



Spring 2007

Canberra Organic

ORGANIC GROWING IN THE CANBERRA REGION

Using grey water Leeks and carrots The biodiesel Troopy

Positive effects of gardening Chestnuts and hazelnuts

Integrated pest management COGS spring planting guide



Vol. 15 No. 3



The **Canberra Organic Growers Society** is a non-profit organisation providing a forum for organic growers to exchange information and encourage the adoption of organic growing methods in the community.

COGS encourages the use of natural methods to improve our soils, promote sustainability and produce fresh, nutritious food.

For information about COGS and organic gardening, visit the COGS website www.cogs.asn.au

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MONTHLY MEETINGS

COGS meetings are held at 7:30pm on the fourth Tuesday of each month (except December and January) at the Majura Community Centre, Rosevear Place, Dickson (from September).

Guest speakers, a produce and seed exchange and sales and the COGS library feature at each meeting. Visitors welcome.

MEMBERSHIP

COGS offers single, family, associate and overseas memberships for \$25 for one year (\$15 for concessions) or \$40 for two years (\$24 for concessions) for new members.

There is a membership application form in this magazine. Please contact the Membership Secretary or a COGS garden convenor for an information kit.

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COGS is run by a voluntary committee elected at the COGS AGM each March.

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From the President Spring 2007

September is the start of the gardening year in the COGS community gardens. Each garden will be holding its annual meeting during the month. Details of the dates and times for these meetings are on page 17. At these meetings garden convenors and committees are elected, local garden rules reviewed, garden development plans and proposals discussed and plot fees collected.

All gardeners are expected to attend their garden meeting and to participate in the maintenance and running of the gardens throughout the year. It is not the convenors job to make all the decisions or do all the work in a community garden.

Water

Stage 3 water restrictions remain in force and are unlikely to be eased over the Spring or Summer. The early winter rains have resulted in dam levels rising to over 41% of capacity, reducing the likelihood of Stage 4 restrictions this year. At this stage it seems likely that water will be available to the gardens for the Spring and Summer growing seasons. Hopefully it will also rain a bit more often this season.

Despite the restrictions in force last season, some COGS gardens continue to use excessive amounts of water. There are still some gardeners who seem to think the water restrictions do not apply to them. Any gardeners who are observed breaking the restrictions this season will receive one written warning and a second offence will result in them forfeiting their plot. The activities which will lead to a warning include: watering outside the permitted times, leaving hoses running on the ground in plots and watering so much that water pools or runs off a plot.

Water allowance

The committee has been monitoring water use in four gardens for the last six years and in another two for the last twelve months. This monitoring has given us a good idea of how much water is required to grow annual vegetables, and has been used to determine the annual garden water allowance. This allowance is the amount of water that will be paid for from the plot fees, and has been set at 54kl per 100 sq m for the coming year. Four of the six gardens monitored have consistently stayed within this allowance whilst remaining very productive. Gardens using more than their allowance are required to fund the excess usage from their garden accounts or a contribution from their members.

COGS monthly meetings are moving

The committee has decided to change the venue for the monthly meetings due to ongoing problems with storage and parking at the Griffin Centre. From September the meetings will be held in the function room at the Majura Community Centre in Rosevear Place, Dickson. This venue is about 5 minutes drive from Civic and a short walk from the bus stop at the Dickson shops. There is ample free parking immediately in front of the building which will make it possible for members to again bring plants, seedlings and produce to meetings.

Charnwood open garden

This year Charnwood garden will be open to the public on December 8 & 9 as part of the Open Garden Scheme. All members are invited to visit Charnwood during this weekend and anyone who would like to help with the running of the event should contact the convenor Tim Carlton or a committee member.

Adrienne Fazekas

**ACTEW Stage 3 Water Restrictions
are currently in force
and must be complied with in all COGS gardens**

IMPORTANT NOTICE

**From September, the COGS monthly meetings will be held at the
Majura Community Centre in Rosevear Place, Dickson**

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Canberra Organic is the quarterly publication of the Canberra Organic Growers Society Inc.

It celebrates organic gardening, local produce, information and social exchange and sustainability in the Canberra region.

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Monica van Wensveen and Sophia Williams

CONTRIBUTIONS

We welcome submissions, ideas and feedback.

Contributions preferred in Word, Publisher or text format, on disk, as attached files or as clean typed copy.

Images should be sent as attached (not embedded) files, on disk or as original photographs or slides.

There are four issues each year - Autumn (February), Winter (May), Spring (August) and Summer (November). Deadlines for copy and advertising are 15 January, 15 April, 15 July and 15 October, respectively.

Please send contributions to

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ADVERTISING

Please contact Monica van Wensveen on 6255 4332 or email editor@cogs.asn.au.

Canberra Organic is a unique way to reach people in the Canberra region who have an interest in organics, gardening and the environment. Our circulation is around 450.

ADVERTISING RATES

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Editor's note

Over the last couple of months, I've had the pleasure of visiting most of the COGS gardens as part of our risk assessment activities.

It's been such a delight to discover the unique character of each garden and to be able to see first-hand the remarkable creativity and skill of COGS gardeners. Many thanks to the garden convenors for showing us around.

This season's *Canberra Organic* is fittingly diverse, featuring articles on grey water and pest management alongside biofuels and the positive effects of gardening - and your regular favourites.

And if you need any inspiration for spring-cleaning, below are my picks for most orderly COGS garden shed - Cook garden (top) and Holder garden (below). How do they do it?!

Enjoy spring in your garden!

Monica



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Contributors to this issue

Articles

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Cover photos

Spring leek at Mitchell; Phil Talbot's weathervane at Holder; broad bean flowers at Mitchell; ready for rain; Oak's Estate garden (this page)



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Around the Gardens



Cook

The Cook garden is doing really well. A couple of plots became available recently and they were snapped up pretty quickly by members on the waiting list.

We have been busy over Winter with regular working bees to improve the entrance to the garden with new beds. These will be planted in Spring with flowering natives and grasses to provide food and habitat for small birds who will hopefully contribute to pest control in the garden. We have recently added three more trees to the orchard and mulched all the communal plantings.

Gardeners are slowly starting to emerge and prepare for spring planting. The soil in the garden is still very moist and delightful to work with.

We are continuing to hold monthly working bees and I'm hoping we'll see more people participating as the Spring weather arrives.

Rasima Kecanovic

Cotter

For the first time in at least three years, all plots at the garden are taken and there is a waiting list. We now have 18 ploholders and almost 1100 square metres under cultivation.

Only limited plantings of winter vegetables are evident in the garden. There has been mixed success with brassicas this year - some of the later developing cauliflowers have, it seems, been affected by the cold and frosty conditions in early winter.

Following the early winter rains most of the gardeners have been active preparing their plots for the next



Roz and Trevor Bruhn, being interviewed by the Canberra Times at the Cotter Garden (Photo: Ann Smith)

growing season. This has included a determined effort to tackle couch infestations, and the cultivation and fertilising of areas that have not been worked for several years. Many gardeners, despite their preparations, are unsure of the extent of their spring plantings given the possibility of harsher water restrictions later in the year.

Roz & Trevor Bruhn

Cotter Orchard

If the rain keeps up, it will be nature's way of restoring the experimental pome orchard in the Cotter Plots, which has lost two or three more of its 50 or so trees to our drought.

It will also be nature's way of keeping away those of us who are keen to restore the trees to fruitfulness with the severe pruning that about half still need.

We might manage to fit in some weekend working parties depending on the weather. If you'd like to help so that you can enjoy the fruits of your work in due course, please contact Ann Smith at a.smith@netspeed.com.au or 6285 2995, or Christine Carter at ccarter@netspeed.com.au.

Ann Smith

Holder

The winter rains have finally arrived what a relief it certainly going to give the depleted soils a real boost. Not much activity and the garden has gone dormant except for a few gardeners who have planted winter crops and general winter tidy up.

Hopefully spring will see a renewed vigour in the garden as the last summer growing season saw a slump in gardening activity due to the warm and dry weather and water restrictions.

It is sort of a relief ACTEW has delayed next level water restrictions, but Holder gardeners have decided not to be complacent and have been looking at a number of options to harvest or collect water, so as to reduce some reliance on portable water.

There are some vacant plots, so please contact me for further information.

Conrad van Hest

Mitchell

Not a lot of action over winter at the Mitchell garden. However, we do have some very healthy looking brassicas and some thriving green manure crops. We've said good bye to three of our gardeners who

have moved away from the area - we wish them well in their future organic endeavours.

And we welcome Chris, who misses the black clay of the Darling Downs, but wants to give Canberra soils a try. We currently have two other good-sized plots vacant.

Thanks to Jan Middeljans for convening the Mitchell garden over July, August and September!

Monica van Wensveen

O'Connor

The cold weather and the short days have cut down on people's presence in the garden and of course the much awaited rain has meant you can almost forget about watering. We did, however, have a garden meeting at the end of June. We discussed, amongst smaller matters, the water restrictions and a proposal to apply jointly with O'Connor Uniting Church (where our garden is located) for government funding to install a water tank for the use of the garden and the church. The application has gone in and we are waiting for a result. The threat of stage four restrictions and the fortunate positioning of the nearby roofs of the church buildings inspired us to do this. We also introduced a self assessment form to be handed out periodically to remind us all of what needs to be done in the garden.

The fertility of the soil is increasing rapidly. Watching this transformation take place from the previously hard clay tennis courts has been great for everyone and is an inspiration for what could be done in the Monaro area with the depleted soil and seemingly 'vacant' farms. The other day I pulled a carrot out of the ground with some difficulty. The reason being it had grown right through the added top soil and down into what was formerly clay but is now ground that is capable of producing vegetables. Everyone in the garden has put so much into bringing this about.

There are some beautiful winter vegetables growing and broad beans spiralling upwards in anticipation of spring. It really is a short winter even in Canberra and it feels to me that we are past the heart of it already and heading for spring planting. Is this wishful thinking??

I am looking forward to the warmer longer days now when people can begin to gather in the garden again and watch everything start to take off!! Yes I know it's a month away at least but that's not long. Happy gardening to everyone!!

Philip Woodhill

Queanbeyan

Only a short report for winter from the Queanbeyan garden, to fit with the shortness of the days! Winter has seen a general slowdown in activity at the garden, with a combination of water restrictions that limit watering to chilly mornings or after dark and the cold conditions meaning that only the hardiest of souls have continued with their plots. I must shamefully admit that I did wuss out, deciding to lay down a green manure crop and retreat indoors for the winter rather than brave the conditions.

The garden has continued to receive some unwanted attention from trespassers, but so far the new locks that have been installed on the shed gate have been holding, with only occasional minor damage to gardens reported. Thankfully, the community spirit of our neighbours has been our main protection, with residents chasing intruders away on several occasions.

While some spare plots are beginning to open up, there has also been a steady stream of interest from potential new gardeners. I would like to welcome Di to the garden, and she has already managed to get a crop in and growing strongly. We now are in the unusual situation of actually having several plots available for new gardeners, so I am expecting to welcome several more new faces to our community come Spring.

A special thanks to the staff at Connell Wagner, who have been separating their kitchen scraps for our compost bins, and at the same time reducing their office waste by around 7Kg per week. Without this contribution, it would be extremely difficult to turn the masses of brown waste that we have into garden soil, so their donation of green waste to recharge the heaps is very welcome!

See you all out there.

Cormac Farrell

Plot fees for 2007-2008 are due in September

Plot holders are reminded the all fees are payable at your annual garden meeting or by September 30th 2007

Any plots not paid for by then may be re-allocated to other gardeners

See page 17 for the dates of the garden meetings

Organics in the news

UK considers organic air ban

The UK's Soil Association - responsible for organic certification in Britain - is considering a controversial plan to restrict or ban produce imported by air. Demand for organic food so outstrips UK farmers' ability to supply that in 2005, 34% of organic food sold in supermarket was imported, raising concerns about encouraging carbon emissions and greenhouse warming. Other suggestions being contemplated include appropriate food labelling or insistence that flights be carbon offset.

When is organic not organic?

The International Herald Tribune reported on the current deliberations of the US Department of Agriculture - responsible for organic regulations in the US - to approve a list of 38 non-organic ingredients (half are food colourings) that can be used in food that is certified organic. To wear the USDA's label, 5% of a product can be non-organic if it comes from an approved list of ingredients - based on whether the organic form is commercially available.

New York's yellow cabs to go green

New York City mayor Michael Bloomberg unveiled a plan to introduce 1000 hybrid taxis into the iconic yellow fleet by late 2008 and to completely replace the city's 13 000 cabs by 2012. The taxi initiative is part of a broader plan for a more environmentally friendly New York, which includes a 30% reduction in carbon emissions by 2030.

DIY soil?

The Cooperative Research Centre for Contamination Assessment and Remediation of the Environment is looking to develop a new Australian industry - making soil. Researchers are looking at ways to create artificial soil from wastes that other industries and sectors - including manufacturing, farming and urban waste - now throw away.

Newman chooses organics over Oscars

The Ecorazzi website reports that screen legend Paul Newman has announced he is leaving acting to focus on organic pursuits. Newman, whose business interests include an organic farm and restaurant and the Newman's Own line of organic dressings and sauces, has already raised almost \$250 million for charity from proceeds of his food products.

And lastly, a study at Southampton University has linked high IQ with vegetarianism. Researchers discovered that people who were vegetarians by age 30 are likely to have had five IQ points more at age 10. More reason to eat your greens?

Top Tips for SPRING

1 Rock and rotate

Crop rotation is an important tool for breaking disease and pest cycles and for meeting nutrient demands. Move crops around the garden bed so that plants from the same family are in a different place in successive seasons.

2 Frost protection

Protect your frost tender seedlings from spring frosts by making your own cloches. Try plastic bottles with the bottoms cut out for individual plants and shade cloth row covers for larger plantings.



3 Weed out weeds

Pull out your weeds before they get a chance to seed and spread. In these times of water restrictions, you'll also be saving precious moisture for your vegies.

4 Try your hand at heirlooms

Those striped tomatoes, purple potatoes and pink carrots are likely to be heirloom or heritage varieties of your favourite vegetables. Heritage seeds have often been passed from farmer to farmer, are grown for their added nutrition and taste and are an investment in plant diversity.

5 To market, to market

If your spring garden is still a blank canvas, a trip to your local market will give you a chance to see, smell and sample the best fresh produce that spring has to offer.

"Our descendents are highly unlikely to thank us if it is ultimately found that we have been guilty of treating Nature merely as a laboratory and not as a vast, integrated living organism."

Charles Windsor, organic gardener and Prince of Wales.

Weather Watch

Time to emerge from hibernation and enjoy Canberra in spring! Here's a snapshot of what to expect, from the Bureau of Meteorology's long term statistics for spring temperature and rainfall.

Temperature

	September	October	November
Canberra	max 16.1	max 19.3	max 22.6
Airport	min 3.2	min 6.0	min 8.7

Rainfall

	September	October	November
Canberra	52.9 mm	63.3 mm	63.8 mm
Airport	7.1 rain days	7.8 rain days	7.4 rain days

(Rain days are days with more than 1 mm rain; temperatures are degrees Celsius)

Seasonal forecast: July - September

- The Bureau of Meteorology indicates the chances of at least average rainfall are around 50% across south-eastern Australia.
- This means that in years with ocean patterns like this year, we would expect 5 out of 10 Septembers to be wetter than average and 5 to be drier than average, based on long term records.
- Computer models are still predicting the development of a La Niña event during winter.
- Over Victoria and southern NSW, the chances of a warmer than average July-September period are between 55% and 60%.

For more information and updates, visit the Bureau of Meteorology's ACT weather website:
www.bom.gov.au/weather/act

2007-08 Plot Fees and Water Allowance

The annual meeting of the committee and the garden convenors was held on August 14th. It was decided that plot fees for the coming gardening year (Sept 1st 2007 - August 31st 2008) would remain unchanged at \$1 per square metre. Although the cost of insurance has decreased substantially, the cost of water has risen considerably with the increases brought in by ACTEW from July 1 2007. This year all the plot fees collected will be directed to paying for insurance and water.

It was also decided to reduce the gardens' water allowance by 10% from 60 to 54 kl per 100 square metres of paid area per year. This allowance is the maximum amount of water that will be paid for from the COGS Water Fund. Any excess usage will have to be paid for by the garden responsible. The committee has been monitoring garden water usage for six years and during that time the majority of the gardens have managed to use less than this new allowance while still remaining very productive.

Gardeners are reminded that ACTEW restrictions apply in all the COGS gardens and that anyone caught breaking these restrictions will only get one warning before being required to forfeit their plot and leave the garden. In addition to the ACTEW restrictions it is a COGS rule that unattended watering is not permitted in the gardens and therefore there is no reason for any gardeners to have tap timers.

Shades of grey (water)

What's in your laundry detergent and what does that mean for your garden?

Using grey water in your garden

ACT guidelines for reuse of laundry and bathroom water in gardens include these tips:

- Don't store grey water for more than 24 hours, as bacteria, viruses and protozoa can reproduce rapidly in warm stagnant conditions, risking spread of disease and odour.
- Ensure no grey water smells, pools or runs off your block.
- Use grey water at surface level or below, so that airborne drops don't drift onto a neighbour's property
- Don't allow grey water to contaminate freshwater supplies, for example by backflow into water supplies.
- Don't allow pets and people, especially children, come into contact with grey water.

Using laundry detergents

The choice of a washing product is based on

1. its ability to clean your clothes,
2. its price, and
3. increasingly its ability to be discharged in the laundry grey water (both wash and rinse) onto gardens.

Unfortunately it is necessary to compromise somewhere, as products advertised to wash your clothes without chemicals have been shown (by *Choice* magazine) to be no more effective than plain water.

Laundry detergents contain many chemicals - importantly phosphates and sodium salts. Don't buy products that advertise themselves as 'environmentally friendly' if they don't list their contents!

Phosphates

Phosphates can be beneficial for lawns and many plants, but high levels around banksias, grevilleas, proteas and eucalypts could be toxic, as many Australian plants have evolved to tolerate the naturally low levels of this element in our soils. High levels can also cause iron deficiencies in plants.

Waste water high in phosphorus can cause algal and aquatic blooms in discharged waste water in streams. It is possible to buy laundry products containing low or no phosphorus - these are labeled NP.

Sodium

Sodium is needed by plants and soil organisms, but too

much causes problems, particularly in clay soils where the structure of soil and its drainage are adversely affected. Excess sodium in a clay soil can be addressed with the addition of gypsum and in particular, compost. Decaying organic matter produces humic acid, which will help neutralise much of the alkalinity in laundry water.

Sodium tolerance in plants varies widely so it is best to use a detergent with as little sodium as possible - Lanfax Labs recommends that 20grams of sodium per wash should be the maximum used. Generally liquid laundry detergents contain less sodium than powders.

Sodium salts are never biodegradable. Potassium salts could be used in detergent manufacture but are more expensive and therefore not commonly used.

Sodium in greywater increases the PH level so that soil becomes excessively alkaline. Acid loving plants such as Rhododendrons and Daphne should not receive this water

General recommendations

- Read labels carefully.
- Use compost and mulch in areas receiving grey water.
- For vegetables use rinse water only, and apply it to the soil around plants such as corn, tomatoes and broccoli where above-ground parts only are eaten. Don't apply to leafy vegetables or root crops.
- Rotate with fresh water if available.
- Reduce detergent levels to achieve an acceptable cleanliness in your washing.
- Use cold or tepid water.
- Liquid detergents with **low levels of sodium** are best for soils, but may not clean your washing to your liking!

Where to find out more

The *ACT guidelines* on grey water use are available online at

www.actewagl.com.au/advice/greywater.aspx

Choice Magazine recently reviewed laundry products and made several recommendations for environmentally less harmful products. *Choice* is available in ACT public libraries.

The *LanFax Labs* web site lists a large range of products that have been tested and includes a lot of very useful information.

www.lanfaxlabs.com.au

Margaret Richardson

Water saving tips for your garden

No matter what the restrictions, here is a gathering of ideas about how to be water-wise in your garden.

Store water in the soil

- **Well-composted soil** holds water better and doesn't dry out as quickly as unimproved soil.
- Avoid water leaving your property - only apply **enough water** that your soil can absorb.
- **Tree roots** will 'follow' water so don't start a garden too close to large trees.
- Use **mulch** to reduce evaporation from the soil and to keep weeds down.

Design a water efficient garden

- **Choose crops carefully** - try to avoid water-guzzling plants.
- Consider **timing of plants** when possible - a successful early and/or late planting may be better than planting in a period of maximum water stress.
- **Prioritise** your garden and focus watering efforts on those plants you most want to retain.
- Take note of **which plants survived** recent dry conditions and use this as a guide on what to plant more of and what not to replace.
- Keep on top of **weeds** - make sure that all water gets to your vegetables.
- Use **windbreaks** and **temporary shade** to shelter seedlings and vulnerable plants from winds and heat.

Water when and where it counts

- Water during the **cooler periods of the day**. Late evening is best as it gives plants time to absorb water before morning. Early morning watering is better than during the heat of the day.
- When using a can or hand held hose, **water individual plants** thoroughly, rather than watering a whole area.
- **Check soil moisture** before watering. A rostered watering day doesn't mean you *must* water.
- Install **homemade funnels** next to the plants likely to suffer. This directs water straight to the roots and prevents run-off.

- **Water thoroughly** less often, rather than watering little and often. This will encourage the plants to develop deeper root systems which is beneficial in drought.
- **Seedlings and young transplants** should never go short of water but once established, their needs can vary widely.
- Once established, don't water **tomatoes** until flowering starts. Less watering will reduce the number and size of fruit, but these should be tastier. Try not to allow to dry out completely once fruit has set.
- Don't water **peas and beans** until unless soil is very dry as this encourages lush growth and delays cropping. Watering when plants begin to flower and pods are swelling will increase the crop.
- Too much water delays the maturity of **onions** and reduces keeping quality. Only water in very dry conditions while plants are establishing.
- Only water **root crops** when the soil is drying out - too much water encourages leaf growth at the expense of root growth. Root crops will survive better than most crops in times of water shortage.
- Corn benefits most from water once flowering starts.
- The critical period for leafy vegetables is from about two weeks before harvest.

Saving water

- Use **vegetable cooking water** and teapot dregs on the garden, as well as cold water collected while waiting for the shower to heat.
- Use **collected shower water** to flush your toilet.
- Place a potted plant under **hanging pots** to catch drained water.
- **Harvest water** from available rooves and drain-pipes by using water-catching containers like butts. Make sure they are covered to prevent accidents, contamination and mosquito breeding.

With thanks to the collected wisdom of the Brisbane Organic Growers, the Henry Doubleday Research Association, The Organic Way, Grass Roots, the BBC and COGS members.

To share your water-saving tips, please send them to editor@cogs.asn.au.

Seasonal picking: LEEKS

A popular and versatile Autumn and Winter vegetable, leeks are members of the Alliaceae (onion) family but much easier to grow successfully than onions. They have been cultivated since at least 3000 BC in Egypt, are now grown in many countries but are no longer found in the wild.

Site and soil

Leeks prefer an open, sunny site but will tolerate shade for part of the day. They require a moderately rich, fertile soil that is free draining. The addition of compost or well rotted manures prior to planting will benefit the crop by improving soil structure and drainage. Leeks prefer a slightly alkaline soil so a light dressing of lime or dolomite may be required if the pH is below 6.5.

Planting

Leeks require a long growing season of at least six months to reach a good size, although they can be eaten at any stage. Seedlings transplanted in early Spring will be ready to harvest from late Summer and those planted in late Spring will provide the main Winter crop.

Leeks can be grown from seed or bought as seedlings and transplanted. If growing from seed it is best to plant the seed in punnets or a seed bed, as the seedlings can take 8 to 10 weeks to reach a suitable size for transplanting. Seedlings are ready to transplant when they are about 15 - 20 cm tall. Leeks are traditionally planted in trenches or in individual 10 - 15 cm deep holes to produce longer white stems. Planting holes are made with a dibber and the seedlings dropped in and gently watered to wash a little soil over the roots. As the leeks grow rain and irrigation will gradually fill the holes. Leeks should be planted at least 15 cm apart to allow them sufficient space to reach full size.

Cultivating

Leeks need little attention aside from weed control and ensuring adequate soil moisture is available during the growing season. If you want to produce leeks with very long white stems they will need to be blanched. This requires excluding light from the growing stem to prevent it producing chlorophyll. The original planting depth will determine the length of white stem below the surface. To blanch more of the stem either mound the soil around the stems as they grow, or tie layers of newspaper or thin cardboard around the stems. If using the paper method, avoid overhead irrigation and check regularly for snails and slugs that can take up residence inside the paper collars.

Harvesting

Depending on the variety and planting time it is

possible to harvest leeks for many months from early Autumn until early Spring. Use a fork to lift them as the dense root mass makes it difficult to pull them by hand without breaking the stems. Leeks are not troubled by frost and will remain in good condition in the ground over winter, but will go to seed as soon as the weather warms in Spring. They are best used fresh from the ground but will keep for several days if refrigerated.



Problems

Leeks are rarely troubled by pests or diseases. Good crop hygiene and regular crop rotation should minimise problems.

Saving seed

Leeks are biennial and if planted in Spring will go to seed the following Spring. The flowers are arranged in large white or pinkish umbels and are pollinated by insects. Each leek will produce hundreds of seeds. Leeks will not cross with onions or garlic, but will cross with other varieties of leek.

References

Penny Woodward, *Garlic and friends*
Richard Bird, *Growing Fruit & Vegetables*
Denys de Saulles, *Home Grown*

Words and photo: Adrienne Fazekas

Seasonal planting: CARROTS

What's not to like about carrots? They have been my favourite food since I was a kid, they're full of goodness, they just about look after themselves and they offer a veritable bounty for the space they take up in your garden.

Carrots have been grown around the world for thousands of years, but the common orange varieties have only been in favour in relatively recent times. In Europe, white and yellow varieties were preferred until a few centuries ago, and even now purple carrots are more popular in Afghanistan and pink carrots are de rigeur in India.

There are many types of carrots available, but it may be best to let your soil choose for you. Long-rooted varieties are best suited to light, friable soil; if your soil is stony, clayey, shallow or doesn't drain well, try short-root types.

Carrots are a root vegetable, storing food reserves underground and are very hardy. The best time to sow is in spring to early summer (September-January). For a continuous harvest, plant a few rows of carrots every 4-5 weeks.



Site and soil

The trick to success with carrots is in the soil. They prefer a light, loose, fertile soil and a sunny spot.

Start preparing your soil in late winter or early spring, in advance until it has a fine crumbly texture. Don't add organic material as it makes the soil too rich for the seeds. If you need to, make sure it's evenly applied and incorporated well before planting.

Planting

Carrots don't like transplanting - direct seeding is the best option. Carrot seeds are very small, but to give them the best chance (and to save yourself time later), plant them as thinly as possible. To help with this, try mixing the seed with sand, or try planting carrot and radish seeds together - radishes mature first and harvesting automatically thins the carrot crop.

Make a trench 2-3 cm deep and plant seeds about 2-5 cm apart, covering the seeds once planted. This helps with thinning, weeding and mulching later.

Carrots take 10-14 days to germinate and in this time, their soil needs to be kept moist. A piece of shade cloth over the area is often used to retain moisture until the plants germinate. A light layer of dry grass clippings is an alternative.

Cultivating

Carrots need little attention in their growing period, although they need to be kept watered or they will produce woody coarse roots.

Carrots each need 2-5cm space to grow, so thinning may still be necessary. This is the tricky part, because young carrot foliage can be very weedy-looking!

Harvesting

Carrots are ready for harvest in 12-16 weeks, depending on the variety. As soon as they're big enough to eat they can be pulled out of the ground.

In cold areas like Canberra, they can be stored in the ground over winter as long as they are protected from frost. This tends to sweeten the flavour.

Problems

Carrots don't have major pest or disease problems and crop rotation will keep most of these at bay. Carrots will do best following a greedy crop such as a brassica or lettuce. They aren't keen to follow celery, parsnips or parsley.

Carrot fly is attracted by the smell of crushed foliage and may be a problem if carrot tops are left in the garden bed after thinning or harvesting.

References and further reading

- The Canberra Gardener
- Organic Vegetable Gardening (Annette McFarlane)
- The Helpful Gardener website
www.helpfulgardener.com/organic/2006/carrots

Words and photo: Monica van Wensveen

Managing Pests and Diseases in an Organic Garden

In Part 1 of this article (*Canberra Organic*, Autumn 2007) Integrated Pest Management (IPM) was introduced as a method which is suitable for adaptation to organic gardening methods. It provided an overview of the main features of IPM and briefly summarised what the gardener needs to know and do to successfully implement such a program.

IPM is a set of procedures that can be used to manage organically the common pest and disease problems which occur in our gardens while at the same time maintaining or enhancing the ecological balance of living organisms within our soils and plants. This article provides an example of an IPM procedure for green vegetable bugs on tomatoes and should be read in conjunction with Part 1 of this article.

Normally an IPM program for a particular crop would address all the pests and diseases to which that crop is susceptible in a particular area as well as a monitoring and control calendar for each pest and disease. However, the example given below is for illustrative purposes only and considers just the green vegetable bug in tomatoes.

An IPM procedure for Green Vegetable Bug on Tomatoes

Pest Details

Green Vegetable Bug (*Nezara viridula*)

Problems/Symptoms

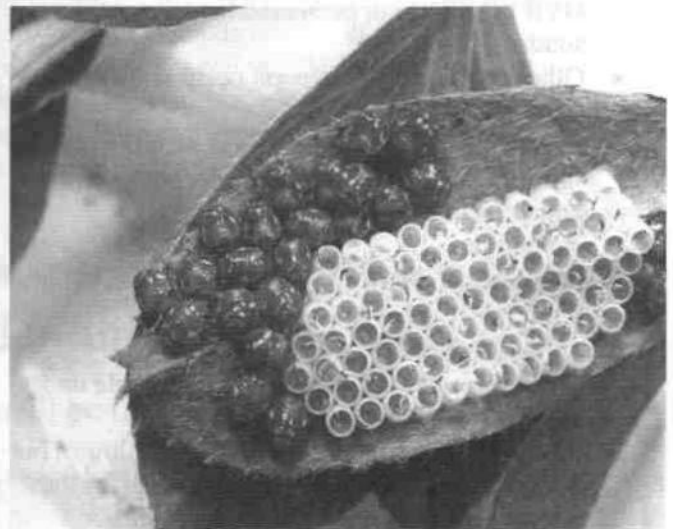
- Causes mottled white, hard and corky spots, where the bug has been sucking on the fruit making the fruit less attractive to eat.
- Bugs can also be present on the stems and leaves but with no obvious signs.

Pest Identification

- The adults are green, shield-shaped bugs, approximately 15mm long by 8mm wide, with three small spots in a line between the wing insertions. They feed by inserting their sharp, tubular mouthparts into soft plant tissues and sucking the sap.
- They prefer sunny positions. If mildly disturbed they will hide, but if the disturbance persists they will drop to the ground or fly away.
- In common with many other bugs, when provoked they can exude a brownish, foul-smelling fluid which will stain fingers or clothes and leave a persistent odour. Because of this defence mechanism they are not favoured as food by most predators.

Pest Cycle

- Mating takes place on vegetation during spring and summer.
- Approximately 60-80 eggs are laid in a raft shaped formation. Each egg is 0.75mm in diameter and is yellow when first laid. As the embryo develops a reddish-orange Y-shaped mark becomes noticeable.
- Incubation time varies with temperature – 5 days in summer to 2 to 3 weeks in early spring.
- Egg rafts may contain eggs of varying colour: yellow or orange eggs are normal; black eggs have been parasitised, and will produce a small parasitic insect; and there may be whitish empty eggs from which either a nymph or a parasite has emerged.
- The nymphs are orange when they emerge, but soon change to a shining black.
- In later instars the hind wings gradually develop and the green colour becomes more dominant.
- At the final moult the colour changes completely to green, or rarely, to orange.
- Life cycle is approximately 65-70 days, up to four generations a year.
- Over winters as an adult in tree bark, litter or anywhere it can obtain protection.



Egg raft and newly hatched GVB nymphs on the underside of a lucerne leaf at the Cook garden.

Photo; Adrienne Fazekas

Control

- Threshold – no more than one Green Vegetable Bug (GVB) per plant.
- Monitoring
 - weekly inspection of every third plant for bug and eggs under leaves until first fruit picked.
 - weekly inspection of every plant for bug and eggs under leaves during fruit picking.

Managing Pests and Diseases continued

- Cultural Methods
 - Stressed plants seem more likely to be attacked – ensure optimum plant nutrition.
 - Smaller fruit varieties and yellow varieties seem less susceptible but will still be damaged.
- Physical/Mechanical
 - Physically squash any bugs found.
 - Physically squash any eggs found if fewer than 1/3 are parasitised.
 - Remove weeds which may harbour bugs and eggs in vegetable plot. Weeds known to host GVB include castor oil plant, caltrop, privet, amaranthus, silver leaf nightshade.
 - Separate soybeans and sunflowers (both known to host GVB) as much as possible from tomato crop to avoid cross-contamination with GVB.
- Biological/Beneficial Organisms (all available and selected)
 - There are no biological controls available commercially.
 - CSIRO has successfully established a South American parasitoid *Trichopoda Giacomelli* in northern NSW and southern QLD which attacks GVB but it has not been established in ACT or southern NSW.
 - Other species of *Trichopoda* occur naturally and also parasitise GVB eggs.
 - A naturally occurring parasitoid wasp *Trissolcus spp* parasitises GVB eggs but it is not known how effective it is in reducing crop GVB populations.
 - Ants are also known to be predators of GVB.
- Chemical Controls
 - The only registered insecticide acceptable under the National Standard for Organic and Biodynamic Produce is PyGanic (pyrethrum) but it is not registered for GVB in tomatoes by the APVMA making it illegal to use for this purpose. In any case NSW Agriculture reports that the pyrethrum does not give satisfactory control of GVB. Consequently, chemical controls are not suitable for the GVB on tomatoes and non-chemical methods must be used instead.

Tomato IPM Monitoring and Control Calendar

The successful application of an IPM program requires constant vigilance by the gardener. It requires regular monitoring of the crop for pests and diseases. The following monitoring and control calendar is suggested as suitable for Green Vegetable Bug on tomatoes.

November to May

Weekly:

During picking check each plant for GVB and eggs

If more than one bug per plant found, squash any GVB and egg rafts where fewer than one third the eggs are parasitised.

Remove any weeds from the crop and nearby which may host GVB

June to October

Monthly:

Check for overwintering adult GVB on any perennial host plants and on any sheltered surface where they may seek protection. Squash any GVB found.

Evaluating the IPM Procedures

An IPM procedure is not fixed in concrete. It is an iterative process which uses experience from the previous season to identify where adjustments are needed for the next season. Consequently, records should be kept throughout the year to allow the following points to be considered when evaluating the procedure and making any necessary adjustments.

- Planning
 - What do you want to achieve?
 - Have your requirements changed?
 - Can you identify pests and diseases and their control options or is more training required?
 - Was record-keeping adequate?
- Do changes, or expected changes, in climate, soil, light, water require changes in the procedure?
- Pest and disease identification.
 - Do the IPM procedures cover the list the pests and diseases which occurred?
 - Do records of pest life cycle, conditions favouring, control options, beneficials suggest the need to modify IPM procedures?
 - Is there any new information from research which requires modification of IPM procedures?
- Were monitoring procedures sufficiently quick, accurate, reliable and frequent
- Were the rating systems, sampling patterns and traps adequate for monitoring pest numbers?
- Were thresholds for the level of the pest population at which treatment is applied adequate?
- Were the decision making processes adequate for dealing with pest outbreaks?

Further Work

Because different crops are susceptible to different pests and diseases, separate IPM procedures for each of the common crops will be developed over time. These will be placed on the COGS web site as they are developed. Integral to the development of these IPM procedures and programs is the plant clinic which is held at all monthly meetings before the guest speaker starts at 8pm or after tea. Members are encouraged to bring along any pest or disease problems they have encountered so that the problem can be identified and their experience with it recorded. For members who cannot attend meetings details of pest and disease problems can be sent to gardens@cogs.asn.au and I will contact you as soon as possible. These pest and disease problems will be the basis for developing IPM procedures for the range of common crops grown by gardeners in Canberra.

Further Reading

R.A. Cloyd, P.L. Nixon, N.R.Pataky, *IPM for Gardeners; A Guide to Integrated Pest Management*, 2004, Timber Press
PC Hely, G Pasfield, JG Gellatley, *Insect Pests of Fruit and Vegetables in NSW*, 1982, Inkata Press
Integrated Pest Management Pty Ltd, *The Good Bug Book*, 2nd Ed, 2002, Australian Biological Control Inc
Ruth M. Kerruish, *Plant Protection 3 – Selected Ornamentals Fruit and Vegetables*, 1997, Rootrot Press
Judy McMaugh, *What Garden Pest or Disease is That*, 2000, New Holland
National Association for Sustainable Agriculture Australia Limited, *NASAA Organic Standard*, December 2004
Organic Industry Export Consultative Committee, *National Standard For Organic And Bio-Dynamic Produce*, Ed 3.2, October 2005

A Selection of Internet Resources (not necessarily organic)

www.apvma.gov.au for the list of registered chemicals in Australia.
www.goodbugs.org.au for biological control agents available commercially in Australia.
www.agric.nsw.gov.au for advice on IPM and various crops, pests and diseases.
www.ento.csiro.au/biocontrol for biocontrol work being undertaken at CSIRO
plantnet.rbgsyd.nsw.gov.au Sydney Royal Botanic Gardens site for Flora of NSW including some weeds
www.weeds.asn.au Tasmanian site dealing with weeds and control methods.
www.agric.nsw.gov.au/reader/vegetable-ipm for copies of the *NSW Vegetable IPM Newsletter*
www.weeds.org.au site of the Australian Weeds Committee and the National Weeds Strategy
creatures.ifas.ufl.edu. A useful University of Florida site with management programs for various pests in crops
www.hortnet.co.nz A site which contains information to manage pests and diseases in various crops.

Keith Colls

Annual garden meetings

The 2007 annual garden meetings will be held at the following times:

Charnwood	Sat Sept 8	3 pm	Northside	Sun Sept 9	12noon
Cook	Sun Sept 2	12 noon	Oaks Estate	Sat Sept 8	11 am
Cotter	Sat Sept 15	9.30 am	O'Connor	Sat Sept 22	10 am
Erindale	contact convenor		Queanbeyan	Sun Sept 23	10 am
Holder	Sun Sept 16	11 am	Theodore	Sun Sept 9	10 am
Kambah	contact convenor				

All gardeners are expected to attend to elect garden convenors and garden committees and to pay plot fees for the coming year.

The good oil on biodiesel

In 1900 at the World Exhibition in Paris, a man demonstrated his internal combustion engine and said two words which astonished the gathered engineers, inventors and scientists.....'peanut oil'.

The man was Rudolf Diesel and the engine was the diesel engine, designed to run on almost any hydrocarbon fuel, from gasoline to peanut oil.

After Rudolf died mysteriously in 1913 (English newspapers suggested he was assassinated by French agents to keep the diesel engine out of English submarines – he was crossing the English Channel to discuss this with the English at the time), the petroleum industry capitalised on the engine, by calling one of the by-products of gasoline distillation 'diesel fuel'.

Thus diesel fuel became the fuel of the diesel engine and vegetable oils were all but forgotten.



Benny in front of used vegetable oil drums and filtering apparatus, holding the 5 micron filter sock

From Paris to Ainslie

Over the decades that followed and the many variations of the engine, the diesel engine of today must run on a much less viscous fuel than the vegetable oils which powered the first engines.

In the 1970s though, scientists discovered that through a chemical reaction (by mixing vegetable oil with 20% methanol), the viscosity of vegetable oils could be decreased and stabilized. This resulting fuel is called bio-diesel and can be used in almost all diesel engines, and poured straight into the fuel tank. Bio-diesel will also mix with diesel fuel in any proportion.

This discovery also reignited enthusiasm for running diesel engines on straight pure vegetable oil again. If oil is heated it will become much more viscous (as every cook knows of heating oil in the frypan).

This heated oil can be put straight into diesel engines and away they go, just like in 1900 at the Paris Exhibition. For a variety of mechanical reasons, in general, the older diesel engines will perform better on straight vegetable oil. Warning.....do not just heat 20 litres and pour it into your new Peugeot diesel car!! There's more to it than that!!

Three years ago I purchased a 1981 diesel Toyota Landcruiser 'Troopcarrier', precisely for the purpose of running it on vegetable oil.

I chose this vehicle because my friend Rohan had an identical 1983 Troopy and had been successfully running his on vegetable oil for two years. These 4WDs can also fit 44 gallon drums in the back (for the oil) and make excellent camping vehicles!!

Rohan helped me to make the necessary additions and adjustments (no engine modifications at all though) which cost approximately \$300 in total, including a purpose built 12 volt heater from America which cost \$150 – to heat the oil to 70-80°.

Switching over

So what's it like to drive? Well, pretty terrible. They're a big, heavy old 4WD with no power steering and 26 year old seats – but I digress, we were talking about oils....

I start the Troopy on diesel fuel and after about 3 kilometres, the engine is warming up and I flick 'the switch'. Simultaneously this activates four things:

1. Starts the fancy little American heater to heat the oil up to 70-80° (runs off the Troopy's battery)
2. Activates a solenoid valve which changes over from diesel fuel to vegetable oil entering the engine
3. Activates small fuel pump to pump vegetable oil (which is stored in separate tank in the back) through to engine bay
4. Makes little green light on dashboard glow! This is a reminder for me that I am on vegetable oil

And off we go without the engine missing a beat. Three kilometers before home I flick 'the switch' back to diesel fuel so the fuel lines and injectors and engine

are emptied of vegetable oil and full of diesel fuel ready for the next trip. Otherwise the vegetable oil will thicken overnight which spells trouble for starting the Troopy next time...this is where the little glowing green light on the dashboard comes in handy!. If I've only stopped up to an hour (at shops for example), I can leave the oil in the system and all will be hot enough to start again.



Benny and the back of Troopy, where the oil drums are stored

Oils ain't oils

Whilst it is possible to use the finest organic extra virgin olive oils, these don't quite compare in cost to the used oils (usually sunflower, canola and cottonseed) which you can pick up for free.

Surprisingly actually getting the used oil can be the hardest part of the entire set-up, reflecting demand in different parts of Australia for used oils. I have collected used oils over the years from the greasy 'back end' of fish and chip shops, cafes, pubs and fast food outlets.

This is smelly, greasy, messy and at times unpleasant business and only for the committed. I must say though, that since moving to Canberra I've found a generous outlet with some of the best used oil and

pick-up arrangements I've ever had – it's an oil man's dream!

Once back home, I filter the used oil using sunlight, gravity and 5 micron filter sock (sounds technical but it is simply a measurement). This is necessary as you don't want bits of chips clogging up your engine and leaving you stranded – not sure if the NRMA can fix that one!

Benefits of biofuels

Perhaps some readers are wondering why bother with all this work, despite the extremely cheap fuel. My original motivations (back when fuel was much cheaper too) stem from the environmental benefits of bio-diesel and straight vegetable oil.

Though I won't go into a full break down of the differing emissions (refer reference for further information) I will highlight two significant environmental benefits: a reduction of sulfur dioxide (SO₂) by 100%, which has always been a problem of diesel fuels and contributes to acid rain; and a reduction of net carbon dioxide (CO₂) by 100%.

Though CO₂ comes out of my exhaust, if you look at the life cycle of the fuel this CO₂ is absorbed by the plants (as they are growing) which produce the oil in the first place.

At the end of it all it has been great for me and I still marvel sometimes that I am driving on 100% vegetable oil.... and recycled oil at that. We've driven over 70,000 kilometres fuelled by vegetable oil to date, which has included some big trips where we have packed over 400 litres of oil in the back! A visit to a service station is a rare thing indeed.

We average about 8 kms per liter of oil compared to 9 kms per litre of diesel fuel. There is approximately a 5 % reduction in power but this is largely not felt in our old and trusty Troopy.

Known amongst the faithful as the bio-diesel and straight vegetable oil 'bible', Joshua Tickell's *From the fryer to the fuel tank: the complete guide to using vegetable oil as an alternative fuel* is highly recommended for anyone interested in learning more, available both new and in the library.

And yes there is a distinctive deep fried chip smell that comes out of the exhaust, so do me a favour, keep me on the road and eat more chips!!

Benny Glasman

Photos: Catherine Knight

Growing cool climate nuts

Bungendore grower Stewart Deans gave the June COGS meeting a new appreciation of the joys and challenges of nut-growing and pondered why eating hazelnuts is probably better for you than jogging.

Stewart has a background in electrical engineering and spent 20 years in the air force and 20 years in the public service. He then decided on a tree change and in 1999 moved to a chestnut and hazelnut farm in Bungendore.

He's come a long way since his first hazelnut harvest in February 2000, serving 2 years as president and 2 years as vice-president of Hazelnut Growers of Australia, and he is currently on the board of the Australian Nut Industry Council.

The Deans family farm, Nuts About Bungendore, is open Saturday and Sunday from late March to late April for picking your own chestnuts and for farm-gate sales of hazelnuts. It's located at 459 Bungendore Road, just past the showground as you leave Bungendore, and before you reach the escarpment.

Growing chestnuts

The main chestnut grown in Australia is the Spanish chestnut *Castanea sativa*. They are a deep-rooted (to 30m) long-lived (to more than 100 years) tree with attractive foliage and shape, but with their spiky fruit and potential height (up to 20m), they're probably not an ideal choice for a Canberra backyard!

Commercial trees are typically grafted, shaped and appropriately spaced and yield anywhere between 15 and 200 kg per tree. Male and female flowers grow on the same tree, but they are 'self infertile', meaning they need two trees for pollination to occur. Pollination is predominantly by wind, but insects may also assist.

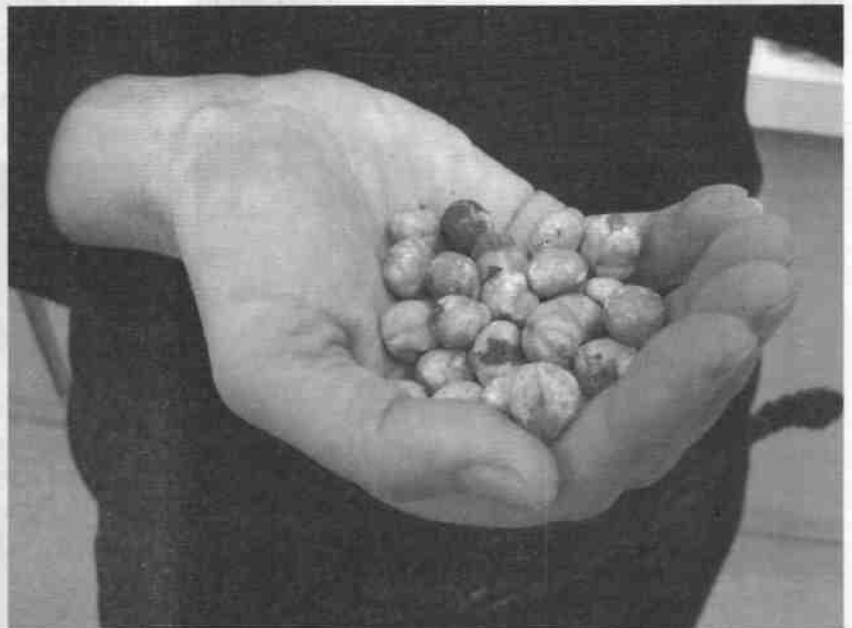
Maintenance centres on keeping grass and weeds at bay, managing suckers, pruning and replacing lost nutrients, particularly after a high yield.

Thankfully, Australian chestnut growers don't face the same pest and disease threats as their Asian and American counterparts. But while they don't have to contend with the devastating chestnut blight or chestnut weevil, they do have to keep on top of diseases like root fungus, internal rot in the nut itself,

'bubbly bark' and a variety of bird pests, especially parrots.

Stewart harvests his chestnuts from March to May. Chestnuts fall to the ground when ripe, but as they are perishable and deteriorate if left for too long, regular harvesting is important. They are best eaten fresh, but can be refrigerated at 0-2 degrees, or (oddly) they can be stored under sand.

Roasting and boiling chestnuts is common. They can also be dried, frozen once peeled, used in marron glacé and used as flour-meal. In fact, Stewart advises that anything you can use a potato for, you can use a chestnut for.



A healthy handful of hazelnuts!

Growing hazelnuts

Australia produces between 20 and 50 tonnes of hazelnuts a year, but imports around 2000 tonnes. The biggest hazelnut producer is Turkey, who supply around 80% of the world's hazelnuts.

In Australia, hazelnuts are the second biggest production tree nuts, after almonds. The major species grown is *Corylus avellana*, but some others, such as the Turkish species *Corylus colurna* are being trialled because of their drought tolerance and non-suckering habit.

Hazelnut trees bear separate male and female flowers and are wind pollinated. They are a hardy, shallow rooted tree that is propagated from suckers and that can grow to over 4 metres.

Again, maintenance is grass and weed control (to keep on top of the harvest and to get in before pests do), sucker control, pruning and nutrient replacement.

Australian hazelnuts have few disease problems. However, they are popular with a range of animals, including cockatoos, rosellas, foxes and rats. Minor pests include aphids, borers, rabbits, hares and grasshoppers.

Stewart harvests around February-March when the ripe nuts start to fall from the trees. Post-harvest, the husks are removed and the nuts are dried to 15-8% moisture content.

As COGS members can attest, the raw kernels are delicious, but they can also be used as an ingredient in chocolate and coffee, as a roasted snack and in cakes.

Health appeal

For nut-lovers everywhere, here's some very good news: there has recently been a number of studies that suggest that eating a handful of nuts a few times a week can reduce the risk of developing heart disease by up to 50%.

Researchers describe nuts as "ready-to-eat snack foods that are satisfying, have healthy lipid profiles, and are excellent sources of protein".

In particular, chestnuts have no cholesterol, are low in sodium and fat, are high in complex carbohydrates and are a good source of vitamins C, B1, B2 and folates.

Hazelnuts have the highest fibre content of all the nuts, have significant amounts of B group vitamins including folate and B6 and are high in unsaturated fats.

All this prompted the suggestion that eating recommended quantities of nuts could be better for your body than jogging every day - I'm happy to believe it!

Monica van Wensveen

Photo: Andrew Bishop

References and more information

- Chestnuts Australia
www.chestnutgrowers.com.au
- Hazelnut Growers of Australia
www.hazelnuts.org.au
- Australian Nut Industry Council
www.nutindustry.org.au
- Nuts for Life
www.nutsforlife.com.au
- The Canberra Gardener

Getting eggs in Winter

Notes from David Odell's talk at the July meeting.

It is normal for hens to lay in Spring and Summer, moult in Autumn and not lay in Winter. David Odell recommends replacing half your flock each autumn with point-of-lay cross-breeds, and 'removing' your oldest hens. His approach to hen-keeping is commercial, although he did admit to enjoying the observation of their natural behaviours. From COGS members' questions and comments it seems that many tend to treat their hens as pets as well as producers, often breaking his first rule of "Don't give them names"!

The cross-breed chicken is selectively bred to reduce her instinct to go 'broody', (which means to sit on eggs to hatch chicks). A hen that doesn't go broody will lay more eggs. Buying replacement pullets close to point of lay in January or at point-of-lay in early Autumn will ensure that these young birds do not moult over their first Autumn and will continue to lay over Winter. Point-of-lay hens can be ordered from Produce merchants in Canberra and Queanbeyan. Hens will produce their peak number of eggs in the first three years, but healthy birds can live for around 10 years, although laying far fewer eggs as they age.



David brought along two rather indignant Isa Browns which he used to demonstrate holding and examining hens!

Words and photo: Margaret Richardson

Growing people: The psychological benefits of gardening

What is it about gardening that makes us feel good?

Some of my earliest childhood memories are of being in the garden with my Mum and Nanna. My Nanna and Poppa's vegie garden, planted inside the hollow brick walls of a long abandoned above ground pool, was a green wonderland with moss and tomato plants creeping from between the bricks.

I still have a strong memory of exploring the maze of plants to the sounds of my brothers' laughter and ABC talkback radio being played from the black gardening transistor.

And with such happy childhood memories, it was no surprise that as soon as I got my own place I bought a black gardening radio and started creating more green-thumbed memories.



Positive effects

As a kid, all I knew was that being in the garden was fun and connected me with the people I loved. Now after having both gardened and worked as a psychologist for years, I understand a lot more about what makes gardens – and people – grow.

So apart from healthy food and a good physical workout, what is it that we get out of gardening, organic gardening, and community gardening? Or is gardening just a placebo?

The positive effects of gardening have been known for thousands of years. For example, the Bible, the Koran and innumerable Buddhist texts talk about the benefits to one's heart, mind and soul of communing with nature.

Since that time notable mortals have also extolled the virtues of gardening. For example in 1847 the UK Commissioner of Lunacy, reflecting on all the mental patients in his care, recommended exercise in the open air "to promote cheerfulness and happiness".

Similarly, Dr. Benjamin Rush, a signatory of the US Declaration of Independence and considered the father of American Psychiatry, reported that garden settings held curative effects for people with mental illness. Horticultural therapy is now widely recognized as an emerging treatment, especially in regard to intellectual disability and psychiatric conditions.

Science, psychology and gardening

But what of the rest of us? In layman's terms, organic and community gardening makes you feel good. Somehow the combination of fresh air, physical exercise, meditative focus, disengagement from the pressures of work or home, planning and reaping crops, connecting with natural life cycles and simply getting your hands dirty is immensely satisfying and rewarding.

Science and psychology has now begun to catch up with what we already know intuitively. Research into meditation and brain processes has established that a similar state of consciousness is achieved when a person is in a deep state of relaxation (like a Zen monk), in the 'zone' with repetitive exercise like running, cycling or swimming (like an elite athlete), in a deep deep sleep (my personal favourite!) or in an absorbed state of activity such as often occurs when absorbed in gardening.

This corresponds with a particular frequency of brain waves (13Hz), and is the most restorative and beneficial state a human brain can be in. This is a big clue to why people often 'lose themselves' or 'get lost in time' and feel so good after an afternoon of gardening.



In short, via chemical, social and physical pathways, gardening provides an excellent buffer to stress. Gardeners have a natural advantage here, and organic gardeners even more so given the absence of nasty chemicals such as pesticides in their dirt. This explains why kids and gardeners know that the muddier you get, the happier you are!

BENEFITS OF COMMUNITY GARDENING	
Great food and good exercise	<input checked="" type="checkbox"/>
Improved mental health	<input checked="" type="checkbox"/>
Stress reduction & wellbeing	<input checked="" type="checkbox"/>
Create community capital	<input checked="" type="checkbox"/>
Social connections	<input checked="" type="checkbox"/>
Spirituality	<input checked="" type="checkbox"/>

What is even more amazing is some recent medical research. Just this year it was reported in *Neuroscience* that a bacterium called *Mycobacterium vaccae*, found in dirt and soil stimulates the human body to produce more serotonin. Serotonin is a neurochemical (the brain's natural happy drug) found naturally in people, and manufactured in antidepressants. Low levels of serotonin are linked with problems such as aggression, anxiety, trauma, depression and obsessive compulsive disorder. This is why gardening can be so therapeutic for those with emotional issues.

Stress-busting

A regular dose of serotonin also goes a long way towards explaining the calming properties of gardening for those without psychological problems as well. The stress relief gardening gives, and the life balance it can provide should not be underestimated.

Incontrovertible links now exist between stress and heart disease, cancers, immune disorders, chronic pain, infectious diseases and depression. The innate annual cycles and natural order of gardening can restore a sense of control and security, a sense of mastery and peace that allows for a state of mindfulness and emotional regulation.

Making connections

Organic and community gardeners are respected and envied by others for how their practiced life reflects their values. There are few purer examples than in this type of gardening. It is a philosophy and a way of life as much as a way to get your vegies.

"A little garden in which to walk, and immensity in which to dream"...

In addition to social bonding and belonging, many involved in organic or community gardening experience a sense of connection to the land, to life cycles, to the seasons, to the weather, to health, to other species, to nature, to something bigger, to the moment rather than the past or the future, to oneself.

People hold their own definitions of spirituality, but there are few dedicated gardeners who would not acknowledge that this aspect of gardening exists for them. There are actually multiple research papers attesting to this fact as well, but really, it's best just to try it for yourself and see. It's there most when you stop looking for it...

In November my partner and I will have our first baby. We've already scoured the school fetes and found him his great first gardening jumper and overalls. We can't wait to help create a new generation of green-thumbed kids whose lives are enriched by time in the garden with people they love.

*Kate Barrelle
Photos: Rebecca Scott*

Recent reports

Potential impact of GM canola on organic farming

The commercialisation of GM canola in Australia is likely to have only negligible direct impacts on the organic canola, livestock and honey industries according to a new report from the Australian Bureau of Agricultural and Resource Economics (ABARE).

The report - *Potential impacts from the introduction of GM canola on organic farming in Australia* - investigates the potential economic impacts of the commercialisation of GM canola in Australia on domestic organic agriculture, and looks into the treatment of GMOs in organic certification standards in Australia and in Australia's main organic trade partners.

Certified organic agriculture has grown rapidly in recent years, but remains a small market providing food to those who want to avoid potential chemical residues and GM material.

'Australian organic standards tend to be more stringent than those in our export markets. Therefore, Australian certified organic products are likely to continue to be accepted in export markets if GM canola is introduced in Australia. However, the stringent domestic requirements may reduce Australia's price competitiveness,' said Philip Glyde, Executive Director of ABARE.

'The organic standards require that crops be isolated from non-organic crops and products, including both conventional and GM canola. Planting GM canola in place of conventional canola would therefore have minimal impact on organic canola,' Mr Glyde noted.

'The impact on organic honey is likely to be minimal for the same reason — current standards require that bees do not forage on conventional crops.'

The organic livestock industry was found to use a range of organic feedstuffs, and the lack of organic canola crushing in Australia over the past few years suggests that organic canola meal is not an important component of organic livestock feed rations.

'The introduction of GM canola would therefore appear to have minimal impact on the organic livestock industry,' Mr Glyde explained.

However, Mr Glyde cautioned that the introduction of GM varieties of other crops that are more extensively grown in Australia as certified organic may have a different impact.

The report is available for download from ABARE's website www.abareconomics.com.

ABARE MEDIA RELEASE 10 MAY 2007

Organic agriculture and food security

Organic agriculture is now commercially practiced in 120 countries, representing 31 million hectares and a market of US\$40 billion in 2006 states Food and Agriculture (FAO) in a new paper presented at an International Conference on Organic Agriculture and Food Security.

The paper - *Organic Agriculture and Food Security* - identifies the strengths and weaknesses of organic agriculture with regards to its contribution to food security, analyses attributes of organic supply chains and proposes policy and research actions for improving the performance of organic agriculture at the national, international and institutional levels.

The strongest feature of organic agriculture is its fossil-fuel independence and reliance on locally-available production assets - working with natural processes increases cost-effectiveness and resilience of agro-ecosystems to climatic stress.

By managing biodiversity in time (rotations) and space (mixed cropping), organic farmers use their labour and environmental services to intensify production in a sustainable way.

The paper recognises that 'most certified organic food production in developing countries goes to export' and adds that 'when certified cash crops are linked with agro-ecological improvements and accrued income for poor farmers, this leads to improved food self-reliance and revitalization of small holder agriculture.'

The paper underlines that some requirements should be met when converting to organic agriculture, mainly agro-ecological knowledge and labour availability. Organic management is a knowledge-based approach requiring understanding of agro-ecological processes and it remains a constraint where labour is scarce, such as in populations decimated by HIV/AIDS.

However, labour requirements on organic farms, and the better return on labour, provide employment opportunities where this resource is most abundant.

The paper also quotes recent models that suggest that organic agriculture has the potential to secure a global food supply, just as conventional agriculture is today, but with reduced environmental impact.

The paper calls on governments to 'allocate resources for organic agriculture and to integrate its objectives and actions within their national agricultural development and poverty reduction strategies, with particular emphasis on the needs of vulnerable groups.'

The paper is available on FAO's Organic Agriculture website www.fao.org/organicag

FAO MEDIA RELEASE 3 MAY 2007

Producing champions organically

At the Cook garden I grow a number of dahlias. These are exhibited at some of the major NSW and ACT shows in February, March and April.

Growing for show requires perfection of size, form and condition of the flowers. Many people think this means the use artificial fertilisers and pesticides. The successes I have had suggest otherwise.

This year from the 60 plants in the plot at Cook I picked flowers to exhibit at 6 shows. At these major shows I am competing against people who grow many hundreds of plants.

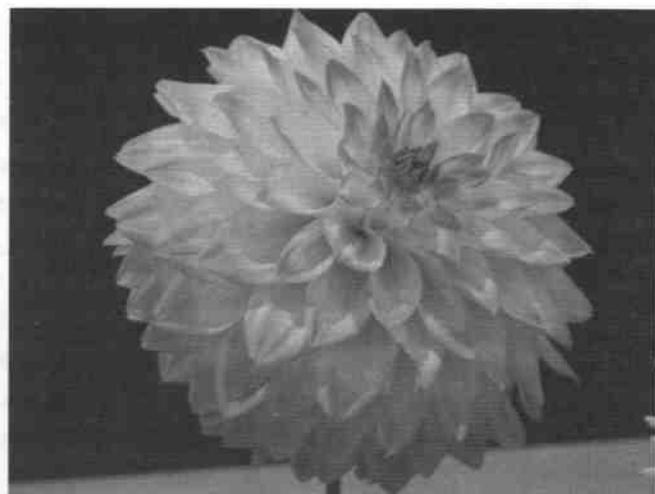
At the NSW championships I finished second in the championship class. At the Central West dahlia championship I again finished second in the championship class with two varieties from Cook winning champion awards.

At Royal Canberra I managed to win the championship class with the grand champion and 5 other champion ribbon winners coming from the Cook garden

The Horticultural Society of Canberra show was the weekend after the hail. Even so, 3 champions and the largest flower in the show came from Cook.



Hamari Gold – this variety was Champion Large Decorative at the Canberra Horticultural Society show



Maggie Hannaford – Champion medium decorative at the Royal Easter Show, Second session

A month later I went to the Royal Easter Show in Sydney for two competitions, winning a number of champion ribbons. Three of those were won with flowers from the Cook garden.

All this shows that, with a little care and attention, it is possible to grow plants close to perfection using organic methods.

Graeme Davis



A new seedling that will be growing at Cook next year (hopefully)

COGS spring vegetable planting guide

Spring is the main planting season in Canberra. The timing of some plantings may need to be varied depending on the particular year.

Be prepared to protect your frost tender seedlings, as harsh frosts can occur right through spring. Make your own cloches from plastic bottles with the bottoms cut out, or use row covers for larger plantings.

USING SEEDS

When direct planting with small seeds, eg carrots, bulk out first by mixing the seeds with sand. You can help the plants pre-germinate by keeping them in moist sand for about 4 days before planting out (do not let them actually germinate).

When planting out large seeds, eg pea or corn, soak overnight in a weak seaweed solution prior to planting; alternatively, keep seeds moist between 2 pieces of kitchen paper for 3 to 4 days until seeds germinate, then plant out carefully. This is particularly useful if you are not sure of the seed's viability.

Check your seed packets for their use-by date as poor germination may result from planting after that time, or plants may show a lack of vigour when the seedlings come up.

A seed should be planted at a depth 2 to 3 times its diameter, although it is better to plant too shallow than too deep.

CROP ROTATION

Remember to rotate the crops you grow in a particular garden bed. Crop rotation is a most important practice for organic gardeners. Successive crops should not come from the same plant families nor make the same demands on nutrients ie follow heavy feeders with light feeders.

Also, successive crops should not share the same diseases or attract the same pests - this prevents a build up of disease problems, and reduces losses from pests.

There are numerous crop rotation schemes used, but try to keep to at least a 4 year rotation period and **do not grow members of the same plant family** in the same bed in consecutive years eg tomatoes, capsicums, eggplants and potatoes are all from the solanum family.

PLANT VARIETIES

It is important with crops such as cabbage and lettuce to choose the appropriate variety for the time of year. Lettuce varieties best suited to early spring are Cos, Salad Bowl, Butterhead and Mignonette.

	SEPT	OCT	NOV
Globe Artichoke	T	T	
J'salem Artichoke	T		
Asparagus	S	S	S
French Beans		S	S
Beetroot	S	S	S
Broccoli			S
Brussels Sprouts		S	S
Cabbage	ST	ST	ST
Capsicum*		S	ST
Carrot	S	S	S
Cauliflower			S
Celery	S	ST	ST
Cucumber*	S	S	ST
Eggplant*	S	S	T
Endive			S
Leeks	ST	ST	T
Lettuce	ST	ST	S
Melons*	S	S	ST
Onions	T	T	
Parsnips	S	S	S
Peas	S	S	
Potatoes	S	S	S
Pumpkins*	S	S	ST
Radish	S	S	S
Rhubarb	T	T	
Silverbeet	S	S	ST
Snow Peas	S	S	S
Spinach	ST	ST	
Squash*	S	S	ST
Sweet corn		S	ST
Tomatoes*	S	S	ST
Turnips, white	S		
Zucchini*	S	S	ST

S= seed sowing

T= transplanting seedlings

* When planting these seeds before November the seed should be started in punnets indoors and the young seedlings kept in a warm sheltered place. Plant out the seedlings once the soil has warmed and the danger of frost has passed.

Member's page

Further report on composting

My Aerobin 400 continues to consume material at an amazing rate, faltering only when I added a layer of tough Grevillea leaves, a severe test. I have recently added a couple of layers of Autumn oak leaves to test whether they will break down or just compact into a hard layer.

The Compost Oven Lung continues to disappoint. The speed with which it composts material is not sufficiently greater than a standard black plastic bin (bpb) to justify the \$120 expense and the fiddliness of unloading it around the fragile components.

As promised in my last article I have constructed an aerator to fit one of my existing 400 litre bpbs. It has been made from 2 metres of 25 mm white pvc pipe



(available from Bunnings in convenient 1 metre lengths), three tee fittings, one cap and a roll of 65 mm black plastic slotted drainage pipe. The pipe was cut and assembled as shown in the photograph below left (without glueing) and numerous slots were cut in the pipe with an angle grinder. The structure was then sheathed in drainage pipe to reduce the risk of the slots becoming blocked. One section of drainage pipe was extended outside one of the bpb doors to allow a constant entry of air. Once assembled inside the bin, the bin was filled with a good mix of compostable material, capped with a piece of bubble wrap material and left for around eight weeks. By this time the contents had sunk to about half way and, from the surface, it looked like good compost had been produced. My preliminary conclusion is that for the cost of a few dollars and fifteen minutes work, a standard bpb can be made to work more efficiently, producing good quality compost at a faster rate. Readers may be able to come up with superior designs that provide even better aeration.

Alan Robertson



COGS Meetings are Moving

From September 2007 COGS monthly meetings will be held at the

**Majura Community Centre
Rosevear Place
Dickson**

From Civic head north along Northbourne Ave, turn right into Antill St and right into Rosevear Pl. The Majura Community Centre is the first building on the right (opposite the ANCA gallery and the Bicycle Museum)

Ample free parking is available at the front of the building

COGS NOTICE BOARD

Don't forget to check the COGS website at www.cogs.asn.au for updates and new notices.

Speakers

A Plant Clinic will be held at all monthly meetings. Please bring any pest or disease problems for identification and share your experience with other gardeners.

**7:30 pm at the Griffin Centre
28 August 2007**

Insights into biodynamic practices
Lynette West

**7.30 pm at the MAJURA COMMUNITY
CENTRE, Rosevear Place, Dickson**

25 September 2007
Practical cheese making
Benny Glasman

23 October 2007
New organic products
Diana O'Brien
Garden writer for the Canberra Chronicle

27 November 2007
Celebration of 30 years of COGS with
drinks and supper

Visit www.cogs.asn.au for updates
and confirmations.

ACT water restrictions

Stage 3 water restrictions apply in all COGS gardens. Hand-held hoses with trigger nozzles, watering cans and drippers may be used 7-10am or 7-10pm on alternate days.

No watering allowed at other times

Organic Gardening course

CIT Solutions course for beginners
11 Nov-2 Dec 2007

Weston Campus, Sundays 1-4pm
For information, call 6207 4441 or visit
www.citsolutions.cit.act.edu.au

Events

Growing Organic Vegetables
With Graham Williams
Lanyon Homestead, Tharwa
10:30-12:30pm 21 October 2007
Call 6235 5677 to register (\$10)

Mountain Creek Farm Spring Open Day
6 October 2007

www.mountaincreekfarm.org.au
Register with Michael on 0413 387 686
or Michael@mountaincreekfarm.com.au

Talks by David Howard,
Head Gardener to HRH the Prince of Wales
9 November at University House
www.rbgsyd.nsw.gov.au/friends for details

Greening Australia plantings
12 August - Condor Hill planting
18 August - Uriarra planting
12 October - Cotter & Blundell's Flat tour
20 October - Tour de Cotter
Contact Haydn Burgess
6253 3035 to RSVP

Open Garden at COGS Charnwood
8 - 9 December 2007
Contact Tim Carlton for details

Roster for COGS meeting suppers

Volunteers are still needed!

Please put your name on the roster
(available at meetings) or ring a
committee member to volunteer.

Thank you!

Environment calendar

- Wattle Day - 1 September
- Biodiversity Month - September
- Threatened Species Day - 7 September
- World Habitat Day - 1 October
- Walk to Work Day - 5 October
- Cycle to Work Day - 17 October
- National Water Week - 21-27 October