



TOMATO TOPICS



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NEWS and INFORMATION
FOR THE PROCESSING TOMATO INDUSTRY

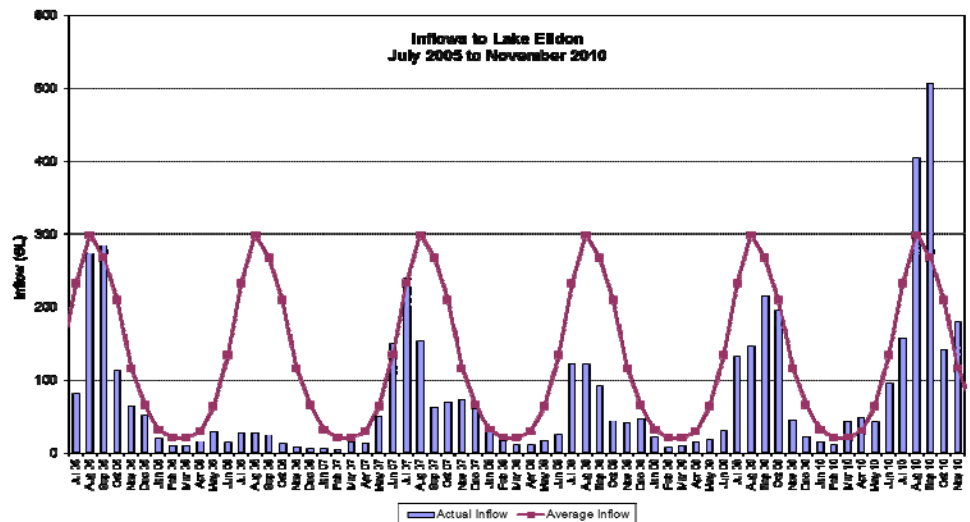
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2010/11 Season Update

Every year certainly does present a new set of challenges. The “drought” conditions experienced over the past few years are no longer, with many areas now battling flooding rains. Even up until the end of November inflows into Lake Eildon were greater than the past 5 years. This has resulted in temporary water trading at less than \$50/ML and irrigation allocations on both the Goulburn and Murray being at 100%.

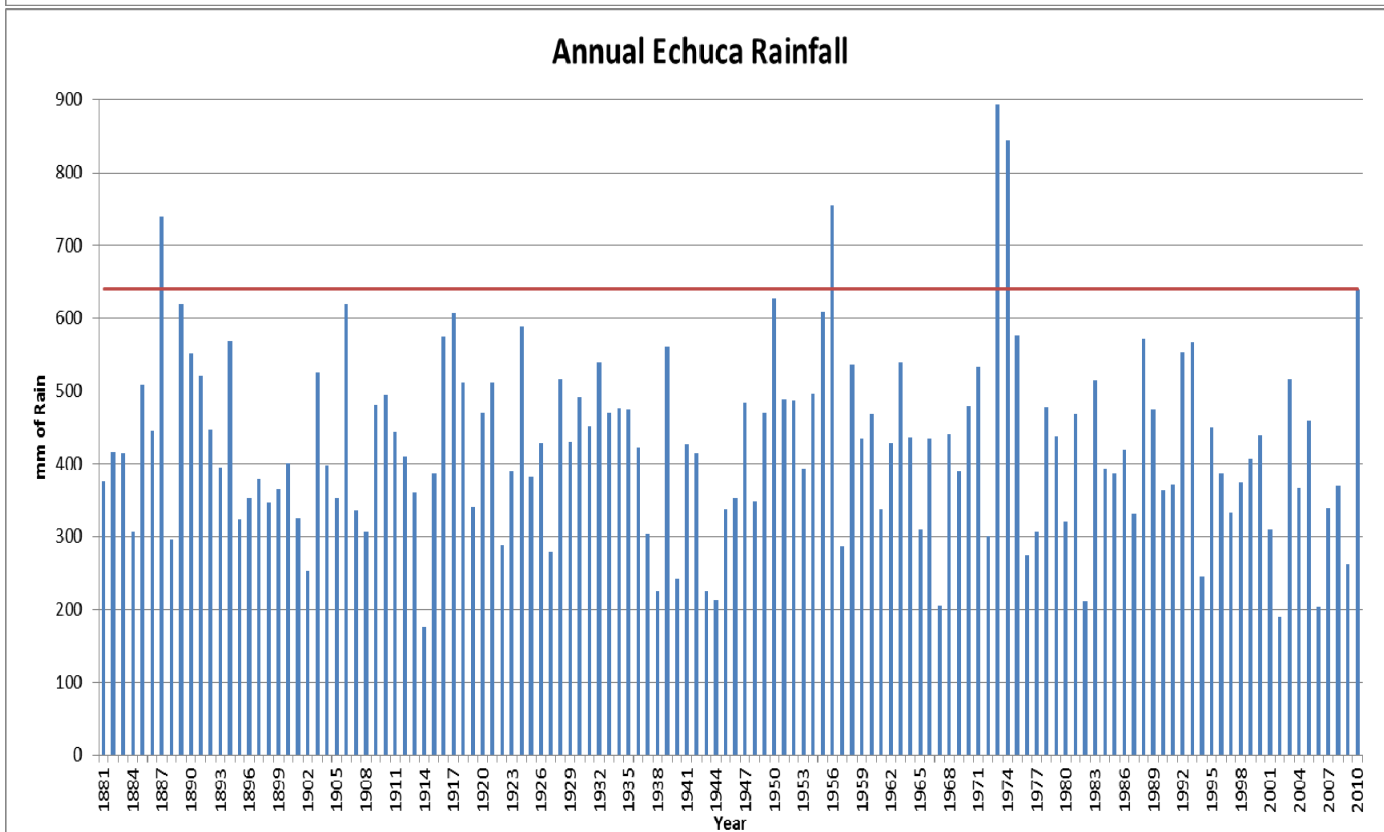
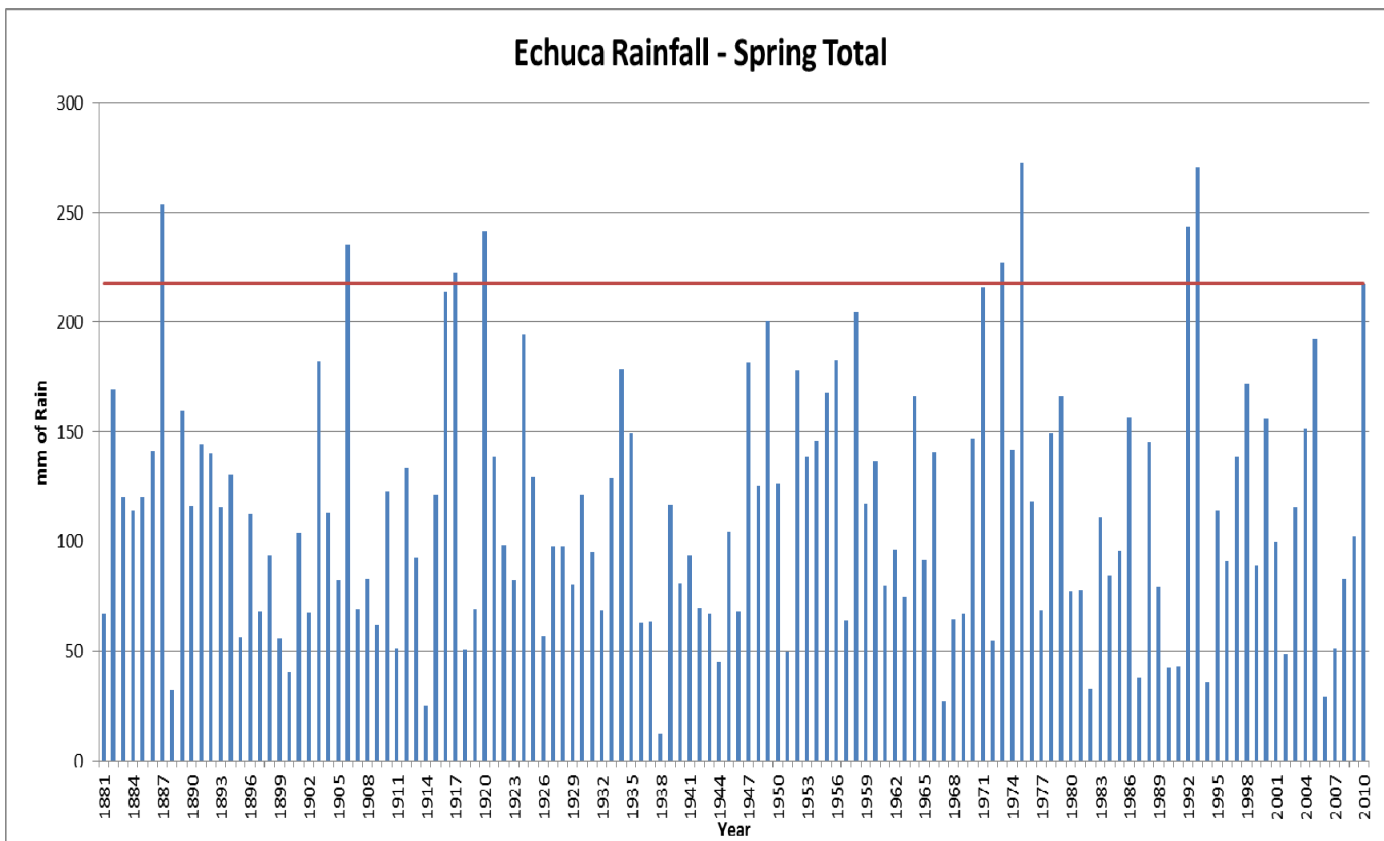


Over 650 ha of new sub-surface drip irrigation has been installed this season under the Federal Government’s On-farm Irrigation Efficiency Program, with installations being delayed due to the spring rainfall. Planting has also been interrupted this season with heavy rain falling across the region at various times. At the time of writing this transplants are still being planted. Expected tonnage for the coming season is still to be determined.

Upon collation of rainfall data for Echuca (as shown on the next page) this year has been the 9th wettest spring since 1881 and 5th wettest year since 1881 (although this year is not yet finished...)

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La Niña conditions have weakened slightly but remain firm across the tropical Pacific. Long-range models surveyed by the Bureau of Metrology (BoM) and published in the latest ENSO Wrap-Up which was released on November 24 suggest that this La Niña event will persist through the southern hemisphere summer and into the first quarter of 2011.

Drift Reducing Technology (DRT) Incentives Program

Drift reducing technology refers most often to the technology and design of application equipment or chemical product formulation but can also include specific ways the equipment is used. The APVMA has created its new “Drift Reducing Technology (DRT) Incentives Program” to promote and encourage the adoption of new and improved technologies and better spray drift management methods.

Details of the DRT Program are still being refined, and the APVMA will introduce the program over the coming months. Initially the APVMA will focus on key areas for which scientific information already exists. After assessment, the APVMA will determine whether these technologies and principles are valid DRT options that it can recognise. Over time the DRT Incentives Program will continue to expand as new scientific data become available to the APVMA for assessment. Industry can assist in the development of this program, by making new scientific information available to the APVMA. This will also benefit them by providing a means for their own technologies and innovations to be assessed and possibly recognised for the improvements they could provide.

The following information is intended to introduce the concepts of the DRT Incentives Program and give readers an indication of how they might benefit from it as it becomes implemented.

In 2002 the APVMA began a concerted effort to strengthen its capacity in the science of spray drift risk assessment. That effort has been ongoing and in 2008 resulted in the publication of APVMA Operating Principles in Relation to Spray Drift Risk. Since then the APVMA has been applying these principles to all new products. In 2010 it began a series of reviews specifically aimed at updating labels for currently registered products to incorporate new instructions to better manage risks from spray drift as identified from spray drift risk assessments. It is important to understand that in order to protect people’s health, Australia’s environment and its international trade from unintended harmful effects of chemical use, it is necessary to assess spray drift risk based on the application technologies and methods that are used in Australia today. The APVMA recognises that some chemical users have already moved to lower-drift equipment and methods or are considering such improvements. The APVMA’s DRT Incentives Program will support chemical users who have already adopted better technologies and risk management methods, as well as provide an incentive for others to do the same. The APVMA realises that some chemical users are concerned that the new spray drift management measures may stop them from being able to use many of these products because of their farm’s size and proximity to sensitive areas. It is important to emphasise again that the new no-spray zones that will be appearing on product labels are designed to provide spray drift risk protection from application with equipment known to be in common use. But modern alternatives that may be included among the APVMA’s DRT incentives options should provide effective solutions for most situ-

ations. In addition, adopting better equipment and methods is also likely to reduce chemical costs by reducing the waste of pesticides lost to off-site drift.

Who will the DRT Incentives Program be for? The DRT Incentives Program has been created to benefit all chemical users by providing a way for them to have access to smaller no-spray zones as a result of taking up validated DRT options. The program can also benefit manufacturers of chemical products and application equipment by providing a way for their improvements to low-drift technology to be recognised and rewarded. Registrants that have developed a chemical product-specific DRT such as a new low-drift formulation can supply data to support a registration for that product with its improved low-drift performance recognised on the product’s label. Manufacturers of application machinery, nozzles and other adaptations to application equipment that can reduce spray drift – namely technologies that are not limited to a specific product – can supply scientific data to support a quantitative assessment of the degree of improvement compared to conventional methods. The APVMA can then make those DRTs that it approves available to all chemical users through a permit mechanism.

How will the DRT Incentives Program work? The concept of the DRT Incentives Program is that chemical users who adopt equipment and methods recognised for reduced spray drift risk can have access to smaller no-spray zones (buffer zones) than those that are shown on product labels. User access to these reduced no-spray zones is made lawful by means of a special permit that the APVMA issues after it validates a particular DRT or, for the case of product specific DRTs, by registration of a new product with a new label. Issuing a permit or registering a new product is the final step. The first step will be submission of scientific information to the APVMA for assessment. In the coming months the APVMA will define how that is to be done and will define data requirements for various categories of DRTs. A permit supporting a proposed DRT can only be issued after the APVMA has assessed the data and decided that its reduction of spray drift risk as compared to conventional approaches is valid. A DRT that is specific to a particular chemical product will be supported by information on that new product’s label. The most up-to-date DRT permits will always be available at www.apvma.gov.au/drt.

Examples of Possible DRT Incentives There are many newer DRT technologies already available and more still in the development stage. The APVMA cannot issue a permit for any of them until it has adequate scientific data that show how much of an improvement the particular DRT equipment or method provides. At the beginning of the DRT Incentive Program, the APVMA will assess those options for which it has data and will provide guidance to industry in relation to which areas it sees promise for future options to be made available. It should be understood that the examples that follow are not exhaustive but are technologies that potentially

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can be implemented sooner than other possibilities. The APVMA will welcome additional suggestions from industry and particularly those with supporting scientific data.

1. **Droplet Size Categories:** The APVMA is currently assessing key studies to provide alternatives to users of pesticides that require a Coarse droplet size category.
2. **Nozzles:** Nozzles are one of the richest opportunities for better DRT options, and lower-drift nozzles are one of the simplest and least expensive improvements for users to adopt.
3. **Non-volatiles Added to Spray Tank Mix for Aerial Application:** For most spray applications, water is the carrier solvent, and spray droplets can shrink rapidly due to evaporation under typical Australian conditions. That droplet shrinkage leads to greater spray drift. Adding compatible non-volatile material to the tank mix imposes a greater minimum mass on each droplet – a change that can substantially reduce spray drift for aerial applications.
4. **Improved Aircraft Configurations :**The APVMA’s modelling capability for aerial applications enables it to determine quantitative reductions in aerial no-spray zones for certain changes to the typical configuration of aircraft as currently considered in the APVMA’s standard risk assessment scenarios.
5. **Sprayer Shields and Shrouds:** Shields and shrouds added to ground application spray booms have the potential to significantly reduce spray drift. However, not all implementations of these devices are equally effective and some designs can even cause worse problems under some conditions.
6. **Barrier Vegetation and Artificial Screens** Plant hedges and tree rows as well as artificial screens have the potential to reduce spray drift in certain situations. Their effectiveness is variable depending upon their height, width, density and arrangement. Barriers that allow little or no air to pass through force the wind to move up and over, but the wind drops down again beyond the barrier at a distance related to the barrier’s height. Barriers with fine, but relatively open foliage can allow more air to pass through while providing a filtering effect, but quantifying the degree of protection is difficult in relation to real-world plantings of different species types and age.
7. **Adjuvants:** Some adjuvants have long been promoted as being capable of reducing spray drift. For a very small number, some studies have provided partial support for this claim. However for a much larger number, there are studies indicating that many adjuvants provide no benefit and many others actually increase spray drift under certain conditions. One of the greatest problems is that some adjuvants behave differently with different tank mixes and differently again when being used with different droplet size categories.
8. **Water Depth and Risk to Aquatic Environments:** Some no-spray zones are imposed to protect nearby aquatic environments.

Screen Duo - For Heat Stress & Locusts

The unusual weather conditions this season in Australia present a particular challenge to producers. The cool and wet conditions have not allowed the crops to acclimatize to higher temperatures. Should the weather change abruptly, growers can expect significant heat and light stress injury to all crops. An application of Screen or Screen Duo as soon as possible after the weather change will go far in reducing yield and quality losses due to high light and temperature conditions. Growers will need to protect their crops as early as possible to avoid damage.

One aspect of Screen or Screen Duo is the alteration of the reflected light spectrum from treated surfaces. Many insects forage based upon visual clues, particularly in the ultraviolet. This has been established by behavioral entomologists at the USDA. Many important pests, including locusts, respond to visual clues from the crops to determine when they should begin foraging. An application of Screen or Screen Duo will alter the spectrum such that many insects do not recognize the crop as food, and move on to untreated plant materials.

Screen Duo is the first product to be developed from Fusion Technology. It is effective for the reduction in crop damage due to excess heat and light. Fusion-based products utilize two different mechanisms for stress management. A particle film (the same ingredients as original Screen) is used to avoid the stress by reflecting/refracting away excess UV, visible, and IR light away from the crop. This keeps the crop cooler, supporting photosynthesis and reducing damage from excess radiation. A naturally occurring compound is added to stimulate the plant’s inherent stress coping biochemical systems.

This dual action product provides growers with an easier to use product, less material to handle and a lower cost per hectare. Screen Duo is applied at half of the rates of the original Screen providing growers with significant benefits including ease of handling and mixing.

For further information contact David Bell – 0417-501 503



New Permits

PER12572 – Acramite (Bifenazate) / cucumber, capsicum & tomato / Two-spotted mite.

Valid 17/11/10 to 30/09/11.

Valid for all states (except Vic).

PER12378 - Acephate / Ornamentals, Tomatoes & Peppers / Western flower thrips.

Valid 25/10/10 to 31/10/15.

Valid for all states (except Vic).

PER11681 - Bayfidan 250 EC Fungicide/Tomato, capsicum, chilli, eggplant / Powdery Mildew.

Valid 25/12/09 to 31/12/11

Valid for all states (except Vic).



UPCOMING EVENTS

Boort Crop Inspection and BBQ

Wednesday 22nd December, Meet at Lyndon and Michelle's at 3:00pm
RSVP to Liz by Monday 20th December 2010

Annual Crop Inspection and Industry Dinner

Friday 21st January 2011

Meet at Campaspe Irrigation 2:00pm

Dinner Venue TBC, starting at 7:00pm

**RSVP required to Liz Mann by Friday 14th January
phone 0427 857 578 or email: lizmann@aptrc.asn.au**

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Proposed Drip Irrigation Tour

Netafim are proposing to organize a tour for processing tomato growers next June (16th to 23rd June in Israel), followed by a visit to the vegetable production region in Ethiopia.

Estimated cost would be around \$4,000 providing HAL funding is accessible

If you are interested in participating please register your interest with Liz Mann by the end of Dec 2010

Managing Pesticide Resistance

DorisBlaesing, RMCG

What is it?

Pesticide resistance management is vital for maintaining effective crop protection options. A comprehensive program of alternative management strategies will mitigate the development of resistance, and contribute towards the quality of the environment.

Loosing control over pests, diseases or weeds due to an excessive use of a pesticide may result in high crop losses and high costs of alternative control products and methods. Pesticide resistance management requires a whole of industry approach with all producers and their advisers strictly adhering to product label requirements.

How do you avoid resistance?

The overriding principle for resistance management is that products must not be overused. Generally, a maximum of three (3) applications should be applied in any crop season, and no more than 2 consecutive sprays before switching to a product from another chemical activity group. This advice may vary on product labels, generally to fewer rather than more applications of the same active ingredient (a.i.). It also is vital to not reduce recommended product application rates as this can easily lead to pest or disease survival and devel-

opment of resistance in surviving populations.

Note: The same active ingredient may be sold under several different product names. Consult your supplier if you are not sure about active ingredients and their activity groups for different pesticide products.

Your supplier will be able to get you specific information about resistance management on your farm. Basic principles are listed below:

1. It is important to monitor crops regularly.
2. Using chemicals in a random manner will cause pests to rapidly develop resistance to chemicals.
3. Help to avoid this by adopting an IRM strategy.
4. Delay resistance development in pests by rotating different a.i. groups and restricting their use to certain periods of the year
5. Avoid broad spectrum sprays (e.g. OP's and SP's) early in a crop cycle to encourage beneficial insects
6. Labels of some products place a limit on the number of times they can be applied.
7. Do not use mixtures of insecticides for controlling pests (eg Bt's & SP's).
8. Good crop hygiene - planting clean seedlings & incorporation of post harvest crop residue - will help to reduce pest pressure.

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Life Cycle Assessment (LCA) of food products with tomato as a case study

Dr Girija Page from the University of Western Sydney will be gathering information during January from growers and processors for the following research.

Sustainability of food production and consumption is one of the major issues linked with the modern way of agriculture. This is because today's food production and consumption patterns deplete natural resources and lead to environmental degradation. The key sustainability issues associated with agriculture are the use of fossil fuels and minerals which are finite and their use have associated environmental impacts such as greenhouse gas emissions and landscape degradation (Harris and Narayanaswamy 2009). The other important issue of concern is the use of fresh water; agricultural products compete and are a dominant user of fresh water which is an increasingly scarce resource globally and especially in Australia.

Developments in the past decade or so and the future obligations to international standards may mean that agricultural enterprises will be required to account for the use of resources and associated environmental impacts (Australian Government 2009; Deurer et al. 2008). Towards this end, Life Cycle Assessment (LCA) is increasingly used as a valuable tool for identifying the potential impacts of products and processes on the environment. LCA has been used in agriculture for identifying the 'hot spots' for improving resource use efficiency and reducing the environmental impacts. In this way sustainability of resource use has been addressed through LCA studies.

Tomato is an important crop commonly used in everyday diets. Tomatoes reach the Sydney consumer in various ways: field grown vs. greenhouse grown; fresh vs. ambient (processed products that could be shelf-stored eg. tomato pasta sauce); seasonal vs. local. It is this variety that makes tomato an interesting case study as a step forward to addressing the recent concerns of environmental impacts and sustainability of primary production and consumption.

Aims of this Research Project

The aim in this research is to model the key environmental impacts of tomato products as a step forward to addressing sustainable production and consumption. To fulfill this aim the following research questions need to be answered. What are the key environmental impacts associated with tomato products? To what degree do the various life cycle stages contribute towards the environmental impacts? What are the 'hot spots' where environmental impacts can be reduced?

The key environmental impacts that this research will model include the energy use, greenhouse gas emissions, waste generation and water use of tomato products from production through to consumption. To be able to model the environmental impacts information will be gathered on each life cycle stage of tomato product. This includes information on the

biophysical inputs/outputs during tomato production, processing, transportation and ultimately the fate of tomato product in the kitchen.

Research Significance

Food is the basic need of human beings and agriculture will continue to be an important human activity. Since all human economic systems including agriculture are fully dependent on the natural environment, a basic understanding of environmental constraints is a prerequisite for making progress towards developing sustainable strategies. Humans can do without fascinating material objects developed by society, but they cannot survive without a sustainable agriculture. This research addresses the increasing public concern over the sustainability of present food production and consumption patterns using tomato as a case study.

Measuring, reporting and addressing the environmental impacts have been considered to be good corporate citizenship for many businesses. Previous studies have indicated that different life stages contribute to a varying extent to the environmental impacts of tomato products. Packaging and consumer use phase has been significant in the use of primary energy while the agricultural production had the biggest share of water used (Andersson 2000; Pydynkowski et al. 2008). The food processing and packaging stages were the greatest contributor to greenhouse gas emissions and global warming (Andersson 2000; Ridoutt and Pfister 2010).

Although there are a few published studies related to certain environmental impacts of tomato production and processing (Andersson et al. 1998; Medina et al. 2006; Ridoutt et al. 2009), there is limited information about LCA and tomato products in Australia. The outcomes of this research, delivered as a series of interim and final reports, will generate information on key environmental impacts of tomato products from production through to consumption (and will include Dolmio® Pasta sauce). It is expected that the findings will form the basis for improvement in management and for making informed choices by the consumer. The outcomes will also have national significance as part of the national research priority for 'An Environmentally Sustainable Australia'.

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Where can I find further information?

Crop Life Australia

CropLife Australia, the peak body of the plant science (inc agricultural chemical) industry in Australia, should be your first point of call for information on pesticide resistance management. Their website is: www.croplifeaustralia.org.au It is updated regularly so you can be sure that the information you are getting through this website is always up to date.

For you or your adviser(s) to receive notifications of updated strategies by email, you / they can send a request using an electronic feedback form on the Crop Life Australia website.

CropLife Australia's Resistance Management Strategies (which are available on their website) provide a guide for the rotation of crop protection products via different product groups. Information is provided on:

1. Fungicide Resistance Management Strategies (including a Fungicide Activity Group Table)
2. Insecticide Resistance Management Strategies (including details on a range of vegetable insect pests and an Insecticide Mode of Action Table)
3. Herbicide Resistance Management Strategies (including details on resistant weeds, Herbicide Mode of Action table and an integrated weed management manual)

For further information go to:

<http://www.frac.info/> Fungicide Resistance Action Committee

<http://www.irac-online.org/> Insecticide Resistance Action Committee

<http://www.hracglobal.com/> Herbicide Resistance Action Committee

Important Reminder

All crop protection products must be handled and applied strictly as specified on the product label or APVMA (Australian Pesticides and Veterinary Medicines Authority) permits. The Resistance Management Strategies do not replace product labels. They are a guide only and do not endorse particular products, groups of products or production methods in terms of their performance. It is important to check with the Australian regulator's (APVMA) product database for up to date information on products and active constituents. The database can be accessed via www.apvma.gov.au.

Product labels

References for resistance management are present on herbicide, insecticide and fungicide labels. These vary from quite detailed information on some fungicide labels through to just references to www.croplifeaustralia.org.au. Make sure you understand the label conditions prior to using a product.

Minor use permits

Generally, growers of crops with small to medium production areas nationally, including many vegetable crops, do not have access to crop protection products with APVMA registration for these crops i.e. the crop is not listed on the product label. The reason for this is that the registration process requires extensive data collection on product efficacy, crop safety (phototoxicity) and required withholding periods (freedom of residues); this is very expensive for producers of crop protection products so that a minimum production area is required to make the process viable.

If a product is not registered for a crop, it may be possible for the industry to obtain a minor use permit. More information on the minor use permit process can be found on the APVMA website under: http://www.apvma.gov.au/permits/agricultural/minor_use.php.

As permits are expiring and being renewed all the time the only way to access current information is via the APVMA web site:

<http://www.apvma.gov.au/permits/permits.shtml>

Generally the permits specify the maximum number of applications per crop or season to manage resistance development.

APVMA Gazette

The APVMA (Australian Pesticides and Veterinary Medicines Authority) Gazette is published fortnightly and contains details of the registration of agricultural and veterinary chemical products and other approvals granted by the APVMA, notices as required by the Agricultural and Veterinary Chemicals Code (the Agvet Code) and related legislation, and a range of regulatory material issued by the APVMA.

For example, the current issue of the APVMA Gazette contains a list of non-renewed registrations i.e. product registrations that were not renewed for the 2010-2011 year, amendments to maximum residue limits (MRLs) of agricultural and veterinary chemicals, particularly for produce entering the food chain.

The APVMA Gazette, and information about subscribing to the gazette alert service, is available on the APVMA website, www.apvma.gov.au.

Locust Update

With locusts active in parts of northern and western Victoria, DPI has received reports of damage to crops. Although the reports are not widespread at this stage, individual farmers have suffered significant losses.

The dates shown in the table are indicative only and are based on the current situation. The dates are to be used as a guide with hatchings expected around the listed dates. The timing of hatchings will vary depending on local conditions.

Location - Victoria	Egg laying	Hatching	Optimum time for chemical treatment (Mid-instar)	Adult locusts (Flying/Swarms)
Northwest - Ouyen	10 December*	30 December	9 January	24 January
Central North – Echuca	10 December*	1 January	11 January	26 January
Echuca - Charlton	2 December	26 December	6 January	21 January
Shepparton - Elmore	17 November	15 December	25 December	8 January
Horsham - Stawell	20 December*	6 January	17 January	31 January

* Future egg laying estimated from current stage of adult development. Dates are a guide only, as egg laying could extend for several weeks before and after the dates given. Forecast dates are based on development models for known or possible egg laying by adult populations and assume sufficient soil moisture for development. Dates are estimated using long-term average temperatures. Dates indicate the majority of the population entering the life stage

As part of the campaign to combat the damage done by locusts, DPI and the Department of Human Services are

working together to support farmers who have been affected by the locust plague. DPI Locust Controller Russell McMurray said many Victorian farmers had already experienced many years of poor conditions and challenging circumstances due to the drought and recent floods.

“The locust threat this spring and summer is another hurdle and some farmers may need support in dealing with losses,” Mr McMurray said.

Counselling and advice services have been established and farmers facing stress and financial hardship caused by locust damage should contact these services.

Landholders in need of support should contact the DPI Locust Hotline on 1300 135 559 or go to www.dpi.vic.gov.au/locusts.

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