Fruitwise

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This issue:

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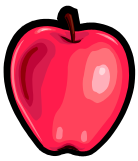
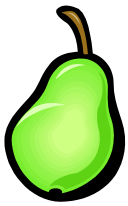
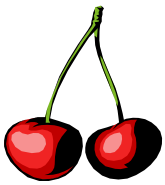
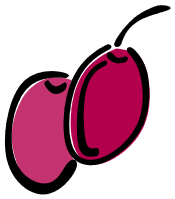
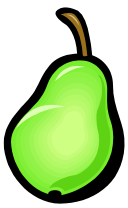










Fruit Drops

Tough Times Contacts:

Most areas in NSW are headed for another very dry year. You may be eligible for some help under the Federal Governments Exceptional Circumstances Relief scheme for drought.

Centrelink:
www.centrelink.gov.au
Drought assistance hotline: 13 23 16 Phone to get advice on EC relief scheme payments and subsidies
Farm help: 1800 050 585 for help with other farm business assistance programs

NSW DPI Drought Hotline: 1800 814 647 for technical information as well as assistance information. Has a list of local drought support workers.
Also see www.agric.nsw.gov.au/reader/drought

Rural Assistance Authority (NSW): 1800 678 593
www.raa.nsw.gov.au
Phone to get an EC certificate for interest rate relief. Check out the "Special Conservation Scheme" for low interest loans to fund environmental works such as de-silting dams.

Rural Financial Counsellors:
http://www.affa.gov.au/content/output.cfm?ObjectID=D2C48F86-BA1A-11A1-A2200060B0A00161

A full contact list is available from the Rural Assistance Authority. Your local counsellors may also be able to help with other local assistance measures, as well as help you to plan for drought recovery.

NEW Weather page for farmers:

There is a new weather information page designed to meet the weather needs of Australian farmers. Called "Water and the land", the new page is provided by the Bureau of meteorology.

www.bom.gov.au/watl/index.shtml

Bushfire Season:

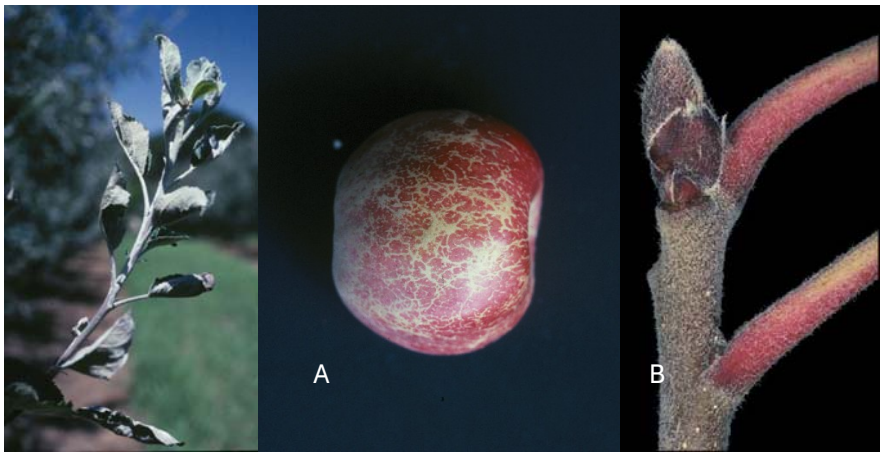
Keep up to date with local fire conditions with the NSW Rural Fire service website www.bushfire.nsw.gov.au . There are also fact sheets on preparing your property for the fire season.

Powdery Mildew- a problem in dry weather

Dr Shane Hetherington
Plant Pathologist
Orange Agricultural Institute

One of the few benefits of dry weather is that most diseases aren't a worry; but there is an exception. Powdery mildew can be a real problem during drought and orchardists must be careful to get on top of this disease early.

Because powdery mildew infects buds it distorts and reduces new growth. This loss of growth can reduce vigour, yield and fruit quality. Pictures A and B show typical powdery mildew symptoms on shoots and fruit respectively. Early detection of this disease is possible but requires careful observation. Infected buds are narrower with bracts that tend to stand away from the bud (Picture C).



Because the disease can be difficult to detect early, it's safer to assume that if you have seen it in your orchard during the last four years you're going to have to spray for it.

Infection is most likely during periods of relatively high humidity and mild temperatures (10-25°C) without rain. Chances of infection are decreased by rain or heavy dew and high temperatures also decrease the disease risk. The fungus that causes the disease can also survive on the surface of leaves or fruit and return to cause infections later in the season as conditions become more favourable for it.

It's important to get on top of this problem early before spores have built up to a point where control is very difficult. The key period for control is between spur burst and fruit set. Most of the systemic fungicides which are commonly used for apple black spot are also registered and effective for use against powdery mildew (always check the label). Other options which have been extremely effective against both black spot and powdery mildew include Flint (Trifloxystrobin), Stroby (ai. Kresoxim-methyl) and Vision (Fluquinconazole + pyrimrethanil).

Where powdery mildew is likely to be a problem orchardists should bias their early season program to favour these fungicides rather than group Y fungicides. In early spring the disease initially comes from buds which were infected in the previous season. It is therefore really important to make sure that these early season sprays are high volume and soaking. Make sure that the spray rig has been calibrated recently.

Other aspects of the orchard can also influence powdery mildew management. Apple varieties vary in their susceptibility to the disease. The following apple varieties are listed in order of most susceptible to least susceptible: Jonagold, Pink Lady, Mutsu, Bonza, Braeburn, Gala, Jonathon, Lady William, and Golden Delicious. Orchardists who don't regularly tip prune are also at greater risk of powdery mildew infection. Terminal buds harbour the fungus through the dormant period and more terminal buds means an increased chance of the disease becoming established.

Orchardists should also remember that young, non-bearing trees are highly susceptible. The distorted growth caused by an early powdery mildew infection makes tree training extremely difficult. Young trees should be treated in exactly the same way as the rest of the orchard.

Pesticide Residue Testing Service

Linda St Clair
Technical Officer
DAS Laboratory, Wollongbar Agricultural Institute

A single residue test for more than 90 pesticides has been developed by scientists at the NSW Department of Primary Industries' Wollongbar laboratory. The new, cost-effective test is being successfully conducted at Wollongbar for a growing number of fruit and vegetable growers.

"Pesticide residue testing is an increasingly important part of many fruit and vegetable growers' quality assurance programs," said Dr Ian Stiff, senior chemist at the Wollongbar Agricultural Institute laboratory. "The tests provide assurance to consumers that products are safe to eat and are complying with the current food regulations, which are set by Food Standards Australia and New Zealand (FSANZ).

"FSANZ is a statutory agency which develops food standards, including maximum residue limits (MRL) for agricultural and veterinary drug residues. These requirements can be legally enforced. For more and more fruit and vegetable growers, there is a requirement for regular pesticide residue testing of produce, as part of an overall quality assurance program."

NSW DPI's Diagnostic and Analytical Services (DAS) Laboratories at Wollongbar have National Association of Testing Authorities (NATA) registration and the residue screening method has NATA accreditation for a wide selection of fruits and vegetables. This level of quality assurance provides confidence for customers. Ongoing research will broaden the range of accredited testing in the coming months.

Pricing for residue testing is very competitive. Enquiries should be directed to NSW DPI Customer Service Unit at Wollongbar, on (02) 6626 1103

APAL Future Orchards 2012 project

Julie Dart
District Horticulturist
Tumut District Office

Batlow Group Facilitator, FO2012 project

The APAL Project "Future Orchards 2012" has started. The Industry Partnerships Project has been funded by the Federal Department of Agriculture, Fisheries and Forestry, and the first events have now been held in major apple growing areas nation wide. Ag First New Zealand was selected by APAL to provide the technical information and manage the data collection and benchmarking involved in the project.

Ross Wilson (centre) demonstrates how tree row volume will be measured as part of the project on monitoring blocks.

There will be a series of eight orchard walks, each held on a local orchard that is involved in the benchmarking part of the project. Orchard walks are open to all growers and workers involved in the apple industry.

The Batlow experience:
Apple growers from the Batlow area attended an orchard walk on Thursday the 7th of September. Twenty-three local growers attended the orchard walk conducted at Wilgro orchard (owned by Ralph Wilson). The event was run by Ross Wilson from AgFirst NZ.

Darral Ashton, local grower and Chairperson of Apple and Pear Australia Limited (APAL), welcomed the group and introduced the project and Ross to the group.

Topics of the day included an outline of the APAL project "Future Orchards 2012", but the main discussion of the day was what growers can do to make sure that their operations are world class.

Keys to international competitiveness include:

- Planting new orchards on dwarfing rootstocks such as M9 and M26 (M9 is preferred)
- Planting orchards at higher densities above 2,000 trees per hectare (rows spaced 3 to 3.5m apart, with trees spaced 1m within the row)
- Supporting the canopy with a well engineered trellis system
- Getting young trees growing strongly to fill the canopy space within the first 2 years to achieve high, early production
- Keeping trees calm, with light fruitful wood for maximum fruit quality
- Protecting the crop with netting in hail prone areas
- Batlow growers need to increase marketable fruit yields from 25 to 45 tonnes per hectare to match the worlds best producers

Ross was pleased to see that there are already good examples of high density apple plantings in the Batlow area, and is hoping that this will only get better in the future.

After the talk, Ralph led the group on a tour of his orchard, discussing his successes and mistakes with the group. The group discussed pruning, managing older trees and how to get young plantings to meet their potential.

The main aim of the orchard walks will be for local growers to share their ideas on what works in Batlow and why, and to learn from the past mistakes of others.

A set of notes from the orchard discussion is available to local growers who attended the walk. Contact Julie Dart at the NSWDPI office on (02) 6947 4188 for a copy to add to your orchard walk folder.

The third round of orchard walks will be held in early February. Contact your local facilitator for more details.

Apple & Pear Australia Ltd.

Australian Government
Department of Agriculture, Fisheries and Forestry

It's not always that obvious!

Phillip Wilk
District Horticulturist
Alstonville

Recently a call from a local fruit grower started a chain of events that eventually led me to the reason his bushes were dying. It made me realise that although we often would like the most obvious insect or disease to be the cause of a plant's demise this often isn't the case. Usually most people will begin with the most obvious or simplest causes first and then gradually work down the list to the more remote.

The grower had seen me many times at different functions and meetings. He mentioned the problem he was having. We met and after observing numerous bushes on his property that were indeed unthrifty, to say the least, I selected one to sample. It was a typical example of the problem but it was nowhere near as advanced as many others I had observed.

We carefully removed the plant to by digging it up to observe the intact root system. The dying plant did indeed look like it had symptoms of a well known disease that commonly causes problems and eventual death of this fruiting bush. At the time of taking the plant, I checked the moisture levels of the soil and other possible causes but found no obvious cultural problems that may have caused the symptoms in the plant.

The plant was carefully packaged and sent to a diagnostic laboratory with a hint that it may be the suspected disease but with a request to be notified of any other problem. The results came back negative for all potential diseases except for the usual soil borne diseases found in most soil samples.

Another trip to the grower's property to get to the cause of the problem had me sampling soil within the mound, obtaining a dam water sample and a fertigation water sample from the drip-line below another plant that looked very unhealthy. Another plant was also carefully dug out to examine roots and be sent away for a further disease check.

The plant sample result was returned with no known disease problems, the dam water sample was quite acceptable for irrigation purposes; but the fertigation sample was extremely acid with a pH reading of 3. Other nutrients in this sample especially sodium were quite high as well.

The grower was shown the results and he was quite surprised that the fertigation mix was so acidic. He told me he acidified the fertigation water on a routine basis because his dam water was very alkaline and he wanted his irrigation water to be between a pH of 4.5 and 5.0. I asked the grower how he monitored his irrigation water and I was taken to a pump shed where nutrients were added to the irrigation dam water. On the wall was a pH and EC meter that indicated how much or little acid was needed to be added to adjust the water to the correct pH.

I asked him to pump just dam water and after some time we noticed the pH unit measuring a pH of 8. The penny dropped. The dam water we had sampled was between 5 and 6 and here we have a reading of the same water with a pH of 8! He told me that the pH unit had never been calibrated since it was installed and he was relying on its accuracy to acidify his own irrigation water. Instead of adjusting it down from a starting point of pH 8 he was actually adjusting it down from a starting point of pH 6. That resulted in a fertigation sample with a pH of 3 which over time was the cause of the plant decline and eventual death. The soil sample is still being processed and should verify these results.

The grower has now put in place a regular management system to calibrate his monitoring equipment so this problem will not reoccur. It is also a good reminder to all growers who rely on monitoring equipment to make management decisions to be sure you are getting accurate information on which to base your choices. Regular calibration is essential.

This example is a clear case of trying not to jump to conclusions when diagnosing plant related problems, as the most obvious symptoms are not always the cause!

Maintenance tips for pH meters:

Often when a pH meter has a problem such as the electrodes drying out, or a power problem it will give a reading of 7.0.

Most pH meters work by measuring the voltage difference between the two electrodes within the probe, when placed in a fluid. Acid solutions give a negative voltage and alkalis a positive. The voltage difference is then converted to a pH reading between 1 and 14. The neutral state of the electrode, when there is no voltage difference, reads as pH 7.0.

Most brands of pH and EC meters should be checked and calibrated weekly, especially the hand held models that rely on batteries. Always use the two point calibration method. For pH, use a neutral (pH 7.0) and either an acid (pH 4) or base (pH 10) calibration solution. Regularly replace test solutions, as they go off over time.

Sydney Orchardists UPDATE Seminar

Peter Malcolm
District Horticulturist
Richmond

More than 120 people attended a NSW DPI seminar for Sydney orchardists held recently on the Hawkesbury Campus of University of Western Sydney (UWS), Richmond on the 19th of October.

Topics discussed included fruit flies, flying foxes and Carpophilus beetles, all highly relevant issues for Sydney orchardists. Also presented were the results of the latest IPM research in Canadian orchards, along with an outline of current orchard research projects being undertaken in Horticulture at UWS (Hawkesbury).

Guest speakers included:

- Dr. Mofakhar Hossain (DPI, Victoria),
- Kylie McClelland (Dept of Environment &Conservation),
- Ed Biel (NSW Farmers),
- Dr. Gerald Chouinard (Quebec Research Institute),
- Andrew Jessup (NSW DPI),
- Prof. Robert Spooner-Hart (UWS, Hawkesbury),
- Richard Bull (Crop Care),
- Graham Nicol (Bayer CropSciences),
- Geoff Messer (Dow AgroSciences).

Flying Foxes

Ed Biel (NSW Farmers) and Kylie McClelland (DEC) gave presentations on flying foxes. Ed Biel emphasised that the Grey Headed Flying Fox (GHFF) cost Sydney orchardists millions of dollars annually, with some growers losing hundreds of thousand of dollars both directly through lost production; and indirectly as a result of the cost of the time and effort associated with combating these animals.

Mr Biel argued that the GHFF, a protected species, was owned by the State and Federal Governments on behalf of the wider community and that the owners of such animals are responsible, in law, for any damage caused by that animal to any individual or their property. He proposed that both the State and Federal Governments should be heavily subsidising the cost of the erection of exclusion netting or, providing compensation each year, for grower losses caused by the GHFF.

Mr Biel emphasized that the orchardists were not responsible for the endangered status of the GHFF, which was chiefly attributed to land clearing and the development of the eastern coastal areas of Australia, particularly in Queensland and NSW. Mr Biel felt that both the orchardists and GHFF were the innocent victims of the GHFF's loss of habitat.

Kylie McClelland (Senior Threatened Species Officer, DEC) described a new collaborative research project which aims to quantify the cost to orchardists of the GHFF and examine the efficacy of various control strategies including non-lethal methods.

Funded by both Federal (Natural Heritage Trust) and State Governments in conjunction with the Hawkesbury-Nepean CMA, this joint NSW DPI / DEC project has just appointed Dr Ho Dang (NSW DPI) as Project Manager. Dr Dang, who is based at the Hawkesbury Office of NSW DPI, would like to hear from orchardists interested in participating in the project. Dr Dang can be contacted on 02 45882100.

Queensland Fruit Fly
Andrew Jessup, Senior Research Horticulturist with NSW DPI, presented information on fruit flies and in particular the life cycle of the Queensland fruit fly. There are about 80 true fruit flies in Australia of which seven are considered to be pests. However not all the pest fruit flies exist in all production areas of Australia.

The fruit fly population is influenced by both geography and climate. It is important to maintain orchard hygiene and have a year round plan to reduce the number of fruit fly cover sprays required. Some of the commonly used materials for the control of fruit flies, such as Dimethoate, Fenthion, Chlorpyrifos and Maldison are currently undergoing APVMA review. As a result, there is a possibility that many growers may have to reassess their existing management strategies for fruit fly.

New Control methods for fruit flies
Richard Bull (Crop Care), Graham Nicol (Bayer CropSciences), and Geoff Messer (Dow AgroSciences) talked about their company's products, Amulet Cue Lure, Lebaycid and Naturalure respectively, which are registered for the control of fruit flies.

Carpophilus Project
Dr. Mofakhar Hossain (DPI, Victoria) talked about his work examining the possibility of controlling Carpophilus beetles using pheromones. Carpophilus beetles are a major pest in many orchards, with numerous growers reporting fruit losses as high as 50% in some seasons. Dr Hossain's trials demonstrated that the use of a synthetic aggregation pheromone and a co-attractant, combined with an 'Attract and Kill System', resulted in dramatically less Carpophilus beetle damage (0.3%) when compared with conventional, pesticide treated blocks which had 10% damage. Dr Hossain then described proposed trials for the 2006/7 season in which more than 187 ha, including more than 85ha of cherries, will be treated with the 'Attract and Kill System' to assess the feasibility of this method for controlling Carpophilus beetles in commercial orchards.

IPM – a Canadian perspective
Dr. Gerald Chouinard from IRDA, Quebec, Canada, talked about insect pests and IPM in pome fruits in Eastern Canada. There are more than 57 common insect pests found in Quebec orchards. About 70 to 80% of growers in Quebec now monitor their orchards and as result, use fewer sprays. This has meant that over the last 24 years, the environmental impact of insecticides has steadily declined.

Some insect pests such as the Plum Curculio have no effective natural predators, while others, such as the Oblique Banded Leaf roller, have many natural enemies. Unfortunately many of these natural predators are extremely vulnerable to many commonly used insecticides. For others such as the European Apple Sawfly, natural enemies have been introduced to control them. Dr Chouinard described current IRDA programs and some techniques being evaluated for the control of insect pests. These include attract and kill, mating disruption, the use of biological controls such as predatory insects and the release of parasitic wasps and the selective use of insecticides for the conservation and augmentation of indigenous predators.

University of Western Sydney projects
Associate Professor Robert Spooner-Hart described some of the ongoing research projects being undertaken at the Centre for Plant and Food Science at UWS (Hawkesbury). At the Centre, Dr Barry McGlasson is heavily involved with three collaborative HAL funded stone fruit projects. He also edits and produces the magazine, Summerfruit Australia Quarterly.

The Centre also has a plant breeding program, with many of its low chill stone fruit registered under PVR and subsequently licensed to the company PhytoNova. Under the direction of Dr Andrew Beattie, a number of projects examining the influence of mineral oils on numerous pests and diseases are currently being undertaken. Research on Small Hive Beetle, the development of bio rational pesticides, the identification and use of entomopathogens for the control of Light Brown Apple Moth

and, the examination of the effects of climate change on tree growth, are some of the other projects currently in progress at the Centre.

Detailed information on each of the individual presentations can be obtained from Peter Malcolm, at NSW DPI Richmond, on (02) 45882100.

Minimizing the risk of microbial contamination of fresh produce

Joe Ekman
Horticulturist- food safety
Gosford

There are many microorganisms (microbes) in the environment – some are harmless, some are beneficial, and others cause food spoilage and breakdown. A small number of microbes have the potential to cause food poisoning. These microbes are called human pathogens. Examples of human pathogens include species of bacteria such as *E.coli*, *Salmonella* and *Listeria*, parasites such as *Cryptosporidium and Giardia* and viruses such as Hepatitis A.

Contamination of fresh produce with human pathogens can present a serious health risk, particularly to susceptible consumers such as old, young and sick people. To prevent this from happening:

- the risk of human pathogens contaminating fresh produce must be assessed;
- good agricultural practices must be implemented in the growing and harvesting of fresh produce;
- hygiene and sanitation practices must be implemented in the packing shed in the handling and preparation of fresh produce for market; and
- all practices must be regularly monitored and reviewed periodically or as practices change.

Sources of human pathogens

From planting through to transport to customers, there are many opportunities for human pathogens to contaminate fresh produce. Potential sources of contamination include:

- soil and dust
- organic products used as fertilisers and soil additives
- water used for irrigation, spraying, water dumps, hydro cooling, top-icing, washing and postharvest treatments
- workers who handle fresh produce at harvest and during grading and packing
- wild and domestic animals, birds and vermin
- harvest bins and containers and harvest and packing line equipment
- packing containers and materials
- storage facilities and transport vehicles

Preventing human pathogens from contaminating fresh produce during growing, harvesting, packing, storing and transport to customers is the best way minimise the risk to consumer health.

Good agricultural practices during growing and harvesting of fresh produce

Practices that minimise the risk of fresh produce being contaminated with human pathogens during growing and harvesting include:

- ✓ Locate or cover stockpiles of organic products (for example animal manure) to avoid contamination from wind drift onto adjacent crops and harvested produce or rainfall runoff into watercourses and groundwater.
- ✓ Use growing practices that minimise the chance of the human pathogens from untreated organic products coming into direct contact with fresh produce. For example, quickly incorporate untreated animal manure into the soil to minimise contamination of adjacent crops from wind drift or contamination of water supplies by rainfall runoff into watercourses and groundwater, and grow the fresh produce on plastic mulch.
- ✓ Maximise the period between applications of untreated organic product and when the crop is harvested – ensure a minimum of 60 days between application and harvest.
- ✓ Compost or age organic products to reduce microbe levels. Composting is more effective than aging. Longer treatment periods are required for aging (usually at least six months) than composting (about six weeks). Handle products produced by vermiculture in the same way as other untreated organic products as there is no heating to reduce microbe levels during production.
- ✓ For side dressing, only use treated proprietary organic products or composted manure containing less than 100 *E.coli* per gram. Ask the supplier (manufacturer) for evidence that the product has been treated and does not exceed this critical limit.
- ✓ Do not apply composted manure or proprietary organic products over the top of produce.
- ✓ Minimise the potential risk of faecal contamination from the presence of livestock, birds and other animals. For example, grazing animals are not allowed into growing crops or adjacent areas during the last 60 days before harvesting.
- ✓ Assess water used for irrigation and spraying for risk of contaminating fresh produce. Where a significant risk exists, either treat the water with a sanitiser or use an alternative water source. The risk of microbial contamination is higher if irrigation water comes into direct contact with the fresh produce immediately before harvest.
- ✓ Check harvest containers and equipment for soundness and cleanliness before use and clean or discard them as required.
- ✓ Train workers about sources of microbial contamination and the importance of good hygiene practices.

Hygiene and sanitation practices during washing, treatment and packing of fresh produce

Practices that minimise the risk of fresh produce being contaminated with human pathogens after harvest include:

- ✓ Assess all water used in the packing shed for risk of contaminating produce, such as water used for water dumps, washing, hydrocoolers, top-icing, postharvest treatment, cleaning of packing line equipment and surrounding areas and water used for staff facilities.
- ✓ Select water sources or sanitise water used for postharvest treatments and for hand washing to minimise the risk of contamination of produce.
- ✓ Treat water dumps and hydrocooler solutions with an approved sanitiser to maintain water quality for the duration of use. Monitor the concentration of sanitiser to ensure levels are maintained and

keep a record of the initial sanitiser concentration, monitoring frequency, monitoring results, water condition relative to maintaining sanitiser effectiveness (pH, temperature) and quantities of supplementary sanitiser added.

- ✓ Replace water dump, hydrocooler and postharvest treatment solutions at appropriate intervals and do not allow water and treatment solutions to stagnate between uses.
- ✓ Heat waters dumps to 5^0C above fruit temperature to avoid infiltration of microbes through the stem end.
- ✓ Train workers about contamination sources and the importance of maintaining packing shed sanitation practices and personal hygiene requirements.
- ✓ Provide toilets and hand washing facilities that are equipped and maintained to enable workers to achieve personal hygiene requirements. Position signs in visible places to reinforce personal hygiene requirements and monitor workers for their compliance with the requirements.
- ✓ Develop and follow a cleaning plan that ensures that the cleanliness of packing shed areas and facilities is maintained. Use vermin control measures to minimise infestations, discourage birds from roosting and exclude domestic animals from all areas where fresh produce is handled, packed and stored.
- ✓ Check packing containers and equipment, storage areas and transport vehicles before use for cleanliness and vermin infestation and clean or discard if there is a significant risk of contaminating produce.

Product identification and traceability

To ensure fresh produce that is contaminated or suspected of being contaminated can be rapidly identified, withdrawn or recalled and appropriately disposed, the following records and practices are needed:

- ✓ Clearly mark each fresh produce package or container with identification, including the packer's name or brand, address and packing date or batch identification code. If fresh produce from more than one grower is packed under the same name or brand, identify each package with a name or grower code to enable traceability to each farm.
- ✓ Keep records of the growing location, harvest date, packing date/batch identification code, quantity supplied and destination for each consignment.
- ✓ Keep records of the production and postharvest practices related to food safety. This includes records of all fertilisers and soil additives, crop sprays, sanitisers, postharvest treatments and test results.

Testing produce

Preventative measures are clearly superior to microbial testing in assuring the safety of fresh produce. Microbial testing of produce can verify the effectiveness of management practices used to prevent, reduce or eliminate contamination. The *Guidelines for On-Farm Food Safety for Fresh Produce* provides information on microbial testing of produce.

Reviewing practices

The keys to marketing safe fresh produce are good agricultural practices during growing and harvesting and good hygiene and sanitation practices in the packing shed. To ensure practices remain effective it is essential to review all practices on a seasonal basis or when changes occur. Re-assess the risks whenever there are any changes to growing practices such as changes to the water source, irrigation system, fertilisers and soil additives or activities nearby to the crop, and changes in the packing shed such as changes to the water source, washing steps or postharvest treatments, new equipment or new workers.

Reference: *Guidelines for On-Farm Food Safety for Fresh Produce,* 2nd Edition 2004 Department of Agriculture, Fisheries and Forestry
www.daff.gov.au/corporate_docs/publications/pdf/food/nfis/guidelines_onfarm_food_safety_fresh_produce_2004.pdf

NSW DPI Extension Horticulturists

Commercial fruit growers who require horticultural production or pest and disease advice should contact their nearest district horticulturist

Alstonville	Philip Wilk	6626 2450
Camden	Lawrence Ullio	4640 6408
Gosford	Sandra Hardy	4348 1916
Orange	Jeremy Bright	6391 3822
Tumut	Julie Dart	6947 4188
Hawkesbury	Peter Malcolm	4588 2105
Young	Sue Marte	6382 1077