THE COGS QUARTERLY

Canberra Organic Growers Society

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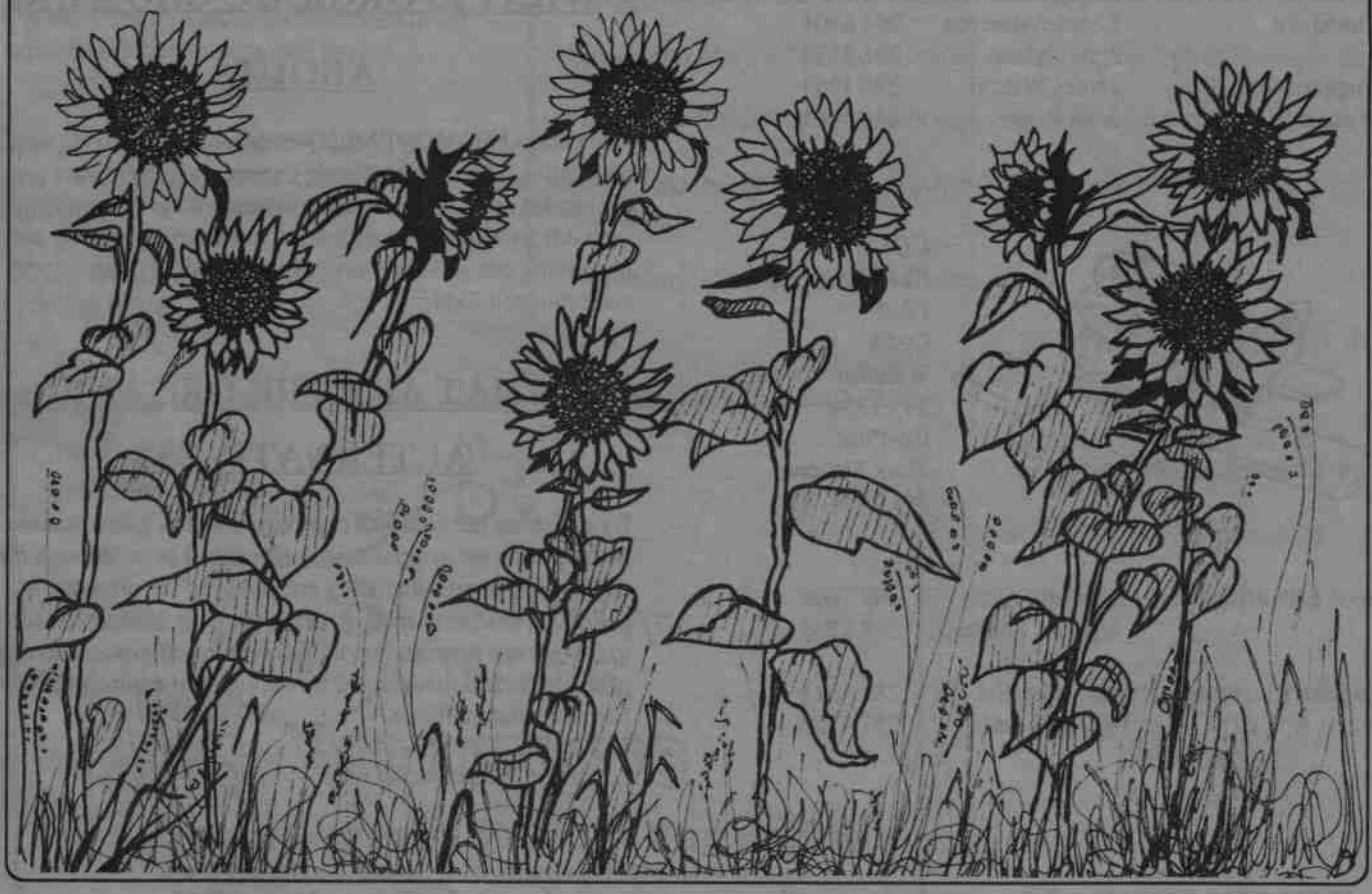

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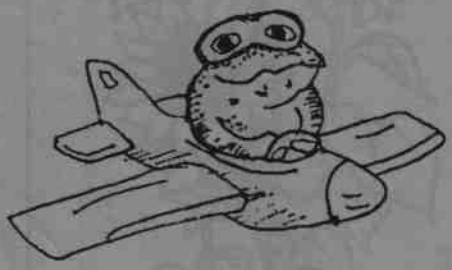

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WHAT IS ORGANIC GROWING ABOUT

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 gtatitude.

REMEMBER: Monthly meetings are on the 4th Tuesday of the month

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CONTENTS

Meeting Notices are on COGS NOTICEBOARD on the inside back page

NEWS BRIEFS

by Michelle Johnson

AROUND THE WORLD:

GOVERNMENT SUPPORT FOR ORGANICS IN EUROPE

With the growing concern in Europe for "clean" food, governments are beginning to actively encourage the organics industry. In the Netherlands a new trade association called the *Information Centre for Organic Products* has been established with the assistance of a DFI 6.2m (approximately $Aust4.75) grant from the Dutch government. In Denmark, government support for the organic sector will be DKr 128m (approximately $Aust 27.8m) over the next 4 years. Since 1987 when grants commenced, there has been a large increase in land in Denmark under organic production from 5,881 hectares on 219 farms to more than 18,000 hectares on 674 farms in 1992.

Source: IFOAM, Ecology and Farming, August 1993 p8

IFOAM CONFERENCE

The tenth IFOAM (International Federation of Organic Agriculture Movements) Scientific Conference will be held at Lincoln University on the Canterbury Plains, South Island, New Zealand in December 1994. The themes of the conference are People- Ecology- Agriculture. In Australia it is anticipated that there will be a number of pre-conference tours and seminars.

Source: Acres Vol 1 Nos 8-9, comment by Gerry Butler

NO TO GENETIC ENGINEERING

IFOAM has now clearly stated its stance on the use of genetically manipulated organisms (GMOs) with an announcement by IFOAM President, Thomas Harding, that the World Board of Directors has amended the IFOAM Basic Standards of Organic Agriculture and Food Processing -" *whereas no genetically manipulated organism or products thereof are used in organic farming, food and/or products.*" This stance came after the European Commission amended EC regulations on organic food production giving the go-ahead for the use of GMOs. The European Parliament, disapproving of this move, has brought the EC Commission to the European Court to settle the issue.

Source: IFOAM, Ecology and Farming, August 1993 p29

Debate on this matter will continue in Australia also. In *Acres, Vol 1 Nos 8&9*, Richard Hindmarsh has written two informative articles on this issue. Some interesting points he makes are:-

* Cheese manufactures in Australia are already authorised to use genetically engineered bacteria in the production of rennin.

* The CSIRO, with major funding from Coca-Cola Amatil Snack Foods, is field testing genetically engineered virus-resistant potato plants at Gatton in SE Queensland.

* Calgene USA wants to field test transgenic cotton tolerant of bromoxynil (a herbicide).

It is estimated that there is a global market for transgenic biopesticides of $US 6-8B, and a further $US6B worth in developing plants tolerant to herbicides. According to Richard Hindmarsh, "canola bioengineered to tolerate the herbicide Roundup (glyphosate), could increase Monsanto's annual sales of Roundup by some hundreds of millions of dollars (and canola is only one of at least 15 crops being engineered to tolerate glyphosate).." (Acres, Vol 1, No9, p6)

ORGANIC COTTON IN USA

There are now approximately 10,000 acres of organic cotton (less actually certified) in the USA, with a lot of attention being paid to this enterprise by clothing companies. One grower is Sally Fox, a member of CCOF (California Certified Organic Farmers), who grows a number of naturally coloured fibres, eliminating the need for any dyes. Such developments are good news for an industry noted for its use of insecticides (5 years ago cotton occupied 3% of the world's cropland, and received 22% of all insecticides used) and use of potent chemicals in the processing and manufacture of material.

Source: Acres, Vol 1, No 8, Tim Marshall's "A Letter From America".

IN AUSTRALIA:

EDUCATION IN ORGANICS

Luciendale Area School in South Australia has bought a 19 hectare farm close to the school which will be the focus of the school's Year 11 and Year 12 Certificate in Agriculture course. The farm will be run with organic farming methods. The project seems to have generated a good deal of community interest with the SA Farmers' Federation, The SE Soil Conservation Board, The Luciendale Community Development Board, the Luciendale District Council, local Land Care groups and a number of individual farmers all offering support. The farm is based on a NZ model, but hopefully will become an example of what can be achieved in other schools around Australia.

Source: Acres, Voll No 8 p22 "Building a Sustainable Curriculum"

DYNAMIC LIFTER CERTIFIED:

Readers may not be aware that certain Dynamic Lifter products have been certified by the BFA (Biological Farmers' Association). These are Dynamic Lifter Standard, Dynamic Lifter Plus Blood and Bone, and Dynamic Lifter Longlife. These product will display the BFA logo.

DELDRIN *Continues on page* **21**

Sir Ian McLennan award to Jonathan Banks for safer, cheaper pest control

Dr Max Whitten, Chief of the CSIRO Division of Entomology, displays the Division's 1993 Sir Ian McLennan Achievement for Industry Award Plaque, while Dr Jonathan Banks, on his right, displays the Medal. Dr Banks and his Stored Grain Research Laboratory team won the award for their contributions to the grain export industry. Photo by Maria Basaglia.

Dr Jonathan Banks of the CSIRO Division of Entomology has taken out this year's Sir Ian McLennan Achievement for Industry Award.

The award was presented by Mr Alex Dix, Chairman of the NSW Science and Technology Council, at a lunchtime ceremony at Sydney's Park Lane Hotel on September 29.

Mr Dix said that Dr Banks and his team at the CSIRO Division of Entomology's Stored Grain Research Laboratory had succeeded magnificently in keeping grain free from insect attack after harvest, thus helping to keep the Australia n grain storage industry in the forefront of world technology.

"Part of the premium price Australian wheat obtains on the international market is due to its freedom from insects," he said, "and this has come about almost entirely as a result of the work of Dr Banks" team.
"Since its inception in 1971 the Laboratory has aimed to reduce industry's reliance on the use of chemicals for grain protection. They've been doing this by developing alternative physical and biological techniques."

The Stored Grain Research Laboratory has developed several non-pesticide methods of protecting grains.

Dr Banks said that the team had identified worrying pesticide residue levels in the Australian diet in the 1970s, but that these levels had been continually going down as the team's new technologies were increasingly adopted.

Grain had been the main contributor to these pesticide levels.

On the financial side, the work of the Laboratory team has been worth more than $8 million extra a year to the export wheat market.

The various storage techniques developed have also saved the grain at least $10 million a year over the Laboratory's 20-year history.

Mr Dix said that Dr Banks had been quick to predict the change in market attitude away from chemical protectants and to help develop to commercial reality the science of controlled atmospheres.

"He was also successful in persuading bulk handling authorities to embark on programs of sealing existing storages," he said.
"The conversion to properly sealed storage has been so successful in Western Australia that in 1992 and 1993 none of its grain was treated with chemical protectants."

As part of the Award Ceremony, plaques were also presented to Dr Max Whitten, as Chief of the parent Division of Entomology, and to Mr John Lawrenson, Managing Director of the Australian Wheat Board, as representative of CSIRO's industry partners.

Mr Lawrenson said that Dr Banks had brought tremendous benefits to the grain industry.
"We operate in a very difficult international market," he said, "and so every competitive advantage we can get is important to us."
"Being able to sell grain free of pesticide residue is an enormous advantage to us".
"Without it we would be missing out on key markets like Japan. We simply wouldn't be in the race."

The Laboratory's work is funded partly by CSIRO and partly by its industry partners. These are the Australian Wheat Board and five bulk handling authorities - Grainco in Queensland; NSW Grain Corporation Ltd; Grain Elevators Board of Victoria; SA Cooperative Bulk Handling Ltd and Co-operative Bulk Handling in Western Australia.

In the past few years Certificates of Commendation have also been presented as part of the Sir Ian McLennan Achievement for Industry Award Ceremony, and this year's Certificate went to Dr Robin Bedding, also of the CSIRO Division of Entomology, for his work on nematodes.
Sir Peter Derham, Chairman of the Board of Management for the Sir Ian McLennan Award, said that Dr Bedding had led the world in the use of parasitic nematodes to control a wide range of insect pests.

"His work has had a major impact on the productivity of the national forestry industry," said Sir Peter, "and has led to the establishment of a new industry - the export of nematodes for the control of overseas insect pests."

reprinted from CoResearch, No 355, Oct. 1993, CSIRO's staff newspaper

Controlling codling moth with pheromone

by Dr. Richard Vickers, Senior Experimental Scientist, CSIRO Division of Entomology, Canberra.

Introduction
Codling moth is the key insect pest of apples and pears in the eastern states of mainland Australia and in many other pome fruit production areas of the world. Although various natural agents such as birds, spiders, parasites and viruses have an influence on codling moth numbers, their effects are neglible and insecticides are required to ensure that damage caused by the moth remains below the commercially acceptable level of 2%.

Codling moth is most commonly controlled in commercial orchards with the broad spectrum organo-phosphate azinphos-methyl, an insecticide that accounts for as much as 60% of all insecticides used in pome fruit production. However the need for alternative means of control is becoming increasingly urgent, in part because there is now evidence that codling moth is becoming resistant to azinphos methyl, but also because the Australian Apple and Pear Grower's Association has committed the Industry to reducing pesticide usage by 50% by 1996 and 75% by 2000.

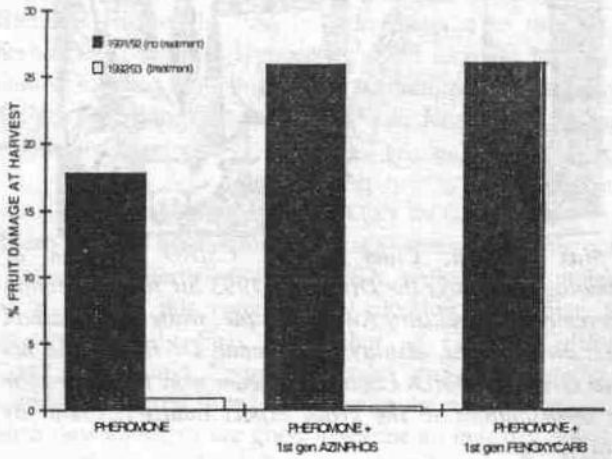
One alternative with potential to control codling moth is the technique known as "mating disruption". Like most moths, the female codling moth releases a species-specific pheromone (which is something like a perfume) to attract males for the purpose of mating. However when we release large quantities of synthetic pheromone into the atmosphere within the orchard, chemical communication between the sexes is disrupted, males are unable to find and mate with females and codling moth populations decline. The technique can only be used over large areas and is not effective in very small plots or on individual trees.

Evaluation
Trials to evaluate the technique commenced at sites in Victoria and NSW in the 1992-93 season in a co-operative venture between the State Departments of Agriculture and CSIRO.We have been comparing the effectiveness of pheromone treatments alone, pheromone plus azinphos-methyl and pheromone plus the insect growth regulator fenoxycarb, where in all cases pheromone was present for the entire season but the insecticides were applied only during the first generation.

In the year before the treatments were put in place (1991-92), adult male populations were monitored with pheromone traps, overwintering larvae were monitored with corrugated cardboard trap bands and fruit damage was assessed at harvest. All of these measures provided us with an indication of the codling moth pressures that the various treatments were likely to face in the following year. This proved to be heavy at the NSW site (Bathurst), where we able to let codling moth develop unchecked during 1991-92, and moderate in the commercial orchard in Victoria (Kilsyth).

In September 1992 the mating disruption pheromone dispensers were placed in all plots at a rate equivalent to 1000/ha (405/acre) and again early in December. Codling moth populations in each plot were monitored with pheromone traps and food lures throughout the season. Fruit damage, including windfalls, was assessed in January and at harvest and trap bands were again used to measure larval populations.

Results.
At both the Victorian and NSW sites, fruit damage at harvest was less than 1%, regardless of treatment. This compared favourably with 3.8% damage in another block at Bathurst, situated some 700 m from the trial site and which had been treated throughout the season with azinphos methyl. It also compared favourably with damage levels obtained in the previous season at both the NSW and Victorian sites (17-26% and 3-5% respectively). The graph illustrates the results obtained from Bathurst



Comparison of fruit damage before and after treatment, B.A.R.S.

The numbers of larvae recovered from trap bands also showed considerable reductions across all treatments between the 1991-92 and 1992-93 seasons. However the difference, at least at Bathurst, was not as great in the pheromone-alone as in the other two treatments and it is likely that the former plots will start the 1993-94 season with a higher population than the others.

Substantial numbers of males were caught in the pheromone traps during the first flight at Bathurst, but very few thereafter. In contrast, males continued to be caûght in large numbers for the entire season at a nearby commercial orchard. At the Victorian site catches were low at all times.

Future directions.
We are very pleased with the results to date and plan to continue the trials virtually unchanged during 1993-94. We will, however, devote more time to monitoring other species in the trial plots. Eliminating or at least reducing azinphos methyl usage for codling moth control may have an impact on the incidence of other species, some of which have the potential to become more significant pests as a result. Over the next two years we hope to identifiy those species and to be able to make recommendations for their control that are compatible with the Industry's goal of substantially reducing pesticide usage by 1996.

(Editorial comment: It is interesting to note that the fruit damage in all plots was less than 1%; perhaps we should question the cost, economic and otherwise, in using the chemical sprays to obtain only a small reduction in fruit damage over the damage in the pheromone-alone plot. In addition, perhaps the use of biological/physical controls over the following winter/spring could be used to reduce larvae numbers for the following season)

Growing food and losing out : the complicity of the city

Stewart Ross
Organic farmer, Pialligo

During the planting year 1987, J. Murison, District Horticulturist, reported the returns on conventionally grown and managed tomato crops in the Hunter Valley returned a margin of —$131.85 per hectare on a yield of 3,750 cartons of tomatoes at $6.50 per carton/10 kg (farm price). This was after a costed outlay of $24,506. How could this be?

A general investigation of world agricultural work and its relationship to urban living will throw some light on why this has come about and what it means for the future of world food policy. First we should look at the world as it is. As an example we will look at our world—Australia. There are now, in 1993, only 6% of the Australian workforce working in agricultural production. Their average age is now 58 years. It will be argued that this group is measurably tired, underfinanced and without any effective political clout: ie they have generally been reduced to a client status, effected by the decisions of the city without any time or resources to have any real effect on the policies that govern them.

If the existence of the Equal Opportunities and Human Rights Commission is to be seen in a just light—and it does appear as if it is concerned with justice—then surely the plight of the guardians of Australian rural lands should be an imperative for investigation, but, sadly it is not. Burdekin's exposure of the plight of the mentally ill surely demonstrates that the rural communities are badly served to a tragic degree. More resources are committed to the rescue, by fantastically sophisticated means such as helicopters, large state search parties and loads of city volunteers, of an injured rock climber than have ever been committed to the rescue or care of the psychologically or emotionally disturbed members of farming communities.

"Ah", I hear you say, "what's this got to do with food and agriculture?" Well, they are related. A number of studies now clearly demonstrates that the returns to rural producers, horticultural crop production, fisheries, etc, have for the last generation returned no more than between 5-9% of the retail price—the price you as a consumer pay. When the Arnott's company 'brayed' in the financial pages that it was doing very well in marketing snacks to the public, the retail price of the unit was 80c for 50 gms—ie 1.06 cents per gram. This is the equivalent of $16,000 per tonne. Gross returns to the grower of the principal snack ingredients were : $150 per tonne for wheat and $300-400 per tonne for potatoes. The differences are obvious! As another example, orange juice is approximately $2.00 per litre retail—this is equivalent to $2,000 per kilolitre. The price to growers is $45-60 per tonne, while the production costs to growers was $160-180 per tonne. There is obviously a minus $ yield to growers.

Grower inputs over the last generation have increased manifold and yet the financial returns have never been lower. The city must bear at least some the blame. Consumers, and their wholesale representatives, have continued to force down the prices growers receive with no consideration of the end consequence for both the farmer and the city. The city may be getting cheap food prices but at what ultimate cost? Well, let me tell you. The cost is a diminishing and exhausted farming sector that has no surplus resources to call on and the end cost is an erosion of all of our food resources. You may be getting cheap prices for cabbages, but is it worth it if there are no cabbages next year or the year after?
In the current Australian situation, growers are being forced into dealing with fewer and fewer multinational corporations for their basic seed stock. This has brought about a substantial reduction in the diversity of food crops available, with a subsequent dangerous situation in terms of loss of genetic food stock. A study undertaken by the Rural Advancement Fund International (1982) has shown that from a sample of 75 types of vegetables 97% were now extinct—only 3% have survived the last 80 years. For example, in 1903 there 544 varieties of cabbages. In 1982 there were only 28 varieties left (a 94.9% loss). Of the 497 lettuce varieties available in 1903, there were only 36 varieties in 1982 (92.8%). The study also investigated apple varieties in use between 1804 and 1904 in the US. Of the 7,098 varieties in use in that period, 6,121 had been lost—that is 86.2% lost.

This alarming loss of diversity needs to be considered alongside the prices farmers now pay for the limited varieties available. Consider these prices and varieties available from the January 1993 New World Commercial Seed List: a) cabbage—2 open pollinated varieties at $240/kg and 11 hybrids from $1,000 to 1,200/kg ; and b)cauliflower—3 open pollinated varieties at an average price of $600/kg and 4 hybrid varieties from $2,280 to $3,200/kg. At germination rates (optimistic) of roughly 80% these prices must be adjusted upwards. In addition, it should be noted that the vast majority of the commercial seed available is import stock.

Small community organisations such as seed savers networks may appear to be addressing this problem but their main clientele are domestic gardeners and growing groups. They are not addressing the more significant problem of securing a broad base of foodstocks for the population. It could be said that seed saving networks are somewhat myopic and unrealistic. In particular, these networks discourage, indeed ban, small farmers from developing a commercial viability on seed production. Free exchange amongst a group of domestic gardeners will not ensure a sound biodiverse base. Nor will it ensure that the city gets its food in the future. This can be only achieved by encouraging those who make a living from food production to develop a viable commercial approach to the generation and preservation of seed. If this does not happen, the grower is forced back into the non-viable hands of the multinational seed companies with their limited, highly expensive and imported seed stock.

The rural sector in Australia is in a genuine crisis. And it is not a drought, flood or rain crisis—it is a social crisis. The city needs to recognise that they have a role to play in fair returns to the grower; fair returns that will allow the grower to ensure the food stock, the viability and the biodiversity of the country as a whole. One way you, as consumers, can play this role is to encourage and support the production and marketing of regionally appropriate food varieties. Demand to have direct access to the full range of local rural produce. Remember each kilo of food in Australia travels 1,000 kms from producer to consumer. Reduce the environmental impact of food transport and directly support your local rural communities.

Poisons within Organic Products

This article has been prepared from a transcript (prepared by Joan Buckie) of the talk given by Jennifer Davis-Downs at the COGS September monthly meeting and articles from which she quoted during that discussion.

Sylvia Maseyk

We may be using products in our organic gardens which we are not aware contain poisons. Jennifer Davis Downs aims to inform people what these problems are and provide some positive ways to remedy their effects.

The information in this article can be applied equally to home or commercial organic gardens or even broadacre organic farms.

Gypsum:

Synthetic gypsum is what is generally available through commercial nurseries - a dirty white coloured powder. Synthetic gypsum is almost 100% pure calcium sulphate: it can be too good at what it does, opening the soil up so much as to create salinity problems. In open soil, the salts can easily rise to the surface, killing plants.

Synthetic gypsum is a bi-product of either superphosphate or refrigerant manufacture. Superphosphate contains high levels of cadmium. The gypsum which is a bi-product of refrigerant manufacture contains high levels of lead. The Paton's company in Sydney has recently withdrawn its synthetic gypsum from the market because of the high lead levels within it.

Natural gypsum is also calcium sulphate, but is not as pure as the synthetic product. It comes in a range of colours (pink, yellow, red, orange or brown) depending on the stone formation around the mined gypsum. Natural gypsum does not contain heavy metal residues and will not open the soil too much.

"Trials reported on by Mr R. J. Flynn, Department of Agriculture, Albury, have been conducted using differently sourced natural gypsums against bi-product gypsum, and in all cases natural gypsum was far superior to the fertiliser bi-product. The bi-product gypsum is nearly pure calcium sulphate which is readily dissolved and apparently leeches very quickly, whilst the natural gypsum releases it approximately 70-85% calcium sulphate more slowly. The moisture content of the bi-product gypsum was found to have no effect on the results. Farmers who have used bi-product gypsum have been generally disappointed with the results." - Information Bulletin on Gypsum.

The easiest way to tell the difference between natural and synthetic gypsum is to check the colour. If it is grey it is most probably synthetic. Bag labelling is no indication. Neutrog is the only company Jenny knows which is bagging natural gypsum commercially. Neutrog natural gypsum is available through Hall Rural and some nurseries.

Cadmium poisoning due to overuse of synthetic gypsum, results in twisted fruit and leaves on plants. One way to remove cadmium from the soil is with a new product called Zeolite, which is a hollow rock crystal, highly charged with ions which attract cadmium. Cadmium is attracted away from the soil to be held within this hollow formation.

If you have been using a lot of synthetic gypsum, it is suggested you try Zeolite because the only other way cadmium can get out of the soil is by moving into the herbage or fruits of the plants that are then consumed in the food chain. In addition, the retention of nitrogen within the hollow Zeolite has a slight warming effect on the soil which increases microbial activity.

Blood and Bone:

Commercially available Blood and Bone is not necessarily organic. There is a mix available which contains "black jack", or sewage waste. It is worth noting that the Biological Farmers Association (BFA) will not certify produce as organically grown if sewage waste is used on the land on which it is grown. The content or purity of sewage waste cannot be guaranteed, as it changes from day to day depending on what is flushed or drained into the system. However, it is known that sewage sludge contains heavy metals such as chromium, cadmium, lead, nickel and even arsenic.

"BCRI recently analysed seventeen samples of organic fertilisers including eight samples of blood and bone products for heavy metals...Seven out of eight samples contained high levels of cadmium, chromium, copper and zinc based on the draft heavy metal levels allowable in products containing sewage sludge. Four samples also contained relatively high levels of lead and three samples contained relatively high levels of nickel." BCRI News

Neutrog has discontinued the use of sewage sludge in their Blood and Bone products.

Roundup

There are two main problems with Roundup. Firstly the inert ingredient (polyoxy-ethyleneamine or POEA) may be more harmful to humans than the active ingredient (glyphosate) itself. As the herbicide breaks down in the soil, the POEA forms lethal chemicals that can cause cancer in humans exposed to them. It is understood that when assessing Roundup for safety, the relevant authorities in the United States may have tested only the glyphosate component of the product, not its inert component.

Secondly, the glyphosate component may not be rapidly inactivated in all soils, particularly sandy soils, during the recommended withholding period, resulting in poor crops. That is, the Roundup kills the emerging weeds but it also has an inhibiting effect on the roots of the plants that it is meant to protect so the plant does fairly poorly.

The soils with the biggest problem are sandy, with low phosphorous absorption rates and which have been treated with superphosphate. Jenny discussed research undertaken by students at Armidale University indicating that traces of Roundup could be found in soil 7 years after its last application.

Why Weeds?

The question must be asked then, what alternatives are there to using products such as Roundup or Zero to destroy weeds? Jenny believes weeds are nature's indicator of what is wrong with your soil. Rather than kill the weed, think about why it is there and how changing the fertility of the soil could assist.

The weeds most people want to get rid of are Kikuyu, Couch, Patterson's Curse and Dock which all assist to increase the fertility of the soil. If you increase soil fertility using some other means, there will be no need for these weeds to continue to grow. For example, plants with strong tap roots, such as dock, will draw up minerals from the second strata of the soil into the topsoil. If you kill the dock, nature will want to return the mineral content of the soil to balance by growing more dock.

Couch grass grows in areas where the topsoil is very shallow. Its purpose is to hold together what is left of the top soil and replace organic matter. If you increase the amount and humus content of your topsoil there is no further need for the couch grass.

Thistles have a wide broad base where the leaves spread over the ground surface. Underneath, the earth remains cool, allowing microbial activity to occur. Thistles and nettles are indicators that the soil is improving.

Nettles are also very high in calcium, which is necessary for strong growth. Other sources of calcium include lime, dolomite or gypsum, which could be added to the soil to reduce the need for nettles to grow there, without reaching for the Roundup.

Jenny undertook an "experiment" with couch grass which at her property grew in one particular location in a mat on poor granite soil with pH 4.5. She added to the soil large amounts of chook manure, Symbex (a microbial stimulator) and kelp. So far, the couch has only returned if she stops feeding the soil.

Other Weed Control Methods

Tussocks have highly fibrous root systems which add organic matter to the soil, and are home to worms. Tussocks are quite good feed but harbour rabbits. Jenny says the BFA suggests boiling quantities of the weed and spraying it back over itself or you could try a high dosage of calcium as dolomite (which also balances magnesium) to stop the need for the weed to be there.

Jenny also suggested trying a Bio-dynamic method called peppering. She suggests you contact someone who knows the detail of this method but here is a broad outline:

Seeds of the weed plant are picked, heated to crucible heat at the full moon, preferably by burning pine needles. The mixture is then potentised by a naturopath/homeopath or you can do it yourself. Spray the mixture back at the right time of the moon cycle and the weeds will not return. You must pick the seed yourself and it must be local to the area you want to spray.

Jenny discussed a case she had observed over a 2 month period on John Priestly's bio-organic orchard at Tocal. John had a problem with fireweed. Within one month of peppering with the potentised fireweed seeds, all fireweeds had been killed off.

Jenny believes that there are times when there is no viable alternative to chemical methods, particularly for commercial farmers. But if the use of chemicals is unavoidable, at least we can do it sensibly.

For example, blackberries have a natural defence to Roundup so you need to be thoughtful about how you apply it. When the plant is actively flowering, feed with kelp so that the plant will open its whole system to make the glyphosate more active. Then apply the glyphosate with a hard-sticking wetting agent or carrier such as codacide oil which will move the glyphosate rapidly into the root system.

Codacide oil gives a better "hit-rate" and "stick-rate" when used commercially to cut down other sprays. Trials in Scotland indicate that Roundup is more effective when applied with codacide.

Symbex

Symbex was developed for use in the Po Valley in Italy where the vegetables had taken up so much Atrazine (a chemical used in vegetable production) that they could no longer sell the vegetables for human consumption. Symbex was developed to take the Atrazine residue out of the soil but it also had a positive and unexpected side-effect: it changes organic material into a plant-useable format and increases soil fertility.

It consists of eight different types of microbial bacteria which work aerobically within the top 10cm of soil to break down organic material and turn sour soil sweet. Symbex will also assist in rapid breakdown of compost or remove chemical residues. It will even break down Dieldrin, which is one of the hardest residues to decompose.

Bracken fern adds organic material to the soil as it desiccates. If you have too much bracken fern, Jenny suggests trying Symbex to change the soil conditions, with

an aim to reduce the need for the weed to be there. Symbex can also be used to feed citrus trees with yellowing leaves or suffering dieback.

In trials Symbex doubled the number of potatoes obtained from plants compared to those fed with conventional fertilisers. Symbex will also fix bare spots in lawn and de-activate root rot.

It was used to clear an oil spill near Cobar: bales of lucerne straw were placed on top of the oil Symbex applied. The lucerne was provided as organic material for the Symbex to feed on.

In a US organic orchard, Jenny has seen horse manure used as organic material with Symbex very successfully. The manure is piled 6" deep under the citrus trees (which have higher skirts that conventional orchards to enable the application of feed under the tree) and Symbex added. Within 6 weeks you could easily put your hand straight into the soil. The fruit were huge and luscious.

In Canberra soils Symbex will work well but needs plenty of organic material on which to feed. It is labelled for wholesale, not retail sale, but nurseries should be able to get it in for you.

Bacteria in Symbex are easily broken down by ultra violet light and therefore must be watered in within 2 hours of application. It is best to apply it in the late afternoon or evening to allow all night for the bacteria to get down into the soil. Symbex will even destroy Roundup, so if using Roundup, apply it ten days before the Symbex.

Nutrog

Nutrog is a combination of layer poultry manure (a longer composted base), natural gypsum and zeolite which will activate your soil. Nutrog has been tested against Dynamic Lifter and turkey shed manure. All three are good organic products but Nutrog gives better root development because it helps to soften up the soil.

Jenny has heard anecdotal evidence of the value of Nutrog. A dairy farmer had spread it at 4 bags to the acre (suggested application is 1 bag per acre) over 6 acres then grazed 72 head of cattle there for 6 days. During those 6 days the cattle produced an extra 15 gallons of milk per day. As soon as they were taken off the treated pasture they dropped back to normal production. In addition, the pasture was ready 2 weeks earlier than anticipated.

Summary

Whether its with our own bodies or our soil, Jenny believes we should learn to treat the cause and not the symptom. We take antibiotics for the flu, rather than balancing our system's vitamin or mineral deficiencies. We kill weeds rather than look at why they are there. It is actually cheaper in the long run to treat the cause: if you build up whatever is lacking in the system then the symptom will go away.

Jenny believes the real answers to our problems are the simple ones. In this technical age, we often expect an expensive and highly sophisticated answer. The simple method of solving plant problems through soil fertility is often overlooked.

We use a lot of "essential" products now which were never considered necessary by our grandmothers. In the home and in the garden or on the farm we should look at the products we are using and ask whether they are really essential.

Jenny is not against the use of chemicals, but against their over-use and misuse. She says "More is not necessarily better". Even with a product like Symbex, applying twice as much doesn't do twice the good.

In the 3 years since she has been in the business, Jenny has noticed a tremendous change in the attitude of farmers to organic methods. Farmers are beginning to see little value in continuing their current practices and are turning to Jenny, and people like her, for advice.

"Before I moved to Dubbo I went to a talk by Bill Mollison on Permaculture at a farm up near Gosford. Mollison believes in going with nature instead of fighting it and using whatever nature provides.

He was remarking how people kill bracken fern and that it actually has its use: In Asia the roots of bracken fern are apparently used for medicinal or aphrodisiac purposes and properly grown bracken fern could be considered an export.

In Mollison's case, he bought some swamp land down in Tasmania and instead of going to great expense to drain it and turn it into farming land, he fenced it off and put eels in there and made something like $3 million exporting them to Japan!"

Jenny Davis-Downs

References

Articles referred to by Jenny in her talk are:

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Persistence of Glyphosate in a Sandy Loam, PL Eberbach and LA Douglas, Soil Biology and Biochemistry, Vol 15, No 4, 1983

Glyphosate residues in a sandy soil affect tomato transplants, PS Cornish, Australian Journal of Experimental Agriculture, 1992.

Copies of these articles are available from Sylvia Maseyk (287 1473)

Your Rural Correspondent David Odell
THE MAGIC OF SPRING!

Spring is such a busy time of the year that I am torn between talking about what is happening at Rockyglen and actually getting out and doing it. Usually I try to save up indoor activities for when the weather is inclement but just recently the days (the mornings especially) have been so glorious after the long weekend of steady rain that I really have to wrestle with my inclination to procrastinate about sitting down at the computer and disciplining my thoughts. But having overcome my initial reluctance with the promise to myself of getting in the garden this afternoon, I'm pleased to share with you some random observations on geese, jersey cows, fencing and gates, the grapevines, chickens, and of course, the garden.

I haven't had much to do with geese until recently, but always had in the back of my mind that they would integrate beautifully as weeders amongst the grapevines. This would be truly organic - a flock of mobile weed-eaters fertilising the ground as they went, saving me time (and effort) and with the promise of plump grass-fattened profits at Easter.

When I was offered two white geese I had little hesitation in accepting them as I saw in them the foundation of my new venture but, of course, they would need a mate if my vision of natural increase was to be realised. Where to find one? A flock of geese on the road at Hoskintown prompted Liz and myself to call upon the owners, yes, they they had a gander available and just to help the project along why shouldn't we buy another female while we were there? So the transaction was made!

Of course, such proginators have to be named. The smaller of the two original geese followed me around and allowed me to pick her up (was she in love?) and so she was named Lucy (Beatrix Potter?). The other was more difficult to assess until we allowed them out to graze and found her gazing admiringly at her reflection in the glass panel beside the front door. She became, and still is, Mrs Vain. Of the new aquisitions the brown gander was named Gorby and his wife was called Mrs Whitehead due to her brown colouring and white bonnet.

Getting the geese used to a routine didn't take long as they are quite amenable birds but involved making a separate pen so they could be allowed to graze and make use of the dams. The opening of the gate each morning is also part of that routine as it is accompanied by a cacophony of trumpeting from outstreatched necks and a flapping of wings as they jostle for take off. Grazing, preening, resting, sunning themselves and sporting on the water make up their idyllic days but always they are ready to tell the world that nothing escapes their beady eyes. At first it was necessary to use long wands for droving them back to their pen at night-time, their necks and heads perpendicular in protest, but now with some wheat as an inducement and a call of "Goose, Goose" they are happy to be shut up for the night.

The first eggs were exciting, so large! Two nests were made in their shed but the third was outside at the mercy of predatory crows so it was a race (which we often lost) to get there first.

Visions of the expanding goose empire were starting to look less promising. Gorby too was starting to act strangely. Was it Spring or was Gorby a SNAG (a Sensitive New Age Goose)? We hadn't noticed any exceptional activities on the dam but we naturally assumed that Nature had taken her course and that the eggs were fertile. But when Gorby showed an unusual interest in supervising the nests and taking turns with the nesting duties we thought he might be just a confused young adult, however, when he started to sit the truth dawned, we had bought two females. So Gorby has become Mrs Gorby (Raisa?) and of course there were no goslings on the way.

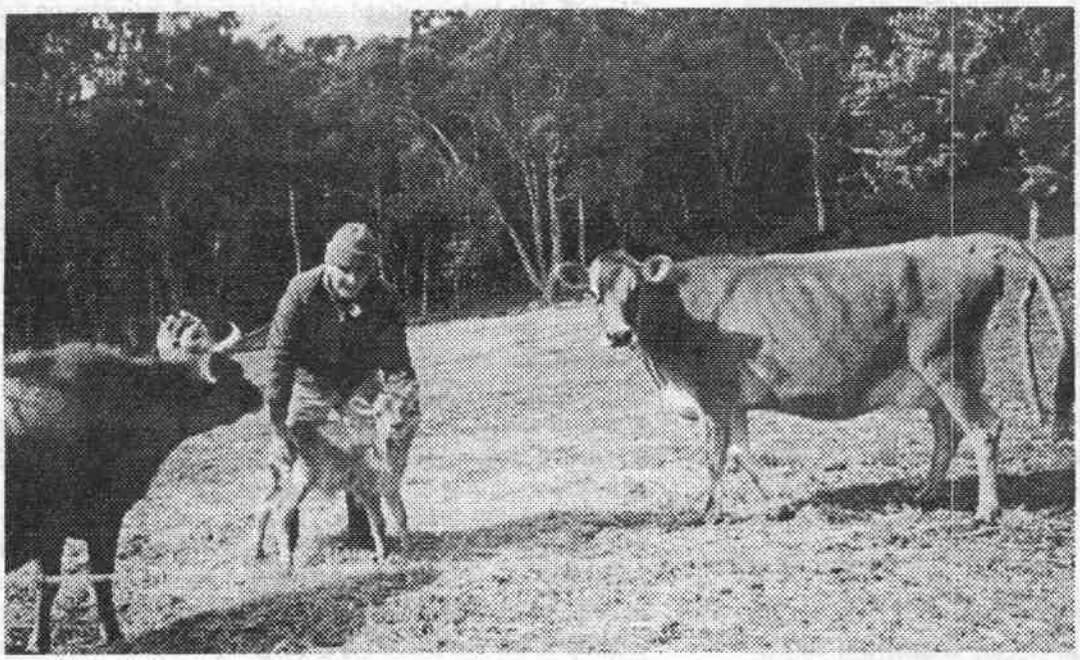
A phone call to Hoskintown with a specific request was followed up by "the coming of Hansard". Hansard is definitely a GANDER. He is brown, just a shade lighter than Mrs Gorby, and has all of the arrogance of his species. He was called Hansard because he has a lot to say but very little of it makes sense!

His coming has altered the previously genteel existence enjoyed by the ladies. Now they are a harem subjected to his likes and dislikes and the basis of a hissing challenge should interlopers such as ourselves impinge upon his territory. His favourite is the young Mrs Gorby but he has marked his authority on Mrs Vain and Lucy (who is still sitting on an empty nest) both showing where he has "ringbarked" the feathers from their necks. However, it is Mrs Whitehead who is not in favour (presumably because she can run faster

than he can) and even for a goose she appears twittery and flustered, so maidenly in fact she has been renamed "Miss Whitehead". Perhaps when the occasion arises we will find a suitable mate for her.

The four Jersey cows were artificially inseminated so that they would calve this Spring - but all have missed out. I have some reservations as to the long term benefits of AI as this involves the use of a shrinking genetic pool because of the preference for prepotent sires but in the short term dramatic herd improvement can take place without the requirement to maintain a bull - and on a small place the economics of keeping a bull must be taken into consideration.

Even though this is one year's production forgone (as well as the expense of the AI service) I am not too worried at this loss due to the fact that the cow shed and calf pens which I had intended to have erected at this time still remain to be erected due to the pressure of other activities - but must be done shortly if we are to keep moving on this front.



The concept is to have a small Jersey stud and as well as rearing calves we would like to make Camembert cheeses (to go with the wine). Apart from that we like Jerseys for their own sakes and envisage showing them in the future.

As a basis for our stud we bought two heifers from Bemboka, just a week old at that time, and looking like something out of a Walt Disney cartoon. Liz chose the smaller one, slightly darker than her sister and carrying a crescent moon splash of white to one side of her forehead. The other promised to be a solid-coloured golden fawn. Because Liz has a penchant for English flower names she decided to call her protege "Buttercup" so I thought it appropriate to name mine after an Australian flower. What'll you call your calf? she asked. "Wattle" I replied. But of course their pedigree names are much longer.

Fencing is an important part of farm management and for too long I have had to compromise with fences that were just adequate and gates that were temporary, so it was a case of making affordable some improvements to existing fences, subdividing some of the larger paddocks, and making provision for some more tree belts. I have been progressively replacing wire "Bogan" gates with the more expensive ones bought from the produce store and was shocked one morning to find that two of the new gates close to the road (and out of sight of the cottage) had been stolen together with most of their fittings. It was quite a brazen theft and illustrates the lengths some persons will go to in order to gain an unscrupulous advantage. However, from that experience I have replaced them with heavy homemade wooden gates which are more readily identifiable and not so easy to remove. And it was this type of gate I wanted originally.

Les is the fencer and I am his "offsider" with the tractor and together we make a useful team. Two dead trees had to be removed because they were on the fence line, the first presenting no problem, but the second (being closer to the cottage) had to be dropped so that it fell between the clothes-line and the septic tank. The degree of difficulty being that the weight of its overhang was in the wrong direction so as a preliminary step the clothes were taken off the line (to minimise any possible loss), a rope was thrown over a high fork to hoist a chain, and, when the chain was made secure it was attached to the tractor. All of these preparations were made so the tractor could take up the strain and the tree would (hopefully) fall in the designated spot.

Les made the "V" cut facing the direction of the fall using the chainsaw and then with his sharp racing axe began to make the decisive cuts to bring it down. I watched anxiously from the relative safety of the tractor while maintaining a steady pull on the chain but all the time fearful that the butt would "kick out" under the strain and catch Les unawares. It is not without reason that trees such as these are called "widow-makers" so it was with a sigh of relief we watched it fall safely and exactly where it was wanted. It wasn't good enough to use as a post but was conveniently located as a source of firewood.

Pruning the grapevines has been completed and budburst is upon us. Its quite exciting seeing the dormant vines coming into new life. As this is their first season after being planted last year the pruning only consists of training to a single upright leader but this is fairly rigorous as it is important to encourage strong root growth.

The Spring rains have also brought about rapid growth of the green feed that was sown before the grapes were planted. The regular slashing of this last year for green manure built up a wonderfully absorbent mulch and the results are very

much evident this year, but this new growth needs to be chipped back and slashed again before it provides too much competition for the grapes. In the not too distant future we will have to set up the trellising and install the drip irrigation.

There is a certain fascination in rearing chickens that never fades: from the egg, to the chick, to the layer, to the breeding pen. How a rather inert looking egg can have the right amount of heat and moisture applied for a period of three weeks and then to watch it hatch to become a living, cheeping entity never ceases to amaze me.

My interest in rearing chickens was rekindled after attending the Free Range Poultry seminar at Hawkesbury in May of this year, so acting on some of the leads obtained from the organisers and participants we purchased 100 day old Isabrown pullets which were flown from Tamworth for us to pick up at Canberra airport. They arrived in perfect condition and were quickly settled into their new home. Now, at five weeks of age, they are vigorous and well grown and promise to be excellent layers if they are to live up to their reputation. It looks as though some of my old equipment will need to be updated and more portable rearing pens made if I am to continue with rearing more chickens.

The garden is showing the benefit of the attention given to it over the Winter as the field peas grown as a green manure crop kept the majority of the weeds under control and allowed me to concentrate on the other, smaller, areas with a combination of heavy mulching and direct chipping.

An inconvenient low-lying corner that is usually too wet to use has been built up with thick batts of lucerne hay and, on top of the hay, old car tyres have been filled with soil for growing potatoes above ground. The lucerne mulch has not only choked down the rampant weeds but is acting as a sponge and providing a reservoir of moisture for the potatoes.

I have also planted sweet corn and climbing beans in the same row to see if the old Inca method of companion planting works (with the addition of Dynamic Lifter instead of the fish heads), but with the added bonus of not digging in the green manure crop, but directly sowing the seed to leave as much ground cover as possible. I'll keep you posted on results.

Of course, I'm trying to beat the cold snaps by getting my tomatoes in as early as possible but the cold weather wins every time so I am looking forward to attending the Eliot Coleman seminar at Gunderoo on Four Season Harvesting for ways of extending the growing and harvesting times of frost-sensitive crops.

I trust that you, too, sense the magic of Spring in your garden. Now I must keep that promise to myself and get into the garden to sow some more seeds - but I have enjoyed talking with you. Until the next time we meet, I remain, your rural correspondent.

David Odell,
Rockyglen, Bungendore.

RETURN TO A GARDEN

by Betty Cornhill

Coming home after four months in England and Scotland my awareness has been heightened to a number of things, such as the bright light in Australia which enhances the vivid colours of flowers and clothes.

The sun was shining brightly this morning, so I decided it was high time I went over to my plot at the Cotter Garden and started to dig it and perhaps get a small area ready to plant carrots.

Before I left Australia, I could dig most of the day without getting tired. Now after 4 months sitting in a car and driving a few thousand miles, or sitting in my friends' living rooms talking and drinking cuppas, or eating their delicious food, I find myself quite a few pounds heavier, and with a lot less stamina for digging.

Besides all this the garden was prepared for us by rotary hoeing, which has left us with a hardpan which you can scarcely stick a fork into, and in my plot this was only about 6 inches below the surface, so I find myself squelching after the good lot of rain we have had in the last few days.

It is foolish to get on the garden when it is like this, for you will almost certainly spoil the structure of the soil, so after digging up the huge clumps of grass and the lovely blue-flowered speedwell, and a nice bunch of parsnips, I walked backwards loosening the soil as I went to aerate it.

Besides the parsnips, I was able to pick some lovely green Lamb's Lettuce for my salads.

Under all this I discovered my strawberry plants, so unless I transplant them I will not be able to grow carrots there!
Having got this far, I was ready to sit in the car to eat my fruit and nut lunch, but just as I was preparing to leave the plot, my little friend the magpie came to find some worms or grubs, so we had a bit of a conversation.

Sitting in the car, the peacefulness of the place began to creep over me. The sun was sparkling on the leaves of the grass, rippling in the wind.

The magpie flew across to pick a fight with one of the choughs who were minding their own business in a thick clump of trees in the City Parks area next door. I was amused to see that eventually the whole flock of choughs were routed by the solitary magpie, and moved off to a new location.

It became rather hot in the car, so I moved it back into the dappled shade of the gum trees.

Earlier, I had collected a box of kindling for my heater. I don't know anything better than gum branches and bark for lighting a fire, and it is very satisfying to be able to tidy up the area and at the same time have this lovely kindling. I sometimes think of Good King Wenceslas and the poor man gathering winter fuel, and I think how lucky I am to be able to gather my winter fuel in bright sunshine instead of snow. I have to thank the gum trees for dropping it down for me.

I went home with a sense of satisfaction, as I usually do, after working in the garden.

AGRICULTURE - REFLECTING OUR SPIRITUAL PATH

by LYNETTE WEST

When we look at man's relationship with nature we can see it reflects his spiritual understanding of the time.

In earlier times farming was based on lores handed down from generation to generation. There are many wonderful songs, rhymes and calendars which told of planting days and harvesting times based on lunar and planetary rhythms. Gardeners at this time were very much in tune with natural rhythms.

Although the peasant farmers had a wonderful affinity to the land they were also bound to it. There were many seasonal tasks which were governed by superstitious rituals. We have needed to evolve away from the peasant life and ritual tasks so that a deeper scientific understanding of the rhythms and influences that govern our planet can be more fully understood.

Modern farming techniques have replaced the old peasant style of agriculture by a more scientific understanding of the elements involved in plant growth. In this type of agricultural practice we see a shift from the spiritual aspects of soil and plant life to one which is dominated by the material aspect. This type of agriculture treats the soil as an aggregation of chemicals, whether mineral or organic, but not as a truly living system. This leads to a breakdown in soil structure and plant health.

As we near the twenty-first century, we now need to balance our scientific knowledge with a more spiritual understanding of all the processes involved in life on this planet. The role of the farmer/gardener has changed over the course of history and we are now entering a new phase of evolution.

It is this bringing together of the spiritual life with scientific knowledge which is addressed in Bio-Dynamic farming practices.

To bring vitality and restore stable humus levels to our soils all our fertilising practices must be kept within the living realms, be organically alive, to really enhance the living quality in our soils. A truly living soil is full of bacteria, micro-organisms and fungi which give the soils their life.

The Biodynamic preparations which are added to the soil are full of these required bacteria. When spread on the soil they further multiply.

Bound up with this is the vital `life-force' which has a magnetic, radiatory effect over the land.
Each of the Biodynamic preparations is related to one of the planets, they each enliven the soil to become receptive to the influences permeating our Earth from the whole cosmos.

BD500, which is sprayed in Spring and Autumn, is related to the Sun, the central governing force, bringing all into rhythmic balance within the soil. BD500 is horn manure which has been buried in the earth for the winter months, thus subjecting it to Winter-Sun forces.

BD501- Horn Silica - has been buried in the Earth for the summer months, thus subjecting it to the Summer-Sun forces.

The plant is a Sun-Earth being and for this reason the preparations are so important.

The great breathing and pulsating of the Sun goes through all the planets causing an external and rhythmic interplay between them.

Both preparations are stirred before use. With this rhythmic stirring we subject these Sun preparations to a rhythmic, spiral Sun activity.

After the Earth has received the compost in which the planetary forces (BD502-507) are harmoniously active, the Sun breathing process brings all into rhythmic balance within the soil.

It is for this reason that the preparations BD500 and BD501 are applied at the last minute, before sowing and during growth respectively. With BD500 the forces concentrate towards the Earth thus leading to germination and growth, and with BD501 the substances and forces open towards the cosmos and can thus produce quality and aroma.

Oak Bark, BD505, is one of the six preparations inserted into the compost heap. It is connected to the Moon forces and the element of calcium.

Moon processes are active in propagation, heredity, reproduction - where a new organism arises from the old, where cell is formed from cell in steady growth.

Moon forces are active whenever we meet swelling growth, in the individual organism through cell division, in separate organisms through propagation.

Limestone acts within the watery element as mediator of the Inner Planetary forces. Oak Bark consists almost entirely of organic limestone.

Here we see how the moon processes which are most active in the watery element are acted upon by the limestone content in the soil. These relationships determine how the Earthly soil according to its constitution works upon the growth of plants. Whenever we are studying plant growth we should be clear in the first place as to the geological foundation out of which it arises. What comes to us from the cosmos is caught up within the Earth, it is therefore important to understand the composition of the soil - its' sand, clay, and limestone content.

As every farm is an individual we need to develop an understanding of the type of soil we are working with, and the way these influences from the Inner and Outer Planets work within the soil.

With knowledge of the BD preparations we then work in an active and practical way to bring this balance to our soils and plants through working in both a scientific and spiritual way.

With the use of the BD preparations over a period of time we find that not only do our plants become stronger and more disease resistant but the humus levels in the soil increases as well.

There is now hard data available which supports the anecdotal evidence of many BD farmers of increased humus levels in their soil, including recent results from a long-term fertiliser experiment in Germany, which started in 1980. (Reference 2).

This study compared the effects of three types of fertiliser treatment:
I - Mineral i.e.`conventional'
II- Organic (rotted & liquid manure)
III- BD (same as II, plus BD preparations)

The following Table is a summary of the results:

	I	II	III
%O.M. in top soil	0.8%	0.9%	1.03%
humus content top soil as % of conventional	100	125	151
humus content subsoil as % of conventional	100	104	142

The humus content was thus significantly higher in the BD treated parcel of land, both in the topsoil and the subsoil. The humus enrichment in III in the subsoil is the result of a greater root mass for the crops (37%), a higher concentration of rootage (65%) and thus more root residues and a higher measure of root excretion.

Hence what did show as a consequence of the BD preparations is a long-term increase in soil fertility. Plants can then feed naturally through the influences of sun, warmth and light and can selectively acquire the nutrients they need for appropriate growth.

Therefore, only when we work with the soil in a truly living way can strength and vitality be restored to the soil, plants, animals and people on whose survival it depends.

Leadership in the sphere of agriculture must return to those who not only work with the material aspects of soil and plant health, but who understand the spiritual processes as well.

References:
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2. "Newsleaf", Issue No.17, July 1993 "BD soils stand out in German Experiment"
3. Steiner, Rudolf, "Agriculture"

Living with Nature

By Shirley Carden

I have become the builder's labourer for this establishment. This requires long hours of devoted service, a lot of standing around waiting for the next instruction, and time gazing out of the window planning my future gardens and observing nature.

We decided when we first came here that it would not be kind to the wild life to keep either dogs or cats. We witnessed three dogs bailing up a wombat, and often observed the local dogs hunting the wallabies through the bush. The cat dispose of many small birds.

We have even subtly persuaded our neighbours it would not be wise to allow their dogs to wander on our land, for we kept fox traps near the chicken yard. One very wet night, either a fox or a quoll executed 24 of our hens and roosters. The soil was so wet the culprit managed to ease the stakes that were holding down the bottom of the fence, out of the ground. But that episode did not get rid of all the ancient "hand-me-down" hens that were costing us a fortune to feed and never produced any eggs. We didn't have the heart to kill them. Now we produce up to eight eggs from eight hens - a much better proportion.

On the other hand one of our neighbours has two cats and a dog, but no obvious lizards or wild ducks. Recently they took a three and a half week vacation while we looked after their stock and gardens. I was amazed at the huge snail population that was being supported by their vegetable garden.

We have very few snails, but we have a large population of blue tongues. I have been told many times that they eat snails. Now I can verify it.

Blue tongue lizards live all over our property including right up to the front and back doors. For three seasons now there has been one huge blue tongue which lives around the house. It is easily identified because of its tail. We call it "old crooked tail". I have actually witnessed it eating a large snail. I have observed it searching for the snails in the same place that I do.

On the same very warm day there were four other blue tongues roaming around the house. One pursued another through two long metal pipes (waiting to be incorporated into the building), clutching a back leg of the pursued. There is a slight variation in colour so I guess in time I shall be able to work out the sex by studying this variation. We have also seen many smaller blue tongues so they are obviously breeding successfully. It's just as well because I'm afraid the kookaburras score a few. Unfortunately the lizards tend to wait until the sun is warm before they move about. The snails are still reasonably easy to find but the slugs are well concealed by then so I have a big problem with these.

Wild ducks are attracted to our large dam. The ducks have actually produced young amongst the reeds three years running. As many as three dozen ducks at a time will land on the dam. They also spend hours wandering all over our five acres leaving their droppings and feeding, hopefully, on slugs and snails as well as other such delicacies. On a bright moonlight night we can hear them wandering around the house.

The warm weather brings out snakes as well as lizards. One has to be very aware when walking around because they tend to enjoy sunning themselves on the paths. We have at least one diamond python every year in the goat and chicken yard. I have heard other people in this area claim these snakes will eat chickens. So far this has not bothered us. There are plenty of mice and frogs around and quite to the contrary we had one hen last year with young chicks which seemed to bed down each night in the same area as the python. The goats will sniff the python without any obvious fear.

Temporary arrangements can bring pleasant surprises. Before the concrete slab for the extension was laid, Peter very thoughtfully had all the top soil removed into a very large heap. I planted many of my precious plants in and around it. I decided on a choko tunnel in which the grandchildren could play. We erected two parallel trellises (temporary of course) out of 8 foot star posts, horizontal strands of wire in between and chicken wire over the top. It ran from east to west on top of the heap. The chokos were planted at the eastern end. I planted my thornless boysenberries on the northern side. On the southern side strawberries and snow peas filled the space. But I got carried away and planted elderberry cuttings (ordinary, variegated and golden) daisies, cardinal mint and pelargoniums around the slopes. All thrived and did extremely well. But now of course it is too crowded so I shall have to set up a similar system somewhere else allowing more room. The beauty of having five acres is that I will be able to do this as soon as I have the time.

I am quite thrilled with all the small birds that are successfully breeding on our five acres. Such set-ups as the choko tunnel are wonderful areas for them to nest. As the small bird population increases I notice the aphid population diminishing quite remarkably. We have lots of wrens, willy wagtails, redbeaks and honey eaters to name a few.

A willy wagtail which is a regular visitor plays a game with the young goat. The bird sits on the back of the mother goat. The kid stands very still at right angles facing the mother. The bird flies between the ears of the kid on to its back. I have observed this too many times for it to be a coincidence.

Coming from Canberra where young magpies are very evident I was amazed to observe for the first few seasons that there were never any young. Could this be that our neighbour down-hill took the easy way out and used weed killer around the hundreds of trees he planted? This resulted in a clear space around the trees and I noticed the magpies found it easy to retrieve the white grubs from these areas. Initially our organic efforts had an influence on our neighbours so he took to heavily mulching as we were doing. Last season I noticed the first young magpies being fed by its parents. Unfortunately the neighbour has been very busy lately and has reverted to using some weed killer around the newly planted trees, but not as much as previously.

When we first occupied our very inadequate little holiday house, I didn't appreciate the presence of as many as four frogs at a time inside. I never did work out how they got in but the problem seems to have been solved. However they live in huge numbers outside. There are plenty of dragon flies frequenting our dams as well.

With our alternative methods I feel these five acres are fast becoming a haven for wildlife and a place of total harmony. Hopefully if we are successful at producing organically we may even manage to have more influence on our neighbours. It's amazing how persuasive a dozen tasty free-range eggs of some delicious peaches can be!

BOOK REVIEW: HARD TIMES HANDBOOK by Keith and Irene Smith

by Annie Brent

If you want to know how to do just about anything, from making a sawdust stove, to mixing up your own "hospital" floor poish, and including brewing up compost or ginger beer on the way, then this is the book for you.

Written by the former editors of "Earth Garden" and containing a number of contributions from readers of that inspiring magazine, it was originally published in 1984, but COGS library has recently acquired a copy of the 1990 edition.

Topics covered are many and varied but the underlying principle of the book is to help you become less reliant on traditional sources of energy, food, clothes and other household requirements. If you're anything like me, you'll find a certain satisfaction in being able to do this even if it's not financially critical.

The chapter entitled "When the Lights go out" contains information on alternative energy sources, candle-making and kerosene and other lamps. "Being Prepared for Food Shortages covers stockpiles, preserving and storing food, as well as collecting rainwater." In the "Home Base" chapter the authors focus on economising on your water and energy use, in ways as diverse as making your own newspaper "logs", building a verandah and knitting a mammoth cap.

COGS members will probably turn first to the chapter on Backyard Food Growing which, although not extensive, does have some good ideas on the predictable things: companions, making liquid manures, saving seeds etc. "Hard Times Tucker" suggests ways of using what your garden (or the supermarket) produces and has lots of good recipes, especially for those sorts of things you know you should eat but are not quite sure how to prepare! In my case this means lentils, soybeans, sourdough bread, cottage cheese and many more.

Incidentally Keith and Irene have more recently published a Hard Times Kitchen Handbook which looks useful also.

Last but not least comes a section full of handy recipes for home-prepared alternatives to all those nasty chemical concoctions we use around the house from window cleaners to stain removers. It aslso has lots of other ideas for keeping your home clean and efficient without breaking the bank or contributing to environmental destruction.

In summary: an interesting book to dip into when you feel like it. Cheerio - I'm off to make some yoghurt.

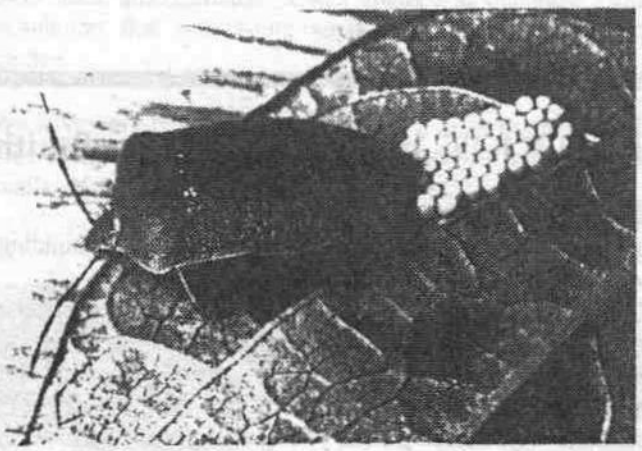
BENEFICIAL INSECTS

by Michelle Johnson

As we carry out our gardening tasks, we are often unaware of the great deal of work being done by our allies in the garden - the hoard of beneficial insects that play such an important role in natural pest control.

Having recently seen the first green vegetable bugs of the season, (and with unpleasant memories of their feasting on my tomatoes last year), I have been searching out information on the beneficial insects that can aid me with these and other pests - and have been astounded by the huge array, including hover flies, lacewings, parasitic wasps and predatory wasps, ladybirds, predatory mites, spiders, ground beetles - and the list goes on! Many have fascinating life cycles, particularly the parasitic wasps.

One parasitic wasp, *Trissolus basalis*, lays its eggs in the sulphur yellow eggs of the green vegetable bug. This wasp is black and very tiny, only about 1mm long. It was introduced to Australia back in the 1930's, specifically to control this pest. However it probably cannot control bug numbers on its own, so it would be wise to also use other control methods for the vegie bug, such as the "squish'm" approach as summer comes on. For a more detailed account of the bug itself see the articie " Green Vegetable Bug" by Sue Pettersson in the April 1992 COGS newsletter.



The green vegitable bug, *Nezara viridula* (HEMI-Pentatomidae), and its egg raft. [C. Lourandos] [1]

Other parasitic wasps lay their eggs inside the larvae of common garden pests. The larvae of the wasps feed inside the host, but do not actually kill the host until they burst out, at which stage they pupate on the collapsed skin of the now dead host (rather gruesome isn't it!). One, the Cotesia Glomerata, is a parasite for the Cabbage White Butterfly.

A third type of parasitism occurs with the aphidine parasitic wasp which attacks aphids. In this case the wasp passes its entire larval and pupal stages inside the host body and bursts out as an adult.

Many wasps are predatory of course. Two predatory wasps are the paper wasps, which build their nests out of chewed wood "paper", often under the eaves of houses, and the mud wasps, with their familiar mud nests on the walls of buildings. Both will eat caterpillars and spiders. The paper wasp will also eat the pear and cherry slug. If you find these nests around your home don't destroy them just to tidy up, or you will lose valuable allies in the garden!

There are so many insects, it is impossible to describe a fraction of them here, but if you see an insect and you wonder if it is a beneficial one, the following may help:
"As a general rule, fast moving grubs and related creatures are beneficial. They need to be fast as their prey, small slugs and insects, is mobile. Plant eaters, pests from our point of view, tend to be more "sluggish"." Joy Larkcom, "Vegetables From Small Gardens", p93.

Given the usefulness of many insects we need to encourage them in our garden. The HDRA Newsletter (from England) in Spring 1993 lists six steps you can take to attract them:

1. Stop using pesticides
Many pesticides kill beneficial insects as well as pests. Since pests tend to breed very fast, they will often come back first.
Remember:"*Whenever we kill a beneficial insect we inherit its job. And as novices we are attempting to take on the task of an expert. Whenever we fail, the environment suffers."* Stuart Hill, Acres Vol 1, No 7, p10 "Broad perspective on sustainable agriculture".

2. Only use organic sprays if you must
Many are not harmless, eg. sulphur fungicide harms parasitic wasps and predatory mites, insecticide soap harms hover fly larvae.

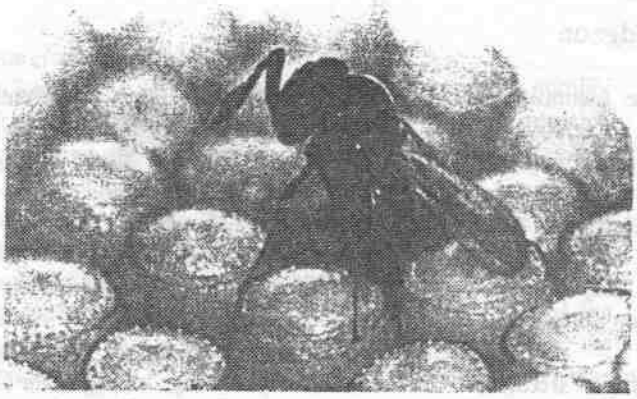
3. Grow flowers to feed them
Flowers are a source of food for many pest-controlling insects, particularly in their adult form. Many have short mouthparts, so simple open flowers or very small flowers are best. Among the favourites are flowers such as fennel, parsnip, parsley, daisies, dandelions, marigolds, sunflowers, thistle, and yarrow.

In a recent study, it was shown that the fennel flowers attract almost 500 different insects, of which 195 were partly predatory and 105 were parasitic.

4. Provide a nursery.
It is essential to have some pests in your garden if you want the beneficial insects to come in as well. The idea is to **control**, **not** **eradicate** pests, so we need to tolerate a low number of them. There is no place for the "Rambo Syndrome" in an organic garden!

Therefore it can be useful to allow a small number of nursery plants in your garden. A "nursery" plant is one which supports pests with no ill effect. HDRA gives the example of the common nettle which supports the nettle aphid which

however does not attack other garden plants. Nettles will therefore



The parasite, *Trissolcus basalis* (HYMN-Scelionidae) making a *Nezara* egg in which it has oviposited. [C Lourandos] [1]

attract many beneficial insects, particularly ladybirds when they emerge from hibernation. The nettles can then be cut down in summer so the predators will move to garden plants. However don't let the nettles become a weed!

5. Provide safe cover

Ground dwelling insects do not like bare soil. Provide dark, cool moist conditions with ground covers, carpet, bits of bark etc.

6. Don't be too tidy

Leave cover for other insects, including some old plant material. HDRA suggest you don't cut back your herbaceous borders in autumn as the hollow stems are a favourite hibernation place.

Following these six steps will encourage beneficial insects to stay in your garden and help keep down the numbers of garden pests. As an added benefit, the increased insect life will also create a more interesting garden to be in!

References:

1. CSIRO, Division of Entomology, "The Insects of Australia: A textbook for students and research workers", Volume 1, Second Edition

2. French J., "Natural Control of Garden Pests", Aird Books 1990

3. HDRA Newsletter (England), Spring 1993, "Gardening with beneficial insects for natural pest control"

4. Larkcom, J., "Vegetables from Small Gardens"

5. personal communication with Dr Ian Neumann, CSIRO, Div. Entomology

Pesticides out, hungry bug-munchers in

by Richard Macey
Science Writer

Reprinted from the Sydney Morning Herald

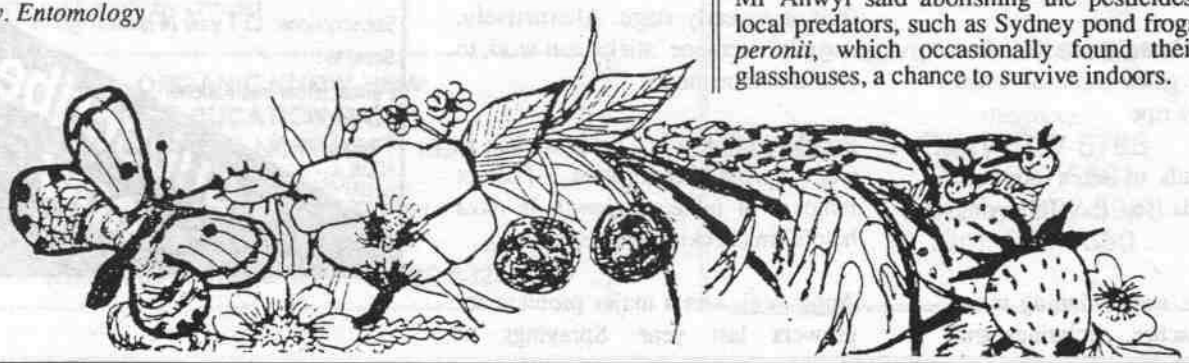
The Royal Botanic Gardens has abolished the use of chemicals in its war against insects munching their way through plants in its tropical glasshouses in Sydney.
Staff are now using a natural army of biological warriors.
In the early 1970s, the gardens built its glass pyramid to exhibit tropical Australian plants. The glass Arc was added in 1990 for exotic tropical plants.
The senior horticulturist at the gardens, Mr Les Anwyl, said yesterday that moving tropical plants into an artificial environment gave insects a picnic.
Some insects made their way into the glasshouses on the plants. Others were almost certainly carried in on the clothes of visitors.

Initially the gardens battled the insects with pesticides.
"Insects inevitably build up a resistance to pesticides," said Mr Anwyl. "Especially the red spider mites, which multiply very fast and grow into huge numbers."
Mr Anwyl said increasing the use of the pesticides would have posed a risk to visitors, staff and the valuable plants, most of which had been taken from the wild and were a scientific collection.

In 1990, with the opening of the Arc - named after its semi-circular shape - the gardens began experimenting with less dangerous weapons, including oil- and soap-based sprays.
It also began unleashing natural predators to attack the pest. First out was a wasp, *Lepomastix dactylopii* released to eat sap sucking mealy bugs making dinner out of the exhibits.
Next, the Chilean red mite *Phytoseiulus persimilis*, was set loose to attack the two spotted mite, or red spider.
Mr. Anwyl said the Chilean red mite, supplied by the University of Western Sydney, Hawkesbury, was carefully tested to ensure it would "not become another cane toad".

Later the ladybird beetle *Cryptolaemus montrouzieri*, was dispatched to reinforce the campaign against the mealy bugs.
Another predator sent to battle the bugs was the Queensland giant tree frog, *Litoria infrafirenata*.

Mr Anwyl said the biological warfare was so successful that the use of all sprays was abandoned six months ago.
"We haven't killed all the pests but we don't have plagues either," he said. Any increase in pests now merely provided more food for predators, causing their numbers to boom.
The extra predators feast on the pests until they die back, causing the predators to starve. The process continues, just as it does in the wild, until a natural balance is restored.
Mr Anwyl said abolishing the pesticides had also given local predators, such as Sydney pond frogs, *Limnodynastes peronii*, which occasionally found their way into the glasshouses, a chance to survive indoors.



SUMMER AT LORIENDALE
The Season of Maturing Fruit

by Owen Pidgeon

The summer months require us to focus on fruit development. With the climate of the Southern Tablelands, this means a number of basics.

Moisture Retention

We have set up micro-irrigation systems, rather than drip irrigation, in order to spread the water to the edge of the root system. Research at the Narromine Research Station in the mid 1980's confirm the importance of regular moisture levels for high yields. Deep watering at regular intervals are essential; the increase in yields are most noticeable for waterings on a weekly basis to twice a week. The application of ample supplies of mulching hay (we always use lucerne, because of other side benefits) aids the retention of the irrigated water.

Weed Control

The application of the mulching hay serves to minimise competitive growth of weeds around the base and feeder root perimeter of the fruit trees. A little hoeing will clear any occasional wild one. The trees need minimal competition, in order to maximise yields. We should not leave fallow ground, or the summer thunderstorms will wash away the precious top soil.

Fruit Thinning

This is an important job to be done early in the summer. With small trees, one is always reluctant to thin off fruit. However, there are two consequences of inaction.

i) a heavy cropping will generally produce a small size fruit.

ii) overweight branches will often break when the gales come or when the fruit is nearly ripe

iii) the tree tends to set a minimal number of buds for the following year.

Some fruit trees need thinning more than others. Peaches, nectarines and plums often set large quantities of fruit. Don't be afraid to remove the surplus - leaving one per every 30 - 40cm. Last year we removed some 450 nashi pears off 20 smallish trees, only to find that the remaining 350 were still too many. They remained too small to be premium quality.

Proceed to thin fruit trees in November, or at the latest, in early December. Otherwise, the tree is putting too much energy into filling out unwanted produce.

Pests and Diseases

The Pear and Cherry Slug, if in the region, will begin to appear on the leaves of your trees in mid-November. They decimate the leaves, leaving only a skeleton for posterity. We spray with pyrethrum, a natural product spray. It is very effective as a contact spray; CSIRO scientists note that the best time to apply the spray is in the early evening as the bright sunlight quickly breaks it down.

Woolly aphid may appear on the branches of your apple trees. If left, it will lead to disfiguration. Just mix up some warm soapy water and methylated spirits (in equal parts) and apply vigorously with a small paint brush. This is the most effective, and most specific way of eradicating the pest.

Codling moth should have been controlled biologically/physically through the winter and spring. From this point, I can only recommend removal and destruction of infected fruit at an early stage. Alternatively, use of pheremone `sticks' can work to side-track the moths.

Powdery mildew is a real problem in wet spring conditions. Prompt removal of infected growth is most helpful in checking the disease.

Apple scab was a major problem for growers last year. Sprayings of copper hydroxide (as a preventative just before an `infection period') are permitted under the NASAA standards, but I would wish to minimise the applications. It is important to understand what is going on. Infection occurs most rapidly at temperatures between 17°C and 24°C. The leaves and fruit must remain wet long enough for the spores to germinate and for the resulting fungus growth to enter the plant tissue. The Agricultural Research Centre at Orange states that 9 hours of wetting in this temperature range will lead to infection; the apple scab will become visible in 9-10 days.

Early in the season, the infection period begins from around 7.00am as the fungus needs light, as well as moisture, to trigger the release of ascospores. Ascospores are not

present in the orchard at night, so rain falling after 6.00-7.00pm cannot induce infection. The highly susceptible varieties include Granny Smith, Royal Gala and Red Delicious.

Summer Pruning

Mid Summer is actually the best time for pruning a number of fruit trees. Where there is a high risk of viral infection after pruning, the ideal conditions are hot and dry days.

Apricot and cherry trees should only be pruned in mid Summer, just following the harvest. These trees require little overall pruning after the formative years; probably only to keep the height to a reasonable level. We have lopped the tops off our cherry trees to enable bird nets to be used in the following season.

Our Harvest

Following the late Spring pickings of sweet Tioga strawberries, the first harvest will be from our cherry grove. The later varieties will ripen around Christmas, coinciding with delightful pickings of mid-summer loganberries. We shall freeze some on trays before transferring into bags.

Early January will see the apricots developing their full flavour just before picking. Time to dry some apricots naturally and turn the small ones into delicious apricot jam. We hope to also pick some juicy mulberries this year.

The early white fleshed peaches are sweet and juicy; they are varieties that are too soft for long distance marketing. some friends have `discovered' the trees. So too, the other bramble berries will begin to produce - full, soft and flavoursome-Silvanberries, Lawtonberries and Youngberries.

Early February will see the ripening of the first apples and the delectable fruit, the nectarines. Our varieties of apples will run on until May/June and be complemented in late March by the Nashi pears and an increasing supply of hazelnuts.

Diversity helps us through the seasonal conditions, caters for a range of customers preferences and allows the orchard to yield a real variety over each month of harvest.

Owen Pidgeon
"Loriendale"
Springrange Rd (5km) past HALL
Tel:230 2557
Opening times:
Fridays & Saturdays: in season
Other: mid-week by contact

ORGANIC KNOW HOW
EDUCATION DAY
SUNDAY, 28 NOVEMBER 1993
9.30am - 5.30pm
Luddenham Showground
Adults $6
(Betty has some transport Ph 249 8323)

News Briefs *Continued*

DIELDRIN IN OLD WOOL CARPETS AND UNDERFELT!

In its Jan-Mar 1993 Issue, "Going Organic", the magazine of the Tweed Richmond Organic Producers Organisation (TROPO), reported on the BFA's strong warning not to use wool carpets and underfelt as mulches. The BFA have detected **high levels of Dieldrin in the soil** as old carpet breaks down, arising from the old practice of moth-proofing these carpets with Dieldrin. After they stopped using Dieldrin, organophosphates and now synthetic pyrethroids were substituted for moth-proofing.

The report was verbally confirmed by David Williams, certifying officer for the BFA. David spoke of his personal knowledge of growers who have experienced contamination of their soil, traced back to the use of these wool products as mulches. He added that he believed Dieldrin was probably used until the mid-seventies, and stressed that Dieldrin is a very serious contaminant which remains in the soil for long periods, with a half-life of 30 years. The organophoshates and synthetic pyrethroids have half-lives of 18 months. The uptake by plants is a problem with vegetables, particularly root crops, but fruit trees apparently take up much smaller amounts.

There does not appear to be a contamination problem with synthetic carpets, although these of course are only ground covers which do not break down to fertilise the soil as do the wool products.

Traudi and Mary's Tips for Summer Gardening

by Sylvia Maseyk

This article is the result of another wonderful morning spent chatting with Mary Flowers and Traudi Kalivoda. The main theme of our conversation was that when planting summer crops, judgement is needed when deciding which vegetables to put in early and which to leave until you're absolutely sure of no late frosts.

The following vegetables are frost tender and are safer planted from November onwards unless very well protected: beans (runner & French), capsicum, cucumber, eggplant, melons, potatoes, squash, sweet corn and tomatoes.

The following are less sensitive and can be planted from September: beetroot, carrots, lettuce, parsnips, radishes, silverbeet, spinach, white turnips.

Seeds planted in November will develop into much stronger plants which will quickly catch up in size with those transplanted earlier as seedlings .

Direct sunlight is the best provider of strength to young plants, although some may be interested in establishing seedlings in a glasshouse. For community glasshouses the main worry is keeping a tab on seedlings. The lack of moisture, overheating and ventilation must be monitored. It would be ideal if one could check the glasshouse at least twice each day. Those interested should read relevant literature on glasshouse management.

Late Starters (Frost Sensitive)

The following are best planted from November onwards:
Tomatoes: Seedlings will lose up to one-third of their size and strength when transplanted out in cold weather - Traudi's golden rule is not to plant tomatoes out before 15 October. Tomatoes benefit from a sunny, warm and sheltered aspect such as a north-facing brick wall. A neighbour of Traudi's has successfully grown tomatoes in the same bed against a north-facing brick garage wall for some 20 years, each year replacing the soil.

Tomatoes need really good, well-composted soil and ideally should be planted following a green manure crop. Mary and Traudi have had mixed success with early varieties such as Apollo and suggest these be protected from frost by encircling with empty bags such as those used for superphosphate. Heat can be generated by placing lawn clippings (mostly dried out, so as not to draw nitrogen from the soil) over the edge of the bag which touches the ground.

Capsicum, Cucumber and Eggplant: Much the same requirements as tomatoes - good soil, plenty of organic matter and don't plant too early. Plants should be mulched **after** soil has warmed up (applies also to tomatoes). Plants cannot take up nutrients unless the soil is warm but mulching too early slows soil warming.

Cucumbers can be established in a glasshouse but Traudi doesn't recommend this as cucumbers don't transplant well. She remembers her mother planting cucumber seeds in half eggshells and transplanting the seedling with eggshell intact. This method reduces stress on the seedling. Traudi suggests gently cracking the eggshell to make it easier for the roots to pass through after transplanting.

Melons: Although frost-tender, these need to be planted early (October to early November) as they have a long growing season. Melons should be planted in the sunniest and warmest available part of your garden. Because they require such a long, hot growing season, melons are not recommended for Canberra: even for experienced gardeners success is difficult.

Beans: require a nice rich soil and are best not planted before November in case of a late frost.

Squash and Zucchinis: Seeds should be sown direct where possible, but the requirements for one household can be met with a couple of seedlings, which it is probably more economical to purchase.

Pumpkin: Can be established in the glasshouse or a very warm, protected spot with a rich soil. Pumpkins are hungry feeders and will benefit from the application of some blood and bone.

Sweet Corn: Seeds should be sprouted on damp paper (as described for peas in the Spring Quarterly) before sowing. For corn, the "sprouts" are really roots, not shoots. To ensure that the newly-sprouted roots don't tangle or break, make sure that seeds lie flat on the paper and handle them as little as possible.

Any seeds that don't sprout using this method should be thrown away as they will not germinate in the soil either.

The Sugar Snap Pea

by Traudi Kalivoda and Mary Flowers

The sugar snap pea is a wonderful vegetable - easy to grow, productive and tasty. Eaten fresh from the vine they are absolutely delicious. Sugar snap peas can be cooked, stir fried or frozen but most organic gardeners - and especially children - will enjoy them right off the vine.

Sowing is best done in early February for an autumn crop or August to early October. As sugar snap peas don't like it too hot, seed packets indicate that they are always suitable plants for our colder Canberra climate. I found with all peas that sowing in May is a waste of time as we get no pollination from insects at this time of the year.

Sugar snap peas are deep-rooted plants and prefer slightly alkaline soil; eg soil rich in compost. As a legume they produce their own nitrogen but require phosphate and potassium rich soil.

Prepare 15cm trenches enriched with well rotted compost. Plant seeds in zig-zag fashion along trench 7-8cm between them. Fill trench with soil and gently firm down. Don't water the plants a great deal before they flower. Once flowers appear, water twice weekly around the base of the plant. The plants require a firm 1.8 metre trellis.

Harvest any time after the pods fill out - about 70 to 75 days after sowing seeds. Sugar snaps are sweetest and tastiest if you let them get really rounded and fat.

Traudi and Mary's Tips for Summer Gardening

continued from previous page

A recent example from Traudi was the germination of only 14 of 30 seeds. This certainly saves digging, planting and watering garden beds for less than 50% germination success. With the pre-sprouting method, all the sprouted seeds you sow should become seedlings.

When sprouted roots are about 1cm long, (this takes about 5 days), seeds should be sown in small individual punnets and the seedlings thus obtained transplanted as per suppliers instructions.

Potatoes: Should be planted in a good friable soil without too much nitrogen, which makes the tops leggy at the cost of tubers, or lime, which causes scale. Potatoes like potassium and plenty of compost. It is usually recommended that rows be 75 to 90cm apart, but if the soil is rich and well-composted, rows can be as close as 60cm. Sets within rows should be about 30cm apart.

When plants are about 15cm high, bring the soil up around them into hills. When soil is warm, the plants should be mulched heavily with compost, or with semi-composted straw or leaves retained from autumn.

Traudi has unsuccessfully tried growing potatoes by covering the sets with hay or straw, a method recommended on the *Gardening Australia* TV program. Traudi has found too much light is able to get in, turning the potatoes green and inedible. Rice husks may be a good alternative as they settle closer around the plant, and should allow in less light.

Sweet Turnips: Are better left for January planting as winter vegetables. These are very susceptible to green butterfly, which is also more prevalent in earlier months.

Hardy Crops

Brassicas: For winter crops plant seeds in late November to January for transplanting from February onwards. Brassica seeds need the soil to be firmly packed to germinate.

It is possible to grow cauliflowers for summer eating but Mary believes that it is not worth the trouble for the home gardener as they are very susceptible to butterfly and usually all ripen within a short period, creating a glut.

Traudi suggests that it is uneconomical to try to grow Brussels Sprouts in Canberra.

Root vegetables: including carrot, parsnip, beetroot, white turnips and radishes all require nice deep ground and rich friable soil, improved with manures. Parsnip will self-seed quite well anywhere in your garden while turnips will germinate very quickly (about 4 days) provided the nights aren't too cold. Long white radishes are recommended for taste and ease of growing.

Lettuce, Spinach and Silverbeet: are all easy to grow, responding well to good, nitrogen-rich soil.

General Tips

Mary and Traudi recommend keeping up with the liquid manure described in the article in the Spring quarterly. This should be applied **after watering, not to dry soil.** Watering the plant first assists to further dilute liquid manure, which should already be diluted to the colour of weak tea before being applied. A couple of sad tales were recounted of the demise of plants fed on liquid manure without watering!

The other important thing to keep up is the mulching of plants, after the soil has warmed up. Anything can be used, including sawdust, straw or grass clippings which have already been somewhat decomposed. For strawberries, pine needles can be used, but these are not recommended for other plants.

Next quarterly, watch for Mary and Traudi's tips for autumn as well as their special article on Successful Asparagus Growing.

FRESH VEGETABLES FROM THE GARDEN IN THE MIDDLE OF WINTER

by Marjatta Asa

I know that we are all currently working on getting our vegie patches into a good productive stage for summer. Who would think about winter when we haven't reached summer yet? However, if we want to harvest fresh vegetables over the winter months then we should give some thought to them in the near future. The first one is the brussel sprout. If seeds aren't in pots before Christmas then they won't be ready for harvesting at the beginning of winter. So if you fancy fresh sprouts over the whole winter get started in the second half of November or early December.

The cabbage family doesn't mind being transplanted from smaller to larger pots a number of times. You can keep doing this until summer crops are harvested and vegie patches have room for the winter crops. Try to get brussel sprouts in final positions in the second half of March or very early April at the latest.

Broccoli, cabbage and cauliflower should be sown in pots in early January. Once again the seedlings can be moved from smaller to larger pots until there is space to plant them in their final positions in the garden. In my garden I find space for the cabbage family after onions, which are harvested from late January to February depending on the summer temperatures.

The last seed for the cabbage family, the chinese cabbage, go into pots in early February. Once again, the seedlings are moved from pot to pot until they are ready to be planted in their final positions in early April. If chinese cabbages are planted too early, they tend to go to seed before the temperatures start to drop in the second half of April. All cabbages tend to go to seed if they are left in the one-sized pot for too long while the weather is still hot or if they suffer from lack of water.

I have never had any frost damage to cabbage family plants in Canberra and my earlier garden occupied one of the lowest positions in O'Connor. However, last winter was the first time I grew these vegetables at the farm south of Braidwood. I measured -9^{o}C from the second week in June until the beginning of August (this temperature was measured about 1.5 m above the ground). These frosts were severe enough to kill thumb-sized cauliflowers which were still well covered with outer leaves. I also lost about half of my broccoli plants.

Another group of vegetables providing harvest over the winter are the root vegetables; carrot; parsnip; turnip; swede and beetroot. The seed for these vegetables should be sown in the first half of February. Carrot and parsnip seedlings cannot be transplanted thus you must have space for them at seed sowing time. I usually grow two groups of root vegetables per season. The first crop is sown in late August to early September. These are pulled up and used by the end of January. The only exception is beetroot which in my garden tends to occupy its space until autumn.

The root vegetables may not actually grow over the winter months - this will depend on the temperatures. If the vegetables have reached a usable size by the middle of May they can be left in the ground and harvested when required. The middle of August is the time to pull the remaining root vegetables out of the ground and store them in the fridge for later use. If you do not harvest these biennials at this time, they will start their second growth and go to seed.

Did you realize that starting cabbages, brussel sprouts etc. in the summer months means that there will be a number of months when you will need to keep an eye out for cabbage moths caterpillas? The same applies to turnips and swedes since they also belong to the cabbage family.

Is there anything else we can grow over winter? Yes - endive and leaf chicories are frost hardy. The only problem with these vegetables is that they are somewhat bitter tasting so only grow them if you like a little bit of bitterness in your salad. Silverbeet is another good one for winter. All these leaf vegetables should be started in February, or maybe in early March. They keep growing over the winter months and all of them can be started off in pots and transplanted into larger pots until there is space for them to be planted in their final positions in April.

STRAWBERRY VIRUS

by Miriam Nauenburg

I know we've all heard of Strawberry Virus and Certified strawberry plants, but how many of us know how to identify a plant affected by Strawberry Virus?
Those black spots on the leaf are NOT signs of virus.
The old yellow leaves are NOT signs of virus.
Look at the flowers. The centre of a strawberry flower (which is the ovary), matures into a plump green miniature strawberry which develops into a rich red fruit - on a healthy plant.
Have you a strawberry plant where the fruit just isn't developing?
Are the centres of the flower turning a dull reddish brown instead of filling out into a fruit?
A million flowers and <u>one</u> like that and you have strawberry virus and you won't harvest a crop.
The best thing for you is to throw all the plants in the bed out - NOT INTO THE COMPOST HEAP - and buy new plants `certified virus free' from a reputable supplier next February and plant in a new spot.
The best thing for your neighbour, or nearby plot holders at the Organic Gardens is the same, as there is no treatment, organic of not, for this virus disease, and to keep the plants is to waste a garden area on unproductive plants, and endanger your neighbour's strawberries as the disease is spread by bees and other pollinators.
The `diseased' leaves on strawberry plants are usually caused by either old age or fungal disease, which can be controlled somewhat by organic means and raising the nutrition of the plants and still allow you to harvest a crop. Removing all old brown leaves or those showing black spots helps prolong the life of the plants it the virus has not affected them. again - place those old leaves in a bag for rubbish collection, not in the compost heap.

WHEN TO WATER

The following article is reproduced from the November 1989 COGS Newsletter and was developed from information supplied by the Henry Doubleday Research Association. Traudi Kalivoda and Mary Flowers believe it is an excellent article and offer the following additional information:

- *Well-composted soil holds water better and doesn't dry out as quickly as unimproved soil.*
- *When the soil has warmed up, mulching will also improve the water-holding capacity of soils.*
- *Tree roots will tend to "follow" water so don't start your vegetable patch too close to large trees.*
- *Remember that Australia is a very hot dry country, so in addition to the advice in this article, follow your commonsense and observe the health of your plants.*

Sylvia Maseyk

When watering the vegetable plot it is worth ensuring that one gets maximum benefit from the water applied.

When using can or hand held hose, water individual plants thoroughly, rather than watering whole area. For plants which need regular water, sink a pot plant down to soil level (say 12cm/5") next to these plants and water into this. This takes water straight down into the soil where it is needed and stops soil being washed away from around plant.

If using a sprinkler, a good soak once in a while is far more beneficial then a little and often. Check the soil after you have watered to see how deeply the water has penetrated - you may be surprised at the amount needed to make any real impression on a dry soil. Do not over water with a sprinkler though, as the action of water droplets can damage the surface structure unless it is rich in organic matter. Trickle irrigation, which comes in various forms of leaking hose pipe, is much kinder to the soil structure and is much less wasteful.

Seedlings and young transplants should never go short of water but once established their need can vary considerably.

ROOT CROPS: General watering. Only water when soil is drying out. Too much water will encourage leaf growth at the expense of roots. Water shortage: roots will survive better than most crops in drought. Try not to let soil dry out completely, or roots will tend to split when water is finally applied.

ONIONS: Too much water delays maturity and reduces keeping quality. Only water in very dry conditions while plants are establishing.

PEAS & BEANS: In early stages don't water unless soil is very dry as this encourages lush growth and delays

cropping. Watering when plants begin to flower and pods are swelling will increase the crop.

TOMATOES: Once established do not water until flowering starts. Less watering will reduce number and size of fruit but these should be tastier. Try not to allow to dry out completely, once fruit set.

MARROWS, ETC: Unlike other fruiting crops, watering the growing plants encourages rather than reduces the crop. For maximum cropping keep moist from start to finish, increasing water as cropping starts. Try not to overhead water if subject to mildew.

CAULIFLOWER: Lack of water in early stages can cause small, premature curds.

CABBAGE : If soil is dry, a watering of 4 gals/sq yard two weeks before harvesting will give best value. Don't overhead water or heads will split.

CHINESE CABBAGE: Needs a large and regular supply of water. Not advisable in dry areas.

CELERY, CELERIAC, FLORENCE FENNEL: A good supply regularly otherwise they will be tough or bolt prematurely.

LETTUCE: Water well, especially 7-10 days before harvest.

SPINACH: Will rapidly run to seed in dry conditions. Silver beet more tolerant of dry conditions and NZ spinach quite resistant to drought.

BROCCOLI, BRUSSELS SPROUTS, KALE: Once established if widely spaced these crops should survive without watering.

STRAWBERRIES: Keep picked, mulched and watered. Mark good producers for new plants for next season and remove plants with mildew or rust.

FRUIT TREES (FLOWERING): Need heavy watering once a week.

CITRUS: Need heavy watering once a week.

TOMATOES, EGGPLANTS & CAPSICUM, SWEET POTATO & CLIMBING BEANS: Will hold their blossoms and keep producing if soil is cool.

VEGETABLE PLANTING GUIDE FOR SUMMER

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

S = Seed Sowing
T = Transplanting

NB 1.This table is a 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.g. December plantings of heading lettuce should be successful, February plantings should be the butterhead varieties.

see Marjatta Asa's article on "Fresh Vegetables From the Garden in the Middle Of Winter"

COGS NOTICEBOARD

NEXT MEETING: Tuesday, 23rd November, 1993, 7.30pm, Room 4, Griffin Centre
TOPIC; Dr. Richard Baker will speak on **"Community Action and Environmental Problems facing the Murray-Darling Basin"**
There will be the usual library, produce table and seed exchange.
This meeting will be combined with a small Xmas celebration, so instead of the usual supper, please bring a plate of Xmas goodies to share. There will also be a lucky door prize!
VISITORS ARE MOST WELCOME
Next Committee Meeting: Tuesday, 30th November, 1993, 7.30pm at the Environment Centre.
BOOK DONATIONS: Thanks to Smiths Alternative Bookshop in Civic for donating book prizes for the small raffles we hold at our monthly meetings. This fundraiser is helping us build up our range of books in the library.
CAKE STALL: While thinking of the library, don't forget our cake stall at the Hall Markets on Sunday 5th December. Proceeds from this stall will also go to fund the library, so please gives us your support. The stall will sell home-baked cakes, slices, biscuits and preserves and will have a Xmas theme. **We need goods to sell so please plan on doing some cooking for us!** We also need volunteers to act as collection points for baked goods/preserves during the days prior to the stall and to transport same to the stall on the day.

Let **Linda Hyslop**, our stall coordinator, know how you can help, either at the November meeting or by ringing her on **286 4222.**
We are also going to have a series of baking bees on the evenings of Monday , 29th of November through to Friday the 3rd of December , and on Saturday the 4th December (to package things as well), so if you can come to any one of these baking bees, please let Linda know ASAP.

GINGERBREAD HOUSE RAFFLE: As part of this cake stall we are going to raffle a gingerbread house, very kindly made for us by Lydia Waldron. A terrific prize so close to Xmas! The mouth-watering description is
"2 kgs of the yummiest gingerbread, decorated in true Hansel and Gretal fashion, and made from the finest ingredients (butter, golden syrup, brown sugar, cinnamon etc) . Bring your money to the November meeting to buy some tickets - 50C each, or 3 for $1.
SEED EXCHANGE: The growing season is well and truly with us now, so don't forget to save some seeds from your non-hybrid plants in summer/autumn. Its great fun, and our Seed Exchange would welcome donations.
INSURANCE: The COGS Committee has recently extended COGS' Insurance Cover to include Club Member Liability and Goods Sold Risk. The upshot of this is that we have a very good cover and **can allow the two COGS mulchers to be used by members,** as soon as guidelines for its use are formulated. This should be early December.
Enquires can be directed to: John Ross (Northside) 241 4063
Richard Blyton (Southside) 231 6219
We have also taken out a separate policy, Personal Accident Voluntary Workers Insurance, to cover members working at official COGS functions, including working bees at community gardens, stalls and field days. Unfortunately, this insurance does not cover children under 10 or people over 70 years of age (the other policy covers all members regardless of age).

MEMBERSHIP SUBSCRIPTIONS FOR 1994:
The COGS Committee has set the membership subscription for COGS for 1994 at $20 for single and family membership, with a concession rate of $10. The joining fees will remain the same at $5 and $2.50 for full and concession members respectively. These rates apply to those members whose current expiry date for membership is after the 31st December 1993.
President's Comments
I suppose you have just read the bad news about membership subscriptions going up, so, at the risk of boring you with money matters, I should explain the need for increased rates. Basically there are three factors involved:-
i) the subscription rate has been the same for **over a decade** - a long time - and over this time there have small incidental increases in costs across the board.
ii) we are faced with increased printing and postage costs with the Quarterly. While these are not welcome, I personally believe that the quality of the Quarterly and Flier warrant their costs.
iii) the cost of our insurance has risen so that we can adequately cover our members. I feel this has been a responsible step taken by the Committee, given the increase in COGS activities and membership since the old Policy was taken out.
Both last year and this year, our expenditure has exceeded our income, and we have drawn on savings previously made at fundraising activities. This cannot continue. Our savings our now equal to an average 3 months operating costs for COGS, and cannot responsibly be run down any further.
The further bad news is that if our membership stays at the same level next year, the COGS budget will only allow minimal spending on our community gardens and library, unless we do draw on savings or alternatively fundraise. Hence our cake stall in December for the library. Please support it, and please support COGS when the time comes to renew your membership. COGS is a very worthwhile organisation, but we can only keep growing (pun intended) with your support.
On a lighter note, this is our last publication for the year as we go into the Xmas break. It's a wonderful time of year, especially for those of us blessed with young children. I hope you enjoy the summer ahead (and don't forget to water the garden amidst all the festivities).
Happy Gardening
Michelle Johnson .