



TOMATO TOPICS



Know-how for Horticulture™

NEWS and INFORMATION
FOR THE PROCESSING TOMATO INDUSTRY

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2009/10 Season

This current season is now well underway, following a challenging start. Low temperatures affected a number of the crops early in the season. This was followed by temperatures in the high 30's and low 40's in the first part of November. This heat wave was then followed by rain across much of the processing tomato region, with the following rainfall totals for the month:

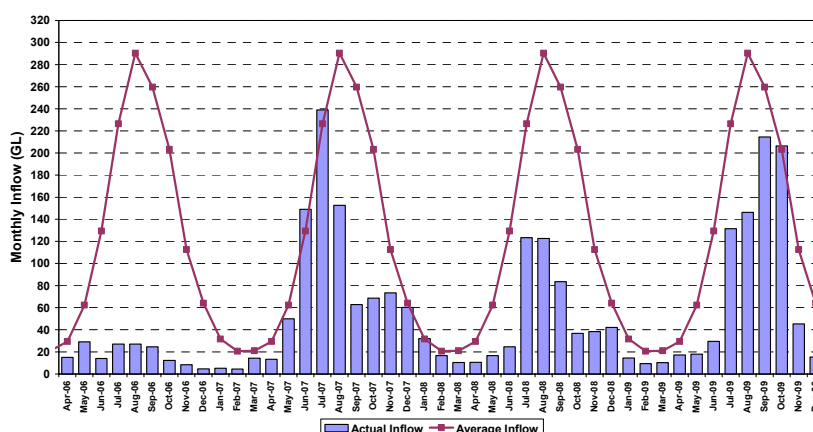
Kerang	98.4 mm
Echuca	52 mm
Shepparton	62.8 mm
Deniliquin	55.8 mm

At this stage more rain is forecast across the production region on Christmas Eve and the days leading up to the New Year

Inflows into Lake Eildon have once again been below the long term average; as shown in this graph. Current irrigation allocations on the Murray system allocation are at 60% of high-reliability water shares (HRWS), while in the Goulburn system 49% HRWS. These levels are the highest the industry has experienced at this time of the year for some time.

At this stage the predicted tonnage for the industry is slightly higher than that produced during the last season.

Inflows to Lake Eildon
Updated to 14 December 2009



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TM06004: Insecticides, Mycorrhizas and Compost – What Does This Mean To Tomato Yield and Quality

Dr Ash Martin, Creation Innovation Agriculture and Forestry

Work on the role and potential benefits of mycorrhizal fungi in sustainable processing tomato production continues this season with a field experiment examining the interaction between a Syngenta Experimental insecticide, Hillview compost application and inoculation with native mycorrhizal fungi on mycorrhizal colonisation, yield, brix and nutrient status on two contrasting tomato farms at Corop and Echuca.

Following on from the large survey conducted by the APTRC, Monash University and RMCg across most processing tomato farms earlier this year, this experiment seeks to quantify the benefit native mycorrhizas, both inoculated and those naturally occurring in the field, may contribute to processing tomato yield and quality, and the extent to which that may be affected by an experimental systemic insecticide and the addition of compost.

Results from the previous APTRC survey in 2009 showed that most growers were yet to take advantage of the potential benefits of mycorrhizal colonisation due to poor colonisation, and that the low colonisation was likely to be caused by the use of metham sodium and, to a lesser extent, crop rotation. In this work two contrasting farm sites were selected: one that had used metham before planting and one that had not. The two sites also had different cropping histories. Importantly, access to the non-mycorrhizal research

variety tomato that acts as a control in field experiments was continued by ongoing collaboration with Monash University.

The Syngenta experimental systemic insecticide may be potentially useful to tomato growers when it becomes available, but there is no publicly available knowledge on what effect it may have on the formation of mycorrhizas in tomatoes, and any subsequent mycorrhizal benefits, so the experiment was designed to evaluate any such effects that may occur. The previous survey also measured soil carbon levels, which, while normal of horticultural soils, were mostly lower than could be considered optimal, and growers expressed some interest in increasing them. Other studies have shown that there may be some relationship between soil carbon levels, and mycorrhizal colonisation and benefits, and so a compost application treatment was also included in the experiment.

The experimental plants are due to be hand harvested in February/March 2010 just prior to mechanical harvesting. Mycorrhizal colonisation in tomato roots, fruit yield and brix, and shoot nutrient concentrations will be measured and analysed, with the results and a report made available to growers by the next APTRC Forum in May 2010.



Trials Being Conducted During the 2009/2010 Processing Tomato Season

Cultivar trials are once again being conducted by Liz Mann in Victoria and Tony Napier (I&I NSW) in NSW.

The Victorian trials are once again at NCP, Rochester and also John and Pat Kennedy's place at Corop. These trials include the following varieties:

SPS 669-6	SPS
Early Magnum	Lefroy Valley
TOM 90031 (UG18806)	Lefroy Valley
TOM 90032 (UG19406)	Lefroy Valley
H5803	Heinz
H3506	Heinz
H4001	Heinz
H3402	Heinz
H4401	Heinz
Sun 6366	Nunhems

Additional small plot trials have also been established adjacent to the Corop trial by SPS.

The NSW trials are at Darlington Point and include the fol-

lowing varieties:

H7204	Heinz
ENP 113	Lefroy Valley
H3002	Heinz
SPS 669-6	SPS

Another trial conducted by Doris Blaesing with financial support from Advanced Plant Nutrition Pty. Ltd. The aim of this trial is to investigate the impact of MaxSil™, a silicon based compound on yield, soluble solids and nutrient uptake in processing tomatoes. This trial is conducted and Geoff and Yvonne Wolfe's place at Echuca West.

In addition to these trials the industry is also offering growers a chance to participate in a fortnightly phone conference with Doris Blaesing to discuss any issues relating to crop nutrition. The next phone conference is planned for Thursday 31st December at 1:15pm. Phone number to call: 1800 672949. Account number 75285533 Pin 0681

WPTC, Parma, Italy, October 29th - 30th, 2009

Louis Chirside, APTG Representative

The **World Processing Tomato Council** (WPTC) holds a meeting to coincide with the Cibus Tec exhibition which is held in Parma, Italy every two years.

Cibus Tec is an exhibition of food processing equipment covering all aspects of agriculture with a large focus on processing tomatoes. As part of the program there is a "Tomato Day Conference" which is a forum of industry leaders presenting information on the processing tomato industry. The theme of this year's program was:

"Processed tomatoes: Affordable, tasty and healthy foods to defy the economic downturn"

The following is a summary of information presented during "Tomato Day":

François-Xavier Branthome (Tomato News) spoke on the current balance between production and consumption of tomato products. This was the largest production year on record and it appears we may go into a cycle similar to that experienced in 2004 when inventories were high. A combination of good market conditions and exceptional weather conditions in all of the major regions of production have led to this record production level: nearly every country has produced more than forecast – this is very unlikely to happen again next year. This record production is only 10% higher than annual consumption which means only a month of carry-over which is not excessive- for many commodities a 30% stock/consumption ratio is considered as normal. The positive news is that consumption is continuing to grow at an estimated one million tonnes a year, which means the current high level of production may be necessary to balance demand in a couple of years.

Paolo Gerevini (Conserve Italia) and Gwen Young (WPTC) presented the current progress on the promotion of processed tomatoes through their health benefits. This included the work of the LYCOCARD project (www.lycocard.com) and Tomato Products Wellness Council (www.tomatowellness.com). Tomato & Health promotional activities are gaining momentum worldwide with the activities of the TPWC, the new LYCOCARD Industrial Platform and the WPTC Chinese Recipe Contest. Links between these organizations already exist and they work together when possible as their aim is similar. When appropriate it is suggested that the issues of sustainability and carbon footprint should also be considered as a standard for more healthful living.

Following "Tomato Day" the WPTC council meeting was held. The main discussions during this meeting were:

Exchange of Information

Kebede Gashaw presented his activity and chaired a roundtable discussion of current production.

The provisional total for the **AMITOM** countries stands at 16.755 million metric tonnes.

In **California**, the harvest is not yet quite finished and the volume harvested to date is 13.316 million short tonnes. The total volume should be in the order of 13.35 million short tonnes - 12.1 million metric tonnes.

Andrew Yu made a detailed presentation of the 2009 pro-

duction in **China** which reached 8 655 000 tonnes. With the increased surface, partly due to the low price of cotton this year, and increased yields of up to 72 t/ha. The brix was higher than normal at 4.8° (the increasing use of hybrids raises the average brix - 4° brix is used as the base for the calculations). The average price was 65 USD/tonne.

Note: The total production figure reached during the meeting was 42.7 million tonnes.

However, it was based on a Brazil production figure estimated during the meeting at 1.5 million tonnes, but later corrected to 1 million tonnes – the total figure presented in was 42.2 million tonnes.

The main ideas discussed during the long ensuing discussion were:

- In Italy the 2009 brix was lower than normal – the production of finished products is not higher than last year
- A combination of good market conditions and exceptional weather conditions in all the major regions of production have led to this record production level: nearly every country has produced more than forecast – this is very unlikely to happen again next year
- The industry needs to send a strong signal that they intend to reduce production next year. Could each region say publicly that at least they will not increase production or even reduce it by 5%? The best approach would be to stress that after 3 years of high production, it is normal to see a reduction next year as historical data shows a cyclical production pattern.
- CLFP inventory are sometimes distorting the picture by showing high stock levels which are not available on the market.
- There are still rumors that 6 small new lines will be installed next year in China but the main consideration is the surface to be planted as the capacity already installed could enable to process more than 10 million tonnes. The large surface planted this year was mainly due to the low price of cotton last year.

China recipe contest

Andrew Yu makes a presentation of the recipe contest recently launched in China at the initiative of WPTC and CCFIA. The contest website is at www.tomatoprc.com. The contest is progressing very well, with good coordination between China and the WPTC. Altogether 32 winning recipes will be selected and later used for communication in China and abroad. The overall winner will be announced during the Estoril congress next June

Andrew Yu also presented a bid for China to organize the 2012 WPTC congress in Beijing. In the absence of any other candidature, and in view of the growing importance of China as both a processing country and its market potential, the proposal was unanimously accepted.

It is decided that the next meeting will take place on Tuesday 2nd February 2010 in Sacramento (California). All WPTC members are invited to attend the Tomato Processing School on Monday, February 1 at the CLFP member registration rate. The CLFP Convention will take place on 2-3 February.

Tomato/Potato Psyllid - A Potential Threat to the Australian Processing Tomato Industry

The Tomato/Potato Psyllid (*Bactericera cockerelli*) is thought to have first arrived in New Zealand in 2006 from the USA. It has now been found in tomato crops in Hawkes Bay and Gisborne.

A range of symptoms is associated with the presence of this psyllid, some are a result of the psyllid alone, while others are due to the bacteria-like disease Liberibacter (*Candidatus Liberibacter solanacearum*) which is also transmitted by the psyllid. The tomato/potato psyllid transmits Liberibacter and may also transmit Phytoplasma (i.e. big bud), although this has not yet been proven.



Tomato plants affected by psyllids on the right; healthy green leaved plants on the left.

The psyllid alone has been shown to reduce crop yields by approximately 38%, as a result of causing plants to produce numerous small poor quality fruit or prevent fruit forming. It is thought that an hour of feeding is sufficient to destroy a plant.

The psyllid has a wide range of hosts including tomatoes and potatoes. Other hosts include a range of weeds also common on processing tomato farms and lucerne.

The psyllid has three lifestages. The lifestages are egg, nymph and adult. Outdoors in North America there are thought to be 4-7 overlapping generations per year. In greenhouses development and survival can occur from between 15.5°C and 32.2°C, optimum development occurring at 26.6°C. The development threshold is 7°C. In a greenhouse averaging 18°C psyllids will take 33 days to complete the life cycle.

Psyllid adults can mate more than once. The first mating usually occurs 2-3 days after emergence.

Females lay up to 510 eggs over their lifetime. Eggs are laid over a period of about 21 days. Eggs hatch 3-9 days after

laying. Eggs are oval in shape and yellow to orange in colour. The eggs are attached to the leaf by a stalk. Eggs can be laid on all parts of the leaf and are very obvious when on the leaf edges.



Adult tomato/potato psyllid with moulted 'skin' of nymph and yellow eggs on stalks.

At this stage neither the psyllid or Liberibacter have been detected in Australia. If either of these are detected in Australia the initial response will be to consider eradication, at the same time it is likely that state borders will be closed to the transport of host produce. This response is similar to that which occurred when Lettuce Aphid arrived in Australia from New Zealand during mid-March 2004. At that time no lettuce movement was permitted across state borders, even for processing. (It is thought that Lettuce Aphid arrived in Australia by an extreme and unusual weather event).

If this pest or disease is detected in Australia the [Emergency Plant Pest Response Deed \(EPPRD\)](#), which is a formal legally binding agreement between PHA, the Australian Government, all state and territory governments and national plant industry body [signatories](#) will be utilised. It covers the management and funding of responses to Emergency Plant Pest (EPP) incidents, including the potential for owner reimbursement costs for growers. It also formalises the role of plant industries' participation in decision making as well as their contribution towards the costs related to EPP responses.

The Australian Processing Tomato Research Council is a member of Plant Health Australia and has signed the EPPRD, hence processing tomato growers would be eligible for owner reimbursement costs. Industries who have not signed this document are not eligible for owner reimbursement costs. The APTRC would also have a seat at the table in all discussion regarding this pest or disease.



UPCOMING EVENTS

Phone Conference with Doris Blaesing for Growers to Discuss Any Issues Relating to Crop Nutrition

Thursday 31st December at 1:15pm

Phone number to call:

1800 672949

Account number 75285533 Pin 0681

APTRC Meeting, Friday 15th January 2010

Crop Inspection and Industry Dinner,

Sponsored by Netafim and HAL

Friday 22nd January, 2010

Meet 2:30 pm Campaspe Irrigation

Dinner 6:30pm Darryl and Eril Rathjen's Home, Colbinabbin

RSVP essential to Liz by January 15th, Phone 0427 857 578

Sustainable Farm Families Year 3 Program

Thursday 29th April, 2010

Workshops with Dean Lanyon and Doris Blaesing

Does long-term sub-surface drip irrigation affect soil structure and plant nutrition?

April/May 2010

Additional information will be provided closer to the time.

World Tomato Congress 2010

Estoril, Portugal from June 20th to the 23rd 2010 www.wptc2010.com

A funding application has recently been submitted to HAL to assist with the cost of attending this event and pre-congress study tour

At this stage it is proposed that a Pre-congress tour will occur studying processing tomato crop production systems in Spain, departing Australia approx 12th June

If you are interested in attending please contact Liz Mann

Tomato Crop Surveys During 2009/10 Season

In February 2010, the Department of Primary Industries (DPI) will be visiting tomato crops in Shepparton and Boort as part of its plant pest surveillance program.

With the permission of growers, routine surveys will be conducted to help protect the industry from pest and disease outbreaks.

These annual surveys are conducted in a range of crops to

reassure trading partners that certain plant pests and diseases are absent from Victoria. Similar surveys also occur in other Australian states and territories.

DPI officers will shortly be contacting growers to arrange surveys of their crops.

For further information, please contact Craig Murdoch on (03) 9210 9449.

Sea Surface Temperature Charts

Dale Grey, DPI Cobram (Taken from The Break Newsletter, Nov 2009)

The Sea Surface Temperature (SST) anomaly chart has become a key indicator of what is happening with the world's climate.

The ocean for most part, drives what happens in climate and weather. Recent advances in technology and measurement have allowed the average punter access to timely SST data.

Say 20 years ago, SST information was limited to measurements taken by temperature probes on ships that travelled the

major shipping routes.

Then, fixed buoys across the equator of the Pacific Ocean that travelled to the bottom of the ocean and back every day, relayed measurements to oceanographic agencies.

<http://www.pmel.noaa.gov/tao/index.shtml>

Satellites through both infra red and height sensors that help to make colour maps of the world's oceans are now used. With ground truthing from temperature probes on ships and buoys, these maps have become more accurate.

Currently, the 3260 Argo Robotic buoys floating around in the ocean currents, sink to the bottom of the ocean and rise to the top weekly, sending through their temperature data to the collectors. These devices have revolutionised our knowledge

of ocean behaviour.

<http://www.argo.net/>

All of this data goes into making a map of actual SST

http://cawcr.gov.au/bmrc/ocean/results/SST_anals/SST_20091101.gif

http://polar.ncep.noaa.gov/sst/oper/global_sst_oper0.png

But most of the talk is rightly about SST anomalies (the difference from normal).

http://cawcr.gov.au/bmrc/ocean/results/SST_anals/SSTA_20091101.gif

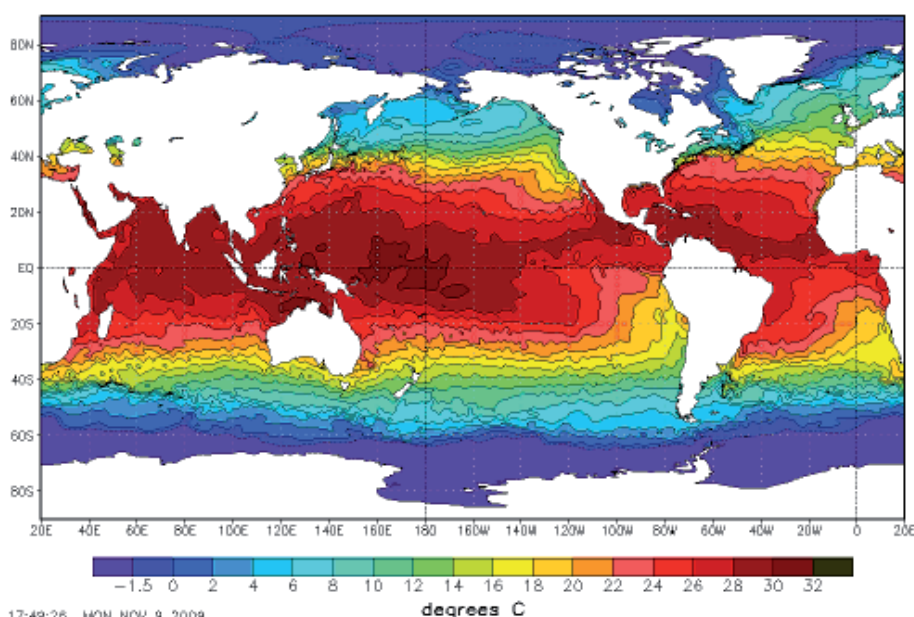
<http://www.osdpd.noaa.gov/ml/ocean/sst/anomaly.html>

These are constructed by comparing the actual temperature to the long term average for that time of the year. You can see that a SST anomaly chart is very

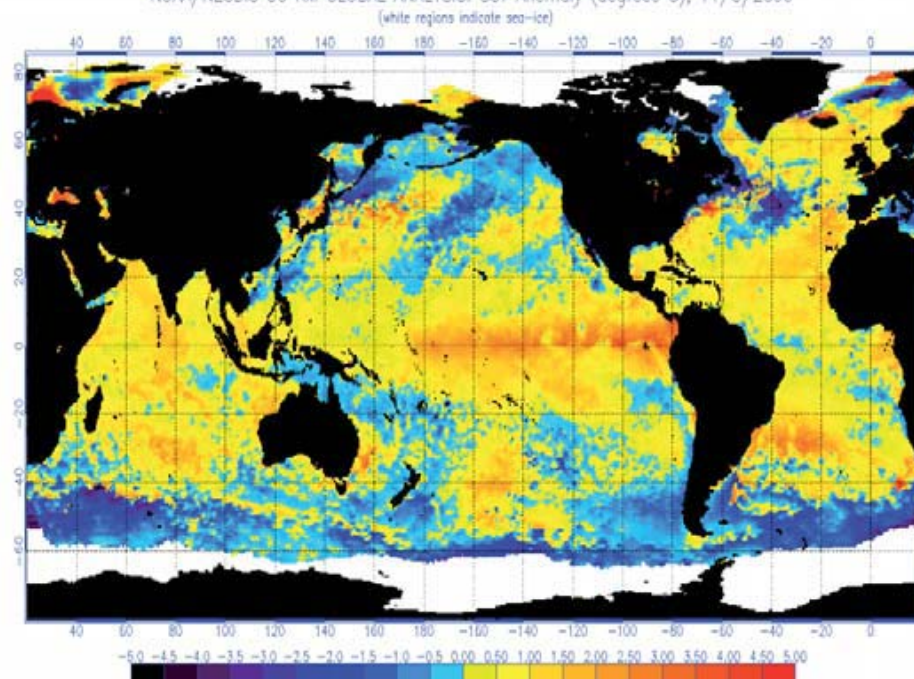
different from an SST chart. SST's vary by at most + or - 4 °C. To the casual observer these temperature differences are small but their impact can be enormous. For instance El Niño and La Niña occur when the Pacific Ocean at the equator is + or - 0.8 °C compared to normal.

Indian Ocean Dipoles occur with similar small changes in ocean temperature. The water in Bass Strait is currently warmer by two degrees compared to normal.

NOAA/NWS/NCEP/EMC Marine Modeling and Analysis Branch
RTG_SST Analysis (0.5 deg X 0.5 deg) for 09 Nov 2009



NOAA/NESDIS 50 KM GLOBAL ANALYSIS: SST Anomaly (degrees C), 11/5/2009



Active Ingredients Registered for Use in Tomatoes in Australia

<i>Fungicides</i>			<i>Insecticides</i>			<i>Herbicides</i>	
Active Ingredient	Group	WHO Class	Active Ingredient	Group	WHO Class	Active Ingredient	Group
Azoxystrobin	11	U	Abamectin	6A		Fluazifop	A
Azoxystrobin & Difenconazole (Permit 1096)	11/3		Acephate	1B	III	Glufosinate	N
Chlorothalonil	M5		Alpha-cypermethrin	3A	II	Metribuzin	C
Copper (Cu) present as Copper ammonium acetate	M1		Beta-cyfluthrin	3A	II	Napropamide	K
Copper (Cu) present as Copper Hydroxide	M1	III	Beta-cypermethrin	3A		Pebulate	E
Copper (Cu) present as Copper octanoate	M1		Bifenazate (Permit 10218)	2D		Pendimethalin	D
Copper (Cu) present as Copper Oxychloride	M1	III	Bifenthrin	3A	II	Quizalofop-p-ethyl	A
Copper (Cu) present as Cupric (II) Hydroxide	M1		Buprofezin (Permit 9178)	17A	U	Quizalofop-p-tefuryl	A
Copper (Cu) present as Cupric Hydroxide	M1		Cadusafos	Nematicide	IB	Rimsulfuron	B
Copper (Cu) present as Cuprous Oxide	M1	II	Carbaryl	1A	II	Sethoxydim	A
Copper (Cu) present as Tribasic copper sulphate	M1	II	Chlorantranilprole	28		Trifluralin	D
Copper Oxychloride	M1	III	Chlorantranilprole & Thiamethoxam (Permit 11280)	28/4A			
Difenconazole	3	III	Chlorpyrifos	1B	II		
Guazatine	M7	II	Cypermethrin	3A	II	Ethephon	PGR
Guazatine acetates	X		Deltamethrin	3A	II		
Iprodione	2	U	Diazinon	1B	II		
Mancozeb	M3	U	Dicofol	2B	III		
Metalaxyl	4	III	Dimethoate	1B	II		
Metalaxyl-m	4		Emamectin	6A	II		
Metiram	M3	U	Emulsifiable Botanical Oil	spray adjuvant			
Potassium bicarbonate	Y		Endosulfan	2A	II		
Propineb	M3	U	Esfenvalerate	3A	II		
Pyrimethanil	9	U	Fenamiphos	1B	IB		
Quintozene	14	U	Fenitrothion	1B	II		
Sulphur	M2	U	Fenthion	1B	II		
Sulphur as Elemental Sulphur	M2	U	Gamma-cyhalothrin	3A	II		
Sulphur as wettable sulphur	M2		Imidacloprid	4A	II		
Sulphur Present as Calcium Polysulfide	M2		Indoxacarb	22A			
Zineb	M3	U	Lambda-cyhalothrin	3A	II		
			Maldison	1B	III		
			Methamidophos	1B	IB		
			Methidathion (Permit 10265)	1B	IB		
			Methomyl	1A	IB		
			Methoxyfenozide	16A	U		
			Nuclear Polyhedrosis Virus of Helicoverpa Armigera				
			Paraffinic oil	spray adjuvant			
			Parathion-methyl	1B	IA		
			Permethrin	3A	II		
			Permethrin (40:60::CIS:TRANS)	3A	II		
			Petroleum oil				
			Phorate	1A	IA		
			Piperonyl Butoxide		U		
			Prinmicarb	1A	II		
			Potassium Salts (Permit 11120)				
			Propargite	14A	III		
			Pymetrozine (Permit 10678)	9A			
			Pyriproxyfen	7C			
			Spinosad	5A	U		
			Sulphur	M2	U		
			Sulphur as Elemental Sulphur	M2	U		
			Sulphur as Thiosulfate	M2			
			Sulphur as Wettable Sulphur	M2			
			Sulphur Present as Calcium Polysulfide	M2			
			Sulphur present as Polysulfide Sulphur	M2			
			Tau-fluvalinate	3A	U		
			Thiamethoxam	4A			
			Thiodicarb	1A	II		
			Trichlorfon	1B	II		
			Zeta-Cypermethrin	3A	IB		
WHO Classifications							
IA = Extremely hazardous; IB = Highly hazardous; II = Moderately hazardous; III = slightly hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified; O = Obsolete as pesticide, not classified.							

Chlorpyrifos Preliminary Review Findings Report on Additional Residues Data

Four contemporary Australian trials, along with two less-recent Australian trials and some overseas data were considered. At 3 days after application (the current WHP), residues in tomatoes ranged from 0.06 to 0.59 mg/kg, with a median residue of 0.10 mg/kg. A longer WHP could not be considered. Fruit are continually ripening and would be present at all stages of ripeness when spraying, and tomatoes almost ready for harvest could not wait more than 3 days. There were no relevant data for cherry or other small tomatoes.

There is **support** from a residues perspective for the ongoing use of chlorpyrifos in standard tomatoes when used as directed, but not in small tomatoes, such as cherry tomatoes. The latter, because of their greater surface area to mass ratio, could be expected to have higher residues than standard-sized fruit. Therefore, the data support an MRL of 1 mg/kg at a WHP of 3 days. However,

this is in conflict with MRLs/tolerances overseas, where the MRL is 0.5 mg/kg at 3 days PHI and could prejudice trade if there was significant trade in this commodity. The use pattern in Australia is not changing, so therefore the magnitude of residues in the treated commodity should also not change.

The recommendation therefore will apply only to field grown tomatoes used for processing and does **not** include fresh tomatoes.

Tomatoes: ongoing use for the patterns prescribed on current labels is **supported** by the data, for processing tomatoes only. An MRL of 1 mg/kg and a WHP of 3 days are recommended.

Commodity	Uses NOT supported	Uses supported	MRL (mg/kg)		WHP (days)	
			Old	Pro-posed	Old	Pro-posed
Tomatoes	<i>Use on fresh market tomatoes</i>	Processing tomatoes only: Tomato grubs, budworm, green vegetable bug, aphids, wireworm, black beetle	70.5	1	3	3

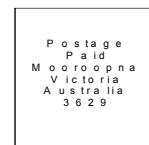
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