dosage. Teenage boys are one of the biggest risk groups, because of the amount they eat, particularly grains and fruits. As this is a time when their hormones are so active (they are changing from boys into men) it is not fanciful to suggest that the potential effects of these chemicals on their development are horrendous, particularly if they eat N. Queensland bananas through the winter.

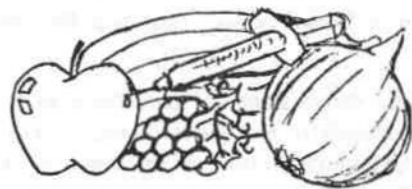
The impact on health is important. Various forms of cancer, neurotoxic effects, damage to the endocrine system,

liver damage and breast cancer can be caused by pesticide residues. The breakdown product DDE is more toxic than its parent compound DDT. Both affect the hormones and are strongly correlated with the incidence of breast cancer (a hormonal type of cancer).

Herbicides, some fungicides and insecticides, and lead can disrupt the endocrine system. There is a list of ones that do this in Kate's book. They can cause boys not to develop properly, and masculinisation of women. Use of these chemicals releases a whole range or cocktail of poisons into the environment, which disrupts the endocrine systems of all humans and animals and birds.

There is good data on the declining quality of human sperm in the western world. "Could we have an organic farmers' field day where we can get ten organic farmers to give sperm for testing?" This would reproduce the Danish experiment which found that the sperm of organic farmers was more viable than that of farmers who used chemicals. A media release of the results would really boost organic growing!

Kate listed numerous other examples of damaging residues, and misrepresentation of "facts" about them to relate here. She answered a multitude of questions. She certainly has it all at her fingertips, and has promised to come and talk to one of our COGS meetings soon.



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# The Role of Organic Growers Within the Concept of Total Catchment Management

*Summary of a talk given by John Betts, Murrumbidgee Total Catchment Management Committee, to the September 1994 COGS general meeting*

If someone asked you to define Total Catchment Management (TCM) you could answer by saying that it is the co-ordinated and balanced use and management of natural resources within a river catchment to achieve sustainability of the environment. Australia's river catchments are under enormous pressure to sustain land use and population centres, especially in the driest continent in the world. At the moment we have a lot of problems all up and down the river system.

Every major river has a TCM committee, comprising people such as farmers, environment groups and local councils, with the help of government agencies such as Dept. of Conservation and Land Management (CALM). The role of such committees is to travel throughout the catchment area and investigate problems and try to work towards solutions.

The emphasis is placed on addressing problems by consultation rather than confrontation. This is done by consultation with and co-operation by all the population of the catchment as individuals and also organisations.

The Murrumbidgee Catchment area starts at Adaminaby, and extends downstream to Balranald. Problems exist all along the catchment, starting with pollution from the snowfields at Tantangara Dam. The further downstream one goes, the worse the water gets, and the less there is. By the time the water reaches Balranald, it is almost unusable, and there is only 15% of the the flow that leaves Burrinjuck Dam.

Water is a finite resource, especially in Australia. We need to use it cleanly, carefully and to maintain a reasonable flow in our rivers.

The main reason why river problems are so bad is the overuse of the limited water in them, particularly pollution from major towns and the use of too much water from the rivers for irrigation. Cotton farming, for example, is out of control with respect to water use – and it is not Australians so much as overseas interests that are involved.

Plans to increase Canberra's population by another 200,000 people by the year 2015 are deeply disturbing, as is much of the small-acre development in surrounding rural areas. The water supply for Canberra is adequate *now*, but it will not stand an increase in population of that order. I may say that ACTEW are doing an excellent job now at addressing problems and issues, after some problems with the Lower Molonglo Treatment Plant a few years ago.

Poor catchment management, including removal of trees, has caused water tables to rise and bring salt to the surface, causing land degradation and killing of vegetation. Dry land and wet land salinity, water quantity and quality, soil

erosion, tree die back and the spread of invasive weeds are some of the major problems that have to be overcome to achieve sustainability of the environment.

The Yass River valley, although it drains a small area, contributes 17% of the salt problems of the Murray-Darling basin. The upper Lachan area, immediately to the north, contributes even more. This type of salinity is largely due to tree removal causing water tables to rise and bring salt layers up.

Carp are a major problem all along the river system. They eat aquatic life, ruining it for native species, stir up sediments, and eat under banks, causing trees to fall into the rivers.

There are massive pollution problems in the irrigation area around Griffith, one of the major food-producing areas in Australia. Over-use of irrigation water has raised water tables and lifted salt levels. This has killed a lot of gum trees and is now affecting orange trees as well as a lot of short term vegetable crops and lucerne, etc.

Water runs from this area into Barren Box Swamp, a natural depression of 3,000 ha, and is stored there to a depth of about 2 m. The heat of summer causes evaporation with salt levels becoming more and more concentrated. The Swamp used to be filled with red river gums, but these are now 100% dead. Moreover, the concentration of pesticide residues in this water is now so high that it has caused users to break out in skin rashes.

Some properties in the Griffith area are starting to reverse these problems (at great expense), by installing trickle irrigation systems and tile drains, along with plantings of trees such as casuarinas.

The present drought and its effects on the land, the people who live there and the national economy should be very obvious to all intelligent Australians.

All levels of government and their agencies must take constructive steps to at least try to alleviate the effects of drought, such as tax incentives for water conservation and subsidies on slow release fertilisers and pasture development, especially using native grasses and vegetation.

Involving the Community in TCM is the way to go about addressing and starting to reverse some of these problems. Communities can form Landcare groups, both rural and urban, to work together with government agencies such as Departments of Agriculture, CALM, Water Resources, etc., enlisting their advice and support.

Funding for various projects can be channeled from sources such as One Billion Trees, Water Resources, Greening

*continued on p 16*

Australia, Total Catchment and Landcare funding programs, if the appropriate application forms are correctly filled in and submitted. Help in obtaining such funding can be sought from local TCM committee members, Landcare field officers and coordinators.

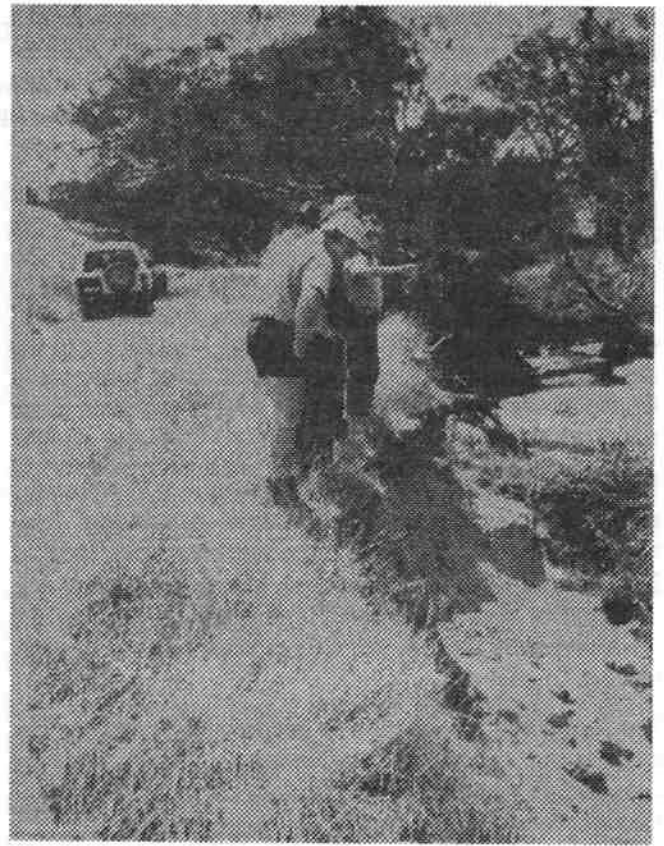
Organic growers have as one of their main aims to preserve and care for a sustainable environment while still maintaining the productivity of the land. These objectives sit very well with the general concept of Landcare and Total Catchment Management, and organic growers should thus have a lot to contribute through their experience and knowledge.

By using chemical-free farming, with tree conservation and planting, and appropriate use and stocking of animals, one can hope to avoid causing problems of salinity and water pollution.

Though most organic growers relate to small acreage farming and horticultural projects, there is no reason why their management knowledge can not be adapted to broad acre farming and land management.

A series of projects that a number of groups are working on is developing native fodder species for broad-acre farms, especially in conjunction with use of slow-release fertilisers. Selection to improve strains of these species is needed, as are solutions to problems, arising from the seeding habits of the plants concerned, of collecting seeds for dissemination.

It is hoped that organic grower organisations will take part in contributing to total catchment management. Their participation would enhance progress in finally achieving a sustainable environment for this and future generations.



*Bookham Landcare Group members receiving advice from Water Resources staff on stream bank erosion*

## **Australian Trust for Conservation Volunteers -- Making a Difference**

The Australian Trust for Conservation Volunteers aims to conserve the environment through involving the community in "hands-on" projects.

The ATCV is a non-profit non-political community-based organisation which operates in every state and territory. It invites anyone with a healthy interest in the environment to join, of all ages, abilities and backgrounds.

Under the guidance of employed and trained field officers and programme managers, volunteers assist in projects such as revegetation, seed collection, fence construction, walking track maintenance, weed and vermin control, heritage restoration, wildlife and other scientific research.

ATCV is involved nationally with LEAP programs as well as with Landcare groups.

ATCV volunteers work on both public and private land including forests, beaches, parklands and farmland. ATCV provides a field officer/supervisor, transport, accommodation and equipment for all projects.

The Canberra office runs week-long and weekend programmes. Unemployed people who complete projects of



three weeks or longer receive a certificate and, if appropriate, a reference.

Private landholders wanting ATCV to work on their properties can expect to pay something in the region of \$1200-\$1400 per week for a team of six people. People interested in this or any other aspect of ATCV can contact Michele Belford at the Canberra Office, Box 1042 Dickson ACT 2602, phone (06) 247 7770 or freecall (008) 646 915. The National headquarters are at P.O. Box 423 Ballarat Victoria 3353, phone (053) 331 483.

# A Guide to a Healthy Pond

by *Heloisa Mariath*

Probably the most common problem that occurs in ponds throughout the summer is green water. This pea soup effect is caused by algae. When conditions suit them (i.e. bright light and plentiful nutrients) they can occur in vast numbers – over 50 000 algae in a teaspoon of water.

Although unattractive, the algae actually improve the condition of the fish by releasing essential vitamins and iodine into the water. These substances improve the overall health and vitality of the fish and result in very intense colouration. Unfortunately these benefits cannot be seen through the thick green soup caused by the blooming.

Conversely, algal blooms can reduce growth of waterlilies and other aquatic plants by reducing light and nutrients available to them. Rapid decomposition of heavy algal blooms can also cause oxygen depletion and kill fish, particularly in warm weather.

Algal blooms feed on phosphates and nitrates, therefore there are several environmentally friendly ways of controlling algae.

## Methods of control:

1) Do nothing. Let nature take its course. This is by far the best method because in a few weeks the pond will achieve natural balance when the excess of nutrients has been mopped up by the algae and other plants.

2) The ultimate filter system is a natural one. Submerged plants and scavengers are the silent workers whose vital role is balancing your pond. Competing with algae for dissolved nutrients in the water is the chore of submerged plants. They also trap debris in their foliage and provide spawning media for fish.

A density of one plant (6 stems) and one scavenger each 30 cm square (or 1 square foot) is recommended for small ponds, and half this density for large ponds. In small ponds, 2/3 of the surface should be covered by foliage of plants such as waterlilies. In large ponds, 1/3 to 1/2 pond-surface cover is sufficient to cut sun light from the algae, reducing photosynthesis and controlling growth.

Scavengers such as snails and tadpoles graze in the moss-like algae in your pool's sides and will eat leftover fish food and plant debris.

However, according to the Department of Environment and Planning, if levels of phosphates are above 0.02 parts per million (ppm), regular problems will occur. In this case, other management techniques can be recommended:

3) If nutrient levels are high, an ecologically safe dye can be added to the water, which will absorb specific wavelengths in the sunlight spectrum that cause the algae to photosynthesise, therefore weakening the algae. It also enhances the reflective quality of the water, to a deep dark lagoon effect. Many public gardens use this dye to dramatise their waterlilies and fish.

4) Nutrient levels higher than 2 ppm of phosphates require further water conditioning to ensure that the algae does not regrow. A natural, cleansing effect of sunlight in water can be amplified by addition of a natural compound that locks up phosphate and precipitates it in small stones in the bottom of your pond, where it can be collected and used as fertiliser in your vegetable garden.

5) Install a filter. This has the added advantage of improving dissolved oxygen content, particularly if the water returns to the pool over a cascade. Choose your filter carefully and be aware that the filter will need more frequent cleaning during periods of heavy algal blooms.

6) Use a good quality algicide. Traditionally algal blooms have been treated with chlorine or copper sulphate. This is not a favoured option; they can affect plant health and may even kill the more sensitive plants.

7) DO NOT drain the pond and refill, for it will happen all over again.

8) DO NOT overfeed fish. Our experience is that an established pond well stocked with plants has enough food to keep all but the most gluttonous fish happy.

The water treatments described vary according to the types and density of the algae, and levels of nutrients. aQuaviva can treat your pond or advise you on application procedures. For more information ring (06) 285 4688.



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VACANCIES DECEMBER AND JANUARY



Your Rural Correspondent David Odell

## Two Books and a Dash of Spring



Spring is always a busy time of the year but this time around it seems to be even busier than before. It started with the lambing, then the chickens arrived, the cows have calved and, of course, the garden is demanding attention. All of this against a background of one of the most persistent droughts on record which has made it difficult to plan ahead with any degree of certainty except to batten down and prepare for possibly even more severe conditions as Summer approaches.

When conditions are difficult it is always a good idea to have a look at culling out those animals which are not as profitable as they should be. The obvious ones go first, such as the ewe showing poor type and not rearing a lamb.

But to make a decision about one of your favourites is more difficult, especially when she is one of my original ewes and one which has lost most of her teeth so that she requires supplementary feeding. So I give her, and others like her, a chance to live and breed again and if she can make it through this drought she will have selected herself as a "survival" ewe.

It has also given me the chance to note the performance of the more exceptional ewes such as the one which has reared twins and has maintained herself in good condition - even more pleasing to note that her twins are daughters and are likely to carry on her characteristics.

One ram lamb has stamped himself as a likely future sire and I have also noted his dam for particular reference as it is under these more difficult conditions that elite animals make their mark and desirable characteristics are enhanced.

First and foremost I am looking for a type that has longevity, does not require drenching for worms and is resistant to fly-strike, in effect minimum-maintenance sheep which I use as mobile mowers and manurers. If there is a surplus of males then lamb is on the menu. Generally the ewe-lambs are kept for breeding, subject to their meeting desirable breed characteristics and fertility, as these are my foundation for a "closed" flock and the concentration of a desirable gene pool.

The chickens arrived as day olds by air courier from Sydney in four boxes of fifty each, one hundred of them being Isabrowns for their lovely brown eggs and the other half meat chickens in anticipation of Christmas.

I had already set up their brooder shed with fresh hardwood sawdust spread to a depth of 200cm on the concrete floor. The four infra-red brooder lamps had warmed the atmosphere, the automatic watering system had been installed and tested, and their little feed hoppers had been primed with feed. I had already got in a supply of organic wheat (from the only source still available) as these are intended to be reared in accordance with the organic standards set by the Biological Farmers' Association.

The Isabrowns have thrived but I don't think I'll persist with the meat chickens as I'm a little disappointed with their performance and survival rate. My supposition is that they are bred to grow so quickly on a highly concentrated diet that they outgrow their strength and because of their extra weight they find it difficult to walk around, let alone scratch and forage.

Another factor militating against continuing with the meat chickens is the extra work involved in processing them and the extra facilities required for them to be hygienically prepared. As my time seems to be limited I have to put in the effort where I can be most effective.

This is why I have made a managerial decision (as far as chickens are concerned) to concentrate on rearing Isabrowns, not so much for me to produce eggs but as started chickens for the backyard producer and those who want organically reared chickens for certified production. At this time they are available from eight-weeks of age progressively up to point-of-lay (which is approximately five months), and come with my guarantee of satisfaction.

The benefits of having started chickens are many, not the least of which is the fact that they are over the difficult time of brooding when losses can be expected to be greater and the expense of specialised equipment is also avoided. They also come with my advice on how to best manage them for your individual circumstances.

The cows started calving on 12 September and since then the six of them have produced seven calves, one bull and six heifers which included a set of twins. Twins are rare and twin heifers are even rarer so it seemed like a good fertility omen for "Affer the Bull" to outscore the AI service in paying for his services and to make up for the previous year's disappointment when they all missed out.

Same-sex twins are OK as breeders, but if it happens that there is one of each then the female of the pair is infertile and is called a "freemartin" and can only be kept for meat. So you may imagine my apprehension as I looked to ascertain the sex of the second calf, and my relief to find that it was a heifer too.

The cow with the bull calf will adopt foster calves so I bought a Hereford "bobby-calf" steer from the saleyards and made up another set of twins – this time an odd-looking set – and she is doing a good job of rearing some steak-on-the-hoof.

Four of the six cows were calving for the first time so this meant I had to "break them in", or more correctly, to teach them how to be milked if they were to be house cows. This can often be a time of some excitement ranging from fidgeting, to kicking, to nervous excrement getting everywhere and even "wild" milk as each cow has a different temperament. Even though this can be guessed at, one doesn't really know for certain until one settles down at the business end often with a headstall and a leg rope as precautions. But as I have always treated my cows kindly I hoped they would reciprocate on this occasion and I was not disappointed.

Each one in turn was induced to settle down with some concentrate ration to keep their head in the one place while I patted them and played around the udder until I was milking them without their quite realising it. None of the cows was leg-roped and I didn't get a fidget or a kick from any of them. The only attention I did get were some looks and sniffs as though I was some odd-looking calf that had taken over. These are the quiet sort of cows that can be taught to lead and be milked under any sort of conditions, the ideal house cow where the calf has been penned overnight so that you have the morning milk and the calf is reared naturally as it has access to its mother during the day.

The advantage here also is that if one wishes to go away or even have a day off the calf will be glad to take over and do the job for you so you are not bound to the normal dairy routine of twice-daily milkings. And, because they are so quiet, they are more readily able to rear foster calves which for the small farmer can be a useful sideline also.

I had late-sown a patch of oats for winter feed but had nearly despaired of getting anything off it. It was only the retained moisture which allowed germination and early growth, together with a couple of diffident showers. This gave an indication that it would grow if it had the

opportunity, so I decided to install some irrigation sprinklers serviced by the domestic pump.

This involved a bit of guesswork and fiddling around with gate valves and polypipe fittings but the results are more than satisfactory. In the first instance there is this vivid oasis of green which has been set up with electric fencing to allow the cows to strip-graze it. The results of this are already evident in the cows' eagerness to get to it and the extra milk it has provided for the calves.

In the second instance it is being prepared for field crops such as potatoes, tomatoes, sweet corn, dwarf beans and pumpkins. Later on there may be the opportunity to sow an Autumn crop of peas. With the irrigation already installed I can feel more confident that results will be forthcoming. The advantage of this extension is that the cottage garden can now be used for herbs, salads and other small-seeded vegetables such as carrots.

\*\*\*

The two books which have been brought to mind at this time are *Quick Poison Slow Poison, Pesticide Risk In The Lucky Country*, by Kate Short, published by her and printed by Envirobook, Sydney, and *The Seed Savers' Handbook for Australia and New Zealand*, by Michel & Jude Fanton, published by the Seed Savers' Network and printed by Merino Lithographics Pty Ltd, Queensland. These books have been reviewed elsewhere to critical acclaim and I do not wish to duplicate or repeat what has already been written about them but only to add a couple of observations from a parent's perspective.

These books, in particular, are for our children to appreciate and take up the challenges they issue. Otherwise it may be too late for our grandchildren to change the trend of corporate greediness, the quick-fix application of poisonous chemicals on the one hand, and the diminishing gene-pool of seeds on the other.

Kate Short is a passionate and articulate speaker and has agreed to speak to our members at our monthly meeting in April 1995 - an occasion not to be missed. The motivation for her passion may be gleaned from the final sentence in her Acknowledgements on p.6, where the loss of her young son to deadly chemicals is recorded.

The Seed Savers' Handbook also provides an inspirational guide for our children and practical advice in maintaining bio-diversity in seed stocks. This link was aptly summed up by Esther Deans in her talk to a packed COGS audience when she said "Seeds are our future, Children are our future - Let them grow together!"

## Why Should we eat Organic Food?

by Betty Cornhill

Somebody said to me the other day, "I think all this stuff about growing food without chemicals is just a fad. I know lots of people who have been eating food from the markets, food grown conventionally, and they are perfectly healthy, so why all this fuss about not using chemicals?"

"We used super on our farm when I was growing up", she went on, "and we were perfectly healthy, and our sheep and cattle were healthy too, so I think it's silly to make so much fuss about using chemicals".

My first reaction was to say that superphosphate is probably the least bad of all the thousands of different chemicals used in agriculture and in the home.

My second reaction was to point out that millions of people in Australia, and world-wide, have asthma, probably lots more than it had 40 years ago when she was young, and what about the people with heart disease, cancer, arthritis and rheumatism, multiple sclerosis, Chronic Fatigue Syndrome?

You and I know a great many people who suffer from some kind of degenerative disease, so it's quite possible that the increase in the use of chemicals in our food is also responsible for the increase in these diseases.

Research projects are being undertaken in many countries in the world today, but as yet there are not too many of these, and guess why?

The big multinationals have most of the money. They make huge profits out of selling chemicals. Research costs money. Nobody can afford to do research for nothing. Everyone has to feed himself and his family. Women are getting more jobs in industry and in research, but a woman also has to feed her family. So who is going to pay for research into the bad effects of chemicals on the body? Certainly not the multinationals.

Some years ago, when the scare about Agent Orange was on, and the chemical companies were telling the Vietnam veterans that their physical problems had nothing to do with Agent Orange, I was listening to the radio, while driving out to my organic farm, and I was infuriated to hear a doctor speaking for BP, saying that Agent Orange was completely harmless! "There is no research to indicate that either 2,4-D or 2,4,5-T cause birth defects", he said.

At that time I was too busy growing organic vegetables for a number of families in Canberra, including my own, to find the time to write to BP about it, but of course we all know now that Agent Orange caused birth deformities in the children of the veterans, among other things.

I had a duck on my farm, which I had bought from a man who bought wheat from a farmer near Young to feed his poultry. The farmer had used 2,4-D as a weedkiller before planting his wheat, as the Dept. of Agriculture recommended at that time. So the duck that laid the egg

from which my duck hatched was fed on wheat contaminated with dioxin, the bad ingredient in 2,4-D.

As my duckling grew he developed a deformity of one wing, so that it dragged on the ground, and he was unable to fold it. It was only after I had contacted the breeder that I discovered the reason why.

Recently I bought a copy of the the 1992 Market Basket Survey put out by the National Health and Medical Research Council. This is the most up-to-date one you can get, and it is more comprehensive than the previous ones I have seen. If you borrow a copy, or buy one from the Government Bookshop, be prepared for a shock if you have been eating conventionally grown food.

**Celery contains 14 different pesticides**, and although they may be in small amounts doesn't mean much when you consider the synergistic effects. It is a cocktail of chemicals, and I, for one, will not subject my body to such poison. I would rather do without celery, but I will most certainly continue to buy organically grown celery, even though it may be more expensive.

**Lettuce contains 9 different pesticides.** And lettuce is one of the easiest plants to grow in your back garden or community garden plot. It will germinate at this time, and young plants are not damaged by frost. If you plant a thick row, you can eat the thinnings, and transplant quite a lot, some in shade, so they will last longer in the hot weather. Eventually they will go to seed when the weather gets hot and dry, and the days are long, but successional sowings may take care of that, or you can buy organically grown lettuce from our excellent organic retailers here in Canberra.

One of the most shocking things in the Market Basket Survey is the figures on infant formulas, and the average amount of poisons such as **mercury, copper, aluminium and cadmium, as well as pesticides, ingested by babies.**

**The estimated weekly intake of metals in micrograms per kg of body weight for a 9 month old infant for diets based on the average energy intake is, for cadmium, 1.29, for lead 3.59, for copper 522.61, for mercury 0.55.**

**Of the 54 different pesticides tested for, infants had weekly intakes of 32 — a horrific lethal cocktail.**

No wonder so many children get asthma, eczema, and other allergies, while they are still young.

If I had children now, I would be growing organically or buying organic food for them, even if my income was very low.

I have seen too many people with alzheimers, athritis, cancer, emphysema, heart disease, stroke, and particularly Chronic Fatigue Syndrome not to feel very strongly about this.

*continued p 21*

continued from p 20

Dr Jean Munro, an allergy specialist in England, has said that every patient she has seen for allergy has chemicals in the blood. I have friends who are allergic to milk, ordinary milk, but can drink raw milk with no ill effects. The doctors now say asthma is caused by dust mites, and mothers must vacuum very thoroughly every day. Poor mums! I had asthma at the age of three, seventy years ago. I was tested for various foods, etc., and was taken off butter, oranges, bread and ordinary toast, but was allowed bacon grease, grape juice, and toast made in the oven. I was kept away from cats for several years. Now I am not allergic to any of these things, and my house must be full of dust mites, but I have no asthma.

A friend's daughter, aged 15, died from an asthma attack recently. **How long are we going to go on feeding our children and ourselves on these chemicals?**

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## Workshop -- Farm Diversification

David Odell's property "Rockyglen", near Bungendore, will be the venue of another workshop run by **Southern Adult Education Centres Inc.** On Sunday 20 November, entrepreneur and author **Craig Guy** will discuss his innovative approaches to farm diversification, including tourism, and how to develop networks of marketing outlets to sell your products.

Craig's farm "Central Victoria Earthworms" at Heathcote Victoria, initially harnessed three species of earthworms to condition topsoil and produce worm castings for use as fertiliser on a large scale.

Subsequent ventures, either planned or under way, include producing vegetables, yabbies, silver perch, water chestnuts and snails. He has established a series of dams and paddies for breeding yabbies and where perch and snails will be introduced. He intends to keep yabbies and perch in one pond by maintaining correct algae and water weed levels, and has ideas about keeping predatory birds away.

Two products of Craig's enterprises are yabby pate and pickled yabbies, sold at gourmet food outlets in Australia and overseas. Waste products are recycled as fish food.

Among Craig's diverse farm products are systems used on site to feed earthworms on refuse and waste at Melbourne Markets and a paper mill. He has trialled coal overburden (soft peat) with worm castings to make a capsulised fertiliser for marketing to farm communities.

Craig involves groups of people in his business on a contract basis. He has one scheme where unemployed people work and share in the net income from vegetable growing in his hothouses.

A fee will be charged for the workshop. For details and registration contact **Elizabeth Waddell**, Adult Education Coordinator, phone (06) 226 2223.

*Craig will also speak at the COGS seminar "Water-Wise Organics" in Canberra on Saturday 19 November (see announcement on p 25, this issue).*

## Obituary: Sister Joyce Lubke, 1910-1994

by Cecil Bodnar

Joyce Lubke will be missed by many members of the Natural Health Society and the Organic Growers Association, and the parents who benefitted by her outstanding insight into children's health.

As a double-certificated Medical Sister with general and midwifery certificates, her health was in a bad way by her late 30s. She had angina, high blood pressure, severe arthritis and a kidney infection about which doctors warned she would die if she did not have the kidney removed. She had worn glasses for much of her life. At the age of 43, doctors warned that she would be bedridden with arthritis within two years.

After visiting a naturopath, she changed to a balanced vegetarian diet and by the end of six months had overcome all of these complaints -- the heart trouble and arthritis were gone, the kidney drained naturally and she no longer had to wear glasses.

She decided to become a naturopath and became Australia's leading authority on Natural Health for children. In 1980 she released her book, *I had No Say: a Guide to Natural Living for Parents and Children*, for which a second edition was released in 1985.

As a Sister at the Hopewood City Clinic and later at Hopewood, Wallacia, Joyce Lubke met many people. Over the years she has addressed many Natural Health Society branches and conventions, the last only two weeks before her death.

Joyce and husband, Mike, founded the Organic Growers' Association (NSW) in 1972. Their garden at Bringelly was the scene of many organic know-how days and has been a demonstration organic garden visited by thousands of people over the years.

Government recognition came when Liverpool City Council presented Joyce with a Heritage Award - **Member of the Order of Liverpool**. The citation reads: "Service for the sick and for her work in the field of natural diet, vegetarianism and organic farming".

Joyce continued to maintain her health at an exemplary level, writing in 1968 that she still did not wear glasses, had a perfectly healthy kidney, no heart trouble or high blood-pressure and no sign of arthritis.

Just after they retired to Camden Retirement Village, Mike died. Back on her feet, Joyce started a home fruit and vegetable garden for which Camden City Council presented her with the Edible Garden Award in 1992, 1993 and 1994.

Continuing to help people right to the end, she gave talks at the Camden Citizens' Centre and had just returned from a speaking trip to Cairns when she died from a health complication that no doubt arose at Mike's death and was aggravated by on-going stress-related problems.

Joyce will be sorely missed by her family and those many people who found her advice invaluable and her reassurance/encouragement a rock of support.

## Kate Short's "Quick Poison, Slow Poison: Pesticide Risk in the Lucky Country"

(270 pp., bibl., index, St. Albans, N.S.W. 1994, \$24.95)

Book review by G.M. Baker

This book is written by a well-known activist on environmental issues, but unlike similar works it concerns the effects on humans of various pesticides. Described on the back cover as 'an expose' it is emotive, designed to stir people, and is strongly biased - "I have made the selection [of material] with a conscious bias toward those that support my hypothesis" - Introduction.

The major focus of this book is to force change regarding pesticide use in Australia. While acknowledging some need for pesticides, the author states "society has yet to find an acceptable balance between the short-term economic necessity of pesticides use and the long term ecological need to reduce pesticide pollution world wide". There is no mention of other pollutants such as car emissions, industrial waste or chemical fertilisers, chemicals per se seem not to be the argument, the focus is solely on pesticides and their effect on people. "This book is written to inform you about these issues" and within the limits the author has set, it serves its purpose. However, I would have preferred some detail on the opposing view so that I could decide for myself (Reminiscent of the NRMA No vote). Her hypothesis is that "pesticides create significant health risks that are largely unrecognised by Australian health authorities, regulators [undefined], lawyers, physicians and the insurance industry."

Dr. Short appears to accept as accurate scientific evidence a rural magazine report with the emotive and dramatic headline "Why one farmer in every 10 poisons himself", based on "research from Victoria's Goulburn Valley", whereas elsewhere she quotes from detailed scientific papers, reports and so on and identifies such works in comprehensive bibliographies at the end of each Chapter. The case histories quoted are bibliographically identified as "adapted from personal correspondence with the author", or from contacts made through the Pesticides Monitor at the Total Environment Centre in Sydney which she helped establish.

It is not an easy book to read, (a scientific background in biochemistry would be an asset), and I found the style and arrangement of information was not user-friendly, nor was it easy to trace some items or themes quickly.

The work is arranged in four Sections:

1. Technical: the difference between acute and chronic pesticide toxicity, between quick and slow poisons.
2. Human exposure to pesticides: technical and procedural limitations of pesticide measurement.
3. Pesticide assessment: the way Government assesses pesticides, the many gaps in knowledge of pesticide toxicity for humans, and corporate secrecy.
4. The social and political aspects: comparison of Australian, European and American approaches. Most

of the overseas material is from American sources.

Appendices:

1. Agenda for Reform [of pesticide use]. This, for me, seemed to put the whole work in context: it concisely sets out the proposed reforms which justify the data collection; and,
2. Challenging Pesticide Risk, which details exactly how to run a campaign, deal with the media, the legal aspects, the strategies and tactics needed. The book is a detailed, if prejudiced, file of sometimes very intensely presented information.

I have lived in an aerial-spraying district where 2,4,5-T was used, and suffered sufficient physical reactions to cause me to change locations; local residents were not as mobile as I was and had developed their own philosophy and rationale to the abundance of anecdotal evidence. But I would be wary of engaging in a campaign as outlined by Dr. Short without knowing a great deal more of the 'other side of the coin.' She lobbies against secrecy, but she herself admits suppressing information adverse to her case. Too much emotion qualifying her argument [grand deceit, shoddy history etc.], is scientifically unacceptable, and too many generalisations spoil the impact of her evidence [pp. 163-164].

I gained the impression that Dr. Short was not particularly objective in her approach to the opposite sex: for example, when discussing the mothers' reactions to children's defects, there is no mention of the fathers' feelings [p. 53ff], and "... perhaps the issue is just too difficult for the predominantly male administration and research community to cope with" [p. 151]. I found quite unnecessary. That this is followed by praise of two organisations run by women makes it more unfortunate, and detracts from the integrity of the work.

Yet three or four male scientists are identified elsewhere, and quoted, because they support the author's views.

The subject of this book is important. The author's Agenda for Reform is exemplary. The accumulation of data supporting the hypothesis is impressive. A great deal of effort and energy has obviously been expended in trying to collect hard evidence, but there is no indication how much of the literature does, in fact, support her views. One does not prove an argument by excluding the data which does not support one's case; this data should be presented, discussed and disproved. There is no other way the reader can assess the validity of the author's case.

It seems that aerial spraying is the main reason for large numbers of the general public being directly affected by pesticides. That this whole problem needs to be brought to public attention urgently is undeniable, and one must respect Dr. Short for her dedication.

### Summer Vegetable Planting Guide

	DEC	JAN	FEB
French Beans	S	S	
Beetroot	S	S	S
Broccoli	S,T	S,T	T
Brussels Sprouts	S,T	S,T	T
Cabbage	S,T	S,T	T
Cauliflower	S,T	S,T	T
Carrots	S	S	S
Celery	T	T	S
Chicory	S	S	S
Chinese Cabbage	S	S	S
Cucumber	S,T	T	
Endive	S	S	S
Kohl Rabi	S,T	S,T	T
Leeks	S	S	
Lettuce	S,T	S,T	S,T
Marrows	T		
Parsnips	S	S	S
Potatoes	S	S	
Radish	S	S	S
Silver Beet	S,T	S,T	T
Squash	S,T		
Swedes		S	S
Sweet Corn	S,T	T	
Tomatoes	T	T	
Turnips		S	S

S = Seed sowing

T = Transplanting

NB: 1. This table is an approximate guide only. Please observe the seasonal weather patterns before deciding when to plant, as there will often be distinct differences in summer weather from one year to the next.

2. Planting times will vary for different varieties of the one vegetable. e.g. December plantings of heading lettuces should be successful, but February plantings should be the butterhead varieties.

### Who has borrowed some of my favourite books and not returned them?

I am missing:

an American book on MOON PLANTING  
(not sure of title or author)

*Opening Doors Within*, by Eileen Caddy  
and *Vision*, by Ken Cary

So please return them

Betty Cornhill  
86 Waller Cres, Campbell ACT 2601  
phone (06) 249 8323

## PULLETS FOR SALE

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## Book Review: *Organic Farming* by Nicolas Lampkin et.al.

by David Odell

Published in the United Kingdom by Farming Press Books, reprinted with amendments 1992, 701pp. including Appendices.

I must admit that I approached this book review with some scepticism as I feared that this might be a cobbled together version prepared by instant experts who were aiming to cash in on the trend to organics.

However, I am happy to say that I was very much mistaken. The book itself is strongly bound with pages that are meant to be used by active farmers, the text is clear and amply supported by illustrations, diagrams and photographs (many of them coloured).

After an introductory chapter the book is divided into two parts, the first dealing with the principles of organic farming while the second looks at organic farming in practice and these are followed by six appendices and index.

Because organic farming has such a wide scope the selection of chapter headings would have posed a problem of what should be included if the topic is to be done justice but following the pragmatic approach of its author a sensible balance has been achieved.

Part one covers the living soil; crop nutrition; management of manures, slurry and organic residues; rotation designs for organic systems; weed management; pest and disease control; and livestock husbandry.

Part two then looks at livestock systems; grassland and fodder crops; arable and horticultural crops; marketing and processing; physical and financial performance; converting to organic farming and concluding with a look at the wider issues.

The appendices then cover such related issues as organic standards; biodynamic farming and gardening; general reading; addresses; Latin names of plants, pests and diseases; and some metric conversion factors.

After my initial scepticism and a cursory glance just to get the feel of the book I found I was being drawn into recognising its true worth as I saw that the text took a balanced view,

was tightly written, with many chapters having 'overviews' to summarise the points made.

To keep the book within manageable proportions each chapter is followed by detailed references and further reading and which, incidentally, shows the depth of the research and scholarship involved in the preparation of this valuable resource. Three matters in particular drew me to the author's points of view, the first is his use of the word 'organic' to describe the system as we know it together with his adoption of positives in presenting his definition of organic farming, secondly he recognises that we cannot set aside the developments of the last 50 years for organic farmers to be Luddites, and thirdly his emphasis on integration and management as the keys to providing a system which doesn't rely on the quick fix chemical alternative.

The many examples and case studies presented in this volume relate to European and Northern Hemisphere situations and although tedious to translate to Australian conditions are nevertheless still valuable in their context. It is to be hoped that as Nicolas Lampkin is now working at Lincoln University in Christchurch, New Zealand that a specific edition will be compiled for Australia and New Zealand.

He is also to be a featured speaker at the IFOAM conference to be held at that University in December and I look forward with interest to meeting him there to explore areas of mutual interest and to put to him the proposition that a Southern Hemisphere edition of "Organic Farming" will be enthusiastically received if it is as informative and of the same high quality as this book is.

This is a book which could be usefully included in the active organic farmer's library or one for the student wishing to make a start in following the right principles and practices. At around \$A70 it is not cheap but once that hurdle is overcome it will prove to be a constant and boon companion.

Canberra Organic Growers Society

presents...

a one - day  
seminar at

Corroboree Park  
Community Hall,  
Ainslie.



# "WATER - WISE ORGANICS" !!

*A feast of organic gardening  
Topics covered include soils, earthworms, mulching, weed control and  
plant water requirements.*

## SATURDAY 19 NOVEMBER

Morning  
programme

Keynote speaker **Cary Reynolds** of ACTEW

**Joyce Wilkie** well-known organic farmer and regular guest with Elaine Harris on 2CN.  
**Craig Guy** of *Central Victorian Earthworms* author of "Our Land Our Future worm  
systems for farm and garden".

Practical session including demonstrations of -  
soil blocking with Joyce,  
tools with **Michael Plane**

Afternoon  
programme

**Judith Turley** experienced organic farmer from 'Millpost' Bungendore

**Richard Stirzaker** from CSIRO researcher of Clever Clover

concluding with **A visit to Richard Stirzaker's nearby home garden.**

REGISTRATION: 9-45am

Seminar with morning and afternoon tea:  
10:30am - 5pm

Cost, including seminar notes : \$25  
(\$20 COGS members)

LUNCH AVAILABLE or B.Y.O

ENQUIRES and early registration:  
John Ross 241 4063

**LUNCH: ORGANIC FOODFEST**

Soup

Sausage Sizzle

Nibbles / Desert

Coffee / Tea / Fruit Juices

Vegetarian catered for

COST \$5



## COGS NOTICEBOARD

### **NOVEMBER GENERAL MEETING:**

The August General Meeting will be held at Room 4, Griffin Centre Tuesday 22 November, 7:30 pm. Speaker: Marcia Voce of Birchfield Herbs, Bungendore. **Visitors are most welcome.**

### **NO GENERAL MEETINGS, DECEMBER & JANUARY**

**MEMBERSHIP FEES UNCHANGED:** Membership and joining fees for COGS will remain unchanged for 1995, at \$20 (\$10 concession) and \$5 (\$2.50 concession) respectively.

### **NEXT COMMITTEE MEETING:**

Tuesday 29 November, 7:30 pm, Environment Centre.

### **VACANCY -- COGS SECRETARY**

The position of COGS Secretary is vacant. Members interested in this important job please contact **Michelle Johnson** (ph 231 6219).

### **SEED EXCHANGE:**

If you have an excess of seeds of your favourite non-hybrid vegetables or flowers, please remember the COGS Seed Exchange and bring some along to our Seed Librarians to share with other members.

Anyone willing to help clean seed (and learn how to do it in the process), please contact **Marjatta Asa** (ph 249 7406) or **Barbara Schreiner** (ph 248 8298).

**SPEAKERS AVAILABLE:** COGS will endeavour to make speakers available to interested groups in the Canberra region. Please contact **Michelle Johnson** (ph 231 6219).

### **THANKS TO SMITHS ALTERNATIVE BOOKSHOP:**

Many thanks to **Smiths Alternative Bookshop** (Alinga St, Civic) for their generous donations of prizes for our book raffles. Proceeds go toward purchasing books for the COGS Library. We ask members to show their appreciation by supporting Smiths Books.

### **JOYCE WILKIE'S RADIO PROGRAM:**

Don't forget Joyce's regular session with Elaine Harris on radio 2CN, the first Friday of every month, 1:30 pm to 1:50 pm.

### **COGS MULCHERS:**

The two COGS mulchers are available for use by COGS members. Enquiries to: **John Ross** (Northside, including Queanbeyan & Bungendore) ph 241 4063, and **Richard Blyton** (Southside) ph 231 6219.

### **WORKSHOPS & FIELD DAYS:**

#### ***COGS SPONSORED:***

**Water-Wise Organics**, Saturday 19 November, Corroboree Park Community Hall, Ainslie.

**SEE ANNOUNCEMENT P 25 THIS ISSUE**

#### ***OTHER:***

**Farm Diversification**, Sunday 20 November, "Rockyglen", near Bungendore

See article on p 21, this issue; Contact: Elizabeth Waddell, (06) 226 2223

### **IFOAM CONFERENCE, CANTERBURY NEW ZEALAND:**

11 - 14 December 1994 -- See notices previous issues of COGS QUARTERLY