

THE COGS

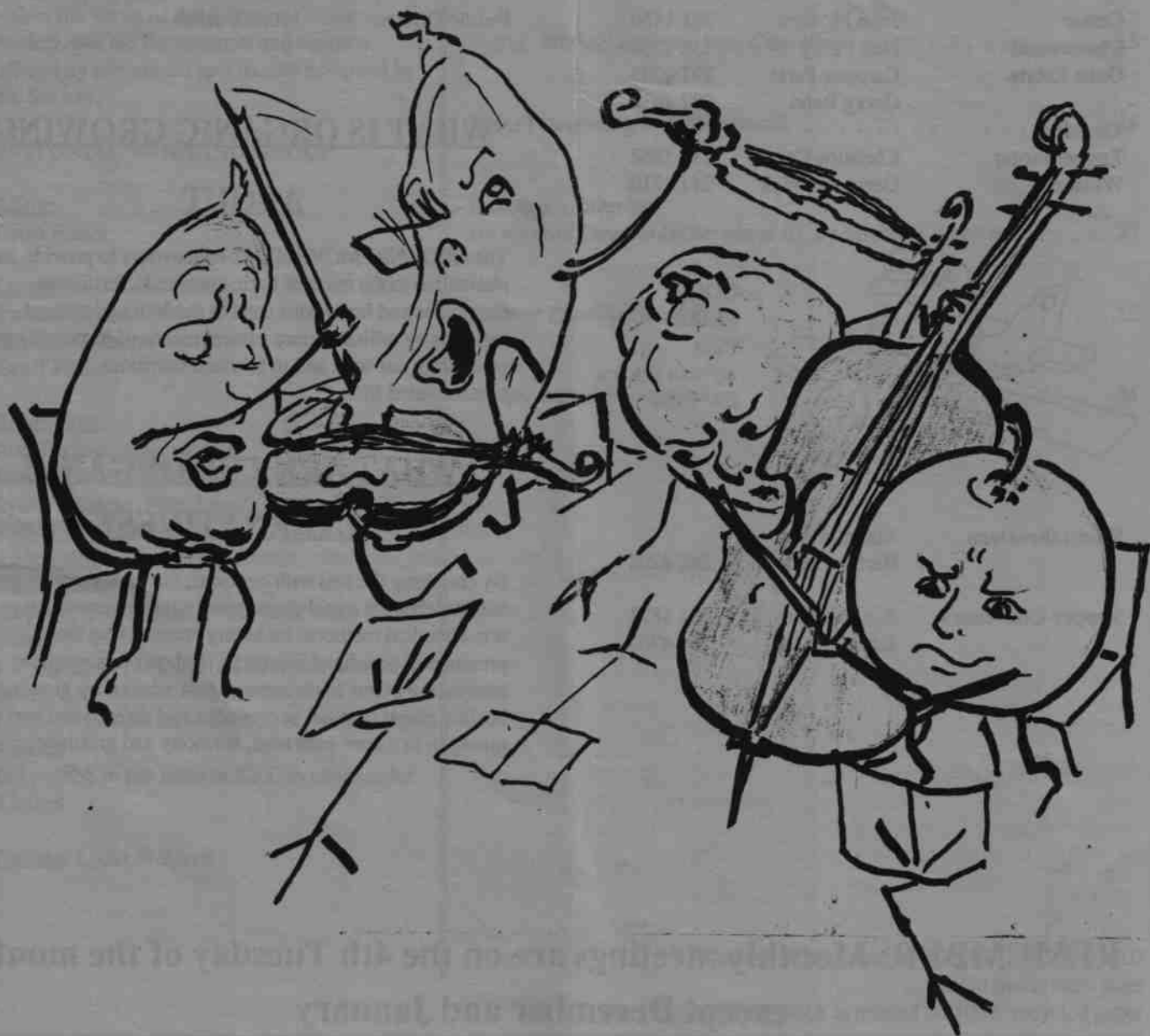


QUARTERLY

VOL 3 no. 4

ORGANIC GROWING IN THE CANBERRA REGION

SUMMER 1995



COMMITTEE AND HELPERS

CANBERRA ORGANIC GROWERS' SOCIETY INC., P.O. BOX 347, DICKSON ACT 2602

President	Michelle Johnson	231 6219
Vice-President	John Ross	241 4063
Secretary	Ezmi Witty	231 4882
Treasurer	Margaret Allen	207 4200(w)
Membership Secretary	John Allen	252 6002(w)
Newsletter Editor	Geoff Foster	238 1109
Librarian	Cathy Sugeran	248 9321

Committee

Betty Cornhill	249 8323
Marianne Humphries	
David Odell	238 1028
Chris Witty	231 4882

Garden Convenors

Cotter	John Flowers	281 1460
Charnwood	Neil Fahey	258 4506
Oaks Estate	Caroline Paris	297 4203
	Georg Rehn	297 1036
Theodore		
Tuggeranong	Christine Carter	231 5862
Watson	Gerry van Wyk	247 2710



**COGS
FLIER:
Pilot**
Aylwen Garden
292 7828

Seed Librarians	Marjatta Asa	
	Barbara Schreiner	248 8298
Supper Convenors	Sue Johnston	281 5871
	Karin Haynes	251 4762

Produce Table

Book Sales Murray Dadds 281 6065

Representatives to State Council

Michelle Johnson
John Ross

Representatives to Conservation Council

(vacant)

Representatives to Environment Centre

Els Wynen

Public Officer Joan Buckie

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
except December and January**

COGS QUARTERLY

Published by the Canberra Organic Growers
Society Inc.
VOL. 3 No.4 (Issue 12)

CONTRIBUTIONS INVITED

Preferably on diskette in IBM compatible
format - Contact Editor for details Ph 06 238
1109

Contributions can be sent to:

COGS Quarterly

PO Box 347

Dickson ACT 2602

or

E-mail to jallen@pcug.org.au

There are four issues each year;

Autumn (February), Winter (May),

Spring (August), Summer (November). Copy
deadline end of month **prior** to each issue

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

EDITORIAL WORKING GROUP

Editor:

Geoff Foster

Layout:

Richard Blyton

Michelle Johnson

Geoff Foster

Illustrations:

Joan Buckie: cover picture

Joan Buckie: "David Odell's portrait"

Lydia Waldron "Flier Logo"

Advertising:

Geoff Foster

1/8 page: \$7 per issue or \$25 in advance for 4
issues

1/4 page: \$14 per issue or \$50 in advance for 4
issues

1/2 page: \$28 per issue or \$100 in advance for
4 issues

full page: \$56 per issue or \$200 in advance for
4 issues

Postage: Lydia Waldron

CONTENTS

<i>Cats and Dogs</i> by Jackie French	4
<i>Blueberries in a Cool Climate -- Mulch, Weeds and the Flush of Spring</i> by Harold McCormack	7
<i>Fundamental Differences Between Organic and Conventional Farming?</i> by Els Wynen.	9
<i>Back to the Stone Age</i> by David Odell	10
<i>The Internet Column</i> by John Allen.	12
<i>Our Health -Our Environment: An AMA National Forum</i> by Betty Cornhill.	14
<i>Notice: Michael Ableman Visit Cancelled</i>	15
<i>Home Composting</i> by Eric Johnson.	16
<i>Genetic Engineering: Do we really need to bother about it?</i> by Michelle Johnson.	23
<i>Summer Planting Guide</i>	25
<i>Membership Subscriptions</i>	26

Meeting Notices are on COGS NOTICEBOARD
on the inside back page

The COGS QUARTERLY is printed on 100% recycled paper

Cats and Dogs

by Jackie French

Some years ago I gave up cats and dogs for wombats. I still miss the cats and dogs, but wombats are a lot more practical for our lifestyle (not to mention the impact on the bush around). There is also the added advantage that it is impossible to train a wombat. Any unsociable behaviour is their affair, not yours. You can teach a wombat to be afraid of you; you can't teach it right or wrong; wombats are entirely wombatocentric. Their view of the universe is unswayed for ever.

But back to the cats and dogs....on the various radio programs I do one of the most common questions is about cats and dogs -- how to keep them off the garden, how to stop digging, leg raising, squatting, bird killing, and invasions from other people's pet moggies -- all very natural behaviour for the animals concerned, but irritating or even devastating for humans.

Controlling dogs in the garden is simpler than controlling cats. Dogs can be taught to share human's views of right and wrong: in other words, trained. You'll never train a cat not to catch birds or lizards (at least till it's so old and contented it doesn't care much either way); but you might convince it that it's best not to let you find out that it's doing it.

How to Repel Dogs and Cats

Dogs may lift their legs or squat to mark their territory -- or if they smell something interesting. If you want to keep dogs from marking your nature strip, hose it often to remove other scents. You can also try:

- . a string of mothballs on shrubs or fences;
- . a spray of one part chilli, one part ammonia, one part horseradish or wormwood, one part vinegar and six parts water. The ammonia smells like a really ferocious dog has been there before; the vinegar, horseradish and chilli are strongly irritant when they sniff it. Let sit overnight then spray on fences or around shrubs -- not on tender leaves.
- . a scatter of pepper may keep dogs off if they sniff hard before they squat.

As a last resort you can mark the space yourself -- with your own urine. We are bigger and fiercer carnivores than dogs and our urine will often scare them off. (On the other hand if you have a very territorial dog, it may encourage it to further efforts).

Dogs are supposed to be repelled by coleus caninus, or dog bane, which smells remarkably as though a dog has just lifted its leg there. Some dogs do avoid it. Others ignore it. A thick wormwood hedge may also repel dogs.

If barking dogs annoy you fill a waterpistol with water and a little citronella oil. Squirt it just in front of the dogs. They stop barking and investigate -- and hopefully by the time they have sniffed around, whatever they are barking at will have disappeared.

Cats

Cats like bare earth. Cover it with bird netting. The first time they try to scratch in it and get their paws caught, they'll learn not to use that particular bit of ground. It is a good idea to cover sandpits with bird netting when they are not being used. Wire netting is also effective, but more cumbersome. You can also try a mulch of the sharp edge torn off computer paper -- neither cats nor dogs like to roam around this stuff -- and it's a good way to get rid of it.

You can make a barrier around the garden with a hedge of gooseberries or any other thickly growing prickly plant, like miniature roses.

Cats are also afraid of the scent of bigger cats. If you can get hold of lion droppings to mulch your garden you've got it made. The dog repellent above, or even straight 'lion urine' scented ammonia can work with cats, as can a barrier of white pepper or mothballs. The effectiveness depends on the courage or recklessness of the cat.

As last resort you can keep cats in -- or out -- with a cat fence, a piece of smooth metal or two or three taut barbed wires angled inwards over the garden, so cats can't jump over them. Make sure they can't climb onto sheds or branches, though, and get out that way. A wide round of aluminium around a tree branch or tree trunk will stop a cat.

If you do keep cats, tie two or three bells on them to warn birds (most cats can learn to stalk with one bell), keep them in at night and keep dry feed out for them at all times so they never have to hunt just to get a snack. (A cat won't get fat just on dry cat food). Give them their own dug garden or a tray of fresh sand or dirt, a good scratching post or two, with different textures on each, lots of interesting plants like cat thyme and cat grass and catnip. Play with them often -- and keep them inside at night so they can't attack roosting birds or sleeping lizards. Make sure all trees and bushes have cat barriers on them.

What Cats Like

The onus is on you to protect the wild life around you -- and to make sure your cat can't stray past your garden. If it does, it's not the cat's fault -- cats are born to hunt and roam -- it's yours. If you don't provide entertainment for your moggie it'll find it itself.

Entertaining Your Feline to Protect Birds.

I once bought a catnip mouse for a friend's cat. Cats are supposed to go crazy about catnip. The cat didn't even sniff at it. I decided that either my friend's moggie was one of a rare breed of catnip resistant cats, or that the 'cats love catnip' theory was another herbal myth.

This didn't turn me off catnip. It's a lovely plant, tall and slightly hairy with long spikes of flowers. You can also

find a lemon scented variety -- and both make pleasant herbal teas, slightly relaxing and good for fevers like flu. I even discovered that many cats do like catnip -- but that the leaves need to be picked when the plant is flowering for the best effect -- the flowers themselves are even better -- and that both have to be dried as quickly as possible or much of the essential oil will be lost. Even so, I've yet to see a cat go totally mad with ecstasy with catnip.

Cat thyme is another matter. Cat thyme (*Teucrium marum*) isn't a true thyme, though it looks like one, with its tiny silvery leaves and sweet fragrance. It is a very pretty herb, with pale purple flowers and almost seems to glow on a bank in full sunlight.

I first realised cat thyme's possibilities when I looked out the window and found a feral cat rubbing itself against it -- first its head and then its back, and then along its legs. It was quite intent, and didn't even notice us as we crept up and trapped it. Note: it isn't easy to trap a feral cat. They usually run as soon as you turn their way. This one wouldn't have noticed a volcano behind it.

We use cat thyme now regularly to trap feral cats. (They cause incredible devastation to the local birds -- especially lyre birds -- and small native animals like bandicoots and antichinus.) It is a lot more effective in summer, when the heat releases the essential oils, and the cats can smell it a long way off. They mostly ignore it in winter. Some cultivars seem much stronger than others too -- of the six odd cat thyme plants we've had (from varied sources) two were totally ineffective in attracting cats -- probably because of a much lower oil content.

Cat thyme would be a treat for any domestic cat. Plant it somewhere you don't mind your cat rolling and prancing -- somewhere in full sun. Don't put it near the veggie patch.

Cat thyme can also be used to keep your neighbours' cat away from your seedlings. Cats like newly dug earth to scratch and defacate in -- and they don't mind at all if you've just planted it. A patch of cat thyme elsewhere in your garden will keep its mind on other things.

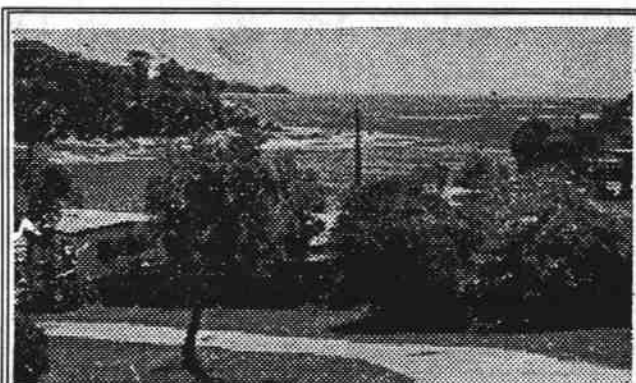
Cat thyme seed is available from Erica Vale, or you can buy quite large plants from many specialist herb suppliers. Cat thyme, by the way, is also a good repellent for sap sucking pests like aphids -- it's lovely under rose bushes -- and is also good for sinus congestion -- pour boiling water over a good handful of the herb, cover the bowl and your head with a towel and inhale.

Another good plant for cats is cat grass (*Dactylis glomerata*), also available from Erica Vale seeds or specialist nurseries. This is a green tender grass, and cats love it. It's an excellent pot plant, too, if your cat spends most of its time indoors and doesn't have access to a large garden. Cats eat grass and sometimes other plant tips, to supplement their diet with vitamins, minerals and roughage and for other medicinal reasons. (Many animals seek out medicinal plants themselves when they need them -- but that is another article.)

Sow your cat grass seed at any time of the year indoors or at any warm time of the year outside. Keep it in good light, but not full sun -- a window sill is excellent. Keep it moist. The grass is ready for your cat to start nibbling when it's about 10cm tall. Either plant it out in a semi shaded part of the garden, or keep it in a pot. It's also good for dogs, rabbits, guinea pigs, chooks and other grass lovers.

Cats also like eating young catmint leaves (*Nepeta cataria*). This is a pretty blue grey perennial, with pale blue flowers. It is a lovely edging plant. Camint is good for stomach upsets and diarrhoea, which may be why cats like it. However it is also mildly hallucinogenic.

A slightly stoned cat is probably far less threat to local wildlife, but whether you allow your cat hallucinogens is up to you. (Wild and even domestic cats by the way seem to have a real affinity for a whole range of hallucinogenic plants.-- just as white cockatoos and some other birds seek out fermented fruit -- and a surprising number of common garden plants are hallucinogenic if you know which bits to use, and when, and how -- and if you're sure you really want to -- from morning glory, some helichrysums, several coleuses, sweet flag, petunias, mesembyanthemums ... but that's another story too.)



BEAUTIFUL HOLIDAY HOUSE

Just across the road from the beach at Garden Bay, over the hill from Malua Bay surf beach.

Two minutes walk to sandy beach good for swimming, snorkelling, or teaching children to swim.

House sleeps eight. Large fenced garden where children can play within sight. Pets welcome.

Cool sea breeze in summer, warmer than Canberra in winter.

\$170/week outside holidays, or \$70 for a week end by the sea. Only 166km from Canberra.

Phone Brian or Jackie on 254-4977, or Betty on 249-8323.

VACANCIES NOV-MAR

Blueberries in a Cool Climate -- Mulch, Weeds and the Flush of Spring

by *Harold McCormick*

Spring -- the time when deciduous plants turn green and the conventional gardener assembles his array of weapons and poisons for the annual assault on weeds. After the discussion initiated at the last COGS meeting, and as at this time I am engaged in trying to minimize the amount of competitive vegetation, I thought I would outline some of my experiences in trying to control weeds from an organic point of view.

Let me make two points clear from the onset. First the only method which completely controls unwanted vegetation and leaves your soil and desirable plants unaffected is to pull weeds and hoe around plantings regularly, at least once a week. For the most part, this involves more time than I am willing to spend. As well, even this action may cause considerable damage to the roots of the plants that you are trying to help. Secondly, as time has passed, I have become less concerned with maintaining a nice looking blueberry patch, and have concentrated my efforts on minimizing growth which is most likely to compete with my blueberry plants.

I have tried a number of mulch products. Below is a brief outline of my experiences.

SAWDUST This is one of the best mulches to prevent weed growth but supplies little or no nutrients. It is best placed on top of the soil to a depth of 10 cm. **DO NOT DIG IN** -- the worms will do that chore for you after the sawdust has broken down.

Sawdust prevents moisture loss and the soil underneath is cool in summer. Its biggest drawback (in addition to the lack of nitrogen) is that once it dries out it has a tendency to shed water making it difficult to rewet that area. It needs to be renewed annually.

BLACK WEEDMAT This is the longest lasting of any of the mulches that I have tried. Water penetrates well and the black colour will absorb heat energy from the sun warming the soil in spring. Soil evaporation is diminished but in the summer soil temperatures will be high (probably limiting growth).

I found despite the fact that there was no competition, growth in blueberries under a weedmat was slow, attaining only half the size of plants in sawdust. When I removed the mulch (a dreadful job) the roots were mostly on the surface. It seems that the high soil temperatures drove the moisture to condense on the underside of the mulch. The elevated soil temperatures probably caused the plant to shut down for much of the time.

Four years after removing the black weedmat the plants are just starting to prosper. However, weedmat has a nasty

habit of reminding you that you gave it a try. Every time I dig in that part of the field I encounter a bit; when I use the brushcutter to trim along that row I unearth another memento of the era when I was a weedmat grower.

Strawberries on the other hand seem to do well using weedmat. They produce much earlier in spring than with other mulches and thrive from year to year. I suspect the foliage of the strawberries covers most of the surface by the time the weather gets really hot and so limits the solar absorption. Limit weedmat use to strawberries.

NEWSPAPER This is excellent to suppress weed growth as long as it is put on several layers thick. Usually it needs to be covered with some material like sawdust, straw or hay. It is likely to limit water penetration to the soil below and provides limited nutrients. It breaks down within one year. I limit its use around new seedlings to give them a good start.

PAPER ROLLS You can buy rolls of paper mulch (about 50 m long) to use to suppress weeds. It needs to be covered at the edges with some material to keep it in place. It should be put in place before planting seedlings as it is almost impossible to put around existing plants. Choose a calm day to lay the mulch as any wind gets under the edges and makes for a fun filled day. Unless completely covered, weeds will begin to poke through within a season. Not worth the trouble.

NOW AVAILABLE AT POWELL'S STOCKFEEDS

Vicmill's
COMPLETE ORGANIC FERTILISER
BFA and NASAA certified

**Vicmill C.O.F. is a completely natural
fertiliser that competes successfully on a
commercial basis with chemical fertilisers
C.O.F. is particularly suitable for use on
vegetables, fruit trees, vines and pastures**

POWELL'S STOCKFEEDS
42-44 Colbee Court
PHILLIP ACT 2606

ph 282 4937

fax 281 6355

STRAW & HAY These mulches supply a steady stream of nutrients and organic material to the soil. They keep the moisture in and the roots cool. Hay, particularly lucerne, is much higher in nutrients (particularly nitrogen) than straw but may contain some weed seeds. It is also more expensive. These mulches allow unhindered water penetration. They do not suppress weed growth as well as most of the others and therefore need to be applied very thickly (20 - 30 cm). The best mulch to use -- use as much as you can afford.

LIVING MULCHES Some vegetation growing around plants may provide more benefits than the the harm caused by their competition. This depends on a number of factors of which relative height is one. Thus white clover would be an unacceptable competitor to low growing vegetables like carrots but around mature blueberry plants the competition from partially shaded clover is much less. The blueberries benefit from the moisture retention and cool soil caused by the clover and the clover supplies some nitrogen as well.

The clover can be systematically slashed to build up the organic matter in the soil. This gives many of the benefits of hay without the necessity of bringing in the material and

without the cost. Some experts believe that competitive growth hardens plants making them less susceptible to diseases, drought and frosts. However, living mulch usually requires regular slashing or pruning to keep it from becoming too competitive. In addition, when water is scarce the added evaporation from the leaves of the mulching plants might adversely affect the growth of all the plants.

In practice, I tend to use a combination of mulches. I grow a combination of clover, grains and grasses between the rows allowing them to encroach under the bushes. In early spring, I slash and pull the growth within the rows and spread a horse manure/sawdust mulch about 50 -100 cm. thick under the bushes. I regularly slash and remove growth in the rows until the fruit has all ripened (mid December until end of January). Any cuttings between the rows is rolled onto the rows as additional mulch. I then tend to let the mulch grow until a final slash as winter approaches.

As well as using mulches you may be able to use animals (ducks, chooks, goats etc.) to help control the growth of competitive vegetation. My experience in this area is limited and I would welcome advice from other readers -- perhaps the topic of a later column.

The early spring warmth and abundant rainfall seems to the harbinger of an early supply of plump fruit. The blueberries were unaffected by the September frosts, but some of my plums and peaches have little or no fruit -- a strong recommendation for variety in all gardens. It's frustrating to labour for a whole year, and end up with little or no reward due to one or two late frosts.

Happy mulching.

**ALROC EXTRAPHOS & POTASH
MINERAL FERTILISER
"Gives Vitality to Tired Soils"**

A blend of:

*34.2% Basalt, 34.2% Granite, 8.55% Dolomite,
8.55% Bentonite, 9.5% Rock Phosphate,
5.0% Rock Potash & an Organic Catalyst*

BFA Certified

20 kg bags in stock

**Other Alroc Mineral Fertilisers &
Liquid Fertilisers can be ordered
ALROC Mineral Fertilisers available in
Bulk**

Also in stock: COCO-PEAT BLOCKS

**Geoff Foster
RMB 649 Gundaroo Road
via Bungendore
Phone (06) 238 1109**

Fundamental Differences Between Organic And Conventional Farming?

by *Els Wynen*

In an effort to find out whether organic and conventional farmers belong to different agricultural paradigms, Beus and Dunlap (1990) looked at the different beliefs and values of agricultural practitioners.

In their discussion of competing agricultural paradigms Beus and Dunlap summarise two different views: the "dominant social paradigm" (DSP) and the "new environmental paradigm" (NEP), respectively.

The core elements of the DSP were seen as "...the Americans' belief in progress, growth and prosperity; faith in science and technology; commitment to a laissez-faire economy and private property rights; and view of nature as something that must be subdued and made useful".

Assumptions of limits to growth and human threat to the balance of nature made proponents of the NEP reject the idea that "nature exists primarily for human use". At a later stage, they also challenged "... the free-market economy, hierarchical political structures, centralized social organization, large-scale technological developments, and the legitimacy of scientific knowledge as the basis for social decision-making". The debate about paradigms within agriculture was said to exist at both the scientific and the societal level, of which the main characteristics are summarised in Table 1.

Table 1: Key elements of the competing agricultural paradigms (Beus and Dunlap 1990)

Conventional	Organic
Centralisation	Decentralisation
Dependence	Independence
Competition	Community
Domination of nature	Harmony with nature
Specialisation	Diversity
Exploitation	Restraint

In a survey conducted in 1989 and 1990 and designed to discover whether members of different groups (organic and conventional farmers) could be shown to adhere to a

combination of values which made up aspects of Table 1, Beus and Dunlap (1991) found there was a strong correlation between group membership and the combination of beliefs.

The questions were not strictly directed towards the technical side of farming, but also to beliefs on which the practices were based. The results, although they cannot be seen as proof of the theory that organic and conventional agriculture belong to two different paradigms, point in the direction of a fundamental difference between organic and conventional farming.

References:

- Beus, C. and Dunlap, R. (1990), 'Conventional vs alternative agriculture: the paradigmatic roots of the debate', *Rural Sociology* 55(4), 590-616.
- Beus, C. and Dunlap, R. (1991), 'Measuring adherence to alternative vs. conventional agricultural paradigm: a proposed scale', *Rural Sociology* 56(3), 432-60.

The Allergy Centre

We have a large range of Allergy Foods, Organic & Biodynamic Grains, Dried Fruit, Nuts, Flours, Breads, Goats Milk, Meat, Yoghurts, etc.

*Allergy Testing by Appointment.
Molly Aukim from the N.S.W. Allergy Prevention Clinic, Chatswood, visits once a month.*

*Osteopathy, Musculo-Skeletal Therapy,
Nutritional & Environmental Medicine,
Traditional Chinese Medicine.
Consultations by Appointment. Ian Cocks, Dr of Osteopathy*

*Contact: Costas Kounnas
Shop 3 Jamison Centre, Bowman
Street, Macquarie A.C.T.*

Ph. 251 2670, Mobile: 0418 620811

Your Rural Correspondent David Odell

Back to the Stone Age



This Spring is promising a superb start to Summer as the soaking rains have come just as the ground is warming up, in the right quantities and, more importantly, at intervals which allows the pasture to maximise its benefits. It seems almost too good to be true and the cynic in me expects *El Nino* to be waiting in the wings for its cue to bring on the spectre of drought once more.

But in the meanwhile the rains have added an impetus to the preparation for this season's crops following the ground-breaking activities and rock-picking which preceded them. Trellising and drip irrigation are in the process of being erected and installed, initially for crops of tomatoes and snowpeas but ultimately for the wine grapes which will be planted next year.

By this sequence of events it is anticipated that the grapes will get off to a good start and not be subject to competition from the inter-row grasses and the probability of prolonged dry spells (as happened previously). This is the benefit of being a practical farmer as one never stops learning -- my idea of heavily mulching the grapes with straw to prevent competition from grasses was effective but had the unintended consequence of keeping the soil around the vines very dry resulting in heavy losses.

So this is a 'back to the drawing-board' experience to ensure that proper preparation is undertaken *before* the vines are replanted. My "7 P's of Mismanagement" state - '**Paltry Prior Preparation Predicts Pathetically Poor Performance**' and is a salutary reminder to me that good business practices are necessary for farming as well as any other business. Not all of the grapevines were lost however and those surviving, which were loosened in the initial preparation, were retrieved to be transplanted to a temporary nursery bed for this season.

The deep ripping of the rows was followed by rock-picking, rotary-hoeing and more rock-picking (the rocks were getting smaller by this time). By incorporating the residue of the straw mulch the soil is being brought to a very acceptable tilth for future crops. As well as being of a longer term benefit for the grape vines the concept of pre-cropping has some immediate advantages in providing cash flow to offset costs of installing the trellis and drip irrigation.

To my way of thinking rock-picking is an exercise which may be compared to the Chinese art of T'ai Chi (the controlled physical energy allowing the mind to be set free for contemplation), and on this occasion allowing my thoughts to travel back 5000 years to the late Stone Age of Neolithic times and be absorbed in the story of "The Man In The Ice" by Konrad Spindler (translated from the German by Ewald Osers, published by Weidenfeld and Nicolson, 1994).

This is the amazing story of the discovery of the frozen body of a Neolithic man preserved in the ice of the Otztal Alps for 5000 years and which revealed, through scientific examination, the secrets of the Stone Age. In the chapter dealing with the Iceman and his World under the heading 'Neolithic Farming' I was struck, not so much by the differences wrought by modern technology, but by the basic similarities persisting since those times.

In the interests of sustainable systems the extension of the growing of crops (wheat, barley, linseed, opium poppy and peas) became the basis for a significant increase in population. The different crops were planted in rotation in various fields and coordinated with fallows and grazing by animals to maintain fertility. Grains were harvested by cutting the stalks so that straw was obtained for Winter fodder after the threshing.

The other significant aspect of Neolithic farming was stockbreeding. The five domestic animals were the dog, the goat, the sheep, the pig and the cow. Pigs and cows were tended close to the settlements while goats and sheep were taken by shepherds to the high country in the Spring and brought back for shearing (plucking) before Winter set in. The dog was friend and guardian in these activities.

Pollen analysis has confirmed the surprising fact emerging from this research that, away from the immediate settlement, land was developed from the high country above the tree-line downwards towards the valleys - the reason being that wolves inhabited the forests and in the Summer pastures it was more readily possible to protect flocks from predators. Gradually, over time, using the 'slash and burn' technique better land was bought into production to support the increasing population.

Altogether an absorbing book which closely examines the facts, which relates the conduct of careful scientific analysis and then which is able to draw the threads together to present a well constructed hypothesis. Highly recommended.

The cycles of life are very close to a farmer as processing an animal for food is part of the farm's economics but some deaths cannot be fully explained but only accepted as part of the Lesson of Life. I give you three examples. The lamb was two months old, well nourished and left there lying on his own -- was he a victim of snake-bite? The goose was reluctant to follow the others back to their pen for the night and eluded me to slip on to the waters of the dam where she had the advantage -- my threats that she would be fox bait were ignored, but in the morning, with her head under her wing, she was quietly bobbing with the breeze - a feathered *Marie Celeste*.

Was it Rudyard Kipling who said 'never give your heart for a dog to chew'? Jack was a tiny terrier with a big heart, a big game hunter the terror of rodents and rabbits. His body language was eloquent in telling Thompson the scents of game were calling and if they were quick about it they could slide away without old spoilsport chaining them up. Thompson (a *mesalliance* between the neighbour's bullterrier and my kelpie) was only too willing to be involved but being less devious (or more stupid) was often spotted by the spoilsport -- but the primitive urges became more insistent and the absences became more frequent -- and more prolonged.

It appeared that the pair of gladiators had found a burrow to investigate (as the tiredness and red earth stains attested) and slipping away quietly they set off to continue the previous day's glorious adventure. Only Thompson limped home unable to tell the spoilsport where they had travelled or what had happened to his mate Jack. I miss Jack's happy personality, his light scratch on the door to be let in, and his companionship. Rest well little man wherever you are!

Is it robbery, a redistribution of assets or just plain opportunism? While I'm milking the cows I see the field mice darting in to pick up some spilt feed, not only do I feed the hens with organic wheat but the cockatoos are in for their share, a pair of crows outwit me in raiding the nest boxes for eggs and a fox has breached the citadel to wreak deadly havoc with half-a-dozen hens and a brace of ducks camped out in their yard.

The fact is that these hangers-on have all day to work out my movements and observe a routine while I seem to have my time stretched in playing catch-up with them. It makes me think of the conclusion to the story of The Man In The Ice -- of how he came to be where he was found -- which throws a long shadow on this competition for resources.

The concept of the integrated, family, farm which sustained mankind over the last 5000 years gave way to the chemical revolution after the Second World War in the interests of 'efficiency' and to capitalise on the discoveries made at, and since, that time. But now, half-a-century on, that 'efficiency' is being actively questioned by those caught up in the pursuit of consumerism. Is there a way of redefining one's goals? Is there a way of achieving that sense of community which comes from sustainable values?

I was happy to read an article about 'Voluntary Simplicity' in the Canberra Times recently which looks at ways of answering these (and other) questions and, more importantly, to realise that one is not alone in questioning present-day values. It is a subject I would like to explore more fully in a subsequent article but in the meantime if

any of my readers would like to contribute their thoughts on this topic I am happy to receive them for inclusion.

Started chickens will be available from the first weekend in December - these are the popular Isabrowns - and orders are now being taken for delivery at that time. They will commence to lay before Easter and continue on through Winter, in fact, feedback from people who got some last year indicate that they are 'egg machines' and it's hard not to be attracted by their friendly nature although they are more demanding in their requirements if they are being reared for free range production.

The pigs have given up their freedom in the interest of Christmas hams and sausages, but while they enjoyed life preparing some new ground for a home garden they were fed on the best of organic wheat, organic meatmeal and skimmed milk from my Jersey cows. They were processed through the abattoir and prepared by the Griffith butchery and vacuum sealed for freshness. Orders for hams are also being taken for delivery at 'direct-from-the-producer prices'.

I look forward to being with you again in the New Year.

ISABROWN CHICKENS

6 weeks old \$5.00 each

Ready for delivery 1 December
1995

David Odell

"Rockyglen" Organic Farm,
Bungendore N.S.W.

Ph 238 1028 (message/fax)
238 1611 (a.h.)

The Internet Column

By John Allen

Email: jallen@pcug.org.au

COGS WWW Home Page URL: <http://www.pcug.org.au/~jallen/cogs.htm>

If you are on the Internet, and you haven't yet let me know, send me a message and say hello!

If you are not on the Internet and you want to have a look at the COGS Home Page and linked World Wide Web sites - the National Library has a couple of computers connected to the Internet (upstairs) which the general public can use - you cannot send messages though. If you want to use this system, all you need to take along is the above URL address (ie "http://..."). When you are connected, and you have the WWW browser loaded (probably Netscape), choose the menu item "Open Location" and go from there.

You will also be able to have a look at the COGS Internet Home Pages at the next monthly meeting. The computer there will not actually be connected to the Internet so you will not be able to see any of the WWW links, but you will at least see what COGS has available.

By the way, if there are any members concerned about the use of COGS funds for Internet-related activities - all of the Internet activities being undertaken are free of any charge to COGS.

We currently have 9 COGS members on the Internet. For the week ending 22 October, the COGS Home Page was accessed at a rate of around 14 times daily.

New Information on the COGS page:

* List of Organic Growers, Certifying Bodies in Australia

- * Michael Ableman Visit
- * Spring Vegetable Planting Guide
- * Information about COGS Quarterly Publication
- * Added information about overseas membership
- * Quick reference index
- * What is Organic Growing?
- * Sewage Sludge on Organic Farms
- * Summer Vegetable Planting Guide
- * Companion Planting
- * Certification Information

The following World Wide Web links can be accessed via the COGS Home Page:

- * Don't Panic, Eat Organic - the organic farmers' home page in California. Contains many other world wide links.
- * Whole Foods Market - an organic whole food business in Texas, also contains recipes.
- * Biodiversity and its Value - a paper by the Biodiversity Unit within the Commonwealth Department of the Environment, Sport and Territories.
- * The University of California's Sustainable Agriculture Research and Education Program.
- * NZ Sustainable Land Management - the Semi-Arid Lands Research Team in NZ is a community-based research approach to facilitate the adoption of more sustainable land management practices.
- * Canada - SCORE - a computer model called Sustainable Cropping Systems Research Study - developed by Agriculture Canada, Alberta Agriculture, and the University of Alberta.
- * Internet Environment Library - a clearinghouse of all environmental information available on the Internet.
- * Eco Gardening Library - a series of fact sheets from Cornell University.
- * Time-Life's Virtual Garden - an extensive on-line resource for the home gardener.
- * Permaculture Resources on the Internet - from Latrobe University in Melbourne - "will eventually be as close as possible to a complete web of links orbiting a common memetic attractor, that being sustainable living, particularly permaculture".
- * The Growing Dome! - a novel hothouse for organic growing.
- * Mulch Based Agriculture Group - the page of a research group from Cornell University.
- * Gardener's World (UK) - information on organic gardening from the BBC.

* Tony Savage's page (a Canberra site!). Follow links to his Garden - a local organic gardener tells about his garden.

* Environmental Education Home Page (University of Canberra) - Home Page from the Applied Ecology Research Group, School of Resource and Environmental Science at the University of Canberra.

* Some information from the Sierra Pelona Press.

* Compost Could Save Millions a Year - a cost-benefit analysis of composting in California.

* Complete Guide to Garden Stuff - a section from Books That Work - a home project resource on the Internet.

* PCEI Sustainable Agriculture - the Sustainable Agriculture page from the Palouse- Clearwater Environmental Institute in Idaho.

* Urban Organic - an example of a mail order organic produce shop (USA).

* AG-PIPE - Gateway to Green Seeds - a discussion and information site for questions and solutions pertaining to sustainable agriculture. This is a local ANU site which is under construction - keep your eye on it.

* Leopold Center for Sustainable Agriculture - located at Iowa State University and has three primary objectives: identify and reduce negative impacts of agriculture on natural resources and rural communities; develop profitable farming systems that conserve natural resources; and work with ISU Extension and other groups to inform the public of new research findings.

* Why Organic? - a Short Course on Reversing the Environmental Impact of Modern Agriculture.

* Organic Gardening / Small-Scale Farming Sources - the raising of vegetable food on the homestead. Sustainable and organic techniques are emphasized.

* Montreal's Community Gardening Program - the Island of Montreal, with a population of 2 million, has one of the best community gardening programs in North America.

This month's interesting site is called "Gardener's World", it is administered by the BBC in the UK. The URL is:

http://www.bbcnc.org.uk/bbctv/gdns_world/organic1.html

There are some interesting articles there which I wanted to reproduce in the COGS Quarterly, but - permission refused - oh well, that's the BBC for you! You will have to be satisfied with a couple of quotes, or get on to the Internet and read it!

The page covers the following topics:

Britain's Gardens

"Britain's gardens represent a priceless asset. Botanically diverse, they team with wildlife now all too often absent on Britain's farms. Yet tragically many over enthusiastic gardeners actually use higher rates of pesticides than the farmers!

We can all play a part in maintaining our part of the country's most valuable environmental assets - the national organic garden.

Why should we garden organically?

"Organic gardening is about a change of attitude. Instead of using brute force and chemical poisons to kill pests and force plants to produce, we out-manoeuvre or win them over with wit and cunning."

Establishing an Organic Garden

Interesting information here about borders, putting down carpet, planting through carpet.

Using your waste!

This article covers the bin, ingredients, and making the compost

The Soil Association

"The Soil Association is Britain's longest established organic charity. It has been working for nearly 50 years to promote a better understanding of the links between organic husbandry, food quality, human and environmental health, and Soil, plants animals and man."

Our Health -- Our Environment: An AMA National Forum

Report by Betty Cornhill

This conference was an important one for it showed that doctors are concerned about the chemicals being used in Agriculture, Industry, and the home, and the effect these are having on our health. The forum was divided into five sessions with two panel sessions for answering questions.

Dr David Weedon, Federal President, AMA, made us all welcome, and Senator John Faulkner gave the opening address, followed by Ms Tricia Caswell (former Executive Director, Australian Conservation Foundation, and Executive Director, PLAN International Australia) on Mainstreaming Environment And Health Issues.

Session One: DEALING WITH POLLUTION.

Senator John Coulter's paper dealt with his work as a research scientist in the late 1970s on problems of carcinogenicity using the Ames Test as a way of identifying mutagenicity. He described in detail how several cases of amoebic meningitis, a nearly always fatal disease at that time, had caused the SA Government to double, and then treble the amount of chlorine added to the water. Meanwhile, evidence was emerging that chlorination of water containing organic material resulted in the formation of chlorinated organic compounds. In turn a correlation was beginning to show between the presence of these compounds and the incidence of bladder cancer.

He went on to show that there is an increased risk of both bladder cancer and rectal cancer from drinking chlorinated water. He also stated that many of the chlorinated compounds, even when present in very low concentrations, are nonetheless potent mutagens. While these can cause cancer, they can also cause abortion and birth defects, especially through sperm germline cells.

Also many chlorinated compounds are fat soluble and pass easily through the skin. One estimate suggests that 10 minutes under a hot shower containing these agents causes as much absorption as drinking 2 litres of the water.

There was much more in Senator Coulter's paper, about sodium in drinking water causing hypertension, about blue-green algae, and about the cause of peptic ulcers, and about illnesses caused by drinking water polluted with toxic chemicals. This was a very important paper, and there were many more to follow.

Dr Kate Short spoke on **Chemical Pollution, The Imperative Of Reduction.**

Mr Claude Gauchat, executive officer, The National Association for Crop Protection and Animal Health (AVCARE) spoke in favour of chemicals in his speech, **The Agvet Industry In Quiet Revolution.** Later, when on the panel, he said that *alternative methods of Agriculture produced 50% of what was produced*

conventionally, and therefore the 9 billion people expected in the year 2000 would not be able to be fed. Els Wynen, a COGS member, who has done research on this very subject rose to say that *he was wrong about the 50%, it was, she said, between 80% and 120%.*

Dr David Moy, Director, Waste Management Research Unit, Griffith University, spoke on **Biomedical Waste-Beyond The Hospital Gate.**

Mr Gary Humphries, MLA, ACT Minister for the Environment, spoke about **Problems Presented By Sheep Dip Sites In The Act.**

Session Two: AIR AND WATER QUALITY

Ms Cathy Zoi, visiting fellow, Environment Protection Agency, spoke on **Improving Our Air And Water: Community Concerns And Policy Challenges.**

Dr Guy Marks, Respiratory Physician, Institute of Respiratory Medicine and Liverpool Hospital, NSW, spoke on **Adverse Respiratory Health Effects Attributable To Air Pollution.**

Dr John Donovan, Principal Medical Adviser, Australian Institute of Health and Welfare spoke on **The National Survey Of Lead In Children.**

Mr David Harley, Chair, Environmental Protection Authority of NSW spoke on **Challenging Traditions In Environmental Management.**

Session Three: A NATIONAL CHEMICAL REGISTER

Prof. Ben Selinger, Chair, Board of the National Registration Authority, and Professor of Chemistry, Australian National University, gave a paper **I Wish It Was Easy.**

Dr Lyn Fragar, Australian Agricultural Health Unit, Moree, NSW, spoke on **Pesticides And Human Health.**

Session Four: GLOBAL PERSPECTIVES

Mr Erwin Jackson, Climate Impacts Unit, Greenpeace spoke on **Climate Change and "Global Infectious Disease Threats" -- International Implications.**

Ms Jennifer Goldie, President, Australians for an Ecologically Sustainable Future spoke on **Health Implications Of Population/Resources Imbalance.**

Professor Robin Marks, Professor of Dermatology, University of Melbourne spoke on **Stratospheric Ozone Depletion: Facts And Fiction**

Continued bottom of page opposite

MICHAEL ABLEMAN'S AUSTRALIAN VISIT CANCELLED!!!!

Due to unfortunate circumstances Michael Ableman will not be coming to Australia in late November

Therefore,

REGRETTABLY, The Seminar "From the Good Earth" on Friday night, 1st December, and the Open Day at the Cotter Garden on Saturday, 2nd December will not proceed.

We apologise for any inconvenience this may have caused.

Tickets holders for the Friday night seminar will be refunded at the COGS General Meeting on the 28th November. If you have already purchased tickets, but cannot attend the meeting our Treasurer will send a refund through the mail for any remaining tickets.

Again our apologies. We hope a future visit by Michael Ableman can be arranged, as we believe his visit would have been highly informative and enjoyable.

The Symposium "Survival, Health & Wellbeing into the 21st Century" organised by the ANU Centre for Continuing Education in conjunction with The Nature and Society Forum Inc, on 29 Nov-1 Dec, at which Michael Ableman was also going to speak will proceed with a full program. Tel 06 249 3806 for details

Michelle Johnson

continued from previous page

Session Five: THE WORKPLACE

Dr Jack Best, President Australasian Faculty of Public Health Medicine spoke on **Public Health And The Environment.**

Mr John Cairns, Industrial Officer, Australian Council of Trade Unions presented **Workplace Health -- A Union Perspective.**

Dr Ian Lambert, Chief Medical Adviser, Shell Australia spoke on **Occupational Health And The Environmental Debate.**

Dr Bruce Hocking, President, Australasian Faculty of Occupational Medicine gave the **Contribution From The Faculty Of Occupational Medicine.**

In the **SUMMARY SESSION** Mr Julian Cribb, Science writer, The Australian, spoke on **Looking To The Future.**

I suggest that if anyone is interested to see any of these papers, they contact me on (06) 2498323 or come to the next COGS meeting, where I will bring the papers.

HOME COMPOSTING

1. FORWARD

The following interesting and useful article was found on the Internet, and is reproduced for COGS members by the kind permission of the author - Eric S. Johnson of Boulder Colorado. Thanks Eric!

Eric's Internet page is appropriately called "The RotWeb"! Eric says "These World Wide Web pages are meant to make basic information about home composting available to a large number of people."

John Allen

2. A COMPOSTING INTRODUCTION

Composting is the decomposition of plant remains and other once-living materials to make an earthy, dark, crumbly substance that is excellent for adding to house plants or enriching garden soil. It is the way to recycle your yard and kitchen wastes, and is a critical step in reducing the volume of garbage needlessly sent to landfills for disposal. It's easy to learn how to compost. Composting can even be done, cleanly and unobtrusively, indoors in apartment buildings and condominiums!

Composting is not a new idea. In the natural world, composting is what happens as leaves pile up on the forest floor and begin to decay. Eventually, the rotting leaves are returned to the soil, where living roots can finish the recycling process by reclaiming the nutrients from the decomposed leaves. Composting may be at the root of agriculture as well. Some scientists have speculated that as early peoples dumped food wastes in piles near their camps, the wastes rotted and were terrific habitat for the seeds of any food plants that sprouted there. Perhaps people began to recognize that dump heaps were good places for food crops to grow, and began to put seeds there intentionally.

Today, the use of composting to turn organic wastes into a valuable resource is expanding rapidly in the United States, as land-fill space becomes scarce and expensive, and as people become more aware of the impacts they have on the environment. In ten years, composting will probably be as commonplace as recycling aluminium cans is today, both in the backyard and on an industrial scale. Many states have stated goals or legislative mandates to drastically reduce the volume of waste being sent to landfills. Utilizing yard and kitchen wastes, which make up about 30% of the waste stream (1), is a big part of the plan to minimize waste overall.

You can contribute to the 'composting revolution' by composting your own yard and kitchen wastes at home. If you have a large yard, you might prefer the ease of composting in a three-bin system out by the back fence. Apartment and condominium residents can get into the act with indoor 'vermi-composting' - using earthworms to recycle kitchen wastes (offices can even recycle coffee grounds and tea bags with vermi-composting). Cities and towns can promote composting through home composting education efforts and the collection of yard wastes for large-scale composting. Whatever your style of composting, there's plenty of room to get involved!

3. HOW TO COMPOST

As a composter, you can put as much effort as you like into your composting system, but at its heart composting is really a very simple process that needs only minimal maintenance. Once you understand the basics, you will need to choose a bin system and build or purchase it (of course, binless compost piles can work just fine as well). With an understanding of the fundamentals, a spot set up for composting, and a few ingredients, you'll be ready to build a compost pile.

COMPOSTING FUNDAMENTALS

Good composting is a matter of providing the proper environmental conditions for microbial life. Compost is made by billions of microbes (fungi, bacteria, etc.) that digest the yard and kitchen wastes (food) you provide for them. If the pile is cool enough, worms, insects, and their relatives will help out the microbes. All of these will slowly make compost out of your yard and kitchen wastes under any conditions. However, like people, these living things need air, water, and food. If you maintain your pile to provide for their needs, they'll happily turn your yard and kitchen wastes into compost much more quickly. Keep in mind the following basic ideas while building your compost piles:

Air

Composting microbes are aerobic - they can't do their work well unless they are provided with air. Without air, anaerobic (non-air needing) microbes take over the pile. They do cause slow decomposition, but tend to smell like putrefying garbage! For this reason, it's important to make sure that there are plenty of air passageways into your compost pile. Some compost ingredients, such as green grass clippings or wet leaves, mat down very easily into slimy layers that air cannot get through. Other ingredients, such as straw, don't mat down easily and are very helpful in allowing air into the center of a pile. To make sure that you have adequate aeration for your pile and its microbes, thoroughly break up or mix in any ingredients that might mat down and exclude air. You can also turn the pile to get air into it, which means completely breaking it apart with a spade or garden fork and then piling it back together in a more 'fluffed-up' condition.

Water

Ideally, your pile should be as moist as a wrung-out sponge to fit the needs of compost microbes. At this moisture level, there is a thin film of water coating every particle in the pile, making it very easy for microbes to

live and disperse themselves throughout the pile. If your pile is drier than this, it won't be very good microbial habitat, and composting will be slowed significantly. If your pile is a great deal wetter, the sodden ingredients will be so heavy that they will tend to mat down and exclude air from the pile, again slowing the composting process (and perhaps creating anaerobic odor problems). If you are using dry ingredients, such as autumn leaves or straw, you'll need to moisten them as you add them to the pile. Kitchen fruit and vegetable wastes generally have plenty of moisture, as do fresh green grass clippings and garden thinnings. Watch out for far-too-soggy piles in wet climates (a tarp may help to keep rain off during wet weather). In dry climates, it may be necessary to water your pile occasionally to maintain proper moisture.

Food

In broad terms, there are two major kinds of food that composting microbes need.

'Browns' are dry and dead plant materials such as straw, dry brown weeds, autumn leaves, and wood chips or sawdust. These materials are mostly made of chemicals that are just long chains of sugar molecules linked together. As such, these items are a source of energy for the compost microbes. Because they tend to be dry, browns often need to be moistened before they are put into a compost system.

'Greens' are fresh (and often green) plant materials such as green weeds from the garden, kitchen fruit and vegetable scraps, green leaves, coffee grounds and tea bags, fresh horse manure, etc. Compared to browns, greens have more nitrogen in them. Nitrogen is a critical element in amino acids and proteins, and can be thought of as a protein source for the billions of multiplying microbes.

A good mix of browns and greens is the best nutritional balance for the microbes. This mix also helps out with the aeration and amount of water in the pile. Browns, for instance, tend to be bulky and promote good aeration. Greens, on the other hand, are typically high in moisture, and balance out the dry nature of the browns. See the 'What to Compost' section for specific information on different materials.

Other things to consider

If you live in a cold climate, your compost pile will probably go dormant in the winter. No problem - it'll start back up again when the springtime thaw comes.

A common misunderstanding about compost piles is that they must be hot to be successful. This just isn't true. If you have good aeration and moisture, and the proper ingredient mix, your pile will decompose just fine at temperatures of 50 degrees Fahrenheit or above.

Hotter piles will decompose a bit faster, however. One way to understand why this is so is to realize that the heat in a hot pile is the result of the collective body heat of

billions of microbes. Generally speaking, the more microbes and the faster their metabolisms, the hotter the pile. If you'd like to keep your pile as warm as possible, consider the following:

For a pile to get hot and stay hot for a long period of time, the typical minimum size for the pile is one cubic meter (a cube one meter, or about three feet, on a side). A pile this size has plenty of mass, in which those billions of heat-generating microbes can live, yet is also large enough that the center of the pile is well-insulated by the material surrounding it. Smaller piles just cannot insulate themselves well enough to remain hot for long, if at all. You can also provide additional insulation to a pile by stacking bales of hay or straw, or bags of dry Fall leaves, around your bin system. Some people even used stacked hay bales to make bin systems (this kind of bin will slowly compost itself, of course).

COMPOSTING QUESTIONS AND ANSWERS:

When is my compost finished?

Finished compost is dark in color and has an earthy smell (like the smell of soil). Usually, it's difficult to recognize any of the original ingredients, although bits of hard-to-decompose materials (such as straw) sometimes can be seen.

There is no single point at which compost is finished - it's a bit more subjective than that. For many outdoor garden applications, for instance, it can be fine to use compost that still has a few recognizable bits of leaves or straw - it will finish rotting in the soil. If you plan to use compost in seed-starting mixes, though, you're best off having a well-finished compost, because seedling roots may be attacked by decomposer microbes if the roots contact unfinished compost.

How can I use my finished compost?

To tell you the truth, well-finished compost looks so fine that I'm tempted to eat the stuff sometimes. However, there are several more common ways that compost can be used, on gardens, lawns, landscapes, and house plants:

COMPOST AS SOIL AMENDMENT: Many people put compost into their garden soil by digging it in prior to spring planting. *[An image shows a potato harvest by apprentices at the UCSC Farm and Garden in 1990, Ed.]* - Due to the use of copious amounts of compost, the potato beds yielded about one pound of potatoes per square foot, or about 1000 pounds total from these four beds, each 80 feet long.

Others actually do their composting in the soil, by burying kitchen wastes and other materials in trenches in the garden. Compost can also be used as a 'top dressing' on the soil during the growing season - in this case it is added in around the bases of plants, where irrigation and soil animals will slowly incorporate it into the soil. On lawns, many people sprinkle/broadcast sifted compost as a top dressing in the spring - I have been doing this on a 'problem area' of a lawn for several years, in an attempt to

improve the soil there for better grass growth. It is also fine to top-dress house plants occasionally with small handfuls of finished compost.

COMPOST AS MULCH: Compost can be left on the surface as a mulch around landscape and garden plants. This is essentially the same as a 'top dressing' application, described above, but mulches are typically meant to cover all of the soil around the plants that get mulched. Mulches protect the soil from erosion. They also save water by shielding soil from the drying effect of the wind and sun. As they decompose, mulches add nutrients to the soil, and if composed of small-enough particles, worms may slowly eat the mulch and incorporate it into the soil.

COMPOST AS TEA: Compost tea is made by combining equal parts of compost and water and letting it sit for a while. The liquid can help to provide a 'quick boost' to ailing house plants or young seedlings and transplants (I recommend diluting it quite a bit for use on seedlings). Stu Campbell, in *Let it Rot*, says that the same compost can be used to make several batches of tea (2). When you're finished making compost tea, use the mucky dregs as a mulch in the garden or landscape.

How does compost improve the soil?

Compost does several things to benefit the soil that synthetic fertilizers cannot do. First, it adds organic matter, which improves the way water interacts with the soil. In sandy soils, compost acts as a sponge to help retain water in the soil that would otherwise drain down below the reach of plant roots (in this way, it protects plants against drought). In clay soils, compost helps to add porosity (tiny holes and passageways) to the soil, making it drain more quickly so that it doesn't stay waterlogged and doesn't dry out into a bricklike substance. Compost also inoculates the soil with vast numbers of beneficial microbes (bacteria, fungi, etc.) and the habitat that the microbes need to live. These microbes are able to extract nutrients from the mineral part of the soil and eventually pass the nutrients on to plants.

CLUB VEDGE ORGANIC SUPERMARKET & CAFE

Takeaways, Lunches, Morning & Afternoon Teas

Open 7 days: Mon-Sat 9am-6pm; Sun 11am-4pm

A Certified BFA Retailer

5% discount to COGS members on fresh produce

Shop 4, The Bay, 29 Bentham St. Yarralumla
Phone 281 6499

4. WHAT TO COMPOST

A great variety of things can be composted at home, saving them from a one-way trip to the land-fill, and turning them into a valuable soil amendment for home use. This list describes some of the items you may want to add to your home compost pile. You may want to read about how to compost to learn about the difference between 'brown' and 'green' ingredients and the roles each plays in the composting process.

The following items can be added to your compost pile:

Grass/lawn clippings

Actually, it's usually easier to leave grass clippings in the lawn, where they will decompose and benefit the soil directly. However, they can be composted, too. Be cautious to add grass clippings in very thin layers, or thoroughly mix them in with other compost ingredients, as they otherwise tend to become slimy and matted down, excluding air from the pile. Fresh grass clippings are high in nitrogen, making them a 'green' compost ingredient.

Hay

Farmers are often very happy to get rid of spoiled hay bales that have been out in the rain, and will give them away or sell them at a low price. Grass hay will probably contain a lot of seed, which can resprout in your garden. Alfalfa hay will compost very readily. The greener the hay, the more nitrogen it contains. Be sure that any hay you plan to compost is well-moistened prior to addition to the pile.

Kitchen wastes

Fruit and vegetable peels/rinds, tea bags, coffee grounds, eggshells, and similar materials are great stuff to compost. They tend to be high in nitrogen (this puts them in the 'greens' category), and are usually quite soft and moist. As such, kitchen wastes need to be mixed in with drier/bulkier materials to allow complete air penetration. Many people compost their kitchen wastes in enclosed worm bins or bury them 8" deep in the soil, to keep from attracting pests to an outdoor compost pile (check with your local government to see if it has regulations about this - some forbid open piles containing food wastes because of the pest issue). Avoid composting meat scraps, fatty food wastes, milk products, and bones - these materials are very attractive to pests.

Leaves

If you live in an area where autumn leaves are still thrown away as garbage, cash in on the bounty each year by acquiring your neighbors' leaves! Generally, leaves are an excellent compost ingredient. They can mat down and exclude air, though, so be sure that any clumps are thoroughly broken up, or that the leaves are only used in very thin layers. Ash and poplar/cottonwood leaves can raise soil pH if used in compost - this may not be beneficial if your soil is already alkaline, as many soils are in the West (especially in semiarid and arid climates). Dead, dry leaves are in the 'browns' category, while living

green leaves contain abundant nitrogen and are considered 'greens'.

Manure

Horse, cow, sheep, and poultry manures are often available for free from local ranches, farms, and stables. They can burn plants if applied when fresh, so be sure they get well composted. Manures typically contain quite a bit of nitrogen (the fresher the manure, the more nitrogen it contains) and are considered a 'green' ingredient. Some manures may contain weed seeds. Fresh manures can get a compost pile to heat up quickly, and will accelerate the decomposition of woody materials, autumn leaves, and other 'browns'.

Straw

Dry straw is a good material for helping to keep a compost pile aerated, because it tends to create lots of passageways for air to get into the pile. Be sure to wet the straw, as it is very slow to decompose otherwise. Straw is definitely a 'brown' and also requires mixture with 'greens' to break down quickly. Many stables use straw as a bedding material for horses - straw that has undergone this treatment is mixed in with horse manure and breaks down more quickly.

Weeds and other garden wastes

Many types of weeds and old garden plants can be composted. Avoid weeds that have begun to go to seed, as seeds may survive all but the hottest compost piles. Some types of weeds are 'pernicious weeds' and will resprout in the compost pile - avoid using these unless they are thoroughly dead. Green weeds are (you guessed it) a 'green', while dead brown weeds are a 'brown'.

Wood chips and sawdust

Wood products belong in the 'browns' category, because they are fairly low in nitrogen. Some sawdusts, especially from broadleaved/deciduous trees, will break down quickly in an active compost pile. Others, especially from coniferous trees, will take longer to decay. Stir sawdust thoroughly into the pile or use very thin layers. Coarse wood chips will very slowly decay, and are probably better used as mulch unless you have lots of time to wait. Be sure not to compost chips or sawdust from any sort of chemically-treated wood - you could be adding toxics like arsenic to your pile if you do.

FYSHWICK GARDEN CENTRE

6 Maryborough St., Fyshwick
Phone: (06) 280 4274, 280 6432

OPEN EVERY DAY

Supplier of almost everything any gardener would need. Special Service and 10% discount on front store items to COGS members - please bring your membership card

5. WHAT NOT TO COMPOST

Whether because of toxins, plant or human diseases, or weed troubles, there are some things that shouldn't be put into compost piles. Avoid composting the following materials:

Chemically treated wood products

Sawdust is often available from construction sites, friends, or your own building projects. If you are considering composting sawdust, be sure of the origin of the sawdust. Sawdust from chemically-treated wood products can be bad stuff to compost. For example, take pressure-treated wood (sometimes called CCA) [*ie treated pine logs, Ed.*], which usually has a greenish tint to it (I have also seen it in other colors). It contains arsenic, a highly toxic element, as well as chromium and copper. There is evidence to suggest that arsenic is leached into the soil from these products when they are used to make compost bins or raised beds, so composting the sawdust would certainly be a mistake. Avoid other chemically-treated wood products and sawdust as well, such as wood treated with creosote or 'penta' preservative.

Diseased plants

Many plant disease organisms are killed by consistent hot composting, but it's difficult to make sure that every speck of the diseased material gets fully composted. It's best not to compost diseased plant material at all, to avoid re-infecting next year's garden.

Human wastes

Human faeces contain disease organisms that can make people very sick. There are some good commercially-available composting toilets on the market that may do an adequate job of composting human wastes, but your backyard pile is definitely not the place for it.

Meat, bones, and fatty food wastes

These materials are very attractive to pests (in an urban setting, this could mean rats...). In addition, fatty food wastes can be very slow to break down, because the fat can exclude the air that composting microbes need to do their work.

Pernicious weeds

Morning glory/bindweed, sheep sorrel, ivy, several kinds of grasses, and some other plants can resprout from their roots and/or stems in the compost pile. Just when you thought you had them all chopped up, you'd actually helped them to multiply! Don't compost these weeds unless they are completely dead and dry (you may want to leave them in a sunny place for a couple of weeks before composting). Remember also that composting weeds that have gone to seed will create weeds in next year's garden, unless a very hot pile temperature can be maintained to kill the seeds.

Pet wastes

Dog and cat faeces may carry diseases that can infect humans. It is best NEVER to use them in compost piles. Some people do bury them 8" deep in the soil, but ONLY in areas where food crops are never grown.

6. COMPOSTING SYSTEMS

There are a tremendous number of options for containing your compost. Some people choose to go binless, simply building a compost pile in a convenient spot on the ground. Others build bins from materials such as recycled pallets, or two-by-fours and plywood. And, of course, there are many commercial bins on the market.

The question arises, "Which system is best?" Each system has advantages and disadvantages that you should consider when making your choice. However, there aren't many significant differences in actual composting performance between the various traditional bin systems (two exceptions might be worm bins and drum/turning units). More important to the success of your efforts is taking care to provide the proper environmental conditions for composting. Choosing a type of bin is much more a matter of asking questions such as, "How much kitchen and yard material do I have for composting?" and "What system best fits my preferences for neatness, attractiveness, and convenience?" If you're agonizing over choosing a recycled-plastic, dome-shaped detrital digester model for \$US259 versus building your own setup from \$US199 of lumber and hardware, you may wish to slow down before laying out all that cash, and make sure that what you end up with will really meet your needs. There are some very attractive and well-engineered commercial bins out there, as well as plans for excellent do-it-yourself models. But why not find out about all the options? Many people, for instance, are very fond of low-cost, attractive units built out of wooden pallets that are free for the asking from local businesses.

One very strong recommendation that I do have is to AVOID THE USE OF TREATED LUMBER when building a bin system. 'Pressure-treated wood' (also known as CCA) [*ie treated pine logs, Ed.*], which commonly has a green tint, contains arsenic, a highly toxic element (it also contains toxic levels of copper and chromium). There is evidence to suggest that arsenic will leach into your compost if you use CCA lumber in the bin. Unfortunately, many extension services and local governments actually recommend using this stuff for building compost bins.

POSSIBLE COMPOSTING SYSTEMS:

One Bin Systems:

A one bin system is the simplest way to make a compost pile, and is a great way to get started. If you plan to make a lot of compost, one bin may not be enough capacity, but adding another can be a simple matter. The basic idea of a one bin system is to make an enclosure for your bin that is at least three feet (or about one meter) across, although you may also choose to use no bin at all if you don't need to keep everything tidy. Possible construction materials include free wooden pallets from local businesses, lumber, cinder blocks, or even steel posts and wire fencing. Once you've made your bin (or decided not to), you might build a pile all at once if you have the ingredients, but it's more

likely you'll build the pile over time as you generate compostable materials.

If you build the pile over time, the stuff on the bottom will decompose first, since it will have been there the longest. When there is finished compost at the bottom of the bin, and you want to use it, simply remove the unfinished compost from on top, take out what you need, and throw the unfinished compost back on top. If your pile is not a high-temperature pile, you may want to let redworms (a kind of earthworm) help make the compost. They'll make the process go more quickly, and can create a very high quality finished product.

Two Bin and Three Bin Systems:

These systems consist of two or three adjacent bins, and may be made out of the same materials as a one bin system. The advantage of having more than one bin is that one can have a bin for the pile being built (as ingredients are accumulated over a period of time) and another one (or more) for a pile already built that is in a more advanced stage of decomposition. If you have the space for such a system, and are generating or gathering enough materials to keep the bins in use, this can be very convenient. When you start using a system like this, build your pile in one of the bins. When this bin becomes full, 'turn the pile' by transferring it to the adjacent bin (a garden fork or similar tool will help). This will aerate the pile and hasten decomposition. An alternative that I have found to be very successful is to let redworms do the turning 'in place' (this way I save myself labor and just leave the pile in its original bin). Whatever you choose to do, you can now begin to build a new pile in an empty bin while the first pile continues to decompose.

I find that a two bin system works well for me, but other people generate more compost or like to have a bin for storing finished compost, and therefore choose a three bin system. In a three bin system, you might start by building a pile in the left-most bin. The original pile is turned into the middle bin when it's time to begin building another pile, aerating it to accelerate the composting process. Another pile is then built in the left-most bin. When that pile is completed, the old pile (which is now in the middle) is turned a final time into the right-most bin for finishing, and the just-built pile is turned into the middle bin, making the left-most bin available for yet another pile. Finished compost will eventually be removed from the right-most bin. Get the idea?

Rotating or Tumbling Systems:

The cost of these systems can be quite high, and they are somewhat small, but these factors are balanced out by the speed at which drum/tumbler systems can generate finished compost. Under ideal circumstances, compost may be finished in three weeks in a rotating drum composter! Fill the container partly full with a mix of greens and moistened browns, and then give the unit a turn every day or so to aerate the ingredients and remix them.

It's important not to pack the container full, because the ingredients won't tumble and mix if packed in tightly.

While one batch is composting, you can accumulate the materials for the next batch. When the first compost is finished, you can dump in the materials you've saved to make more. It's possible to maintain relatively high temperatures in drum/tumbler systems even if they are small, both because the container acts as insulation and because the constant turning keeps the microbes aerated and active.

Sheet or Trench Composting:

This may be the ideal system for people that have garden space who don't want to fuss with bins and piles. Simply bury your kitchen wastes in a trench 8" deep dug in the garden, leave the buried materials to rot for a few months, and then plant above them. By the time you plant, the materials will have rotted into stuff in which plant roots will thrive. If you have copious amounts of materials to get rid of all at once, such as autumn leaves, you might want to spread them around the garden and rototill them into the soil (this is best done in the late autumn, or at least 2 months in advance of planting in the area).

Commercially Available Bin Systems:

Commercially available bins are typically somewhat expensive compared to do-it-yourself bins, but they do keep your compost neatly enclosed and can provide an 'instant solution' to the question of how to set up a composting system. In performance, many of the plastic bins may help to insulate the compost somewhat, allowing decomposition to occur later into the cold season. However, I don't feel that there are major advantages in the actual composting performance of commercial bins - they function more or less the same as a one bin system (described above). A few brands seem to claim that they are able to harvest some kind of special cosmic energy or the power of the pyramids in assisting decomposition. Nonsense. They certainly can function just fine as compost bins, but there is no magic involved.

Many of the companies selling plastic bins manufacture them from recycled plastic. If you plan to get a pre-built plastic bin, keep your eyes open ones made from reclaimed plastic - support recycling and businesses that sell recycled products!

Worm Bin Composting:

Maintaining an enclosed bin specifically for 'vermicomposting' is an excellent way to take care of food wastes. In fact, such a system can even be kept indoors. With the exception of holes for drainage and ventilation, worm bins for indoor use are typically completely enclosed, with a lid of some sort to cover the top. Outdoors, worms can be turned loose in a pile in your compost bin, or contained in a worm bin built specifically for vermicomposting.

Some municipalities, fearful of rodent pests and the diseases they may carry, discourage or even prohibit the composting of food wastes in open piles, recommending enclosed worm bins instead. A sturdy outdoor worm bin is protected from pests, and produces compost quickly during the warm season (or year-round in mild climates).

One of the challenges of beginning a vermicompost system is finding a source of worms. A typical earthworm from the garden won't do. Vermicomposting requires a species that is adapted to living in decomposing organic materials rather than in the soil. Two species are *Eisenia foetida* and *Lumbricus rubellus*. Also known as the redworm, manure worm, or red wiggler, *Eisenia foetida* is often available at bait shops (ask for red wigglers), but can be mail ordered less expensively from worm farms listed in the classified ads of *Organic Gardening Magazine*. Governments and organizations that promote vermicomposting may maintain 'worm banks' as a low-cost source of worms for the general public. Seattle Tilth, in cooperation with Puget Consumers Co-op, has a worm bank at a composting demonstration site in back of a PCC grocery store.

The general idea is to provide a cool, moist bedding (some kind of 'brown' compost ingredient such as shredded leaves or paperboard) for the worms to live in, and then bury kitchen wastes in the bedding. As bacteria and fungi begin to decompose the materials, the worms graze on the bacteria and fungi, and also break up the ingredients with their movement through the bedding. Eventually, they worms have ingested the ingredients and bedding, turning it all into worm castings (faeces) that are an excellent finished compost.

[Worm bin composting is the subject of another article, Ed.]

Come and visit the new look
**THE WILDERNESS
SOCIETY SHOP**

We sell everything
except your soul



16 Garema Place, (next to Noshes)
Canberra City. Open 6 days. Ph. 249 8011
All profits go to protecting wilderness

7. COMPOSTING RESOURCE LIST

[Only the books have been listed here as other articles would not be available in Australia. Ed.]

"Backyard Composting"

Published by Harmonious Press, Ojai, California, 1992 (ISBN 0-9629768-0-6).

This is the simplest, most easy to read how-to guide for composting. It is short and very easy to read, yet presents all the basics. 96pp.

"Let it Rot!"

By Stu Campbell, Storey Communications, Inc., Pownal, Vermont, 1990 (ISBN 0-88266-635-5). This is a good general how-to guide for composting. It's very easy to read, but includes considerable detail for those who really want to learn about the composting process. 152 pp.

"Worms Eat My Garbage"

By Mary Appelhof, Flower Press, Kalamazoo, Michigan, 1982 (ISBN 0-942256-03-4). Mary Appelhof is an expert with more than twenty years experience using worms to compost kitchen fruit and vegetable trimmings. Her book is the best source of detailed information on the simple art of "vermicomposting" kitchen wastes. Interesting reading, with cartoons, drawings, and diagrams. 100 pp.

"Worms Eat Our Garbage"

By Mary Appelhof, Mary Frances Fenton, and Barbara Loss Harris, Flower Press, Kalamazoo, Michigan, 1992 (ISBN 0-942256-05-0). A resource book for teachers who want to try vermicomposting with their students. Activities are appropriate for grades 4 and above. 214 pp.

8. REFERENCES

- (1) "Backyard Composting", Harmonious Press, 1992, p. 7
- (2) Campbell, Stu, "Let it Rot", Storey Publishing, 1990, p. 132

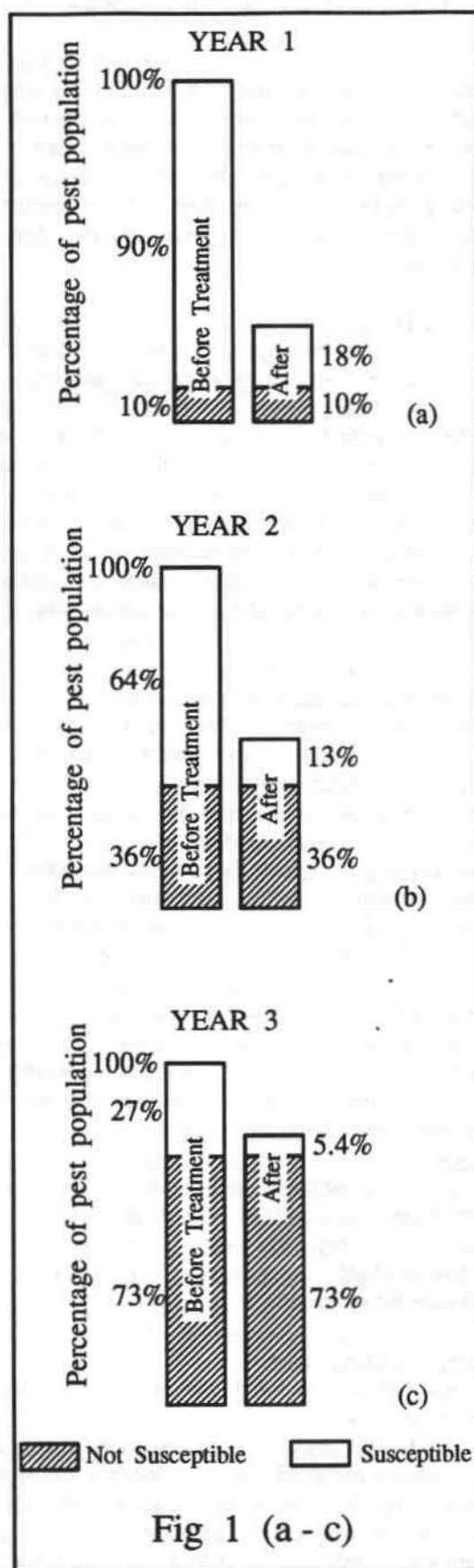


Fig 1 (a - c)

GENETIC ENGINEERING: DO WE REALLY NEED TO BOTHER ABOUT IT?

By Michelle Johnson

Spring and Summer are busy times for the grower. With such a short growing season in Canberra we need to get our crops in early and protect them from the competition of weeds which thrive in the warmer soil, and from pests which are building up again. Already I've noticed that my lettuce seedlings are under attack from an increased number of slugs and snails, whereas in early Spring I had no trouble getting seedlings started. There's too much to do to worry about something as obscure and distant as genetic engineering now, or at any time of the year for that matter. Right? Wrong.

There have been a number of excellent articles¹ written on genetic engineering, highlighting possible dangers and problems with this technology. The one, however, that made the problems seem more immediate and relevant to me was the "Openings" column by Mike McGrath in the September/October issue of the Rodale publication "Organic Gardening"².

The article centres on the use of Bt in pest control. Bt (abbreviation of *Bacillus thuringiensis*) is a very important weapon for organic growers. Many growers will be familiar with it under one of its brand names Dipel, which is *Bt kurstaki*, one of three strains of Bt at present in use. You may have used it on brassicas against the cabbage white butterfly.

Used with restraint, it is an example of safe, sensible pest control. It:

- a) is a microscopic organism that occurs naturally in soils.
- b) is harmless to people, birds, and beneficial insects.
- c) only kills caterpillars that eat the leaves of plants sprayed with Bt and
- d) these caterpillars are generally not the ones that become the beautiful butterflies we see in the garden - they generally turn into moths.

Of concern to Mike McGrath, Editor-in-Chief of the publication, is the release of the "New Leaf" potato variety which is genetically engineered to contain the Bt toxin (the strain is *Bt san diego*). The *Bt san diego* toxin is very effective in the control of the Colorado potato beetle. With this new variety every time a caterpillar munches on a potato leaf it will get a dose of Bt as well.

In the short term this would seem a good way to deal with a pest problem and safeguard a crop. BUT the catch is that it is highly likely to result in the potato beetle, and other

pests, developing a resistance to Bt. This would render this excellent method of pest control useless in the longterm - a disaster for organic growers. This is how genetic engineering can effect you and why organic growers do need to bother with it!

It has already be shown that caterpillars can develop a resistance to Bt. The overuse of *Bt kurstaki* in Hawaii and Florida a few years ago led to the development of a diamondback moth caterpillar that showed no effects from eating Bt sprayed foliage, and growers were urged to reduced their use of Bt.

The general problem of pests developing resistance to a whole range of pesticides, or weeds to herbicides, has been around ever since this chemical warfare started. The diversity and complexity of Nature's arsenal has always meant that a simplistic method would fail.

How does this resistance build up? The best explanation I've heard was given by Michael Burlace, the Organic Farming Officer for the Department of Agriculture in NSW at a talk at the recent Murrumbateman Field Days. The concept I've outlined below is based on his explanation, but the actual presentation is mine (so blame me for any mistakes!).

In any pest population there will naturally be a proportion that are resistant to a particular single method of pest control i.e they are not susceptible to treatment. Mike McGrath is concerned about the resistance of the Colorado potato beetle to Bt, but the principle applies to many situations.

For the sake of this argument, assume 10% of the pest population being treated by a control method are not susceptible to it. 90% are. Assume that when we use the pest control in question, 80% of the susceptible pests are killed (see Figure 1a. on opposite page i.e p22). A percentage will always be missed - a spray for example will not cover every leaf on a crop and some caterpillars will not be hit.

In Year 2 (or the second breeding cycle in a season) the *actual numbers* of the pest will be greatly reduced - hence the apparent success of the control method. But the *percentage* of the pest population not susceptible to the control method has increased (see Figure 1b). On the assumptions given above, after treatment in the second year almost three quarters of the remaining pest population

is not susceptible to the control method. This increases even more by the end of the third year (see Figure 1 c), when over 93% of the pest population is not susceptible to the control method.

When conditions are favourable to the breeding up of the pest numbers, a plague of the pest will occur, and the previously successful treatment will have negligible effect.

This is a simplified model of the actual real life situation, and makes a number of assumptions, implicitly and explicitly. For example I have assumed both susceptible pests and non susceptible pests breed up at the same rate, and no other controls are operating. However, notwithstanding this, the general trend to a large increase in the proportion of non-susceptible pests in the pest population holds. With an initial proportion of non-susceptible pests of less than 10% the process may take longer. Ironically, if the kill rate among susceptibles were higher the change in the proportion of the two categories of pest types would be quicker.

If this problem of a build up of pest resistance to a single control method is well known and simple to describe, you might wonder why it is still promoted. Consider *who* is doing the promotion. The "New Leaf" potato has been developed by the chemical company Monsanto. The big chemical companies make big profits out of the initial use of a new pesticide or new plant varieties which have genetically engineered. They have long been aware of the problem of pest resistance and constantly research new chemicals, or try to find new markets for old chemicals where these resistance problems have not yet shown up.

Pest resistance is one of the major problems with the chemical warfare approach, whether pesticides are sprayed on the crop, or in the case of the genetically engineered "New Leaf" potato, "built-in" to the plant itself. But it is not the only problem.

A fundamental flaw with the approach is that the apparent shortterm successes mask serious failings in the design of the agricultural system. Plagues of pests or diseases are indicators of a basic design fault. Eliot Coleman⁴ points out the "Pests tell you when you are doing right by their absence and when you are doing wrong by their presence." Growers need to look at the reasons why problems exist and how to remove its causal factors on a permanent basis.

In his article "Genetically Engineered Potato Tested"³ David Corkill of the Soil Association of South Australia questions the usefulness of a potato being developed the CSIRO's Division of Plant Industry. The variety is genetically engineered to be resistant to the potato leaf roll virus. This virus can decimate a commercial potato crop,

reducing yields by up to 50%⁵. It is carried from plant to plant by aphids, and commercial growers commonly spray their potato crop six to eight times to eliminate the aphids.

David Corkill believes that such viruses are "a symptom of lack of diversity in the growing system. Not only does a commercial potato crop lack diversity of species, there is also a lack of genetic diversity. The average potato patch will only contain the one variety. Potatoes are grown from tubers, not seed. Each plant will have exactly the same genetic code as its neighbours. This makes them all susceptible to the same diseases. The use of resistant varieties, from whatever source, does not address this underlying fact."³

Past experience, and observation of Nature would seem to indicate that if one disease is dealt with in such a monoculture, it is only a matter of time before another takes its place. Monocultures are not naturally successful. They require constant and unrelenting intervention by the propagator to try to maintain such a system. This need for constant intervention may not be a problem for the research scientist - if anything it guarantees future projects. But it ensures the farmer is on a never-ending treadmill.

The basic techniques of organic growing as outlined by David Corkill- "intercropping/ companion planting, crop rotations, biological control of aphids, growing a range of different varieties; and general maintenance of soil health, might be more applicable alternatives."³

Therefore the use of genetic engineering poses real threats to the organic grower - in a specific case by rendering an existing method of organic control useless and in a broader sense by diverting scientists and growers away from an examination of some of the fundamental problems with the current mainstream model of agriculture. If any genetically engineered crops appear in Australia, please don't grow them!

References

1. Richard Hindmarsh's series of articles in Acres magazine
2. "Openings" by Mike McGraph in "Organic Gardening" September/October 1995, Rodale Publication.
3. "Genetically Engineered Potato Tested" by David Corkill in The Living Soil, the journal of the Soil Association of SA July/August 1995
4. "The New Organic Gardener" by Eliot Coleman
5. "Australia's Growing Future" CSIRO Plant Industry 1995



* In Summer it is a good idea to mulch your garden beds to help keep the soil cool and moist. One experiment has shown that a 4cm layer of straw reduced evaporation by 73%! Be careful however not to lay down a thick layer of sawdust or lawn clippings that can pack down to form an impenetrable barrier to water.

* Soil with lots of compost will contain all the nutrients your plants need for strong, healthy growth. In addition it will retain water and act like a sponge to keep your plants moist through the dry summer days.

* On days of extreme temperatures your plants may need to be physically protected from the heat. This can be achieved by covering the plants with shade cloth secured on a frame eg weldmesh bent over to form a tunnel (secure the shadecloth with some pegs).

* Try not to leave water on the leaves of plants that are susceptible to fungal diseases eg tomatoes, cucumbers, pumpkins, zucchinis. Preferably water with drippers, or if you must use overhead sprinklers, water in the cool of the morning so the water can evaporate during the day.

SUMMER VEGETABLE PLANTING GUIDE

	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.

* Keep those weeds down! They compete with your plants for food, water and sunlight. It is best to tackle them when they are small - before removing them becomes a backbreaking and exhausting exercise.

* Pests can multiply rapidly over summer. Don't reach for the pesticides! Observe if there are natural predators present, remembering that there will be a delay between the appearance of the pest and the subsequent build-up of its predators. If you must spray, use an environmentally benign spray. Read books such as Jackie French's 'Natural Pest Control'.

* Make sure you harvest your crop regularly - in most cases this will encourage your plants to continue cropping and you get to eat your produce at its peak!

* Remember to leave space in your vegie patch for those winter vegetables that must be planted in late summer - early autumn.

Brassicas and other winter crops need time to mature before the extreme cold of winter sets in.



COGS NOTICEBOARD

NOVEMBER GENERAL MEETING:

The next General meeting is on Tuesday, 28th November at 7.30pm in Room 4 at the Griffin Centre. The speaker will be **Jim Laity** who will speak on fish farming in Darwin and hopefully tell us a little about his recent overseas trip.

Library, Seed Exchange and Produce Table will be available. Supper provided.

VISITORS WELCOME!

Next Committee Meeting: Monday, 4th December, 7.30pm Environment Centre.

REMINDER:

MICHAEL ABLEMAN VISIT CANCELLED! See p15 for details

Since you can't hear Michael Ableman himself make sure you have a chance to win his book "From the Good Earth" in our raffle. Tickets will be sold again at our November meeting, and the raffle will be drawn at the end of the night.

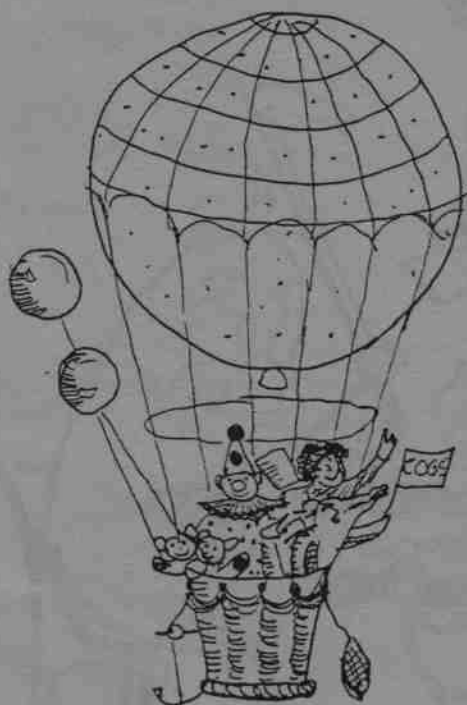
LIBRARY: Our November meeting is the last for 1995. Could all members *please* make a special effort to return all library books. We need to carry out a stocktake before our February meeting and this is much easier if there are no books overdue!

COGS MULCHERS:

The two COGS Mulchers are available for use by COGS members. Enquiries to:

John Ross (Northside, including Queanbeyan & Bungendore) ph 241 4063

and **Richard Blyton** (Southside) ph 231 6219.



COGS AT THE SHOW!

Thanks to the work of one of our members, Owen Pidgeon, COGS has been offered space in the Horticultural Pavillion at The Canberra Show in February. Taking out the Xmas Break, that's not far away! The COGS Committee is currently planning this display with Owen's assistance and we will probably be requesting help from COGS members for specific items. Please help! We will certainly need help during the weekend of the Show and a roster will be drawn up closer to the time. We'll give you a reminder in our February Quarterly, but keep it in mind and let us know if you can help.

The COGS year is rapidly drawing to a close. This is our last publication for 1995, and our next General meeting will be the last until February. May I take this opportunity on behalf of the COGS Committee to wish you all the best for the festive season. I hope you have a wonderful Summer in the garden, and we'll see you again next year! Michelle Johnson



MERRY XMAS



AND A HAPPY NEW YEAR!!!!