

# THE COGS QUARTERLY



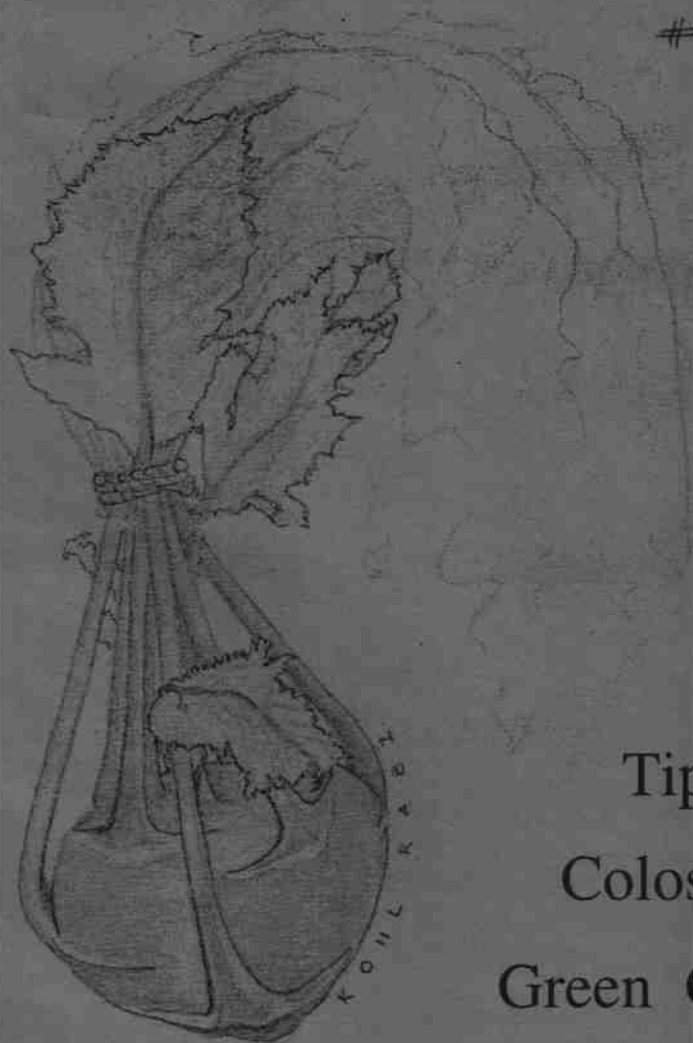
VOL 1 no. 3

SPRING 1993

#10 Piattigo Sun. Sept 19.  
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John Russ. ① Got telephone no. for  
Jonathon Banks.  
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② money for plots & plot allocation.  
- who do I pay.



This issue:

Kohlrabi

Tussie Mussie

Spring Frosts

Tips for Spring Gardening

Colossal Compost Crossword

Green Guerillas of New York

Why NOT use Chemical Fertilisers ?

and much more !

# COGS QUARTERLY

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## WHAT IS ORGANIC GROWING ABOUT?

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

## WHAT ARE THE ORGANIC ALTERNATIVES?

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

### REMEMBER:

MONTHLY MEETINGS ARE ON THE 4TH  
TUESDAY OF THE MONTH

# COGS QUARTERLY

## COGS QUARTERLY

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VOL 1. No. 3 (Issue 3)

### CONTRIBUTIONS WELCOME

Please address all contributions to: P.O. Box 347, Dickson  
ACT 2602

There are four issues each year; Autumn (February), Winter (May), Spring (August), and Summer (November)

Articles in this Quarterly do not necessarily reflect the views of the Society, nor are the products and services offered by advertisers specifically endorsed by the Society.

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**Meeting notices are on COGS NOTICEBOARD on the inside back page**

## PRESIDENT'S COMMENTS

I hope you enjoy the new format of the Quarterly. It came about basically because we lost the cheap printing arrangement we previously enjoyed and have had to go to a new printer. The good news about this is that we now have much more flexibility in our printing arrangements, hence the new format. The bad news is that we now pay commercial rates for our publication. This can be absorbed this year - next year the increased cost may have to be reflected in our subscription rate. But more on that later in the year. For now I hope you find the articles interesting and informative.

I would like to thank the editorial working group who put together this Quarterly. A magazine of this size can only be put together by voluntary workers as a team effort, and as you can see a number of people were involved in this production. I would also like to thank the members who contributed articles, they undoubtedly are responsible for the quality of the magazine. It is good to see that we have so many original contributions on a range of topics.

I must reserve a special thank you to Peter Cornhill for his substantial and well researched article "Why Not Use Chemical Fertilisers". As organic growers we like to concentrate on the many positive benefits of organic methods of food production, but occasionally we need to pause and reflect on why we have rejected chemical agriculture. I recommend you read the article.

Happy Gardening!

MICHELLE JOHNSON

## DIARY DATES with Joyce Wilkie

**August 14** Hall Rural Wine and Trade Fair. This is a new field day, close to Canberra and looks as though it is going to be interesting.

**August 28** Henry Doubleday Field Day. This annual event is held at Dick McNeill's farm at Kurradjong. For details phone (045) 76 1220

**September 17,18,19** Sydney's Alternative Farming & Gardening Exhibition. Hawkesbury Show Grounds Complex. Phone (043) 68 2040 for details.

**September 21,22,23** Henty Farm Machinery Field Days

**September 27-29** International Symposium - Environmental Agriculture Towards 2000. Surfers Paradise. Inquiries: ISEAT Symposium Secretariat, PO Box 9909, Brisbane 4000.

**October 16,17** Murrumbateman Small Farm Field Days. Anyone interested in being involved in a COGS stand please contact Joyce Wilkie on 2368173 (evenings)

**October 30,31** Eliot Coleman & Barbara Damrosch small farm workshop, Gundaroo. See advert on page 10 for details.

### SOME NEWS ITEMS:

#### MUDGEES SMALL FARM FIELD DAYS

Mudgee Small Farm Field days are always well worth a the four hour drive. This year was no exception. Over the past few years Michael Burlace, the NSW Agriculture Organic Farming Officer, has been co-ordinating a special organic section at the field days and this year there were lots of stands plus a large tent set aside for talks. The most notable speaker was Bill Mollison who drew a huge crowd and a lot of interest. His talk centred around alternative political and economic systems and he spent quite a bit of time berating public servants!

For the first time at these field days caterers, other than the local Bush Fire Brigade, were allowed to operate within the grounds. Dennis O'Leary a most enterprising BFA (Biological Farmers of Australia) grazier organised an organic food stall. His hard working team of family and friends converted 6 sheep and 1 steer into rissoles which were served between slices of bio-dynamic

wholemeal bread and could be washed down with hot spiced organic grape juice. The stall did a roaring trade both days, quite an inspiration and truly delicious. Dennis also told me that some of the profit would be going to help the BFA promote the organic industry.

#### ACRES AUSTRALIA

Have you seen the new 'Acres Australia'. Any one who has had paid for a subscription to the very good but extremely infrequent magazine will be relieved to know that Lindsay Bock has taken over the publication. All old subscriptions will be honoured and the new Acres will be coming out regularly every two months in A3 newspaper format. Vol. 1 Nos 7 & 8 are already available and contain some really good reading. At the moment some retail outlets are being negotiated in Canberra, look for details in the next COGS Flier.

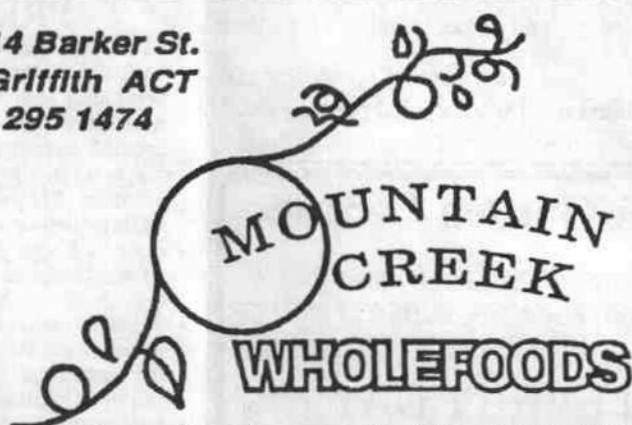
#### PREDATORY INSECTS

The Chinese have been breeding predatory insects for hundreds of years, it is simply one facet of their scrupulously careful, integrated approach to intensive horticulture. It is encouraging to see that there is now an Australian company, BIOLOGICAL ALTERNATIVES, in Moree NSW advertising both Lacewings and Trichogramma for sale.

#### NEW BOOK

Anyone interested in oriental gardening techniques should try and get hold of Joy Larkcom's new book - Oriental Vegetables: The Complete Guide for Garden and Kitchen. This is a remarkable work full of information, well written and carefully researched.

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## SUMMARY OF COGS TALK

by John Raison.

CSIRO Division of Forestry

Soil fertility can be defined in terms of the soil's ability to supply water and nutrients for plant growth, and the suitability of the environment provided for root growth. Soil organic matter contributes to all these factors, and thus is usually positively correlated with plant productivity. Agriculturalists were quick to realise that soil organic matter content can be highly dynamic, and that cultivation of virgin soils often leads to loss of organic matter and a decline in soil fertility. Use of a pasture phase in crop rotations, or adding crop residues or manures to the soil, soon became an integral part of farming systems and stabilized soil fertility at acceptable levels.

Soil scientists have established that organic matter contributes to soil fertility in the following ways:

1. It provides a reserve of nutrients ( especially nitrogen ) in the soil which are slowly released for plant growth.
2. It contributes to ion exchange and buffering of acidity ( pH ). The negative charges on organic matter attract positively charged cations ( eg, potassium, calcium, magnesium... etc.) thus preventing them being leached from the soil.
3. It enhances formation of a stable structure (formation of peds ) in the soil. Organic matter is also the food source for fauna ( eg. earthworms, beetles, mites ) which mix the soil and assist aggregation processes.
4. It improves soil water relations. Better surface structure improves infiltration ( thus lowering run-off and risk of erosion ), organic matter acts as a 'sponge' to retain moisture, and surface residues act as a mulch to reduce water loss from the soil by evaporation.
5. Organic matter provides a range of substrate's and micro-environments in the soil which creates a diverse microbial population and better soil 'health'.

Organic matter enters the soil as fresh residues of either plant (top of root litter ) or animal ( mostly faeces.) origin. It undergoes a complex process of decomposition during which nutrients are released and progressively more resistant compounds ( humus ) are formed. Humus can contain compounds which are thousands of years old.

Organic matter is often considered as a superior source of plant nutrients to inorganic fertilizers, but there are many

'myths' associated with this topic. Both 'organic' principles and the use of inorganic fertilizers have a role in gardening and farming. The following points are worth considering:

1. The chemical forms of nutrients used by plants are the same for both, and so is the nutritional quality of plant products.
2. Both can pollute ( eg. groundwater ) when applied in excess. This is especially so for leaching of nitrate.
3. Both can stimulate soil fertility because of the 'import' of nutrients.
4. Both can contain toxic contaminants, with pesticides being the main problem.
5. Fertilization can increase soil organic matter via stimulation of plant growth, and lead to more productive and sustainable farming systems.

In short, soil organic matter confers many advantages, but inorganic fertilizers also have a role to play when well managed.

### Murrumbateman Scouts

Fund raising to send country scouts to the 17th  
Jamboree in January 1995

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## WHY NOT USE CHEMICAL FERTILISERS?

by Peter Cornhill

To my mind, we are Organic Gardeners or Farmers because we want to feed the soil, not just the current crop we are growing. In other words we are looking at the Big Picture. As Lawrence Hills<sup>1</sup> says "The basic difference between an organic farmer and an inorganic one is that the former farms for not only his sons and grandsons, but for the children and grandchildren of us all....."

Pfeiffer<sup>2</sup> says that low nitrogen (1-2%) as in compost produces as good results as high nitrogen fertilisers (6-16%), but whereas the latter, being highly water soluble, produces the best effects for the first 3-6 weeks, the compost lasts 3-6 months with a steady release, even showing effects into the second or third year if the soil is rich in organic matter.

So compost and organic fertilisers in general are slow release substances that enhance the soil-life in the long term i.e. they make the earth fertile. Chemical "fertilisers", as we can see from much of conventional agriculture and horticulture, do not. One reason for the difference lies in the process which plants use to take up fertilisers.

### HOW DO PLANTS TAKE UP FERTILISERS?

Jeffrey Hodges<sup>3</sup> says that "in a natural situation plant nutrients are held in pockets of humus - decomposed organic material - in the soil, in insoluble organic complexes." Chemical fertilisers, being water soluble, are readily available in the ground water for the plants to take up.

Plant roots, according to Hodges, have two separate functions, one to take up water and the other to take up nutrients. In the natural situation these are 2 distinct processes. Taking in water is a continual process as long as the plant is in leaf. It is taken up by the roots, passes up through the plant and is transpired by the leaves. As we breathe oxygen, so a plant breathes water.

Food uptake in plants is however determined by the amount of sunlight. In winter less sun means less photosynthesis, less growth and less need for nutrients from the soil. In growth periods plants send out feeder roots into the humus where the nutrients are held.

### WHAT HAPPENS WHEN CHEMICAL FERTILISERS ARE USED?

Where chemical fertilisers are used the plant takes up nutrients in the water intake regardless of how much sunlight there is to determine photosynthesis. In other words, it is being "force-fed".

Too many mineral salts are therefore taken up, says Hodges, causing the plant to absorb more moisture to balance these salts. This results in bloated green "giants" which have poor nutritional value and can contain carcinogenic nitrites.

Plants using chemical fertilisers are therefore more likely to be attacked by insects and diseases because of being under stress from this unnatural method of feeding.

Podolinsky<sup>4</sup> claims that the transpiration rate of such plants actually decreases quite a lot because, although the plant is full of water, it doesn't freely let it go as normal capillary action osmosis is disturbed. Also, because the plants' light cells are not blown open they have very few vitamins, enzymes, hormones, etc leading to little flavour or food value.

Both Podolinsky<sup>5</sup> and Hodges warn against the danger of raw manures producing the same effects through being highly water soluble. Dairy cows will avoid the lush grass from manures around the dairy, and feeding on these grasses can produce identical nitrate and nitrite poisoning symptoms (and the equivalent in potassium) by chemical fertilisers.

This along with sterility, according to Podolinsky, is the cause of bloat in cattle, a problem that does not occur on Biodynamic farms. In humans it manifests as cyanosis (in infants especially) caused by nitrates in well water - quoted as far back as 1945 in the Journal of the American Medical Association<sup>6</sup>. Therefore it is extremely important to compost all animal manures and be sure that the compost is well-rotted before applying it to your garden.

The next problem with using chemical fertilisers is that because they are water soluble and therefore leach out quickly, they are generally required at frequent intervals in large amounts. This can lead to an imbalance in the elements in the soil resulting, according to R. Hodges<sup>7</sup>, in an unbalanced nutrient content in the plants. This in turn can affect the health/productivity of the animals feeding on these crops. This is particularly so when nitrate, potassium or phosphate is applied either as inorganic fertiliser or raw slurry or manure. For example<sup>8</sup>:-

- a) Apple trees fed too much nitrogen can result in calcium deficiency in both tree and fruit (cork spot, bitter pit, rots).
- b) Too much potassium fertiliser can cause magnesium deficiency.
- c) Pastures fertilised with potassium and nitrogen always had high potassium levels, but the sodium, calcium and magnesium contents in many cases were so low as to cause deficiencies in grazing cattle (study by Kemp 1971).
- d) Voisin (1965) quotes examples of how fertiliser nitrogen can reduce available copper; phosphorus reduces available zinc; calcium reduces available manganese; and potassium

reduces available sodium, calcium, magnesium and boron.

e) A study by Schiller and others (1971) showed significant infertility in cows feeding on pastures treated with 80kg/hectare of chemical fertilisers.

## LONG-TERM EFFECTS OF CHEMICAL FERTILISERS

There is no doubt that excess use of such fertilisers has not only caused pollution of the environment by their very production -- e.g. 2 tons of oil (usually imported) to produce one ton of nitrogenous fertiliser; 500 calories of fossil fuel to produce one calorie in the form of a hothouse lettuce<sup>9</sup> -- but also by their easy solubility.

High nitrogen fertilisers can also be a serious health problem. In the animal/human body, for instance, nitrate is turned into nitrite and this can block the haemoglobin  $O_2 - CO_2$  exchange (blue baby syndrome). This is causing increasing concern in a number of overseas countries.

It seems that nitrates take up to 30 years to percolate down through the soil to groundwater supplies, and the Department of the Environment and National Water Council in Britain expressed alarm at finding levels of nitrate exceeding 50mg./litre<sup>10</sup>. Concentrations of nitrates there doubled over the 20 years to 1983, so that a blanket of nitrates is seeping down at the rate of 3 feet per year.

In the Danish town of Aarlborg, with only 30mg/litre nitrates in the groundwater, stomach cancer is higher than in other areas with less water pollution.

In Switzerland, nitrate levels are now set by statute for all vegetables and any containing more than 3000ppm can be compulsarily removed from sale.

A further problem with chemical fertilisers is the increasing dependency on them as agricultural crops become more uniform and genetic diversity shrinks. Thus conventional agriculture is caught in a vicious circle as increased vulnerability of crops results in increased use of chemicals to compensate for the uniformity and vulnerability.<sup>11</sup>

## DIFFERENCE BETWEEN ORGANIC AND CONVENTIONAL METHODS

Monitoring of organic/conventional fields in Illinois, USA<sup>12</sup> showed that nitrate levels in drainage water were 5 to 6 times higher for conventional systems. Compost grown vegetables were generally much lower in nitrate and higher in Vitamin C

- also important because it is supposed to have a buffering effect on the nitrate levels, particularly soya beans. (It is advisable to sprout seeds for at least 10 days to reduce this.)

Another characteristic of the difference between organic and conventional farming is the difference in the taste, nutritional value and keeping qualities. In vegetables, nutritionally valuable substances were generally higher, while nutritionally undesirable substances were lower in organic produce than conventional produce (results of an extensive 12 year comparative study of vegetables by Schuphan 1974).

Samoras<sup>12</sup> concluded that the storage capacity of vegetables is "improved without exception by increased doses of organic fertiliser and that it is always weakened by an increase in the use of mineral fertiliser, especially nitrogen." The Biodynamic preparations BD500 and BD501 have an influence similar to organic fertilisers on the storage capacity of fruit and the growth of fungi on nutritive media and fruit. The compost preparations BD502-507 have an opposite effect, and are thus used to encourage decomposition and transformation.

It has also been found by a number of researchers<sup>14</sup> that although the fresh weight of produce may initially be higher in conventional systems, this is because there is a higher proportion of dry matter in the organically grown produce, and this goes hand in hand with a higher quality product with better keeping qualities.

At the same time, R Hodges<sup>15</sup> points out that livestock need up to 15% less of biologically produced feedstuffs as compared to conventional feedstuffs, and yet they are frequently more productive in spite of this. The higher nutritional value of biologically produced food is undoubtedly a major factor in this.

For example, the Haughley experiment of the Soil Association (Balfour 1975), Peavey and Greig (1972)<sup>16</sup> found that spinach from an "ecological" production system absorbed more iron than the one treated with mineral fertilisers. Hall (1974) found 3.6 times more Vitamin C and 2.3 times more carotene in leeks and carrots of ecological as compared with conventionally grown produce.

The only 2 places that I've found anyone in organic/BD agriculture to recommend the use of soluble fertilisers are when Michael Roads suggests using superphosphate only to start the cycle of biological activity in the soil. Alex Podolinsky also suggests that this may be used where the farm is converting from conventional to B.D or organic and the



# COGS QUARTERLY

farmer needs an immediate return from the land. He says that although rock dusts will act in the soil exactly as though they had originally been in it, they may have to be transported from thousands of miles away. This may be impracticable, so artificial fertilisers (say, superphosphate) could be used just to start the biological cycle if the particular element is not there in the soil. This would only last a short time; then it is gone, but by that time rock phosphate dust should have been added, say 2 years in succession, so that there should then never be a need to add phosphate to the soil again.

## A HEALTHY SOIL MEANS HEALTHY FOOD

So we see many problems with conventional agriculture with its reliance on chemical fertilisers (as well as herbicides, pesticides, fungicides, etc. - but this is beyond the scope of this article). We see that by contrast, the organic farmer works to manage the biological health of his soil. The soil is then "not a passive medium in which plant growth can occur but rather a nurturing matrix designed to produce crops which are balanced in their nutritional content and which have little need for pesticides to protect them, since healthy plants are remarkably resistant to attack by insects, fungi and other plant pests."<sup>17</sup> Organic farming also works on and protects the long term health of the soil - which means healthy foods.

Organic matter in soil is nature's factory for biological activity. The natural soil organisms - worms and beneficial microorganisms - break down vegetable and animal matter. Where sufficient are present, soil structure, aeration, drainage and moisture-holding capacity will all function, creating a fertile and living soil, where many soil-borne diseases are also controlled. This, for me, is what organic growing is really all about. There are many variations of it depending on a variety of soil types and climates, and probably more to be worked out.

I'll leave you with the thoughts of Lawrence Hills, (founder of the Henry Doubleday Research Association) He says that conventional farmers always ask the rhetorical question "If we gave up chemical fertilisers, wouldn't the world starve because compost could never grow enough food for the hungry millions of the future?". Lawrence's answer to that is: "If we do not give up chemical fertilisers and alter our agriculture so that we live on the earth's income instead of squandering its capital, we shall starve our hungry millions in little more than 100 years. We have to learn the best way of achieving maximum continued production from the land before the raw materials and the energy make chemical fertilisers run out."<sup>18</sup>

## THE FOLLOWING TABLE IS FROM LAWRENCE'S ARTICLE, P4.

Yields of Wheat, Barley and Oats in hundredweight per acre and kilograms per hectare.

(from the Cambridge University Agricultural Economics Unit Survey of organic and inorganic yields)

	British Average	S. Mayall (Organic)	B Capon (Organic)
WHEAT cwt	34.8	35.3	38.0
kg	4,420	4,480	4,830
BARLEY cwt	31.6	-	32.0
kg	4,041	-	4,070
OATS cwt	30.8	38.3	35.0
kg	3,910	4,860	4,450

Peter Cornhill

(Many thanks to Michelle for pointing me in the right direction with a couple of publications)

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14. Vogtmann., p11.
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16. Vogtmann, p8.
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## WHATEVER HAPPENED TO THE CARDENS? by Shirley Carden

We last saw many of you at the wonderful farewell you gave us in 1988. Leaving COGS has been more of a wrench than I bargained for, being a member since its very beginning. I often recall with a sigh working at the Cotter Community Garden with my good friend, Traudie

Peter and I intended going straight to Crystal Waters Permaculture Village in Queensland. After all, we were originally Queenslanders. We had bought a plot and were keen to get started. That is, until our children and grandchildren visited our intended home and declared it was indeed a beautiful place, but the roads were too dangerous and the distance too great to transport their families on a regular basis to visit us.

So we looked elsewhere and found this gem at Broughton Vale about 20 km north of Nowra. It's only five acres, but even that is proving to be a handful. All the land around here has been drastically changed from its original wilderness that was dominated by giant red cedars. So it needs constant attention to save it from becoming overrun with blackberries and lantana etc.

But what saves this piece of Australia is the resilience that springs from its high rainfall and fertility. It is always green, and although there is a great deal of pasture, there are also many areas of forest and even the occasional young red cedar. Our area is laced with little creeks. It ranges from gently undulating to the steep escarpments which are quite close to us and form an ever present backdrop to our view. We are regularly flood-bound: for when it rains, it really rains. At such times, the escarpment showers the forest below with several wild waterfalls. But we have also experienced drought during which the creeks run almost dry, so providing water storage is essential if we are to run a viable farm.

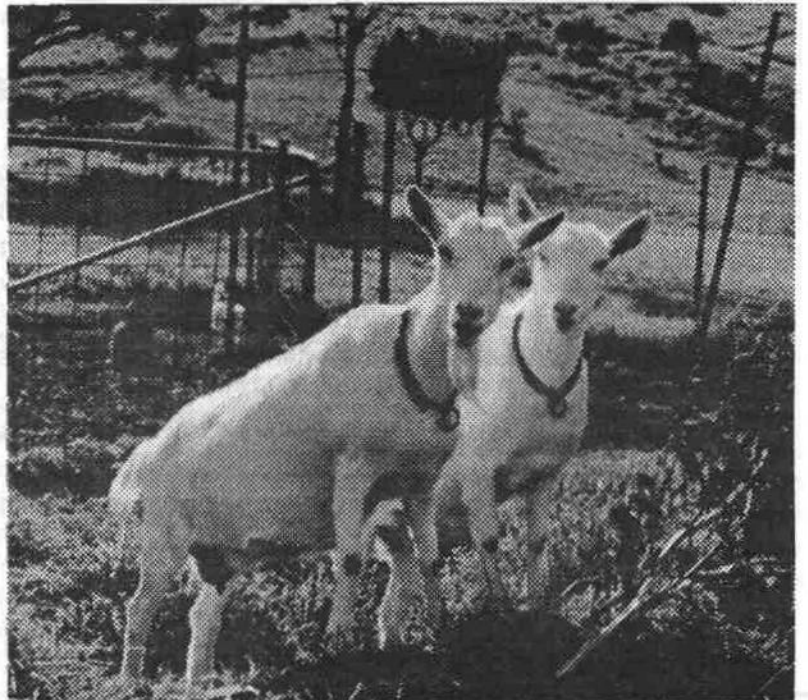
When we came here, there was a little holiday house on the block, quite a few blackberries, and plenty of kikuyu grass that just grew and grew. We soon acquired a tractor and slasher to control the growth, our son's two milking goats, and his chooks. We built a large farm shed and put in a little dam, a large tank, and a gravel driveway to avoid getting bogged when the rains came. We also dug drainage channels to control the run-off.

The essential preliminaries over, we decided to start our orchard and to re-afforest the steeper parts with rainforest species. In all, we reckon we've planted about forty orchard trees and over one hundred other trees most of which are natives. We have many more in pots waiting to be planted.

Part of our block was taken up by a little boggy valley overrun with blackberries and lantana. This proved to be a blessing in disguise, because of the springs there that never run dry. We have turned part of this into a large deep dam that is spring fed. We have a canoe for the grandchildren, and in the summer we can swim there. Otherwise it is a domain for ducks, cormorants, cranes and other water birds. Peter divides the blackberry patches into manageable clumps by slashing access paths. That way, we get a good crop that is accessible. The goats help to control them too.

For a long time, we raked the grass by hand after slashing, loaded it onto our trailer, and carted it for use as mulch, bedding for the animals and emergency fodder. Fortunately we acquired an ancient mechanical grass rake. It rakes the grass into windrows that are much easier to gather.

Gradually I am learning how to cope with the conditions here. Too much rain followed by periods of drought require a new approach to growing after being used to Canberra. Things have to be well drained, so I grow my crops on mounds of soil or mulch. Most people are fearful of the kikuyu, because it sends runners that get into everything. But we find that a thick layer of mulch will kill it, and if it does come through the mulch it is easy to pull out by hand. So we use the kikuyu



to control itself where we don't want it, and at the same time feed the worms and produce wonderful soil.

We haven't got a huge vegie garden, because we spend a lot of time extending our little house. Right now in winter, we grow more tomatoes than we can use. Self-sown, they grow on the southern side of the house with no direct sun, yet they ripen inside when picked as soon as they show any colour. Other crops that we have in season are potatoes, berries, chokoes, oranges, mandarins, peaches, nectarines, passionfruit, the promise of many more fruit and nuts, and of course herbs (I haven't yet the variety that I used to have in Canberra).

The nearby township of Berry has much to offer, especially on the first Sunday of each month when its now famous market is held. I believe there is a waiting list of 300 for a stall, and thousands of visitors flock from as far away as Sydney. There are successful, commercial organic growers in the area. We hope to become certified eventually, supplying the Canberra market out of season. When we have something worth showing, we shall be happy to have field days for those who are interested, so perhaps it could be a weekend's excursion from Canberra. We shall look forward then to renewing old friendships.



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**Date:** Sat 30 - Sun 31 Oct, 1993  
**Cost:** \$180 for the 1st member of family or partnership  
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### Further Information:

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## OBSERVATIONS and IMPRESSIONS by David Odell

Your Rural Correspondent has been visiting - from the Lower Hunter in the north to Gippsland, Victoria, in the south and to Hawksbury and Tumut in between - so I'm taking this opportunity to pass on to you my observations of the country I saw and impressions of some of the people I met.

During mid April I stayed with my son and his family on the Central Coast and from there forayed to Newcastle and the Lower Hunter wine growing districts. This was absorbing not simply because it was the first time I had been in this area but also because one could see the change in emphasis taking place from heavy industry and manufacturing to tourism and hospitality based on the wine industry. Perhaps this is a reflection of the economic circumstances of these times but at the same time it shows an awareness of the need to turn away from the extractive and polluting to the self-sustaining and renewable. Even so the demand on land is intense as typified by the urban development in the Gosford-Ourimbah-Wyong area where orange groves and poultry farms have given way to the demands of commuters and retirees and the bitumen tentacles servicing the F3 Freeway.

The Hawksbury campus of the University of Western Sydney held a field day on 22 May 1993 on "The Production and Marketing of Free Range and Organic Eggs", which was conducted by Ian Littleton and Judy Sanders from the Windsor advisory office

(ph (045) 770 600) and which was well attended by approximately 100 participants many of whom were newcomers keen to get a start in the industry. The seminar took the form of a presentation of papers by those organising the seminar and an examination of questions raised by syndicates of participants who were seeking answers to their own particular problems. This was followed by an examination of the College's self-funding free range egg project and the irrigated pastures which are the basis of the system. Following the seminar a number of us joined together for a dinner to hold further informal discussions on the future of free range poultry in a deregulated market and the benefits of joining the NSW Free Range Egg Producers Association. It was very pleasing to see that participants came from every State with particularly strong representation from NSW, Victoria and Queensland. I couldn't help but reflect on the fact that in having kept poultry on and off for over 40 years and in having 'bought' my experience in rearing pullets and meat chickens it was really a case of "the more things change the more they stay the same"

Following this seminar I was particularly interested to see the poultry and waterfowl at the 1993 Royal Canberra Poultry Show held at Natex on 12 & 13 June as it is the poultry fancier who maintains the genetic pool (something like a seed-savers network) of those "unfashionable" breeds which could hold the key to future developments in the poultry industry.

On 16 June I made a brief two-day visit to Tumut visiting the home of Colin and Pattie Ludford at their 'Clear Water' property on the Goobragandra River. Their generous hospitality enabled me to see quite a lot of the district and the lower reaches of the Snowy Mountains scheme and in particular portions of the newly completed Hume and Hovell Walking Trail which stretches through the mountains almost to Albury. Tumut offers an amazing variety of attractions to the visitor and has the potential to be a source of products and produce for the Canberra market should an all-weather road be built across the Brindabellas to shorten the present circuitous route through Yass and South Gundagai. Tumut provides plantation timber, fruit, milk and beef from an under-utilised area which shows that it is reliant on distant markets (for example, its milk is marketed in WaggaWagga) and it is usually the dedicated traveller and enthusiast such as the fly fishermen and bushwalker/skier who are the ones to savour the delights the district has to offer. Perhaps, in its wisdom, the Commonwealth Government can use its Defence powers under the Constitution to provide alternative road access from Canberra to Tumut (perhaps as an adjunct to the Snowy Mountains scheme and State National Parks) which will be both practical and environmentally sensitive.

From 6 to 11 July I spent visiting Gippsland in Victoria and was struck by how green and lush this area is when compared to my usual vista of browned and cold-seared highlands. Of course it was raining at the time and continued to do so (on and off) for the remainder of my stay but on the days the sun did shine it revealed a landscape quite different to the one with which I am familiar. It is predominately dairying country, from flats to gently undulating, backed by the Strezlecki Ranges and populated by high producing black-and-white Friesiens but occasionally a different sort of fence indicated that deer were being farmed.

A visit to the Tarago River Cheese Co at Neerim South was one highlight of my stay. Two high school girls on work experience gave a delightful spiel on the local cheeses and gave us samples of Gippsland Blue, Tarago Lavender and Tarago Double Cream amongst others and of course we had to buy some to take with us. Because of our interest in cheese making Karl Nealon, a very approachable and interesting young man, gave us some additional information on cheeses and demonstrated some of his techniques

*[continued page 17]*



## SPRING AT LORIENDALE New growth at the Orchard.

Early spring is the season of new growth. As root systems begin growing ahead of leaves, drainage is a key item. Very wet, winter conditions will lead to a drowning of the tiny white root hairs that are searching out new food supplies. So ensure good drainage away from the drip-line.

Almonds herald the spring for us at Loriendale with the pinkish-white blossoms bursting forth in late August. Early September sees the blossoms of apricots and nectarines, followed by peaches and pears. Our peas burst forth in late September. Cherries and apples wait for October.

Most years in Canberra, we experience a sharp swing in moisture levels, after the late winter rains. By the end of October, the rains have passed and warm, dry conditions take over. We have the month of October to complete the mulching and re-set the irrigation systems.

During the winter, the Bantam hens have completed their important work around the fruit trees. The previous year's mulch may be scattered about, but a lot of the grubs will have been taken care of! We now have flocks of Silkies, Pekins, Langshans and Wyandotte bantams covering sections of the orchard. Free range eggs are the bonus.

### Mulching.

Spring is the season for mulching. As we know, mulching is the way we most effectively help nature renew soil and feed plants. Continual supplies of organic matter will lead to a soil rich in life and sweet in texture. Mulching encourages micro-soil life and earthworms. We apply a generous 15-20 cm (6-9 inches) of coarse mulch ( eg. stalks, hay, leaves, grass clippings, straw, seaweed ). We rely on ample supplies of slightly weather-damaged lucerne hay to cover the 1400 fruit and nut trees and the rows of berries. Old lucerne hay minimises weed seeds and brings a bonus: the deep roots of the lucerne plant draw up many trace elements.

### Fertilisers.

We have looked to natural fertilisers to complement the mulching. In early September, we work to apply an annual quota of manures/blood and bone-based fertilisers. Last season, we were able to obtain from Victoria a certified, well-rounded fertiliser with good ratios of calcium and sulphur, as well as nitrogen, potassium and phosphorus. Produced by Vic Mills and called 'Complete Organic Fertiliser', it has pig manure, blood and bone, and brown coal

by-products. The anaerobic soil life which turns the dense carbon-bearing plant tissue into a fossil fuel can work a further wonder.

Please note that when a fruit tree has shown strong growth in the past season (and little fruiting), it may be best to not feed it too heavily this year.

### Grafting.

Winter's the time to collect some healthy, vigorous shoots from the past year's growth. Select wood of 1-2 cm in diameter. Keep these pieces cold and moist in the refrigerator by wrapping in wet paper and placing in plastic bags. Label if you have several varieties.

Grafting allows you to sample a range of varieties when there is little space. There are older varieties kept by Canberra growers. Grafting is done in spring during or after bud-burst when the sap is rising vigorously. Ensure the scion wood and the stock have maximum contact between the two exposed cambium surfaces. Peach grafting is more difficult than grafting apple or pear.

### SPECIFIC NOTES

#### Apple Trees.

These like an open, sunny position and reasonable drainage. The growing root tips of apple trees have a real dislike of grass roots (apart from legumes like clover), so broad mulching is beneficial.

One of the soil micro-organisms, the family of Mycorrhiza, has a symbiotic relationship with the apple tree. The tiny, thread-like filaments of the fungus invade the root cells and exchange nutrients and minerals. A soil rich in Mycorrhiza will aid the health of the trees.

Some organic gardeners spray their fruit trees in July/ early August with dormant winter oil spray. The purpose of this petroleum-based spray is to suffocate aphids, red spider, thrips, codlin moth ( in the egg stage), scale and mites. However, it will also impartially suffocate predatory insects

Codlin moth is the major pest concern. Their winter cycle is earth-bound, and hens are the answer at this stage. In early spring, the grubs that have survived winter now climb the tree trunks. Tying hessian or corrugated cardboard around the trunks will trap many grubs. They spin their cocoons inside

# COGS QUARTERLY

these traps as they would in rough bark. Change these on a ten day cycle and burn. Garlic spray applied at petal fall has been reported to prevent attacks.

Companion planting is useful among apple trees. We have inter-planted tansy in part of our orchard. We have also planted garlic cloves around many of our trees.

Finally, a note on black spot which is the bane of a grower's life in wet, humid seasons. Organically approved sprays include Bordeaux mixture (copper sulphate and lime) or copper hydroxide. A dry growing season would result in little black spot without spraying. Other options based on lime are being trialled, but the results to date are mixed.

We have gathered up as many leaves and prunings as possible to minimise the carry over of spores.

## Stone Fruit.

Peaches and nectarines respond well to good mulch, especially a mixed mulch with seaweed. The wide range of minerals in seaweed improves the vigour and resistance of the trees. Following a severe bout of leaf curl, I have been advised to apply a generous application of foliar seaweed spray.

The spraying time for leaf curl is critical. At the end of August/early September, the buds begin to swell and the leaves to emerge. An application of Bordeaux spray contains this problem, but only if the leaf tips are not advanced (the spray also helps to control brown rot overwintering).

Apricot trees enjoy much open space. Their roots love a cool, moist rich root run, so mulch out beyond the furthest branch. Also apply one dose of the copper-based spray to contain the problems of bacterial gummosis (gumming on branches).. That is the reason why I only prune apricot trees in mis-summer.

Enjoy the season of blossoms and new growth,

**OWEN PIDGEON**

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## VEGETABLE PLANTING GUIDE

	SEPT	OCT	NOV
Globe Art	T		
Jerus. Art	T		
Asparagus	S		
French Beans		S	S
	S		
Beetroot	S	S	S
Broccoli			S
Brussel Sprouts			S
Cabbage	ST	ST	ST
Capsicum		S	
Carrot	S	S	S
Cauliflower			S
Celery	S	ST	ST
Cucumber	S	S	ST
Eggplant	S	T	T
Endive			S
Leeks	ST	ST	T
Lettuce	ST	ST	S
Marrows	S	S	ST
Melons	S	S	ST
Onions	ST	T	
Parsnips	S	S	S
Peas	S	S	S
Potatoes	S	S	S
Pumpkins	S	S	ST
Radish	S	S	S
Rhubarb	T	T	
Salsify	S	S	S
Silverbeet	S	S	ST
Spinach	S	S	
Squash	S	S	ST
Sweet corn		S	ST
Tomatoes	S	ST	ST
Turnips white		S	

S= seed sowing  
T= transplant

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## TIPS FOR SPRING GARDENING

Sylvia Maseyk

Recently I met two of our most experienced gardeners, Mary Flowers and Traudi K who gave me some tips for spring gardening as well as wonderful tea and apple strudel and conversation. Things to do in spring include:

**Compost** can be built up now for spring by adding plenty of green stuff - lawn clippings, fresh manure etc. Compost heaps can be emptied onto the garden during spring. Place the compost on top of beds not currently in use and cover with straw or lucerne hay to protect the worms from frosts.

**Green manure crops**, which should have been sown in early winter, can be dug in during the second week of September. Traudy particularly recommends Cowpeas as a green manure crop for colder climates such as Canberra's.

However, Traudy and Mary say that digging in green manure crops is back-breaking work, and I for one will accept their advice about this! Easier alternatives are compost or liquid manure. Their recipe for liquid manure is as follows:

Into a 44-gallon drum put a barrow-load of comfrey leaves, 3-4 nettle plants (the annual type), 3-4 yarrow plants and some fresh cow manure. Fill the drum with water and leave for a fortnight until it's really smelly! The brew should be diluted at least 50-50 with water, as it is strong enough to burn even quite hardy plants.

Other herbs can be added, such as dandelion and borage, but the comfrey, nettle and yarrow are essential to provide important minerals to the compost:

Comfrey for calcium, nitrogen and potassium

Nettle adds iron, copper and calcium

Yarrow provides copper, nitrates and phosphates as well as accelerating the decomposition of the pile

### Tips for better spring vegetables:

**Carrots** - can be grown in August, September or October. Traudy has previously written for the newsletter about growing carrots.

**Beetroot** - can be planted direct from seed or transplanted. If growing your own seedlings, use individual punnets - just one seed will produce up to four plants. These are best thinned out by snipping off the heads of the smaller seedlings, leaving the roots of the stronger plants intact.

**Lettuce** - the best varieties are Salad Bowl, Oak Leaf, Mignonette and Butter Crunch. Sow seed in punnets in friable soil to be transplanted later.

**Onions** - Brown or white onions are best grown from seedlings while spring onions can be grown direct from seed.

**Peas** - Greenfeast or Telephone are worth trying between August and October, although late frosts could diminish crops. To get peas started strongly, soak seeds between two pieces of moist kitchen paper for 3 or 4

days. The paper should be kept moist, but not wet. The seeds will sprout and should be sown direct into nice friable composted soil with a small amount of Blood and Bone mixed in well.

**Potatoes** - for an early crop, sow in August to October and keep very well mulched.

**Pumpkins, squash and zucchini** - should be started in punnets indoors. The seeds should be sown into very fine sand which is kept just moist.

Some more unusual vegetables which can be planted now include corn salad and Chinese vegetables such as long white turnip and white radish (Tokyo cross).

Traudi and Mary do not recommend mulching seedlings. Leave until the young plants are quite well established and when the weather is warmer. Mulch can attract frost.

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## KOHLRABI by Traudi K

Kohlrabi is a cool weather crop but tolerates heat well. Although available plants or seeds are mostly of the purple variety, the white Vienna is the one I like best. It seems to be softer and sweeter. But if there is trouble with the white cabbage butterfly, it is safer to grow the purple kind - its leaves seem to be harder and not as much affected by this pest.

Preparing the soil is the key. A rich sandy soil; with lots of organic matter encourages rapid growth with tender tasty Kohlrabies. Plant in a bed 1.5m by 60cm which gives just the right spacing for 14 to 16 plants. Plants become spindly and bitter if spaced too closely. Plant two or three seeds

1.5cm deep in each spacing then thin to the strongest plants after they come up in a week or ten days.

When the plants are 10-15cm tall mulch the bed with grass clippings, sawdust or compost. Fertilise heavily as all cole crops respond to rich ground and the Kohlrabi is no exception. Rapid growth is essential for texture and flavour.

Kohlrabi can be a substitute for cabbage, turnip or even apple. Its sweet stem (which can be harvested when it is between the size of a golf ball and a tennis ball) can be steamed, sliced or cubed and served with seasoned butter. Combine cubed Kohlrabi with carrots and peas. Grate fresh Kohlrabi for coleslaw, or eat it slivered in salads, peeled and sliced for dips or eat it like an apple. Serve au gratin or creamed. Add it to soups or stews or stir fry in Chinese dishes.

Fresh Kohlrabi has more vitamin C than orange juice. It is also a good source of calcium, phosphorous and potassium.



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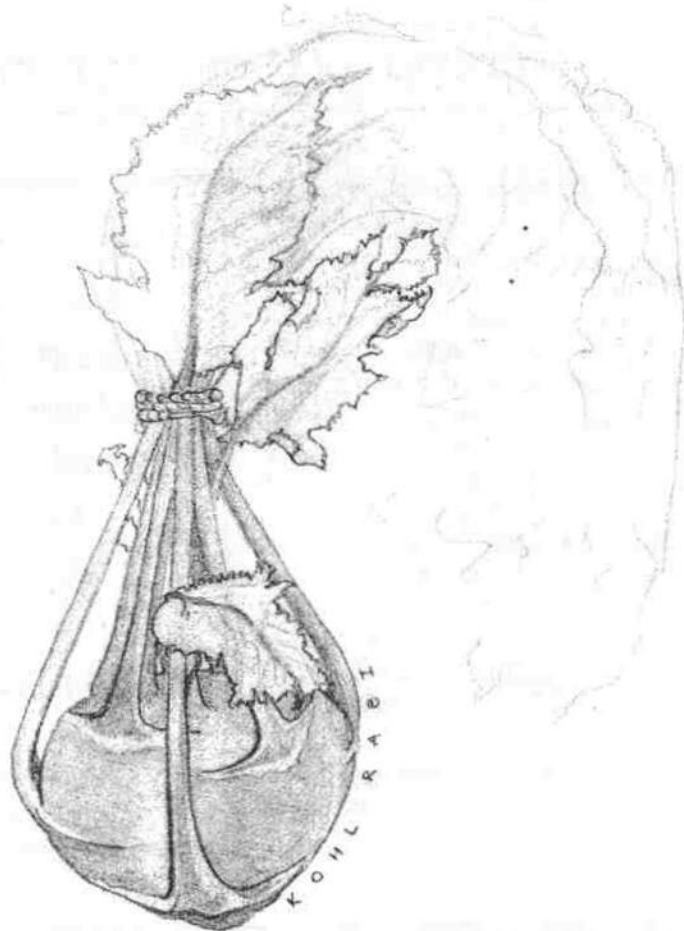
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## LATE SPRING FROSTS: A warning for new Canberrans! by Michelle Johnson

As Paul Dann pointed out in his recent talk to COGS (which unfortunately we were not able to transcribe), one difficult aspect of growing in this region is the variability in the date of the last frost each year. As a consequence it is difficult to know just when to plant out frost sensitive seedlings.

To emphasise the risks involved with early plantings, I have extracted the following information from 54 years of data on the date of the last frost each year at Canberra Airport. The raw data was supplied by the Bureau of Meteorology and is derived from the recorded minimum terrestrial temperatures since a frost occurs, by definition, if the terrestrial minimum temperature is  $-0.9^{\circ}\text{C}$  or less:

The graph shows the percentage of times the last frost of the season occurred on or after the date shown on the horizontal axis.

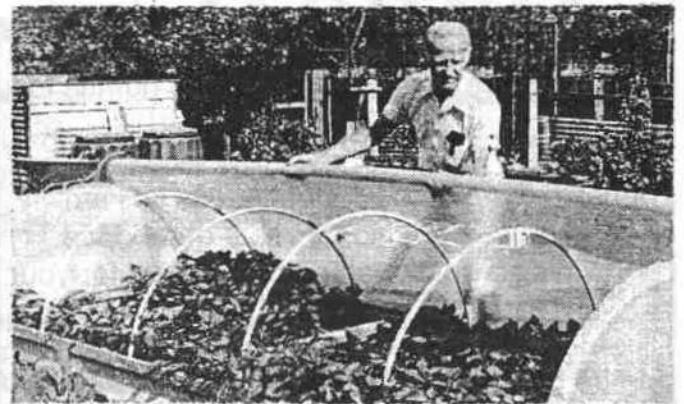
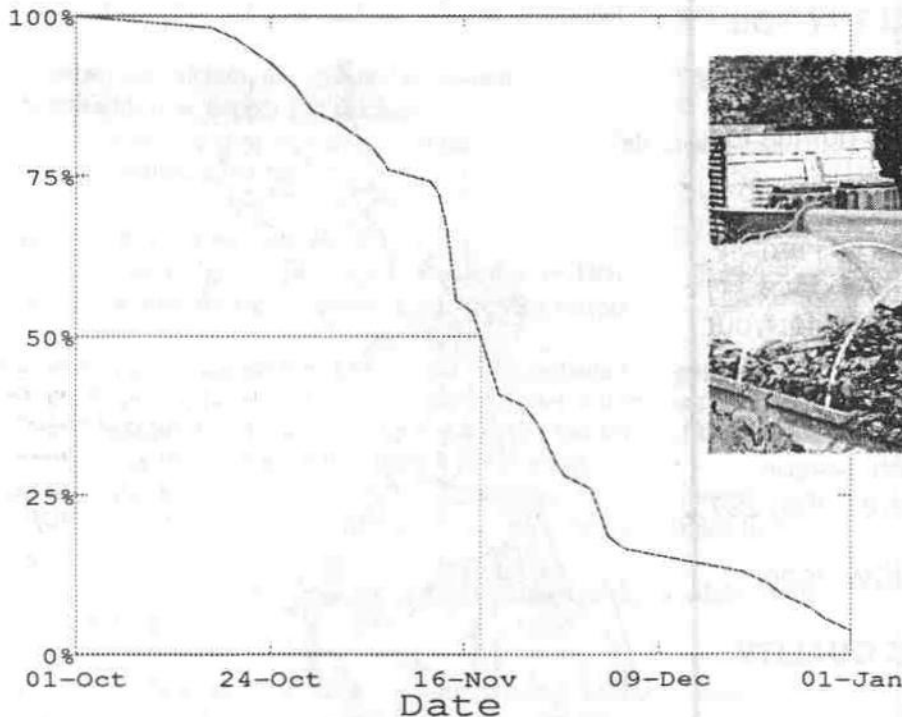
It can be seen that 50% of the time the last frost was on or after the 17th November i.e. in late spring or early summer. These late frosts can be quite severe too. For example, in 1967 the minimum terrestrial temperature on Boxing Day was  $-3.3^{\circ}\text{C}$ . A chilly Xmas! A few years earlier in 1964, the minimum terrestrial temperature on the 18th Dec. was  $-3.9^{\circ}\text{C}$ .

So, choose a warm spot in your garden for your frost sensitive seedlings. The microclimate can make a significant difference. Be prepared to cover them if a frost is forecast. There are many types of row covers which you can construct (see our book review for a reference). Improvise. An old crate upturned with carpet or felt over it can do the trick.

If you decide to plant late in the year, it is wise to select short season varieties. You must also remember that Canberra has a short growing season (there's the dilemma!). The average frost free period is only 141 days (with a median of 145 days). The earliest a frost has occurred is the 2nd of March (the median is the 9th April).

**February is the only month in which no frost has ever been recorded at Canberra Airport!**

LIKELIHOOD OF LAST FROST



**COTTER GARDEN**  
by John Flowers

Although onions can be put in, now is a relatively quiet time as far as sowing and planting are concerned.

Plottolders, who generally hibernate at this time of the year, should be looking at those odd jobs such as tidying up, weeding and spreading compost. A very important task - if in the long term we are going to survive - is the digging out of couch grass which is still a problem in some areas. Experience has shown that digging couch grass out is the only sure way of getting rid of it - and we can take comfort from the fact that the exercise must improve the blood circulation when the weather is chilly.

At this time those who visit the garden might give thought and 5 to 10 minutes of their time to weeding the Herb Garden, which surely is a source of pleasure to everyone.

We have to say thanks for the removal of trees on our western boundary, the roots of which had invaded several nearby plots. Those in the area should see a much better reward for their labours in the future.

**[David Odell, continued**  
**from page 11]**

Property prices are depressed in Victoria which has given those prepared to wait for better economic times to return the opportunity for long term investments. As reported in the local press one group (relocating from Byron Bay with Dr Helen Caldicott as its spokesperson) known as "All One Voice" has caused some local consternation by buying up selected properties from Leongatha to Warragul. I suspect there is a degree of media beat-up in labelling this group a 'sect' as any member of an alternative society would appear 'different' to established groups in society especially when flush with investment monies brought about by property appreciation on the Far North Coast. Having sought the sun and surf in the sixties on properties that were then unfashionable the reverse migration of a second wave of people seeking an alternative lifestyle has gone against the usual trend in society -but one which may be in anticipation of the next property boom.

The rain that kept Victoria green during my visit also brought 60mm to Bungendore. A most welcome benefit as the conditions have been unseasonably mild and dry since the snowfalls of early June and one which has replenished dams and subsoil moisture. The rain has also allowed my garden beds to be prepared for a further sowing of field peas as a green manure crop. I'm taking the opportunity of lightly hoeing in the emerging weeds, broadcasting the field peas and covering them with lucerne hay as a mulch before giving them a good watering in. By Springtime when the soil will be warming up the peas will be soft and luscious and needing to be rotary- hoed in to provide the bacteria with delicious meals "a la carte".

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I have spent a lot of time chipping the weeds from around my grapevines when it is stated how easy it is to spray to eliminate them. It is said that these sprays break down quickly leaving no residual effects (and its use would save my aching back) but then I remember the same thing was said about DDT and 2 4 5 T when these were hailed as saviours of the human race - and then I watch the birds and hear the frogs and know that here at least they are safe from toxic after-effects and feel happy to be an organic grower.

I look forward to talking with you again in November,

**DAVID ODELL**  
Rural Correspondent.



## GREEN GUERRILLAS OF NEW YORK

by  
Phil Tietz

Extracted from the Permaculture International Journal. For subs send \$15 for 4 issues to Permaculture International Journal, P.O. Box 7185 Lismore Heights, NSW 2480

*New York has a reputation for being the most vibrant but also the most alienating city in the world. It has astonishingly sophisticated buildings and services mixed with wastelands and ghettos that are harsh to the human spirit.*

*A small group of volunteer gardeners set out 20 years ago to regreen the unused and abandoned areas and build a sense of neighbourhood.*

*The Green Guerillas began by creating a community garden in a vacant lot on the Bowery in downtown Manhattan. As they get ready to celebrate their 20th anniversary of greening New York, there are over 1000 community gardens, urban composting projects and many other positive activities established. The Guerillas have even appeared on film in the Hollywood hit Green Card starring Gerard Depardieu and Andie MacDowell, whose character was in love with plants as well as the Frenchman.*

*Phil Tietz, Assistant Director of the Green Guerillas, reports for us from New York.*

The original garden in Manhattan where the Guerillas began is still flourishing. It is now known as the Liz Christy Bowery-Houson Garden, in memory of our organization's founder, who died in 1985.

The garden is an excellent example of a mixed-use permanent urban landscape. It includes fruit and ornamental trees, a wide variety of small fruits, intensive vegetable gardening and composting a small pond and a very wide variety of perennials.

Kim Mulcahy, who has dedicated a tremendous amount of his time to the garden over the last 5 years, is largely responsible for the perennial and small-fruit collection. He grows five kinds of grapes, alpine strawberries, raspberries, blackberries, kiwi, dwarf apricots, currants, gooseberry and persimmon. Kim has made a special effort to determine which plants are best adapted to our particular local climate. The garden is open to the public whenever people are gardening there, and permaculturists who plan to visit New York are encouraged to call us and arrange a visit.

Our main activity at the Green Guerillas is the collection and distribution of donated plant material. Each year we give away over \$200,000 worth of plants and materials to local community gardening groups. The material comes from roof gardens, landscaping companies, nurseries and corporate plant displays. We have over 1000 community gardens in the city, and it takes each garden about 5 years to develop a good collection of plant material (and to build their beds, pathways and structures).

There is a great demand for plants from the community and we're always looking for better ways to obtain materials for the gardeners. As gardens become more established (over 100 of them are at least 10 years old) they in turn become sources of plant stock.



We also give technical assistance to garden groups on subjects such as design, maintenance and plant care. In addition, we are members of the American Community Gardening Association, which has affiliates in cities throughout the U.S. and Canada.

There are several other greening groups in New York City, including Operation Green Thumb (the city government's own community gardening agency, established in 1979), and Council on the Environment (involved in open space as well as farmers' markets, environmental education and recycling). Also there is the Parks Council (which does large scale parkland advocacy as well as grassroots work) and Bronx Green-Up (the New York Botanical Garden's outreach program).

### Garden preservation

The Green Guerillas and other greening groups now see garden preservation as a high priority and are working (both together and separately) to this end. Our own major preservation project is in the Lower East Side of the city, where we are working with local community organizations on a plan which addresses the future of over 40 gardens in the area, while also developing crucial low income housing.

Many of us see the preservation of these gardens as a tool for building sustainable neighbourhoods in the

# COGS QUARTERLY

future. In neighbourhoods where residents work together on a common greenspace, other social and environmental projects usually develop for the good of the community.

## Special Projects

Our special projects currently include composting schemes in urban gardens, a roof garden at a residence for people with AIDS, the eco-restoration of an abandoned park in Brooklyn, and the planting of deciduous vines on city walls.

Our composting program is finally beginning to produce results after 3 years of work to obtain funding. We estimate that about 10 gardens in New York currently do composting on a large scale (6 cubic metres a month or more) and with a high degree of skill. Hundreds more are doing it on a more casual basis.

We would like to see every community garden as a facility for local recycling of organic waste, able to provide a valuable product for more and better mini-gardens throughout the neighbourhood. As awareness of and interest in composting by the general population grow, this aim will become easier to accomplish. The reason that group composting projects are important is simply that New Yorkers do not have backyards.

Our roof garden in an AIDS care residence is being developed with the support of the AIDS Resource Centre, or ARC. This garden is about 5 years old, although we have been working with ARC since the early 80s in their supportive housing locations citywide. The garden is on top of a 6-storey building which houses 44 people. It includes fruit and vegetables in planter boxes and a variety of vines, trees, ornamental grasses and perennials. About half the plants are native species.

The garden is designed for low maintenance and is easily kept up by two of the residents with a visit about once a month from the Green Guerillas. It has special design features for the AIDS residents, including a shaded area (sunlight can be a problem because of reactions to medications and other physical conditions), and no thorny plants (because of risk of infection).

Our friends at the Dr White Centre youth group in Brooklyn are reclaiming an abandoned park and planning a sustainable landscape with a meadow, a small woodland area and a formal flower garden. In addition the group will soon install a vegetable garden in a parking lot behind their building.

Most of the young people working on this park live in the massive housing projects of Brooklyn and have no experience of gardening whatsoever. However, some of the young men have already expressed interest in building greenhouses back home in the projects - truly some budding urban permaculturists here!

Our newest project is helping people plant more vines, both in gardens and on residential buildings. At the Liz Christy Garden we have a 20 year old planting of Boston Ivy (*Parthenocissus tricuspidata*) which covers a brick wall 6

stories high and over 60 metres long. The ivy puts out a tremendous amount of foliage, cleaning the air and absorbing carbon dioxide while shading and cooling the building in summer. In winter the leaves fall off and allow natural solar energy to warm the building. Mixed in with the ivy are grape vines, some of which grow to 5 metres or more. We are doing a stencilled mural at each of our new ivy sites, which shows how the wall will look in three years.

Some of our other activities include helping gardeners build pergolas and grow grapes. We feel that grapes can be grown more widely in New York City, even on the sides of buildings and on rooftops. We are also encouraging people to grow other useful vines such as hops, kiwi and scarlet runner bean.

*For more information contact:*

*Green Guerillas. 625 Broadway*

*New York, NY 10012*

*Tel: (212) 674 8124*

*The Green Guerillas also publish a newsletter called Vitis Vine.*

*PIJ #46 Page 6&7*





# TUSSIE-MUSSIE, A Herbal Floral Arrangement

by  
Joan Manley

The tussie-mussie, a small bouquet, is a tradition handed down from Olde Englande. The tradition relates to important events in people's lives; birth, marriage, retention or regaining of good health, and most important, the crowning of a monarch. Queen Elizabeth II was handed a tussie-mussie as she entered Westminster Cathedral for her coronation.

In the Middle Ages, the health of the population was threatened by plague or prolonged illness due to water pollution and unclean streets. Outside the towns, in the monastery gardens, herbs were first grown for medicinal purposes whilst in the later Middle Ages in the urban environment, the herbal bouquet, 'Tussie-Mussie', was carried to repel noxious smells and illness bearing aromas of all kinds.

Favoured herbs were prominent in each period. By the fifteenth century the marigold became the most popular bloom, a centrepiece for flower arrangements. The blossom was admired for its 'golden beauty', dedicated to the sun and seen as a symbol for happiness. In later eras, other blooms could be seen as being 'in vogue'. The bouquet is most impressive if small, delicate flowers are chosen, and where leaf, flower and sprig are all given equal importance. Small roses, clove pinks,

forget-me-nots and violets are most suitable for a 'posie' arrangement.

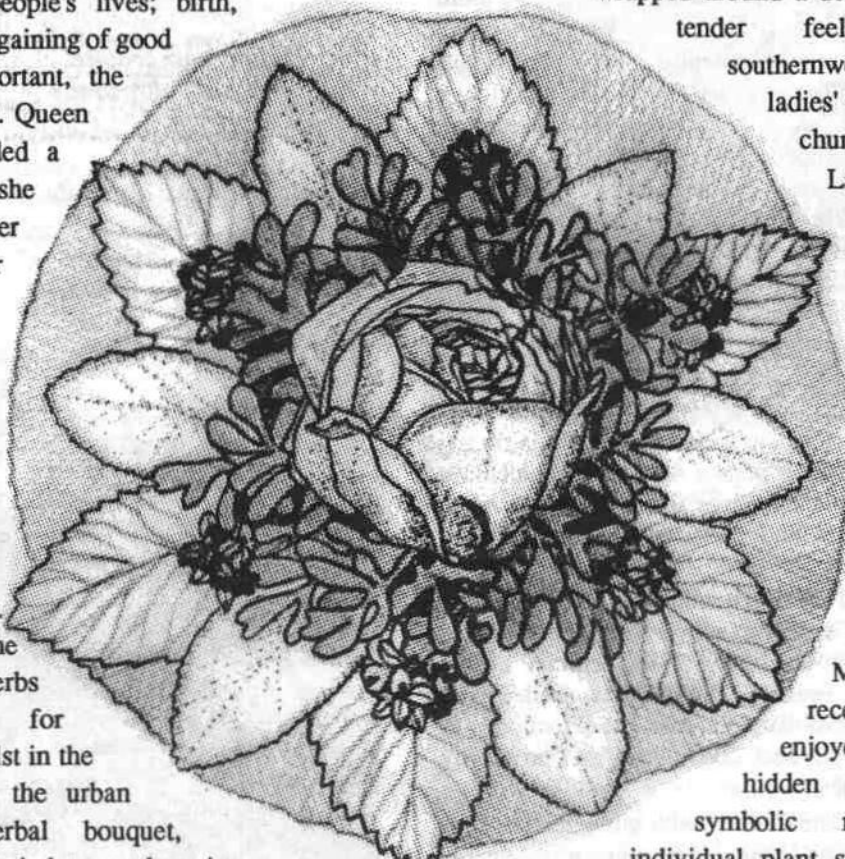
An important aspect, when making a tussie-mussie and presenting it as a gift, is to write the symbolic meaning of the herb used on a gift card. Sentiment is an essential part of the process of giving and receiving a tussie-mussie.

Symbolic sentiment attributed to some of the plants and flowers:

Heartease, for remembrance of things past.

In the same genre, forget-me-nots and southernwood, when wrapped around a deep red rosebud, denote tender feelings. Sprays of southernwood were tucked in ladies' corsages for wearing to church.

Lavender was worn for luck and lilly-of-the-valley for purity.



Moreover, sentiment is an important ingredient when deciding the floral and plant composition of the tussie-mussie. In the Middle Ages the receiver of the bouquet enjoyed deciphering the hidden message based on symbolic meaning given to individual plant species. One technique

for making a tussie-mussie is to start with a central bloom and encircle it with contrasting flowers and leaves. Bind the stems with florist's tape as you go in order to keep the posie tight. The build-up of layers can then be emphasised with an outer circle of leaves from a large-leafed herb. When completed, the posie can be slipped through a paper doily or stiff nett to enhance the effect.

Tussie-mussies make a charming and unique personal gift. They stay fresh for about a week and for prolonged enjoyment and display, can be dried in a warm, dark room.



## ANALYSIS OF COMPOST QUESTIONNAIRE by Michelle Johnson

Previously I asked COGS members to respond to a questionnaire on various methods of composting. In all 31 people responded, with composting experience ranging from less than 5 years to 60 years. This report is not comprehensive, but deals with questions which were answered by a reasonable number of people, or where I considered the answers would be of interest to readers.

### PART 1: CLOSED SYSTEMS

#### BINS

1. 14 respondents use commercially available plastic bins.
2. 8 have a GEYDE, 5 a RELN, and 3 "OTHER" plastic bins.
3. Two people reported that their bins had already lasted about 20 years, another respondent 15 years. No-one commented on any problems with the bins lasting.
4. Most "home-made" bins appear from description to be more aerobic than closed plastic bins - usually with solid sides (cement blocks, bricks, timber, lined pallets ) with a light cover on top.
5. In Q9, most respondents reported using a combination of one bin at a time, and some type of open system.
6. In Q10, 12 of the 14 respondents reported using the bins primarily to dispose of kitchen scraps.
7. A wide variety of materials were added overall, including most types of garden refuse (particularly grass clippings), seaweed, different bedding matter from chickens, rabbits, guinea pigs and budgies as well as stable manures, urine, straw, sawdust, rag paper, cardboard, wood ash, particles from vacuum cleaner, comfrey, borage and QR compost activator.
8. In Q13 only 3 of the 14 respondents reported using limestone, 11 of the 14 added some type of manure or blood and bone.
9. The answers to Q8 ( How long does it take to fill it? and How big is your household?) & Q12 (How long does it take to cure in a)warm weather and b) cold weather) were very interesting to examine in association with Q14 i.e. How successful do you consider closed bins are for composting? ) In response to Q14, of 12 respondents, 3 respondents reported that they considered it "not successful", 2 thought it "fair", 1 "OK", 3 "good", 3 "very good".

In the first group of 6 who thought it not successful, fair or OK (Group A),

- a) 3 out of 6 did not use manures.
- b) respondents had small households (except one, who however used a limited range of materials in the bin)

- c) respondents took between 3 months to one year to fill the bin
- d) 3 of the 6 commented that it took "too long" to cure in both warm and cold weather.

In the second group of 6 who considered them "good" or "very good" (Group B)

- a) all used manures (and usually a variety of types)
- b) respondents had larger households of 3-4 people (except one who however added a large variety of materials and filled the bin quickly)
- c) took only 3 weeks to 4 months to fill the bin.
- d) commented that the bin took only a matter of weeks to a maximum of 4 months to cure in warm weather and generally between 2 to 6 months in cold weather.

13. In response to Q15, comparing the product from the closed bin to that from the open system, 4 out of the 6 in Group A commented that the product was either too dry or too wet. In Group B, no-one commented on moisture problems, but noted a quicker decomposition and a heavier consistency with the final product (except one, who thought the product the same, provided the open system was covered somehow.)

*COMMENT: Although the above results are drawn from too small a sample to make dogmatic conclusions they do suggest that moisture content and how quickly the bins are filled and the materials heat up are critical to the success of closed bin composting.*

*In his book "Organic Gardening" (revised ed. 1981), Peter Bennett comments on his experiences with closed bins over nine years and also notes moisture problems (generally wetness). He points out that "good drainage and material separation is essential" and that the bin needs the frequent addition of small amounts of chopped dry matter (page 99, underlining mine). He also adds that:-*

- a) because of the comparatively high nitrogen to carbon ratio, the composting material may be acidic and need the addition of dolomite.
- b) soil should be added in much larger amounts than in open systems.(about 25% by volume) i.e one bucket of soil to every 4 or 5 buckets of kitchen waste mixed with one bucket of dry matter

*He concludes that "the finished product then becomes a highly nutrient-enriched 'soil' rather than the typical light, open, fibrous compost that one one expects from aerobic composting by standard methods." (page 100).*

*Incidentally, he then gives some hints on curing in a closed bin which may be of interest: Firstly, only fill the bin to about 4/5 full. Flatten the top surface, cover with 7.5cm soil. Replace lid. Leave 14 days. Then, on opening, fill in the gap between the perimeter of the soil and the inside of the bin with more soil, and put a further 7.5cm soil on the top. Leave off the lid for the rest of the curing process (about 10 weeks).*

## PART 2: OPEN SYSTEMS

27 responded to this section of the questionnaire.

1. 18 used an 'open' container, 14 a free-standing mound, 8 used sheet composting.

2. 13 respondents made their open container from timber, 5 from galvanised iron, 3 from bricks/blocks, 4 from wire cages.

One respondent found timber partitions between bins, which were placed against a brick wall, eroded away in about 6 years. They were replaced with steel partitions.

*COMMENT: Although untreated timbers can erode quickly, readers of "Organic Gardening" the Rodale publication in the USA were warned NOT to make compost bins out of treated timber (i.e. timber treated with copper arsenate), or grow edible plants in raised beds made with the timber. (page 27, April, 1992)*

3. Heap sizes varied from 1m<sup>3</sup> to 3m<sup>3</sup>, with most around 1.5m\*1.5m\* 1m

4. 8 respondents turned their heap, 3 once , 3 fortnightly, 2 didn't say.

One respondent did not turn her heap because she is allergic to fermenting compost, she sets up her heap where she later wishes to plant.

5. On average the heaps cured in 2-3 months in warm weather, 4-6 months in cold weather, although some heaps took up to 12 months.

**There was no clear correlation between the length of time the heaps took to cure and any other variables discussed, including whether the heap was turned or not.**

6. Only 2 respondents used chimneys to aerate the heap.

7. 16 respondents reported that they added to the heap over time, 5 created the heap in one go.

8. 20 respondents layered the heap, only 2 mixed the materials before adding.

9. 14 respondents used soil in the heap: 7 used old compost, 5 topsoil, 10 ordinary garden soil, 2 clay soil. One respondent adds worm castings.

10. Most shred prunings, and thick stems before adding. 4 shred grass, leaves and paper.

11. 19 add food scraps to the heap, 11 cover it.

12. 11 reported problems with flies/mice etc. The most common solution offered was simply to cover the pile, although this not necessarily mean the people that covered the pile had no problems.

13. 4 respondents separate out leaves before composting and 3 use them directly as a mulch on the garden.

One respondent, a very experienced grower, keeps oak leaves separate, shreds them, keeps in a wooden bin uncovered for at least a year during which they will completely break down; this composted material is wonderful for camelias, azaleas, daphne and acid loving shrubs.

14. 9 respondents use eucalypt leaves, usually in small

quantities, and report no problems with their use.

15. 3 respondents use pine needles in the compost, one directly around strawberries.

## PART 3: SPECIAL ADDITIVES

1. 4 respondents use 'activators': 3 people use the BD preparations, 2 use QR (either homemade or bought) and one has used both.

*The BD preparations have been discussed in a previous COGS newsletter.*

*See the shadow box for Mary Flowers' 'recipe' for homemade compost activator.*

2. Benefits seen were more uniform breakdown and adding vitality to the soil.

3. 11 respondents add comfrey, 2 tansy, 2 yarrow, 2 dandelion, 1 nettles , 1 borage and 1 any herbs available. Such plants are believed to be rich in minerals, add life and provide food for the soil bacteria.

I will report on the various methods of 'housing' worms in a future *Quarterly*.

### RECIPE FOR HOMEMADE QR ACTIVATOR

(based on EM Bruce's procedure in "Commonsense Compost Making")

Dry leaves of Nettles, Yarrow, Camomile, Dandelions and Valerian, then powder them individually in a coffee grinder and store in separate glass jars.

Also powder oak bark in an old coffee grinder and store in a glass jar.

Mix about 15 drops of honey to several tablespoons of sugar of milk, mix and store in a screw top jar.

Then take a teaspoon of each one and place in the one jar, mix well and screw down well.

When required take enough of mixture to cover a one cent piece, mix with one pint of rain water, let stand overnight, shake well and sprinkle on heap as you build it or else make 4 or 5 holes in finished heap with a crowbar. Pour a little of the mixture down each hole and fill with loam. Cover well to keep rain out and leave about 2-3 months (for 3 cubic metres). The heap should have been well mixed with a variety of materials.

*Comment: In Bruce's very interesting little book, she states:-*

1. *the essential ingredients are Yarrow and Nettle (p74)*

2. *it is made fresh every autumn (p75)*

3. *the powder used in the commercial QR Activator can be used in larger doses than the homemade activator (p83)*

## INTRODUCTION to The SEEDSAVER'S HANDBOOK

*Reprinted with the kind permission of Jude and Michel Fanton.*

Gardening is one of Australia's most popular pastimes, as well as being a healthy and practical pursuit. However, too few of today's gardeners do what came so naturally to their ancestors - save the seeds of their crops.

Until recent times all gardeners and farmers were the stewards of the plant heritage that sustained us. Over the centuries it was seed saving that enabled people to domesticate wild plants, and this allowed the diversity of crops that we have come to enjoy.

The diversity of life (bio-diversity), that is essential to our survival, is quietly eroding. Far fewer locally adapted strains are available today: the strains that have the particular characteristics of taste, and of pest and disease-resistance, that are so useful to the no-spray gardener.

Why is this happening, when the skills that a gardener requires to help maintain our plant heritage are so few and so simple? Why have half a dozen strains of shiny red cricket balls replaced juicy, delicious tomatoes whose gene pool features hundreds of different strains?

To save good seeds you need only follow what the plant do naturally. But you do have to start with an original and viable seed stock.

The way food is mass-produced and distributed today dictates plant breeding and seed production worldwide. It stands to reason that, when plants re engineered for specific commercial features, other valuable characteristics are inevitably lost. Tomatoes harvested by machine, dumped onto conveyor belts and hauled long distances by track need to be very tough indeed, but not necessarily tasty or nutritious!

Citing this "tasteless but tough" commercial tomato as a "prime example" of the problem, the eminent Australian seed physiologist Dr. David Murray notes that, "Flavour and aroma constituents are major determinants of...quality in fruits, vegetables and grain crops, but this aspect...has often been ignored in past breeding programmes." (Murray, ed., *Advanced Methods in Plant Breeding and Biotechnology*, 1991)

Most commercial enterprises concentrate on breeding hybrids, not open pollinated varieties. But hybrids are not suitable for seed saving because they revert to their highly inbred parents, or are simply as sterile as a mule.

The end result of these trends is that gardeners are left with a dependency on corporate-controlled hybrid vegetable and flower seeds that require purchasing each year - at further cost to the gardeners. Of course, this is a positive attribute for agrichemical corporations!

Furthermore, hybrid plants are genetically uniform. Hybrid seeds will produce practically identical plants, which will succumb all at once when there is a disease or pest problem. In a small garden, differences among plants allow different reactions to pests. Uniformity is quite contrary to the requirements of the home gardener.

Hybrid vegetables are designed to mature all at the same time.

Farmers under contract to a cannery need their beans, or tomatoes, to ripen simultaneously in order to minimize their harvesting costs, but home gardeners need their crops to ripen

progressively so that there will be enough fresh produce for many meals.

Commercial growers needs a vegetable that has been bred to cope with travelling to distant markets. The home gardener's crop needs to travel only as far as the kitchen. Home-grown beans can be as tender as possible and tomatoes as juicy as peaches - unlike the tasteless, market-bound varieties.

The Seed Savers' Trust invites you to help preserve the rich diversity of food crops before it disappears, both for our own future and the future of our descendants.

Seed saving can be as simple or as involved as you wish. It can be about acquiring and maintaining old varieties and passing on the seeds to neighbours or friends. Or it can be detailed and scientific, relating to breeding for specific conditions, such as saline seeds. It's up to you.

Whichever type of seed saver you choose to be, or might be already, there is a dynamic to it. It has to do with self-reliance.

We can help ourselves to become independent again by saving seeds and passing on knowledge about propagation and plant usage. By regaining control of our food, we strengthen our own security, the genetic integrity of our traditional crops and the potential to develop useful varieties that are adapted to the climate, the soil of the region and local pests.

Already some native Australian food crops, like the quandong, finger lime and macadamia, have been improved by selecting plants that are more palatable under cultivation. There is enormous scope for more bush tucker on the table.

Seed saving is an enjoyable activity that everybody can undertake. It is fascinating to watch plants flower and go to seed, to see all the different forms of the young seedlings, to witness how they change over the years, and to become familiar with them. It satisfies our curiosity about the cycles of living things.

Wise gardeners in Australia and New Zealand have saved the seeds of vegetables, flowers and herbs that have been cultivated by their families for as long as 150 years. In the first six years of the Seed Savers' Network we uncovered in excess of 1200 home-saved varieties, only a few of them available through commercial channels.

Our aim is to maintain these varieties in as many gardens as possible, rather than in a seed bank. We hope that this book will provide home gardeners with the necessary knowledge to become effective seed savers and to protect plant diversity.

The techniques are mostly easy to master and you will notice that we have developed a Simplicity Rating system for the plants described in our Handbook (Part Three, page 51). You can see at a glance whether the plant you have selected for seed saving matches your experience.

For instance beginners can start with tomatoes, lettuce and beans because they do not cross-pollinate easily. This optimises the chances of future seed purity.

You may choose to caretake only one variety at first, having obtained your stock from a gardening friend, a family-owned seed company, The Seed Savers' Network, your local gardening club or Permaculture group. Soon you'll have an abundance of seeds, and enough experience to go on to greater things.

Good luck, and pass it on!

**MICHEL AND JUDE FANTON**



## COLOSSOL COMPOST CROSSWORD by Michelle Johnson

### CLUES

#### ACROSS:

1. use to judge heat and moisture
4. help breakdown the raw materials
6. .... acid in finished compost
9. use very sparingly in pile
13. popular closed plastic bin...
14. a 'soil-cultivating organic fertiliser factory' #
15. when everything old is ... again
16. .... level: like a wet sponge
18. early spring crop
20. closed container for composting
22. closed bins you must rotate daily
24. as for 9. across
27. spread and till: .... composting
28. use compost in potting ...
29. cheap plastic compost bin
30. throw in unless seeding
31. some is needed in your heap
32. tool to turn heap
33. add lime to correct
34. composting in closed bins is
35. this crop appreciates compost too
36. ... of soil
39. compost pioneer, Sir
43. counterparts up north (abbr.)
44. use to cover heap
47. pile should reach about .... degs
49. organic matter will
50. vital element in heap
52. Peter Cundall's favourite:  
..... & bone.
54. beware of these in warm weather
56. helps to shred these leaves first
57. cover food scraps to deter a ...
58. low temperature stage of cycle
61. 'household liquid activator'\*
62. pile
63. part of fish waste
65. lettuce
67. favourite friends
69. iron (chemical symbol)
70. end product of composting
72. add from your winter fires
74. optimum ratio C/N is .. /1
75. generally OK in newspapers now
77. COGS is affiliated with this council
78. clippings available in spring
82. bounty from the sea
84. one of the bacteria present in pile
86. ... activity greatest in Spring  
and Autumn
87. vines do well in old compost
88. carried on the work of 39. across  
in the USA
89. these flowers appreciate compost
90. where you keep your garden tools

#### DOWN:

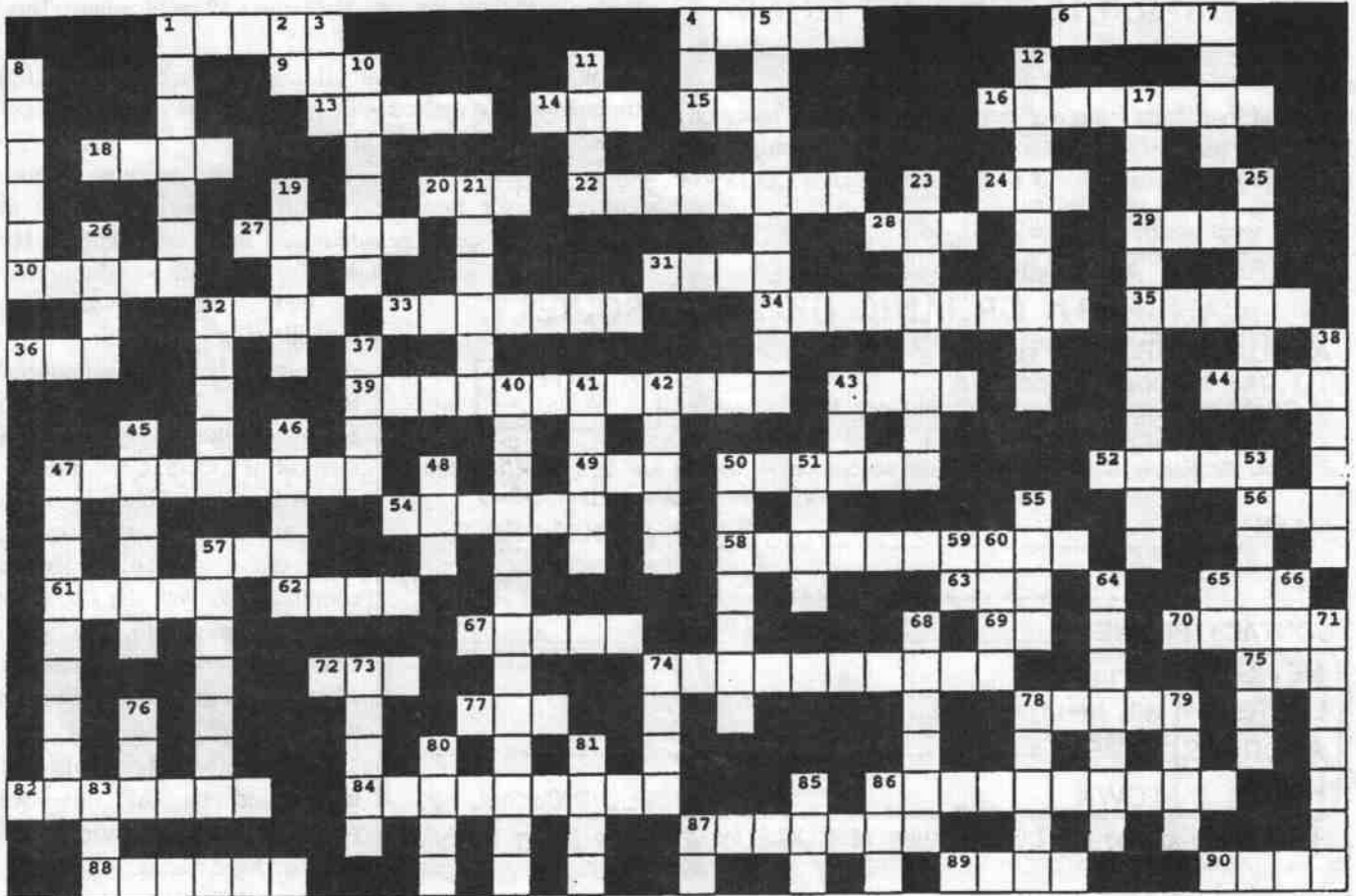
1. gardeners are wise to take precautions against this disease
2. molybdenum (chemical symbol): deficiency a problem in caulis
3. pile might not heat up if too ...
4. making compost should be this
5. wooden bin developed there
7. shred these stalks before adding
8. believed to be useful activator
10. gather in autumn
11. critical factor in decomposition
12. macronutrient needed by plants
17. hot stage in cycle
19. final volume a ..... of original
21. trace element found in seaweed
23. element needed for decomposition
25. Indian state where 39. across worked
26. .... the soil not the plant
32. first stage of heat cycle reaches  
..... degrees
37. tool often used in autumn
38. something's wrong if it does this
40. natural mineral fertiliser
41. manure from stables
42. add for 16. across
43. name of son of 88. across (abbr.)
45. don't add unless hot composting
46. old fashioned word: fine grained
47. organic matter improves soil ....
48. ... cubic metre is smallest size
50. herb high in potash
51. some ... of disease when handling  
partly decayed household wastes
53. supplies magnesium and calcium
55. prong on 32. across
57. what we do when we compost
59. ... at first you don't succeed
60. composting: cycle of .... & death
64. .... matter
65. copper (chemical symbol)
66. can dry out your pile in summer
68. gives structure to stems
71. experienced
73. carbon source
74. .... up paper before adding
76. favourite manure with BD
78. with compost as a fertiliser  
the plant .....
79. do this if heap is too dry
80. our group
81. a hollow one allows air into heap
83. essential for certain bacteria
85. the three big ones
86. ... mass
87. measure of acidity/alkalinity  
# front cover, "Organic Gardening", March 1993 \* description  
attributed to Lawrence Hills

#### REFERENCES:

1. Bennett, P., "Organic Gardening", revised 1981 ed.,
2. Jeavons, J., "How to grow more Vegetables", 1974.
3. Conacher, J., "Composting and Organic Growing", Organic Growers Assoc. W.A. (Inc), 1980
4. "Organic Gardening", April 1993, Rodale Press

THE SOLUTION IS ON THE BACK COVER

# COGS QUARTERLY



## BOOK REVIEW:

"The Four Season Harvest" by Eliot Coleman  
Reviewed by Annie Brent, COGS Librarian.

This is one of two books by Eliot Coleman recently acquired for the COGS library. The other one, The New Organic Grower, was briefly reviewed in a previous newsletter (June 1991, by Joyce Wilkie and Mike Plane). Eliot Coleman is an American gardener living in the cold north-east of the US. Although his region is obviously far colder than our own, the techniques he recommends are readily applicable in the Canberra area. Indeed, members should note that Eliot Coleman is to give a weekend workshop at Gundaroo later this year.

Coleman's basic tenet in this book is the desirability of being able to harvest fresh produce from one's garden all year round. He aims to avoid the sweat of having to preserve garden produce by whatever means, be it bottling, freezing or jam making. However, he does give some suggestions on drying techniques, and detailed information about storage of produce once harvested.

An early chapter outlining how to build an effective compost heap is useful. Coleman then goes on to give a detailed description of how to establish an organic garden that will have you enjoying fresh food twelve months a year. Topics

covered include planning and preparation of the site, soil structure and aeration, crop rotation, green manuring, seed sowing and transplanting, trellising and weed control.

In order to be able to harvest crops in the depths of a north-eastern US winter, Coleman relies heavily on growing things under cover. In this book he provides a comprehensive guide to constructing and using both cold frames and tunnel greenhouses. For the latter he has even devised a way of making such a structure mobile, enabling year round use of the soil.

The book concludes with an inventory of 50 vegetable crops, each item being composed of information on planting distance, the vegetable's place in a crop rotation, growing tips, storage tips and advice about varieties to try.

The Four Season Harvest is a fascinating and informative book, written in a style which makes it effortless and delightful to read. It is packed with hundreds of ideas worth trying, even for those of us organic growers not necessarily determined to have something fresh to harvest every day of the year. Don't be put off by the fact it's American; the content is well worth the effort of having to add or subtract six months here and there

*Retail price approximately \$25.*

# COGS QUARTERLY

## COGS NOTICEBOARD

**NEXT MEETING:** Tuesday, August 24th, 1993 7.30 pm

Room 4 Griffin Centre

**TOPIC:** Stewart Ross will talk on "GREEN SEEDS"

Barbara Schreiner, a horticulture teacher, will also talk on "How Seeds Are Made"

Please bring in some flowers from your garden so we can examine the structure of as many varieties as possible.

Marjatta Asa will bring in samples of seeds, so that growers new to growing from seed, or harvesting their own seeds, can become familiar with different types.

At this meeting, and subsequent meetings, there will be a seed exchange table.

### VISITORS ARE MOST WELCOME

There will be the usual library, produce stall, and book stall, with a good supper and friendly talk afterwards.

**Next Committee Meeting:** Tuesday 31st August, 1993 at 7.30pm at the Environment Centre.

**SEED EXCHANGE:** There has been a very gratifying response to the request in the July Flier for members to help with the Seed Exchange. Thank you to all who have offered to help.

Marjatta Asa (249 7406) and Barbara Schreiner (248 8298) have agreed to be our seed librarians and other members will help with the seed exchange table and with the important job of cataloging and packaging seeds.

We would now like members to donate seeds to the Exchange. Please bring in seeds to the August meeting if you have saved some for us. If you have some to donate, but cannot come to our meetings, please contact Marjatta or Barbara to discuss how we can collect them. Donated seed will be available at meetings from September onwards, for a small price per packet.

To help start off the exchange COGS has also bought seeds from Diggers Club and Phoenix Seeds which should be available at the August meeting.

**GRAFTING DEMONSTRATION:** There will be a grafting demonstration at Jonathan Banks' apple orchard at No.10 Beltana Road, Pialligo on Sunday, the 19th September from 1.30pm to 4.30pm. for COGS members. Bring along your own supplies for afternoon tea (cups of tea will be provided).

**VALLEY GARDEN:** Leonie Atherton, the garden convenor, would like to thank the COGS members who helped at the recent working bee at the garden. The fence was almost completed, and hopefully it will act as a deterrent to vandals who have been a problem at the site. It was an enjoyable, though tiring day, with wonderful weather for the lunchtime barbeque.

**GARDEN AVAILABLE:** As advertised previously, COGS has been contacted by someone in Forrest who has a large back garden which for thirty years has produced vegetables organically. The owner can no longer manage the garden, but wants it kept up by organic means, so it is being offered at no charge for the use of COGS members. At least two people could work the garden.

Anyone interested should telephone 295 9433.

**BOOK DONATION:** Thanks to Smiths Alternative Bookshop in Civic for donating a book prize for a small raffle run at our July meeting. We plan to hold such raffles at our meetings as a fundraiser to help build up our range of books for the library. This way a lucky member wins a book, and our library gets a new book.

**JOYCE WILKIE'S RADIO SESSION:** Joyce's regular session with Elaine Harris on 2CN has been changed to the 1st Friday of every month at 1.30pm to 1.50pm.