

**Development of residue management
strategies and action plans for
export vegetables.**

Kevin Bodnaruk
AKC Consulting Pty Ltd

Project Number: VG08112

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Development of residue management strategies and action plans for export
vegetables.

Final Report

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Purpose of the Project:

To identify potential export market issues arising from pesticide MRL disparities and to develop risk management options to aid in avoiding potential residue violations.

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MEDIA SUMMARY

Export trade of Australian horticultural commodities can be damaged by unwanted pesticide residues not meeting importing country standards. Such breaches can potentially impact on the livelihood of growers and affect access to overseas markets for the entire industry. As exports have been identified as one avenue for industry growth, residue management and export compliance have been highlighted as an issue warranting investigation.

This project has examined the risks of pesticide residue non-compliance for 11 crops, e.g., beans, beetroot, broccoli, cabbages, capsicums, carrots, cauliflower, celery, leeks, lettuce and sweet corn. The project objective was to identify pest management options which could aid exports of Australian vegetables in achieving compliance with importing country standards. This was addressed, firstly through the provision of information on current pesticide related standards and secondly, where disparities existed by identifying alternative pesticide options that could assist in exports conforming to importer standards.

Project coordinators, AKC Consulting, have liaised with chemical manufacturers, and international and domestic regulatory organisations, to:

- collate listings of Maximum Residue Limits (MRLs) for the nominated export markets
- prepare comparisons for MRLs for the 11 commodities;
- undertake residue risk analyses by comparing Australian MRLs with those of a range of importing countries
- developed preliminary residue management options
- provided the preliminary results as input to the Minor Use Coordinator and SARP process, i.e., residue management options.
- seek to keep industry informed of new developments and progress of existing residue issues.

This information was made available to industry for consideration and feedback.

TECHNICAL SUMMARY

Australia exports fresh fruit and vegetables exports had a market value in excess of \$700m in 2008/09 with vegetables contributing approximately 20% (\$151m). These export industries aim to provide 'clean' high quality produce, free of pests and diseases to their customers. To achieve this, chemical control methods are often used. As a consequence, pesticide residues in the harvested commodity can occur. Australian growers apply these pesticides in accordance with local regulatory requirements complying with domestic standards. However, domestic compliance, does not guarantee international compliance. Inadvertent breaches can occur due to maximum residue limit (MRL) disparities between countries, i.e., either different MRLs or an absence of MRLs for a product. The result of breaches can be financial loss through quarantining of the shipment, as well as temporary loss of market access.

Prior to the project there was little information available on MRL data for export destinations relevant to vegetables, e.g., the National Residue Survey compile a MRL table for use by the onion industry. There is, however, no source of information specifically targeted at residue management. This lack of suitable information was deemed to be a significant shortcoming due to the serious potential trade implications associated with MRL breaches.

In the project, assessments were completed for 11 export crops, beans, beetroot, broccoli, cabbages, capsicums, carrots, cauliflower, celery, leeks, lettuce and sweet corn, to determine the degree of potential exposure to MRL violations. This involved collating MRL tables for export destinations for each commodity then developing management option guidelines on the basis of any identified MRL disparities. These guidelines were developed based upon available residue trial data and MRLs existing either at Codex or other international jurisdictions. Input was sought from relevant chemical manufacturers and options amended where necessary. This information was the provided to industry stakeholders.

1.0 INTRODUCTION

1.1 CURRENT SITUATION

There exists, internationally, growing concerns that countries will use regulatory standards, such as maximum residue limits (MRLs), as trade barriers. These concerns have been heightened with an increasing number of countries seeking to revise their MRL regimes to positive list systems. That is, there is nil tolerance unless an MRL exists on the positive list.

Australia exports of vegetables in 2008/09 had a market value in excess of \$151. These industries aim to provide 'clean' high quality produce free of pests and diseases to their customers. Chemical control measures are often used to achieve this. An outcome can be pesticide residues in the harvested commodity.

In Australia, domestic MRLs are based on the determination of residues following the observance of good agricultural practice (GAP). This approach is essentially the same as that followed by importing countries; however differences in use pattern can result in MRL disparities. While there is movement towards greater harmonisation of regulatory standards and the use of United Nations (Codex) standards as benchmarks, pesticide MRLs still vary from country to country. It is therefore possible for countries to reject food imports where residues do not comply with either local or Codex standards. This increases the risk of residue violations occurring where food safety concerns have seen an increase in at border residue monitoring. That is, unless there is some mechanism available facilitating access to information that allows growers and or exporters to assess their level of risk.

Currently, MRL information can be accessed via a number of sources such as government agency websites. However, this information tends to be static, reflects the situation when collated and can be updated infrequently. Furthermore, having access to MRL information while enabling a grower to identify where an MRL gap may exist does not necessarily provide information on the level of risk and how this risk might be mitigated.

The Agricultural Pesticides and Veterinary Medicines Authority (APVMA), in acknowledging concerns over the potential for residue violations to impact adversely on trade have made it a requirement that this aspect be addressed with new product registrations for nominated 'major' crops. This can involve the placement of a statement on product labels such as *"Treated fruit for export to particular destinations outside Australia may require a longer interval before harvest to comply with residues standards of importing countries. Please contact your industry body or exporter before using...."* Unfortunately, this approach while positive could be somewhat problematic, from an individual grower's perspective. Particularly when one reviews the range of pesticides registered in individual crops. For example, there are over 50 compounds approved for use in carrots and 60 in lettuce. Placing the onus upon the grower to pursue the required information for each compound can be onerous.

Recognizing that situations can exist where breaches could occur due to MRL disparities between countries, i.e., either through different MRLs or through an absence of MRLs this

project was initiated. The purpose of the project was to identify the extent of risk and to provide risk mitigation options for industry stakeholder consideration. The aim being to provide growers with options to minimize risks of non-compliance, thereby avoiding potential problems at export destinations.

Industries such as apples, pears and wine have published guidance documents for growers on the use of registered products to help ensure compliance. This advice often varies depending upon export destination and can include advice not to use certain products, or to implement harvest intervals longer than those specified on a product label. The latter approach usually involves the examination of residue decline data, where available, in determining the period (WHP) required to meet an importing countries tolerance.

Unfortunately, the number of potential alternative options available for the affected vegetable industries is limited.

2.0 METHODOLOGY

The determination of potential risks of MRL violations for the nominated commodities was completed in two stages. The first was done for broccoli, cabbages, capsicums, carrots, cauliflower, and lettuce, the second for beans, beetroot, celery, leeks and sweet corn. Initially information was collated consisting of the MRLs that existed in the target export markets for pesticides with approvals in Australia. The markets for which MRL information was gathered were identified through preliminary consultation with the peak industry body AUSVEG.

Based upon the MRL tables for each export market the various pesticide-commodity combinations were assessed for their violation risk as either low or high. Risk was assessed as low where either no data gap existed, i.e., MRLs were comparable between Australia and the export market, or where the Australian use pattern was unlikely to result in a detectable residue. In low risk cases it was concluded that alternative options to current Australian uses were not required.

Where the risk from an MRL disparity was considered as high, information available in the public domain was sought and where available reviewed. This involved determining whether MRLs existed in other jurisdictions and what data, if any might be available to justify and support a permit request. This was done to determine whether either amended use patterns could be developed, i.e., estimation of suitable export harvest intervals, or identify alternative pesticides where approvals could be sought from the APVMA. In some instances chemical manufacturers were also contacted with regard to the availability of trial data and or company based assessments.

In order to ensure relevance of the risk assessment process and the mitigation options derived specific pesticide-commodity combination were reviewed within the context of that crops pest management matrix, i.e., availability of approved alternatives, MRLs elsewhere, trial data or need, i.e., individual pesticides were examined on the basis of specific pest or disease controlled within a crop rather than on the presence or absence of an MRL.

In the analysis MRL status, existing options and availability of alternative options were examined culminating in the development of potential risk mitigation options, e.g., desk-top permit applications or proposals for data generation. An example of the type of detailed analysis undertaken for brassica vegetables is provided in Attachment III.

These options were then provided to relevant industry representatives for feedback. The processes involved during the course of the project were cyclic. These cycles covered data collection, collation, and undertaking risk assessments, seeking feedback, the generation of risk mitigation options and their communication. This involved consultation with various industry participants. To ensure that the information generated was of value and easily used issues relating to format and content were agreed through consultation with the key stakeholders, e.g., Pesticide Minor Use Coordinator.

3.0 RESULTS

3.1 MRL LISTINGS

As indicated MRL data covering the 11 commodities was gathered for key export markets as identified, by the peak industry body AUSVEG. The MRL data was collected from chemical manufacturers, regulatory bodies in the importing countries and Australian regulatory authorities. The collated MRL data is presented by crop and country in Attachment I.

3.2 RESIDUE RISK MITIGATION OPTIONS

The residue risk mitigation options identified to address the MRL gaps found in export markets were collated and provided to the Pesticide Minor Use Coordinator. In total over 150 pesticide-commodity risk mitigation combinations were identified for the 11 crops. The risk mitigation options identified for the 11 crops are outlined in Attachment II.

These options were provided to the Pesticide Minor Use Coordinator, firstly as an element of the Strategic Agrichemical Review Process (SARP) being undertaken for the 11 crops covered in VG08112. Those risk mitigation options identified in VG08112 were used to help identify potential solutions to gaps identified in the SARP process.

And secondly submitted for consideration and possible inclusion in the Minor Use program, i.e., submitted to relevant vegetable industry advisory committees (IAC) for possible funding of data generation or inclusion in possible desk-top permit applications. To date of the risk mitigation options identified only a small number have progressed to permit applications. This was due to the initial round of crops being classified as major as per the APVMA guidelines and the second round of minor crops still to be fully considered.

3.2 COMMUNICATION

The MRL tables and mitigation options were made available to the peak industry body and to the Pesticide Minor Use Coordinator. The options were then utilised as one element of the Minor Use project proposal process and SARP analysis. The collated listings of project proposals were then provided to the relevant vegetable industry IAC for consideration, i.e., whether to fund the necessary work required.

4.0 DISCUSSION

The purpose of the project was to provide information that would potentially help vegetable industries to mitigate risk of MRL breaches in export markets. The benefits of which would be in aiding to maintain market access and sustain international competitiveness. It is believed that the output of the project, i.e., the MRL tables and mitigation options, have aided in this regard. However, the undertaking of the project has highlighted a number of issues requiring further consideration.

The project has identified that for vegetables, due to the large number of currently registered products not having tolerances established in export markets, at this stage the provision of

export guidelines is largely impractical, i.e., the lack of information would result in advice to 'not use' many products. This outcome is untenable in vegetable production due to the need for pesticides to control pests and diseases throughout the crop cycle, i.e., few options to recommend no use post-flowering.

Therefore, it is believed the vegetable industry needs to identify which are the high compliance risk pesticides, and consider either funding residue trials, or pursuing domestic regulatory approvals based on standards established elsewhere such as Codex, the US or the EU to provide the necessary information to growers.

To this end it is suggested that should the vegetable industry consider further investment in this area that it be done incrementally and in a more targeted manner, i.e., initially involve a detailed exploration of issues associated with specific key markets and commodities only.

Allied with it is suggested that the vegetable industry should consider implementing a program of residue monitoring as a means of GAP verification. It is believed that these two initiatives, for key export vegetables, would not only help assure current markets, aid in ensuring compliance and also provide a platform from which the industry could build export markets and increase returns.

The lack of coordinated residue monitoring within the vegetable industry is seen as a significant shortcoming. Currently the industry has no mechanism by which to verify that GAP is being followed, whether for domestic or export markets. A number of state based monitoring programs exist but these are usually rolling or targeted at individual commodities. In addition wholesalers have implemented their own program FreshTest. While information from these programs can be of value the industry has no input into their workings, i.e., they are not structured with producers in mind.

Consideration should therefore, be given to the vegetable industry developing mechanisms for either collecting existing residue monitoring data or implementing industry owned residue monitoring programs. Such a step would provide the industry with a measure by which to identify potentially problematic pesticides, for which risk mitigation options are required. In addition, the compilation of the monitoring data would provide a historical record of successful compliance with which to respond to importing countries in the event of an MRL breach.

Finally industries and government need to place greater emphasis on MRLs when negotiating access to new markets. At present the issue of MRL compliance appears to be considered primarily only when a problem has been identified. It is recommended that consideration of MRLs should become an integral part of the market access process.

5.0 RECOMMENDATIONS

- 1) That the vegetable industry give consideration to pursuing a more targeted approach with regard to the information collated and options developed as a means of aiding exporters to deal with shifts in key export markets with regard to pesticide residue standards.
- 2) That the opportunity be explored to utilize MRL risk assessments, where appropriate, in new market access deliberations.
- 3) That industries give consideration to:-
 - to continuing to include export compliance as a consideration when identifying strategic pest management needs,
 - the development of residue monitoring program.
 - the generation of residue trial data, where required, to ensure pesticide use patterns result in compliant residues.

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ATTACHMENTS

ATTACHMENT I: MRL Tables
BRASSICAS

Name	APVMA MRLs mg/kg	FSANZ MRLs mg/kg	Aust. WHP	Codex (UAE, Hong Kong) MRLs mg/kg	Singapore MRLs mg/kg	Malaysia MRLs mg/kg	Japan MRLs mg/kg Provisional	Taiwan MRLs mg/kg
acephate	5.00	5.00	14	2.00	5.00	2.0 caul	5.00	1.00
bifenthrin	T1	1.00	7				2 cab, 0.05 caul, Broc 0.1	1.00
carbaryl	5.00	5.00	3			5.00	1 cab, 5 caul, broc 6.0	1.00
carbendazim	3.00	3.00	5			2.0 cab	3.00	4.00
chlorfenapyr	0.50	0.50	7			1.0 cab	1 cab, caul& broc 3.0	
chlorothalonil	T7	7.00	7	1.00	7.00	1.0 cab	2.0 Cab, 1.0 caul, brocc 5.0	
chlorpyrifos	0.50	0.50	5	0.05	0.05	0.05	Cab & caul 0.05, brocc 1.0	0.50
chlorthal-dimethyl	5.00	5.00	NR				4.00	
clethodim	0.50	0.20					Cab 0.2, Caul & brocc 2.0	
copper	10.00	-			30.00	E	E	E
cyfluthrin	0.50	0.50	7				2.00	1.00
cypermethrin (alpha & zeta)	1.00	1.00	1	1.00	1.00	1.00	1.00	1.00
deltamethrin	0.05	0.05	2	0.20	0.05	0.20	0.50	0.50

BRASSICAS

Name	APVMA MRLs mg/kg	FSANZ MRLs mg/kg	Aust. WHP	Codex (UAE, Hong Kong) MRLs mg/kg	Singapore MRLs mg/kg	Malaysia MRLs mg/kg	Japan MRLs mg/kg Provisional	Taiwan MRLs mg/kg
diazinon	0.70	0.70	14	2 Cab	0.50	0.50	0.10	0.50
dicofol	5.00	5.00	7		5.00		3.00	
dimethoate	2.00	2.00	7	2 Cab	2.00	2.00	1.00	
disulfoton	0.50	0.50		0.50	0.50		0.50	0.10
diquat	0.05	0.05	Nil	0.05	0.05		0.05	
emamectin benzoate	0.02	0.02	3			0.05 cab	Cab & brocc0.1, caul 0.5	0.05
endosulfan	1.00	2.00	28	0.50	2.00	2.0 cab	2 cab, caul & brocc 0.5	2.00
esfenvalerate	1.00	1.00	2	3 Cab 2 Cau		3.0 cab, 2.0 caul	3 cab, 2 caul & brocc	0.50
fenamiphos	0.05	0.05	NS	0.05			0.05 cab, 0.04 caul & brocc	
fipronil	0.05	0.05	7	0.02		0.05 cab	0.05	0.03
fluazifop-P present as butyl ester	1.00	1.00	42				2 cab, 1 caul & brocc	0.20
fluazinam	0.01	0.01	NR				0.10	
fluvalinate	0.5 cau	0.5 cau	2				cab & caul 0.5,	0.50

BRASSICAS

Name	APVMA MRLs mg/kg	FSANZ MRLs mg/kg	Aust. WHP	Codex (UAE, Hong Kong) MRLs mg/kg	Singapore MRLs mg/kg	Malaysia MRLs mg/kg	Japan MRLs mg/kg Provisional	Taiwan MRLs mg/kg
imidacloprid	0.50	0.50	7	0.50			0.5 cab, 5 caul & brocc	1.00
indoxacarb	2.00	2.00	7				1 cab, 3 caul, brocc 0.2	
Inorganic bromide								
mancozeb (dithiocarbamates)	2.00	2.00	7	5 cab	2.00	5.00	5 cab, 0.2 caul & brocc	2.50
maldison	2.00	2.00		8 cab, 0.5 caul	8.0 cab	8.0 cab	Cab & caul 2.0, brocc 5.0	2.00
metalaxyl (metalaxyl-M)	0.10	0.10	7	0.50	0.50		Cab & caul 0.5, brocc 2.0	2.00
metaldehyde		1.00	7				1.00	
methamidophos	1.00	1.00	7	0.50	1.00		1.00	0.50
methidathion	0.10	0.10	7	0.1 Cab			0.10	
methiocarb	0.01	0.10	7		0.10		0.10	
methomyl	1 cab	1 cab	1	5 cab, 2 caul	5.0 cab		5 cab, 2 caul & brocc	2.00
metolachlor (S-metolachlor)	*0.02	0.02	NR				1.0 cab, 0.02 caul & brocc	

BRASSICAS

Name	APVMA MRLs mg/kg	FSANZ MRLs mg/kg	Aust. WHP	Codex (UAE, Hong Kong) MRLs mg/kg	Singapore MRLs mg/kg	Malaysia MRLs mg/kg	Japan MRLs mg/kg Provisional	Taiwan MRLs mg/kg
mevinphos	0.30	0.30	7	1.00			0.05 cab, 0.4 caul, brocc 0.5	0.20
oxyflourfen	*0.05	0.05	NR				0.05	0.20
paraquat	*0.05	0.05	NS	0.05	0.05		0.05	
parathion methyl	T0.1	0.10	14				0.20	
pendimethalin	*0.05	0.05	NR			0.1 cab	0.2 cab, 0.05 caul & brocc	0.10
permethrin 40:60	1.00	1.00	2	5.0 Cab 0.5 Caul	5.0 cab, 0.5 caul	5.0 cab, 0.5 caul	5 cab, 0.5 caul, brocc 2.0	2.00
phorate	0.50	0.50	70				0.30	0.05
Phosphorous acid	-	-	NR				E	
piperonyl butoxide	8.00	8.00			8.00		8.00	
pirimicarb	1.00	1.00	2	1.00	1.00		1.00	1.00
procymidone	T5	5.00	1				2.0 cab, 5.0 caul & brocc	5.00
propachlor	0.60	0.60	NR				0.60	
propargite			7				3.00	
prothiofos	0.20	0.20	7			0.20	0.20	0.50
pymetrozine	0.02	0.10	14				0.02	
pyrethrins	1.00	1.00			1.00	E	1.00	

BRASSICAS

Name	APVMA MRLs mg/kg	FSANZ MRLs mg/kg	Aust. WHP	Codex (UAE, Hong Kong) MRLs mg/kg	Singapore MRLs mg/kg	Malaysia MRLs mg/kg	Japan MRLs mg/kg Provisional	Taiwan MRLs mg/kg
quintozene	0.02	0.02	28	0.02 Cab	0.02 cab	0.02 cab	0.1 cab, 0.02 caul, 0.05 brocc	
quizalofop	0.01 Cab, *0.05	0.01 Cab, *0.05	14				0.3 cab, 0.05 caul, brocc 0.3	
sethoxydim	0.20	0.10	42			0.2 cab	10.00	
spinosad	0.50	0.50	3	2.00		0.5 cab	2.00	1.00
thiodicarb		1.00	7	2.0 C			methomyl	1.00
triadimenol	1.00	1.00	7				1.00	
trichlorfon	0.1 Cab, 0.2 Caul	0.10	2		0.2 caul		0.50	
trifluralin	0.05	0.05	NR				0.1 cab, 3.0 Caul, 0.05 brocc	0.05

Capsicum MRLs

Chemical	APVMA	FSANZ	Codex	EU	Japan	Singapore	Taiwan	Malaysia
abamectin	0.02	0.02	0.02	0.05	0.02		0.02	
acephate	5	5		0.02	5		1	
beta-cyfluthrin	T0.2	0.2		0.3	5			
bifenthrin	T0.5	T0.5		0.2	0.4		1	
bupirimate	T1				ns			
carbaryl	5	5	5	0.05	5	5	0.5	
chlorothalonil	T7	7	7	2	7	10	1	
chlorpyrifos	T1	1	2	0.5	0.5	0.5	0.5	
clethodim	T0.7				1			
copper (Cu)					E	30	E	E
diazinon	0.7	0.7	0.05	0.5	0.1	0.5	0.2	
dicofol	5	5	1	0.02	1	5		
dimethoate	2	2	1	0.02	1	1		
diquat	*0.05	0.05	*0.05	0.05	0.05	0.05		
emamectin benzoate	0.01	0.01			0.2			
endosulfan	T2	2		1	0.5	2		
fenthion	5	5		0.01	5			
fluazifop-P	*0.02	0.02			0.02		0.2	
imidacloprid	0.5	0.5	1		3		0.5	0.1
indoxacarb (25:75)	0.5	0.5	0.3		1			
maldison	0.5	0.5	0.1	3	0.5		1	
mancozeb	3	3	1	2	1		2.5	
metalaxyl/Metalaxyl-M	0.1	0.1	1	0.05	2		0.5	
metaldehyde	1	1			1			
methamidophos	2	2	1	0.01	2	1	0.5	
methidathion	0.1	0.1		0.02	0.1			
methiocarb	0.1	0.1			0.05	0.1		
methomyl	1	1	0.7	0.05	0.7		1	
paraquat	*0.05	*0.05	0.05	0.02	0.05	0.05		

Capsicum MRLs

Chemical	APVMA	FSANZ	Codex	EU	Japan	Singapore	Taiwan	Malaysia
parathion-methyl	T0.2	0.2		0.02	1			
piperonyl buroside	8	8	2		2	8		
pirimicarb	1	1	0.5		1		0.5	
procymidone	T2	2	5	2	5		2	
propargite	3	3			3			
pyrethrins	1	1	0.05	1	1	1		E
quintozene	0.01	0.01	0.05	0.02	0.02	0.01		
spinosad	0.2	0.2	0.3	1	2			
tetradifon	5	5			1			
thiodicarb	T5	5			1		1	
thiram	3	3			1		2.5	
triadimenol	T1	0.5	0.1	0.5	1			
trichlorfon	0.2	0.5			1			
trifluralin	0.05	0.05			0.1		0.05	
zineb	3		1	2	1		2.5	

Carrot MRLs									
Active	Aust WHP	APVMA MRLs mg/kg	FSANZ MRLs mg/kg	Codex (Hong Kong/ Thailand) MRLs mg/kg	Malaysia MRLs mg/kg	Singapore MRLs mg/kg	Japan MRLs mg/kg	Taiwan MRLs mg/kg	EU MRLs mg/kg
Carbaryl	3	5.00	5.00	0.50	0.50	2.00	0.50		1.00
Chlorpicrin	NS								
Chlorothalonil	7	7.00	7.00	1.00	1.00	1.00	1.00	1.00	1.00
Chlorpyrifos	Nil	* 0.01	*0.01	0.50	0.50	0.50	0.50	0.50	0.10
Chlorthal-dimethyl	Nil	5.00	5.00				5.00	0.10	
Diazinon	14	0.70	0.70	0.50	0.50	0.50	0.50	0.10	0.20
1,3 dichloropropene	NS								
Dicofol	7	5.00	5.00			5.00	3.00	0.50	0.02
Difenoconazole	7	0.20	0.20				0.20		
Dimethoate	7	2.00	2.00		1.00	2.00	1.00		0.02
Diquat	NR	* 0.05	0.05	0.05	0.05	0.05	0.03		0.05
Dithiocarbamates (mancozeb, metiram, propineb, thira	7	1.00	1.00	1.00	1.00	0.50	1.00	0.50	0.20
Endosulfan	14	T2	T2	0.20	0.20	0.20	0.20		0.05
Fenamiphos	84	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.05
Fluazifop-butyl	49	0.10	0.10				2.00	0.20	
Linuron	42	* 0.05	*0.05				0.20	0.50	
Maldison	3	0.50	0.50	0.50	0.50		0.50		0.50
maleic hydrazide	56	T40					30.00	15.00	30.00
Metalaxyl	NR	0.10	0.10	0.05	0.05		0.05	0.10	0.10
Metaldehyde	7	1.00	T1		1.00		1.00		
Methiocarb	7	0.10	0.10			0.10	0.05		
Paraquat	NS	* 0.05	*0.05	0.05	0.05	0.05	0.05		0.05
Parathion-methyl	14	T 0.5	T0.5		1.00		1.00	0.50	0.20
Pendimethalin	NR	* 0.05	0.05				0.20	0.10	

Carrot MRLs									
Active	Aust WHP	APVMA MRLs mg/kg	FSANZ MRLs mg/kg	Codex (Hong Kong/ Thailand) MRLs mg/kg	Malaysia MRLs mg/kg	Singapore MRLs mg/kg	Japan MRLs mg/kg	Taiwan MRLs mg/kg	EU MRLs mg/kg
Phorate	70	0.50	0.50			0.50	0.30	0.05	0.05
Phosphorous acid	1	T100					E		
Piperonyl butoxide	1	8.00	8.00			8.00	0.50		
Procymidone	9	T1.0	1.00				0.50	0.50	0.02
Prometryn	NR	* 0.1	*0.1				0.05		
Propargite	7	3.00	3.00				3.00		
Pyrethrins	1	1.00	1.00	0.05	E	1.00	1.00		1.00
Quizalofop-ethyl	70	* 0.02	*0.02				0.10		
Sethoxydim	NR	1.00	1.00				10.00		
Spinosad	3	0.02	0.02				0.20		
Trichlorfon	2	0.10	0.10			0.10	0.50		0.50
Trifluralin	NR	0.50	0.50				1.00		

NR - Not
Required
when used
as directed
NS - Not
Set

Lettuce MRLs	APVMA MRL		FSANZ		Codex		Malaysia		Singapore		Japan	
	Head	Leafy	Head	Leafy	Head	Leafy	Head	Leafy	Head	Leafy	Head	Leafy
1,3-dichloropropene												
alpha-cypermethrin	2	5	2		5	-			2	2	2	2
azoxystrobin (PER8182)	T3	T3	-	-	-	-	-	-			5	5
Bacillus thuringiensis					-	-						
bifenthrin (PER7301)	T2		2		-	-					1	1
boscalid (PER seed crops)					-	-					11	11
carbaryl	10	10	10	10	10	10			10	10	10	10
chloropicrin	-	-	-	-	-	-	-	-	-	-		
chlorpyrifos	*0.01	*0.01	*0.01	*0.01	0.1	-	1	1	0.1	0.1	0.1	0.1
chlorthal-dimethyl (PER6920)	T1	T1	-	-	-	-	-	-	-	-	3	3
clethodim	0.2	0.2	0.1	0.1	-	-					0.1	0.1
copper (Cu)	10	10					Not prescri bed		30	30		
cypermethrin					2		2	2	2	2	2	2
dazomet	-	-			-	-					0.5	0.5
diazinon	0.7	0.7	0.7	0.7	0.5	0.5	-	-	0.7	0.7	0.1	0.1
dicofol	5	5			-	-			5	5	3	3
dimethoate	2	2	2	2	2				2	2	2	2
dimethomorph	0.3	2	0.3	2	-	-					0.3	0.3
diquat	*0.05	*0.05	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05
emamectin benzoate	0.2	0.2	0.2	0.2	-	-					0.5	0.5
ethyl formate					-	-						
fenamiphos	0.2	0.2	0.2	0.2					0.2	0.2	0.1	0.1
fenitrothion	0.5	0.5	0.5	0.5	0.5				2	2	0.2	0.2
ferric (iron) phosphate												
fluazifop-P	0.05	0.05	0.05	0.05							0.1	0.1
imidacloprid (PER7416)	T5	T5	5	5	2						5	5
indoxacarb (25:75)	3	-	3	-							1	1
iprodione	5	5	5	5	10	25			5	5	10	10

Lettuce MRLs	APVMA MRL		FSANZ		Codex		Malaysia		Singapore		Japan	
	Head	Leafy	Head	Leafy	Head	Leafy	Head	Leafy	Head	Leafy	Head	Leafy
lambda-cyhalothrin											2	2
maldison	2	2	2	2	8		8	8	8	8	2	2
mancozeb	5	5	5	5	10		10	10	1	1	10	10
metalaxyl/metalaxyl-M	0.3	0.3	0.3	0.3	2		-		2	2	2	2
metaldehyde	1	1	1	1			1	1			1	1
methiocarb	0.1	0.1	0.1	0.1	0.2	0.2			0.1	0.1	0.1	0.1
methomyl	1	1	1	1	5				5	5	5	5
metiram	5	5	5	5	10		10				10	10
Nuclear Polyhedrosis Virus												
omethoate	2	2	2	2							1	1
paraquat	*0.05	*0.05	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05
parathion-methyl	T1	T1	1	1	0.05	0.05					1	1
pendimethalin	*0.05	*0.05	0.05	0.05							0.2	0.2
permethrin 40:60	5	5	5	5	2				5	5	2	2
phenmedipham (PER6935)	T0.2	T0.2									0.2	0.2
piperonyl butoxide									8	8	50	50
pirimicarb	T5	T5	3	3	1				1	1	1	1
prochloraz	2	-	2	-	-	-	-	-			2	2
propargite	3	3	3	3							3	3
propineb	5	5	5	5	10	-						
propyzamide	1	1	1	1							0.1	0.1
pymetrozine (PER7629)	T0.5	T0.5	0.5	0.5							0.1	0.1
pyrethrins	1	1	1	1			Not prescribed		1	1	1	1
quintozene	0.3	0.3	0.3	0.3	3				0.3	0.3	0.2	0.2
sethoxydim	0.2	0.2	0.1	0.1							10	10
spinosad	5	5	5	5	10	10					8	8
sulfur (S)												
tebuconazole (PER8207)	T0.02	T0.02	0.02	0.02							0.5	0.5

Lettuce MRLs	APVMA MRL		FSANZ		Codex		Malaysia		Singapore		Japan	
	Head	Leafy	Head	Leafy	Head	Leafy	Head	Leafy	Head	Leafy	Head	Leafy
thiram	5	5	5	5	10		10		1	1		
trichlorfon	0.1	0.1	0.1	0.1	-	-					0.5	0.5

Bean MRLs	Aus	Codex	Japan	Korea	Malaysia	Taiwan	EU
acifluorfen	0.1		0.1				
Azoxystrobin	3		2				1
bentazone	0.1		0.5				
Bifenthrin	0.5		0.5			1	0.5
Bifertanol	0.5		0.3	0.2			0.05
Boscalid	T3		1.6				
Carbaryl	3	5	4				0.05
Chlorpyrifos	0.3	0.01	E 0.2; M 0.1	0.1	0.2		0.05
Chlorthal-dimethyl	5		3				
Clomazone	0.05		0.05				
Copper							
Diazinon	0.7	0.2	0.2	0.1	0.2	0.2	0.02
Dicofol/Tetradifon	Dif 5 Tet.5	Dif.2	Dif. 2; Tet. 1	Dif. 0.1	Dif. 2	Dif. 5	Dif. 0.02
Dimethoate	5		1	2	1		0.02
Disulfoton	0.5	0.2	0.2			0.1	0.02
EPTC	0.04		0.1				
Esfenvalerate	0.5	1	0.5				0.02
fluazifop-P as butyl ester	0.1		0.1				
Imidacloprid	T1	2	2			0.5	
Iprodione	1	2	0.2	?		5	5
Maldison	2		8				
Mancozeb	2		0.6		2	2.5	1
Methidathion	0.1		0.1				0.02
Methomyl	1	1	1	0.1		1	0.05
Metiram	2		0.6			2.5	1
Metolachlor	0.02		0.3	0.3	0.1		
Oxycarboxin	5		5				
Parathion-methyl	?0.2, 0.5		1	1			0.02
Permethrin 40:60	0.5	1	3	0.1		1	0.05
Piperonyl butoxide + bifenthrin	bif. 0.5	p.b. 1	pb. 8; bif. 0.5			bif. 1	0.5

Bean MRLs	Aus	Codex	Japan	Korea	Malaysia	Taiwan	EU
Primicarb	1	1	1			0.5	
Procymidone	T3	1	1			2	2
Propargite	3	20	20	0.2			
Quintozene	0.01	0.1	0.1				0.02
Quizalofop-P-ethyl	0.02		0.25				
Sethoxydim	0.1		10	20			
S-metolachlor	0.02		0.3				
Spinosad	0.5	0.3	0.3				
Tebuconazole	0.5	Nominated	0.5				
Trichlorfon	0.1		0.1	0.1	0.1		
Trifluralin	0.05		0.05	0.1		0.05	
Zineb	2		0.6				1

Beetroot MRLs	Aus	Codex	Japan	Korea	Malaysia	Taiwan	EU
Chloridazon	0.05		0.1				
Chlorothalonil	7		0.2			1	0.01
Chlorpyrifos	*0.01		0.05				0.05
Clethodim	1		0.1				
Diazinon	0.7		0.1			0.1	0.02
Difenoconazole	0.2		0.5				
Dimethoate	2	0.2	1		Codex		0.02
Endosulfan	NRA 0.5; ANZFA 2		0.5	1		0.1	0.02
Ethofumesate	0.1		0.1				0.1
Fenamiphos	0.2		0.1			0.1	0.02
Iprodione	0.1		1	0.2		5	0.5
Lambda-cyhalothrin	0.01		0.2				0.02
Mancozeb	1		0.5			0.5	0.05
paraffinic oil							
Pendimethalin	0.05		0.05			0.1	0.05
petroleum oil							
Phenmedipham	0.1		0.05				
Primicarb	1	0.05	0.2		Codex		
Propachlor	0.05		0.05				
Propiconazole	0.02		0.05				0.05
Pymetrozine	0.02		0.6				0.02
Quizalofop-P-ethyl	0.02		0.1				
Quizalofop-P-tefuryl	0.02		0.1				
Sethoxydim	1		0.5				
Spinosad	0.02		0.06				
Zineb	1		0.5				0.05

Celery MRLs	Aus	Codex	Japan	Korea	Malaysia	Taiwan	EU
azoxystrobin	0.5						0.05
Chlorothalonil	10	10	10	1	10	2	10
Chlorpyrifos	5		E 0.05; M 0.03	0.05		1	0.05
Clethodim	0.1		0.1				
Copper							
Copper							
Copper							
Diazinon	0.7		0.1	0.5	0.5	0.5	0.02
dicofol +tetradifon	dic 5; tet 5		dic 3; tet 1	dic 1; tet 1			dic 0.02
difenoconazole (PER9052)	T5						
Dimethoate	2	0.5	1	1			0.02
Endosulfan	APVMA 1; ANZFA 2	2	2	2		2	0.05
Esfenvalerate	2	2	2			2	0.02
Ethofumesate	0.1					0.05	
Fenamiphos	0.05		0.04				0.02
fluazifop-P as butyl	0.02		0.02			0.2	
Helicoverpa NPV (zea)							
Imidacloprid	0.3		5			1	
Iprodione	2		5	0.2		7	0.02
linuron	0.05		0.2	0.5			0.1
Maldison	2		2				
Mancozeb	5		0.2		5	4	0.5
Methomyl	3	2	2	0.5		3	0.05
Metiram	5		0.2			4	0.5
Permethrin 40:60	5	2	2	2		2	0.05
Prometryn	0.1		0.05	0.5			
Propachlor							
Propiconazole	5		5				0.05
Propineb	5		0.2		5	4	0.5

Celery MRLs	Aus	Codex	Japan	Korea	Malaysia	Taiwan	EU
Spinosad	2	2	8	1		1	
Sulfur+Mancozeb	5		0.2		5	4	0.5
Thiram	5		0.2		5	4	
Trichlorfon	0.2		0.2	0.2			
Zineb	5		0.2				0.5
Ziram	5		0.2		5	4	

Leek MRLs	Aus	Codex	Japan	Korea	Malaysia	Taiwan	EU
Alpha-cypermethrin	T0.5	0.5	0.05				
Azoxystrobin	0.5		0.3				0.05
Boscalid	T5		2.5				
Chlorothalonil	10		0.2			1	0.01
Chlorpyrifos	5		0.05				0.05
Cyanazine			0.02				
Dimethoate	2		1				0.02
Dimethomorph	0.5		2				
Ethofumesate	0.1		1				0.05
Fluazifop-P	0.5		0.1			0.2	
loxynil as octanoate	1		0.1				
Methabenzthiazuron	0.2		0.01				
Oxyfluorfen	0.05		0.01				
Pendimethalin	0.05		0.1			0.1	0.05
Phosphorous acid	10						
Pirimicarb	1	0.5	1			0.5	
Propachlor			0.05				
Simazine			0.05				
Tebuconazole	0.01		0.2				

Sweet corn MRLs	Aus	Codex	Japan	Korea	Malaysia	Taiwan	EU
2,4-D	0.2	0.05	0.05	0.05			0.05
Alpha-cypermethrin	0.05	0.05	0.2	0.05			0.05
amorphous silica							
atrazine	*0.1		0.2			0.25	0.1
Carbaryl	1	0.1	0.1	1		0.5	0.05
carboxin	0.1		0.2	0.2			
Chlorothalonil	T7.0	0.01	0.01	0.2			0.01
Cyanazine	*0.02		0.1				
Cypermethrin	0.05		0.2				
Deltamethrin	0.1	0.02	1	1		0.05	0.05
Diazinon	0.7	0.02	0.02	0.1			0.02
dicofol	5		3				0.02
dimethoate	2		1	0.1			0.02
EPTC	*0.04		0.1				
Esfenvalerate	0.05	0.1		2			0.02
fludioxonil	*0.02		0.02				0.01
Fluroxypyr	0.2		0.1				0.05
Helicoverpa NPV (armigera)							
imidacloprid	*0.02		0.1				0.02
Linuron	*0.05		0.2	0.2			0.05
MCPA	*0,02		0.1				
metalaxyl	0.1		0.05	0.05		0.1	0.05
Methomyl	0.1	2	0.02	0.05		1	0.05
Metolachlor	0.1		0.1	0.1		0.1	
paraffinic oil							
Permethrin	*0.05	0.1	2	0.05			0.05
petroleum oil							
Propachlor	0.05		0.08				
propargite	3		0.1	0.1			
Propiconazole	T*0.02		1	1		0.1	0.05

Sweet corn MRLs	Aus	Codex	Japan	Korea	Malaysia	Taiwan	EU
S-metolachlor							
Spinosad	0.02	0.01	0.02				
Terbufos	*0.05	0.01	0.01	0.01			
Thiodicarb	*0.1	2	0.02	0.05			0.05
thiram	3	0.1	0.1				

ATTACHMENTS II: Pesticide-commodity analysis and alternative options

Beans

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
Soil fumigation		chlopicrin, 1,3 dichloropene				*	Residues not anticipated		Chloropicrin listed as a chemical of security concern
		dazomet					Residues not anticipated		
Weed Control									
Pre-plant knockdown of weeds		diquat, paraquat	*			*	Codex MRL for paraquat. Aust MRL at LOQ, shouldn't be a problem	Carfentrazone - Registered in US for use with shielded sprayers. US MRL 0.1 mg/kg	Paraquat listed as a chemical of security concern. Nominated on priority list for spray drift label review
Pre-emergent residual herbicides		clomazone					MRLs at LOQ, shouldn't be a problem		
		clorthal-dimethyl							
		dimethenamid-P					MRLs at LOQ, shouldn't be a problem		
		EPTC					MRLs at LOQ, shouldn't be a problem		
		metolachlor/S-metolachlor					MRLs at LOQ, shouldn't be a problem		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
		pendimethalin		*			MRLs at LOQ, shouldn't be a problem		
		trifluralin					MRLs at LOQ, shouldn't be a problem		
Post-emergent BLW control		acifluorfen							
		bentazone					MRLs at LOQ, shouldn't be a problem		
Post-emergent grass control		fluazifop					MRLs in US @ 1.0, EU @ 0.5	Possible residue decline trials needed	
		quizalofop					MRLs at LOQ, shouldn't be a problem		
		sethoxydim					MRLs in US @ 4 and EU 0.5 mg/kg		
Pests									
Snails & slugs		metaldehyde					No MRLs at Codex, Taiwan or EU	Copper sulfate. Generally exempt from MRLs	
		methiocarb	*						
		Iron-EDTA							
Nematodes		chlopicrin, 1,3 dichloropene	*			*	Aust MRL higher than Taiwan & EU	fluensulfone - new compound from Farnoz	Listed as a chemical of security concern
		dazomet					Residues not anticipated		Chloropicrin listed as a chemical of

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
									security concern
Insect Control									
Aphids	<i>Myzus persicae</i> , <i>Macrosiphum euphorbiae</i>	dimethoate				*		Imidacloprid - MRLs US 4, Codex 2, Japan 2.8, EU 2 pirimicarb?? EU MRL @ 1 mg/kg. However, move to withdraw in US a concern. Pymetrozine - EU MRL @ 2 mg/kg	Nominated on priority list for spray drift label review
		fatty acid K Salts							
		parafinic oil							
		malathion				*			
		pyrethrins							
Thrips		fatty acid K Salts							
		diazinon	*						
		dimethoate	*						
		esfenvalerate							
		methomyl	*						
		parafinic oil							
		pyrethrins							
spinosad							Listed as a chemical of security concern		
Red legged earth mite	<i>Halotydeus destructor</i>	dimethoate	*						
Cutworm	<i>Agrotis spp.</i>	diazinon	*			*	Under review. Aust MRL 0.7, Codex, Malaysia, Singapore & Japan 0.5.	Spinosad approved in crop in Aus, registered against pest in other crops.	Listed as a chemical of security concern
		chlorpyrifos	*				Aust MRL		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
							at LOQ		
		trichlorfon							
Bean fly	<i>Ophiomyia phaseoli</i>	diazinon	*						
Bean pod borer	<i>Maruca vitrata</i>	methomyl	*						
Crickets	<i>Orthoptera</i>	chlorpyrifos	*				Aust MRL at LOQ	malathion registered in other crops in Aus.	
pumpkin beetle	<i>Aulacophora</i> spp.	carbaryl	*						
Ants	Formicidae	pyrethrins							
Heliothis	<i>Helicoverpa</i> sp.	Bt						Methoxyfenozide - Registered in US. MRL 1.5 mg/kg, EU 0.2,	
		NPV						Chlorantraniliprole MRL @ US 2, EU *0.01mg/kg	
		carbaryl	*						
		esfenvalerate							
		methomyl							
		permethrin							
		pyrethrins							
		spinosad							
Mites	<i>Tetranychus</i> sp.	dicofol		*	*		No Codex or Malaysian MRLs. Singapore equivalent, Japan lower (3 vs 5ppm)		No manufacturer support
		dimethoate	*						
		fatty acid K Salts							
		parafinic oil							
		propargite					Equivalent MRL in Japan. No		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
							MRLs elsewhere.		
		sulfur	*				Exempt		
Green Vegetable bug	<i>Nezara viridula</i>	carbaryl	*					Cypermethrin - approved for pest in Aust, MRLs in Codex, Japan, Malaysia Singapore @ 0.05	
		dimethoate	*						
		malathion	*						
Leafhoppers/Jassids	Cicadellidae	parafinic oil							
		methyl parathion	*					Clothianidin - MRL in US @ 0.8 mg/kg. Malathion registered for leafhoppers in Australia.	
		dimetoate	*					Bifenthrin registered in the US - MRL 0.6 mg/kg	
		pyrethrins							
Loopers	Geometridae	Bt						Methoxyfenozide - Registered in US. MRL 1.5 mg/kg, EU 0.1 mg/kg	
		esfenvalerate						Bifenthrin registered in the US - MRL 0.6 mg/kg	
		methomyl	*						
		spinosad							
Whitefly	Aleyrodidae	fatty acid K Salts							
		pyrethrins							
Wingless grass hopper	<i>Phaulacridium vittatum</i>	chlorpyrifos	*						
		carbaryl	*					Malathion - registered in other crops in Aus.	

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
Disease control									
Leaf spot	<i>Bacterial spot</i>	copper		*					
Damping off	Pythium/phytophthora	metalaxyl					Codex MRL @ LOQ (*0.05 mg/kg)	Phos acid registered for use in US. Fluopicolide - Registered in the US, MRL of 0.15 mg/kg	
Anthracnose	<i>Colletotrichum</i>	mancozeb		*				Azoxystrobin - Registered in US MRLs Codex & US @ 3. EU @ 1 mg/kg. Pyraclostrobin registered in the US - MRL 0.5 mg/kg	
Angular leaf spot	<i>Phaeoisariopsis griseola</i>	mancozeb		*					
Sclerotinia rot		boscalid (PER10276)						Switch - Registered in UK MRLs in US cyprodinil 0.6 mg/kg & fludioxonil 0.4 mg/kg. Iprodione - US MRL 2 mg/kg.	
Rust	Uromyces spp.	mancozeb		*				Azoxystrobin - Registered in US MRLs Codex & US @ 3. EU @ 1 mg/kg. Pyraclostrobin registered in the US - MRL 0.5 mg/kg	
		oxycarboxin							
		sulfur							
		tebuconazole							

Beetroot

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
Soil fumigation		chlopicrin, 1,3 dichloropene				*	Residues not anticipated		Chloropicrin listed as a chemical of security concern
		dazomet					Residues not anticipated		
Weed Control									
Pre-plant knockdown of weeds Pre-emergent residual herbicides		diquat, paraquat	*			*	Codex MRL for paraquat. Aust MRL at LOQ, shouldn't be a problem	Carfentrazone - Registered in US for use with shielded sprayers. US MRL 0.1 mg/kg	Paraquat listed as a chemical of security concern. Nominated on priority list for spray drift label review
		chloridazon					MRLs at LOQ, shouldn't be a problem		
		pendimethalin (PER8766)		*			MRLs at LOQ, shouldn't be a problem	Dimethenamid-P MRLs in EU, Codex & US @ *0.01 mg/kg Registered in US in sugar beet.	
		propachlor		*			MRLs at LOQ, shouldn't be a problem	S-metolachlor - registered in US, MRL @ 0.3 mg/kg, EU MRL @ 0.05 mg/kg	Use revoked in EU.
Post-emergent BLW control		ethofumesate					MRLs at LOQ, shouldn't be a problem	clopyralid - Registered for use in the US & UK. MRL in US 4, EU 1 mg/kg	
		phenmedipham					Aus MRL 0.1. MRLs in EU @ 0.1 , US @ 0.2		
Post-emergent grass control		clethodim					MRLs in US @ 1.0, EU @ 0.5	Possible residue decline trials needed	

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment		
		quizalofop									
		sethoxydim					MRLs in US @ 4 and EU 0.5 mg/kg				
Pests											
Snails & slugs		metaldehyde					No MRLs at Codex, Taiwan or EU	Copper sulfate. Generally exempt from MRLs			
		Iron-EDTA									
		methiocarb	*	*		*	No MRLs at Codex, Taiwan or EU		Listed as a chemical of security concern		
Nematodes		fenamiphos	*	*		*	Aust MRL higher than Taiwan & EU	fluensulfone - new compound from Farmoz	Listed as a chemical of security concern		
		chlopicrin, 1,3 dichloropene				*	Residues not anticipated		Chloropicrin listed as a chemical of security concern		
		dazomet					Residues not anticipated				
Insect Control											
Aphids (Green peach aphid, Potato aphid etc)	<i>Myzus persicae</i> , <i>Macrosiphum euphorbiae</i>	endosulfan				*	Australian MRL T2. MRL of 0.2 @ Codex & Japan. EU 0.05	Imidacloprid - MRLs US 0.4, Codex 0.5, Japan 0.4 (sugar beet), EU *0.05 Spirotetramat - Registered in US in Group 1C.	Endosulfan POPs nomination, listed as a chemical of security concern		
		fatty acid K Salts									
		fenamiphos	*	*		*					
		parafinic oil									
		pirimicarb		*		0.05 mg/kg					Codex MRL
		pymetrozine (PER7530)					*				Nominated on priority list for

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
		pyrethrins							spray drift label review
Thrips		fatty acid K Salts	*	*			Under review. Current MRL 2.0ppm. Japan 1.0, EU 0.02 No Codex MRL.	Spinosad - registered in crop. Approved against thrips in other crops.	
		fenamiphos	*	*		*			Listed as a chemical of security concern
		lambda-cyhalothrin							
		parafinic oil							
		pyrethrins							
Beetroot webworm	<i>Hymenia recurvalis</i>	Bt						Methoxyfenozide - Registered in US. Codex MRL 0.3 (sugar beet), US @ 0.5, Japan @ 0.05 mg/kg, EU MRL 0.02 mg/kg.	
		diazinon	*			*	Under review. Aust MRL 0.7, Codex, Malaysia, Singapore & Japan 0.5.	Indoxacarb - Registered against the pest in US. MRL in US @ 0.3 mg/kg	Listed as a chemical of security concern
		endosulfan					*		
		methomyl							
Cutworm	<i>Agrotis spp.</i>	diazinon	*			*	Under review. Aust MRL 0.7, Codex, Malaysia, Singapore & Japan 0.5.	Spinosad approved in crop in Aus, registered against pest in other crops.	Listed as a chemical of security concern
		carbaryl	*				Codex and	Possible residue	

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment	
							Japanese Provisional MRL @ 0.5 mg/kg, EU 0.05. Singapore @ 2 mg/kg & Taiwan with no MRL.	decline trials needed		
		chlorpyrifos	*				Aust MRL at LOQ			
Crickets		chlorpyrifos	*				Aust MRL at LOQ	malathion registered in other crops in Aus.		
Earwigs	<i>Forficula auricularia</i>	carbaryl	*					Indoxacarb - Approved for earwig control in other crops in Aus.		
		chlorpyrifos	*					Imidacloprid seed treatments		
False wireworm		chlorpyrifos	*							
Harvester ants		chlorpyrifos	*							
Heliothis	<i>Helicoverpa sp.</i>	Bt						NPV - registered in other veg crops in Australia		
		carbaryl						Chlorantraniliprole MRL @ Codex 0.02 mg/kg		
		endosulfan					*			
		methomyl								
		pyrethrins								
		spinosad								
Mites	<i>Tetranychus sp.</i>	dicofol		*	*		No Codex or Malaysian MRLs. Singapore equivalent, Japan lower (3 vs 5ppm)		No manufacturer support	
		fatty acid K Salts								

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
		parafinic oil							
		propargite					Equivalent MRL in Japan. No MRLs elsewhere.		
		sulfur	*				Exempt		
Green Vegetable bug	<i>Nezara viridula</i>	carbaryl	*					Cypermethrin - approved for pest in Aust, MRLs in Codex, Japan, Malaysia Singapore @ 0.05	
		trichlorfon	*				MRLs in Singapore, Japan & EU equivalent. No MRL Codex & Malaysia	malathion registered in other crops in Aus.	
Rutherglen bug	<i>Nysius sp.</i>	carbaryl	*					Deltamethrin - approved for control of pest in Aust.	
		trichlorfon	*				MRLs in Singapore, Japan & EU equivalent. No MRL Codex & Malaysia	Malathion registered in other crops in Aus	
		lambda-cyhalothrin						Deltamethrin - approved for control of pest in Aust.	
Leafminer	<i>Liriomyza chenopodii</i>	dimethoate						abamectin - registered for Liriomyza control in a range of vegetables in US. Group 1C MRL of 0.01 mg/kg	
		endosulfan						Cyromazine registered for leafminer control in	

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
								a range of crops in US.	
Light brown apple moth	<i>Epiphyas postvittana</i>	Bt						Methoxyfenozide - US MRL @ 0.5 mg/kg, EU MRL 0.02 mg/kg, Japan MRL @ 0.05 mg/kg.	
		spinosad					Aust MRL 0.02.No MRLs in Codex, Malaysia, Singapore, EU or US. Japan 0.2	Indoxacarb - Registered against similar pests in US. MRL in US @ 0.3 mg/kg	
Leafhoppers		parafinic oil						Thiamethoxam registered in the US. MRL @ 0.05 mg/kg	
		pyrethrins						Clothianidin - MRL in US @ 0.8 mg/kg. Malathion registered for leafhoppers in Australia.	
Loopers		Bt						Indoxacarb - Registered against similar pests in US. MRL in US @ 0.3 mg/kg	
		endosulfan							
		lambda-cyhalothrin							
		methomyl							
Vegetable weevil	<i>Listroderes difficilis</i>	lambda-cyhalothrin						Indoxacarb - Registered against similar pests in Aust. MRL @ 0.3 mg/kg	
		chlorpyrifos							

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
Whitefly		fatty acid K Salts						Thiamethoxam registered in the US.	
		pyrethrins							
Wingless grass hopper	<i>Phaulacridium vittatum</i>	chlorpyrifos						Indoxacarb - Registered against the pest in Aust. MRL @ 0.3 mg/kg Malathion - registered in other crops in Aus.	
		carbaryl							
Disease control									
Botrytis		chlorothalonil (PER11950)						Switch registered in US for Alternaria. MRLs in US cyprodinil & fludioxonil @ 0.75 mg/kg.	
		iprodione (PER7603)		*					
Leaf spot	<i>Alternaria dauci and Cercospora beticola</i>	chlorothalonil (PER11950)		*			MRL of 1.0 in all markets. Australian MRL 7.0ppm.	Azoxystrobin MRLs in Codex @ 1, EU 0.05, US & Canada 0.5 mg/kg. Pyraclostrobin registered in US, MRL in US & Canada @ 0.4 mg/kg. EU 0.02 mg/kg	
		difenoconazole (PER8928)		*			No MRLs except Japan		
		iprodione (PER7603)		*				Switch registered in US for Alternaria. MRLs in US cyprodinil & fludioxonil @ 0.75 mg/kg. tebuconazole - registered in the US for Cercospora, MRL 0.7 mg/kg	
		mancozeb	*	*			Singapore, Taiwan & EU lower		Propiconazole approved for use in US.

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
		propiconazole (PER9130)		*		*			Nominated on priority list for spray drift label review
		zineb		*					
Phoma leaf spot	<i>Phoma betae</i>	chlorothalonil (PER11950)							
Pythium/phytophthora		metalaxyl					Codex MRL @ LOQ (*0.05 mg/kg)	Phos acid registered for use in US. Fluopicolide - Registered in the US, MRL of 0.15 mg/kg	
Downy mildew	<i>Peronospora spp</i>	mancozeb		*				Phos acid registered for use in US	
Sclerotinia rot		iprodione (PER7603)		*				Boscalid - MRLs - EU 0.5, US 0.1 & Codex @ 2 mg/kg.	
Powdery mildew	<i>Erysiphe spp.</i>	sulfur					Exempt	Pyraclostrobin - Registered in US. MRLs in US & Japan @ 0.2, EU 0.02. Switch registered in US for Powdery mildew. MRLs in US cyprodinil & fludioxonil @ 0.75 mg/kg. Propiconazole approved for use in US.	
Rhizoctonia		tolcolfos-methyl						fludioxonil (seed treatment + metalaxyl - Maxim XL)	
Rust	<i>Uromyces spp.</i>	copper						Propiconazole - Registered in crop in US. Approved for rust control in other crops	
		sulfur							

Brassica vegetables

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
Weed Control									
Pre-emergent residual herbicides		Chlorthal-dimethyl					Only other MRL in Japan @ 4.0.		Possible decline trials with chlorthal.
		Metolachlor					MRLs near LOQ, detectable residues not anticipated.		
		Trifluralin					Equivalent MRLs in Japan & Taiwan		
		Pendimethalin		*			MRLs near LOQ, detectable residues not anticipated.		
		Propachlor					Only other MRL in Japan @ 0.6.		
Post-emergent grass control		Fluazifop					MRL 1.0 with 42 day WHP. No Codex MRL, Equivalent MRLs in Japan, 0.2 mg/kg in Taiwan.	Clethodim MRLs in Japan 2.0 & US 3.0.	Possible residue decline trials needed with clethodim.
		Quizalofop					MRL @ LOQ with 14 day WHP. Only other MRL in Japan.		
		Sethoxydim					Equivalent MRLs in Malaysia & Japan.		
Pests									
Snails & slugs		Copper complex					Exempt		
		Iron complex					Exempt		
		Metaldehyde					No MRLs at Codex, Taiwan or EU		
		Methiocarb	*	*		*	No MRLs at Codex, Taiwan or EU. Equivalent MRLs at Japan &		Methiocarb - Listed as a chemical of security concern

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment	
							Singapore			
Nematodes		fenamiphos	*	*		*	No MRLs at Codex or Malaysia. Equivalent MRL in Singapore.	thiazosulfone (expt product), Sodium lauryl sulfate	Fenamiphos - Potential issue over dietary intake. Listed as a chemical of security concern	
		Chlopicrin, 1,3 dichloropene				*	Residues not anticipated			
		Dazomet					Residues not anticipated			
Insect Control										
Aphids (cabbage aphid, Grey cabbage aphid, Green peach aphid)	<i>Aphididae, Brevicoryne brassicae, Myzus persicae, Lipaphis pseudobrassicae</i>	Acephate	*				Equivalent MRLs @ Codex, Singapore, Japan, & Malaysia. Lower MRL in Taiwan	Thiamethoxam. US 4.5, EU 0.2, Japan 2 mg/kg.	Thiamethoxam. Scheduled for Codex review in 2011.	
		Chlorpyrifos	*	*			Lower MRLs in Codex, Singapore, Japan, & Malaysia. Equivalent MRL in Taiwan.	Fonicamid - EU MRL @ *0.05, US 1.5, Japan 1 cab, 4 for others. No Codex MRLs	Fonicamid registered in the US against aphids, plant bugs and whitefly	
		Diazinon	*				*	Equivalent MRL @ Codex. Lower elsewhere.		Diazinon - Listed as a chemical of security concern
		Dimethoate	*	*				No MRL @ Codex & Taiwan. Equivalent in Singapore & Malaysia. Lower elsewhere.		
		Endosulfan	*				*	Lower MRLs @ Codex & Japan. Equivalent @ Singapore, Malaysia & Taiwan.		Endosulfan - POPs nomination, Listed as a chemical of security concern
		Imidacloprid						Equivalent MRLs @ Codex, Japan & Taiwan		
		Maldison	*					Equivalent MRLs @ Codex & elsewhere.		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
		Methidathion	*			*	Equivalent MRL @ Japan. None elsewhere.		Listed as a chemical of security concern
		Methamidophos	*	*		*	Equivalent @ Singapore & Japan. Lower @ Codex & Taiwan.		Methamidophos - Listed as a chemical subject to the Rotterdam Convention on the Prior Informed Consent. Listed as a chemical of security concern
		Permethrin			*		Equivalent MRL in Taiwan, Lower MRLs elsewhere.		Manufacturer support uncertain
		Phorate	*			*	No MRL @ Codex, Singapore & Malaysia. Lower elsewhere.		Phorate - Listed as a chemical of security concern
		Pirimicarb		*			Equivalent MRLs elsewhere.		
		Pymetrozine					MRLs near LOQ, detectable residues not anticipated.		
		Pyrethrins					Equivalent @ Singapore & Japan. Exempt in Malaysia		
		parathion-methyl	*				*	Equivalent MRL in Japan. None elsewhere.	
Thrips		Dimethoate	*	*			No MRL @ Codex & Taiwan. Equivalent in Singapore & Malaysia. Lower elsewhere.	Spirotetramat - Codex MRL cabbage 2 brocc & caul 1, US 2.5, EO cabbage 0.2 brocc & caul 1.	Spirotetramat - Temporary MRL in Aust @ 7 except Brussels sprouts @ 1.
		Endosulfan	*			*	Lower MRLs @ Codex & Japan. Equivalent @ Singapore, Malaysia & Taiwan.		Endosulfan - POPs nomination, Listed as a chemical of security concern

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
		Pyrethrins					Equivalent @ Singapore & Japan. Exempt in Malaysia		
		Spinosad					Equivalent MRLs @ Codex, Japan, Malaysia & Taiwan. No MRL in Singapore.		
		Phorate	*			*	No MRL @ Codex, Singapore & Malaysia. Lower elsewhere.		Phorate - Listed as a chemical of security concern
Armyworm		Carbaryl	*				Equivalent MRL in Malaysia. Lower MRLs @ Japan & Taiwan. None elsewhere.	Methoxyfenozide - EU MRL *0.02, US 7, Codex Brocc 3 Cabb 7, Japan cabb, caul 7 brocc 3 mg/kg. Metaflumizone - EU MRL 1 for cab *0.05 caul & broc; Codex in 2010	Methoxyfenozide registered in the US. Metaflumizone - Scheduled for Codex review in 2010
Cutworm	<i>Agrotis spp.</i>	Carbaryl	*				Equivalent MRL in Malaysia. Lower MRLs @ Japan & Taiwan. None elsewhere.	Methoxyfenozide - EU MRL *0.02, US 7, Codex Brocc 3 Cabb 7, Japan cabb, caul 7 brocc 3 mg/kg.	Methoxyfenozide registered in the US - suppression only.
Cabbage centre grub	<i>Hellula spp.</i>	Chlorantraniliprole					US - 4, EU broccoli -1, cabbage 2 other *0.01. No Codex MRL	Indoxacarb. Lower MRL at Codex. Approved for use against <i>Hellula</i> spp. in USA.	Chlorantraniliprole scheduled for Codex review in 2011.
		Deltamethrin		*			Equivalent MRLs elsewhere.	metaflumizone - EU MRL 1 for cab *0.05 caul & broc; Codex in 2010	Metaflumizone - Scheduled for Codex review in 2010
		Diazinon	*			*	Equivalent MRL @ Codex. Lower elsewhere.		Diazinon - Listed as a chemical of security concern
		Esfenvalerate		*			Equivalent MRLs in Codex, Japan,		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
							Malaysia & Taiwan.		
		Methamidophos	*	*		*	Equivalent @ Singapore & Japan. Lower @ Codex & Taiwan.		Methamidophos - Listed as a chemical subject to the Rotterdam Convention on the Prior Informed Consent. Listed as a chemical of security concern
		Methomyl	*			*	Equivalent MRLs @ Codex, Japan & Taiwan. No MRL in Singapore.		Methomyl - Listed as a chemical of security concern
		Prothiofos					Equivalent MRLs in Japan, Malaysia & Taiwan. None elsewhere		
		Spinosad					Equivalent MRLs @ Codex, Japan & Taiwan. No MRL in Singapore.		
Cabbage moth	<i>Plutella xylostella</i>	acephate	*				Equivalent MRLs @ Codex, Singapore, Japan, & Malaysia. Lower MRL in Taiwan	metaflumizone - EU MRL 1 for cab *0.05 caul & brocc; Codex in 2010	Metaflumizone - Scheduled for Codex review in 2010
		Alpha cypermethrin		*			Equivalent MRLs elsewhere.	Methoxyfenozide - EU MRL *0.02, US 7, Codex Brocc 3 Cabb 7, Japan cabb, caul 7 brocc 3 mg/kg.	Methoxyfenozide registered in the US - suppression only.
		Beta-cyfluthrin		*			Equivalent MRLs in Japan & Taiwan. None elsewhere		
		Bt					Exempt		
		Carbaryl	*				Equivalent MRL in Malaysia. Lower		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
							MRLs @ Japan & Taiwan. None elsewhere.		
		Chlorantraniliprole					US - 4, EU broccoli -1, cabbage 2 other *0.01. No Codex MRL		Chlorantraniliprole scheduled for Codex review in 2011.
		Chlorfenapyr					No MRLs elsewhere.		
		Chlorpyrifos		*			Lower MRLs in Codex, Singapore, Japan, & Malaysia. Equivalent MRL in Taiwan.		
		Deltamethrin					Equivalent MRLs elsewhere.		
		Diazinon	*	*		*	Equivalent MRL @ Codex. Lower elsewhere.		Diazinon - Listed as a chemical of security concern
		Emamectin					Equivalent MRLs in Japan, Malaysia & Taiwan. None elsewhere		Scheduled for Codex review in 2011
		Endosulfan	*			*	Lower MRLs @ Codex & Japan. Equivalent @ Singapore, Malaysia & Taiwan.		Endosulfan - POPs nomination. Listed as a chemical of security concern
		Esfenvalerate		*			Equivalent MRLs in Codex, Japan, Malaysia & Taiwan.		
		flubendiamide					EU *0.01 mg/kg, US 0.6, Japan - cabbage 3		Scheduled for Codex review in 2011
		Fipronil	*				Equivalent MRL in Japan. Lower MRL @ Codex & Taiwan. None elsewhere.		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
		Fluvalinate		*			Equivalent MRLs in Japan & Taiwan. None elsewhere		
		Gamma cyhalothrin		*			No MRL @ Codex, Singapore & Malaysia. Equivalent MRLs @ Japan & Taiwan.		
		Indoxacarb					Equivalent MRL in Japan. Lower MRL proposed @ Codex. No MRLs elsewhere.		
		Methamidophos	*	*		*	Equivalent @ Singapore & Japan. Lower @ Codex & Taiwan.		Methamidophos - Listed as a chemical subject to the Rotterdam Convention on the Prior Informed Consent. Listed as a chemical of security concern
		Methidathion	*			*	Equivalent MRL @ Japan. None elsewhere.		Methidathion - Listed as a chemical of security concern
		Methomyl	*			*	Equivalent MRLs @ Codex, Japan & Taiwan. No MRL in Singapore.		Methomyl - Listed as a chemical of security concern
		Methyl parathion	*			*	Equivalent MRL in Japan. None elsewhere.		Methyl parathion - Listed as a chemical of security concern
		Mevinphos				*	Equivalent MRL in Japan. None elsewhere		Mevinphos - Listed as a chemical of security concern
		Permethrin			*		Equivalent MRL in Taiwan, Lower MRLs elsewhere.		Manufacturer support uncertain
		Prothiofos					Equivalent MRLs in Japan, Malaysia &		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
							Taiwan. None elsewhere		
		Pyrethrins					Equivalent @ Singapore & Japan. Exempt in Malaysia		
		Spinosad					Equivalent MRLs @ Codex, Japan & Taiwan. No MRL in Singapore.		
		Trichlorfon	*				MRLs in Singapore & Japan equivalent. No MRL Codex, Malaysia & Taiwan.		
Cabbage white butterfly	<i>Pieris rapae</i>	acephate	*				Equivalent MRLs @ Codex, Singapore, Japan, & Malaysia. Lower MRL in Taiwan	metaflumizone - EU MRL 1 for cab *0.05 caul & broc; Codex in 2010	Metaflumizone - Scheduled for Codex review in 2010
		Alpha cypermethrin		*			Equivalent MRLs elsewhere.		
		Beta-cyfluthrin		*			Equivalent MRLs in Japan & Taiwan. None elsewhere		
		Bt					Exempt		
		Carbaryl	*				Equivalent MRL in Malaysia. Lower MRLs @ Japan & Taiwan. None elsewhere.		
		Chlorantraniliprole					US - 4, EU broccoli -1, cabbage 2 other *0.01. No Codex MRL		Chlorantraniliprole scheduled for Codex review in 2011.
		Chlorfenapyr					No MRLs elsewhere.		
		Chlorpyrifos	*	*			Lower MRLs in Codex, Singapore, Japan,		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
							& Malaysia. Equivalent MRL in Taiwan.		
		Deltamethrin		*			Equivalent MRLs elsewhere.		
		Emamectin					No Codex MRL. Equivalent MRLs in Japan, Malaysia & Taiwan. MRL in USA.		Emamectin - Scheduled for Codex review in 2011
		Endosulfan	*			*	Lower MRLs @ Codex & Japan. Equivalent @ Singapore, Malaysia & Taiwan.		Endosulfan - POPs nomination. Listed as a chemical of security concern
		Esfenvalerate		*			Equivalent MRLs in Codex, Japan, Malaysia & Taiwan.		
		Flubendiamide					EU *0.01 mg/kg, US 0.6, Japan - cabbage 3		Scheduled for Codex review in 2011
		Fluvalinate		*			Equivalent MRLs in Japan & Taiwan. None elsewhere		
		Gamma cyhalothrin		*			No MRL @ Codex, Singapore & Malaysia. Equivalent MRLs @ Japan & Taiwan.		
		Indoxacarb					Equivalent MRL in Japan. Lower MRL proposed @ Codex. No MRLs elsewhere.		
		Methamidophos	*	*		*	Equivalent @ Singapore & Japan. Lower @ Codex & Taiwan.		Methamidophos - Listed as a chemical subject to the Rotterdam Convention on the

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
									Prior Informed Consent. Listed as a chemical of security concern
		Methidathion	*			*	Equivalent MRL @ Japan. None elsewhere.		Methidathion - Listed as a chemical of security concern
		Methomyl	*			*	Equivalent MRLs @ Codex, Japan & Taiwan. No MRL in Singapore.		Methomyl - Listed as a chemical of security concern
		Methyl parathion	*			*	Equivalent MRL in Japan. None elsewhere.		Methyl parathion - Listed as a chemical of security concern
		Permethrin			*		Equivalent MRL in Taiwan, Lower MRLs elsewhere.		Manufacturer support uncertain
		Prothiofos					Equivalent MRLs in Japan, Malaysia & Taiwan. None elsewhere		
		Spinosad					Equivalent MRLs @ Codex, Japan & Taiwan. No MRL in Singapore.		
		Trichlorfon	*				MRLs in Singapore & Japan equivalent. No MRL Codex, Malaysia & Taiwan.		
		Thiodicarb					Equivalent MRLs @ Codex, Japan & Taiwan. No MRL in Singapore.		
Cabbage cluster caterpillar	<i>Crociodolomia pavonana</i>	Bt					Exempt	flubendiamide - EU *0.01 mg/kg, US 0.6, Japan - cabbage 3 mg/kg	Metaflumizone - Scheduled for Codex review in 2010
		Chlorantraniliprole					US - 4, EU	metaflumizone -	Chlorantraniliprole

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
							broccoli -1, cabbage 2 other *0.01. No Codex MRL	EU MRL 1 for cab *0.05 caul & broc; Codex in 2010	scheduled for Codex review in 2011.
		Chlorpyrifos	*	*			Lower MRLs in Codex, Singapore, Japan, & Malaysia. Equivalent MRL in Taiwan.		
		Fipronil	*						
		Gamma cyhalothrin		*			Equivalent MRL in Japan.Lower MRL @ Codex & Taiwan. None elsewhere.		
		Permethrin			*		No MRL @ Codex, Singapore & Malaysia. Equivalent MRLs @ Japan & Taiwan.		Manufacturer support uncertain
		Spinosad					Equivalent MRL in Taiwan, Lower MRLs elsewhere.		
		Thiodicarb					Equivalent MRLs @ Codex, Japan & Taiwan. No MRL in Singapore.		
African Black beetle		Chlorpyrifos	*	*			Equivalent MRLs @ Codex, Japan & Taiwan. No MRL in Singapore.		
Loopers	<i>Geometridae</i>	Bt					Exempt	metaflumizone - EU MRL 1 for cab *0.05 caul & broc; Codex in 2010	Metaflumizone - Scheduled for Codex review in 2010
		Endosulfan	*			*	Lower MRLs @ Codex & Japan. Equivalent @ Singapore, Malaysia &		POPs nomination. Listed as a chemical of security concern

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
							Taiwan.		
		Methomyl	*			*	Equivalent MRLs @ Codex, Japan & Taiwan. No MRL in Singapore.		Methomyl - Listed as a chemical of security concern
		Spinosad					Equivalent MRLs @ Codex, Japan & Taiwan. No MRL in Singapore.		
Mites	<i>Tetranychus spp.</i>	Dicofol			*		Equivalent MRL @Singapore. Lower MRL in Japan. None elsewhere.		Dicofol - No manufacturer support
		Phorate	*			*	No MRL @ Codex, Singapore & Malaysia. Lower elsewhere.		Phorate - Listed as a chemical of security concern
		Propargite					Equivalent MRL in Japan. No MRLs elsewhere.		
		Sulfur					Exempt		
Green Vegetable bug	<i>Nezara viridula</i>	Dimethoate	*	*			Current MRL 2.0ppm. Codex, Japan 1.0 EU 0.02		
		Endosulfan	*			*	Lower MRLs @ Codex & Japan. Equivalent @ Singapore, Malaysia & Taiwan.		Endosulfan - POPs nomination. Listed as a chemical of security concern
		Maldison	*				Equivalent MRLs @ Codex & elsewhere.		
		parathion-methyl	*			*	Equivalent MRL in Japan. None elsewhere.		Parathion methyl - Listed as a chemical of security concern
		Trichlorfon	*				MRLs in Singapore & Japan equivalent.		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
							No MRL Codex, Malaysia & Taiwan.		
Rutherglen bug	<i>Nysius sp.</i>	Endosulfan	*			*	Lower MRLs @ Codex & Japan. Equivalent @ Singapore, Malaysia & Taiwan.	flonicamid - EU MRL @ *0.05, US 1.5, Japan 1 cab, 4 for others. No Codex MRLs	Endosulfan - POPs nomination. Listed as a chemical of security concern
		Maldison	*				Equivalent MRLs @ Codex & elsewhere.		Flonicamid registered in the US against aphids, plant bugs and whitefly
		Trichlorfon	*				MRLs in Singapore & Japan equivalent. No MRL Codex, Malaysia & Taiwan.		
Jassids, leafhoppers		Phorate	*			*	No MRL @ Codex, Singapore & Malaysia. Lower elsewhere.	flonicamid - EU MRL @ *0.05, US 1.5, Japan 1 cab, 4 for others. No Codex MRLs	Phorate - Listed as a chemical of security concern
		Endosulfan	*			*	Lower MRLs @ Codex & Japan. Equivalent @ Singapore, Malaysia & Taiwan.		Endosulfan - POPs nomination. Listed as a chemical of security concern
		Dimethoate	*	*			Current MRL 2.0ppm. Codex, Japan 1.0 EU 0.02		Flonicamid registered in the US against aphids, plant bugs and whitefly
		Maldison	*				Equivalent MRLs @ Codex & elsewhere.		
Helicoverpa	<i>Helicoverpa spp.</i>	acephate	*				Equivalent MRLs @ Codex, Singapore, Japan, & Malaysia. Lower MRL in Taiwan	metaflumizone - EU MRL 1 for cab *0.05 caul & broc; Codex in 2010	Metaflumizone - Scheduled for Codex review in 2010
		Alpha cypermethrin		*			Equivalent MRLs elsewhere.		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
		Beta-cyfluthrin		*			Equivalent MRLs in Japan & Taiwan. None elsewhere		
		Bt					Exempt		
		Carbaryl	*				Equivalent MRL in Malaysia. Lower MRLs @ Japan & Taiwan. None elsewhere.		
		Chlorantraniliprole					US - 4, EU broccoli -1, cabbage 2 other *0.01. No Codex MRL		Chlorantraniliprole scheduled for Codex review in 2011.
		Endosulfan	*			*	Lower MRLs @ Codex & Japan. Equivalent @ Singapore, Malaysia & Taiwan.		Endosulfan - POPs nomination. Listed as a chemical of security concern
		Esfenvalerate		*			Equivalent MRLs in Codex, Japan, Malaysia & Taiwan.		
		Flubendiamide					EU *0.01 mg/kg, US 0.6, Japan - cabbage 3		Flubendiamide - Scheduled for Codex review in 2011
		Fluvalinate		*			Equivalent MRLs in Japan & Taiwan. None elsewhere		
		Indoxacarb					Equivalent MRL in Japan. Lower MRL proposed @ Codex. No MRLs elsewhere.		
		Methomyl	*			*	Equivalent MRLs @ Codex, Japan & Taiwan. No MRL in Singapore.		Methomyl - Listed as a chemical of security concern
		Spinosad					Equivalent MRLs @ Codex, Japan		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment	
							& Taiwan. No MRL in Singapore.			
Cluster caterpillar	<i>Spodoptera litura</i>	Alpha -Cypermethrin		*			Equivalent MRLs elsewhere.	Metaflumizone - EU MRL 1 for cab *0.05 caul & broc; Codex in 2010	Metaflumizone - Scheduled for Codex review in 2010	
		Beta-cyfluthrin		*			Equivalent MRLs in Japan & Taiwan. None elsewhere			
		Chlorantraniliprole					US - 4, EU broccoli -1, cabbage 2 other *0.01. No Codex MRL		Chlorantraniliprole scheduled for Codex review in 2011.	
		Chlorpyrifos	*	*			Lower MRLs in Codex, Singapore, Japan, & Malaysia. Equivalent MRL in Taiwan.			
		Diazinon	*				Equivalent MRL @ Codex. Lower elsewhere.		Diazinon - Listed as a chemical of security concern	
		flubendiamide					EU *0.01 mg/kg, US 0.6, Japan - cabbage 3		Flubendiamide - Scheduled for Codex review in 2011	
		Methamidophos	*	*			* Equivalent @ Singapore & Japan. Lower @ Codex & Taiwan.		Methamidophos - Listed as a chemical of security concern	
		Methomyl	*				* Equivalent MRLs @ Codex, Japan & Taiwan. No MRL in Singapore.		Methomyl - Listed as a chemical of security concern	
		Permethrin				*		Equivalent MRL in Taiwan, Lower MRLs elsewhere.		Permethrin - Manufacturer support uncertain
		Prothiofos						Equivalent MRLs in Japan, Malaysia & Taiwan. None		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
							elsewhere		
Silver leaf white fly	<i>Bemisia tabaci</i>	bifenthrin (PER10228)		*			EU - cab 1, Broc & caul 0.2; Japan -2 cab, 0.05 caul, Broc 0.1; Taiwan 1; USA 0.6	Pyriproxyfen - EU MRL @ *0.05, US 0.7, Japan 0.7, No Codex MRL. flonicamid - EU MRL @ *0.05, US 1.5, Japan 1 cab, 4 for others. No Codex MRLs	Pyriproxyfen - registered in the US against whitefly. Flonicamid registered in the US against aphids, plant bugs and whitefly
Soybean looper	<i>Thysanoplusia orichalcea</i>	Chlorantraniliprole					US - 4, EU broccoli -1, cabbage 2 other *0.01. No Codex MRL	flubendiamide - EU *0.01 mg/kg, US 0.6, Japan - cabbage 3 mg/kg	Chlorantraniliprole scheduled for Codex review in 2011.
		flubendiamide					EU *0.01 mg/kg, US 0.6, Japan - cabbage 3		flubendiamide scheduled for Codex review in 2011.
Disease control									
Ring spot	<i>Mycosphaerella brassicicola</i>	Copper					Exempt	penconazole	Possible desktop permit application for penconazole based on registration in Brussels sprouts. Possible desktop permit application for pyraclostrobin based on OS data.MRL in US & Japan @ 5.0, EU @ 0.1 mg/kg.
		Chlorothalonil					Equivalent MRL in Singapore, other markets lower.	pyraclostrobin - MRL in US & Japan @ 5.0, EU @ 0.1 mg/kg.	
		mancozeb, metiram	*	*			Equivalent MRLs @ Singapore, Malaysia & Taiwan. Lower MRL in Japan. No Codex MRL.		
		Triadimenol		*			Equivalent MRL in Japan. No MRLs elsewhere.		
Club root	<i>Plasmodiophora brassicae</i>	fluazinam					EU *0.05, Japan 0.1, US 0.01.		
		Quintozene					Equivalent MRL in Japan. No MRLs elsewhere.		
Peppery leaf spot	<i>Pseudomonas syringae pv maculicola</i>	Copper					Exempt		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
Blackrot	<i>Xanthomonas campestris</i>	Quintozene					Equivalent MRL in Japan. No MRLs elsewhere.		
Damping Off	<i>Pythium/Phytophthora</i>	metalaxyl					Equivalent MRLs in Copdex, Singapore, Japan & Taiwan.	azoxystrobin - MRLs in EU 0.3, US 3, Codex 5 & Japan 5. Phosphorous acid - exempt Japan & US, 10 in EU	Possible desktop permit application for azoxystrobin based on os data. Phosphorous acid - registered in US as a pre-plant root dip
		metalaxyl-M (PER10735)					Seed treatment - Equivalent MRLs in Copdex, Singapore, Japan & Taiwan.		
Downy mildew	<i>Peronospora parasitica</i>	Phosphorous acid (PER8254)					Exempt in Japan & US. No MRLs elsewhere.	Phosphorous acid - exempt Japan & US, 10 in EU	Possible desktop permit application for azoxystrobin (Codex MRL @ 5) or dimethomorph registered in US (Codex MRLs of 2 for cabbage and 1 for broccoli.)
		mancozeb, metiram	*	*			Equivalent MRLs @ Singapore, Malaysia & Taiwan. Lower MRL in Japan. No Codex MRL.	Fenamidone US MRL 60, EU 2, Japan 20. No Codex MRLs	Fenamidone registered in the US
		Copper					Exempt		
Alternaria spot	<i>Alternaria brassicicola</i>	mancozeb	*	*			Equivalent MRLs @ Singapore, Malaysia & Taiwan. Lower MRL in Japan. No Codex MRL.		Possible desktop permit application for azoxystrobin &/or pyraclostrobin . Possible residue decline trials needed.
Anthracnose		mancozeb	*	*			Equivalent MRLs @ Singapore, Malaysia & Taiwan. Lower MRL in Japan. No Codex MRL.	Phosphorous acid - exempt Japan & US, 10 in EU	Phosphorous acid - registered in US as a pre-plant root dip

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Possible Alternative Options	Comment
White blister	<i>Albugo</i>	Metalaxyl (PER10674)					Equivalent MRLs in Copdex, Singapore, Japan & Taiwan.	Fenamidone US MRL 60, EU 2, Japan 20. No Codex MRLs	Fenamidone registered in the US
		azoxystrobin (PER10261)					azoxystrobin - MRLs in EU 0.3, US 3, Codex 5 & Japan 5.		
Seedling damping off	<i>Rhizoctonia solani</i>	Iprodione (PER10588)		*					
		Quintozene					Equivalent MRL in Japan. No MRLs elsewhere.		
		Fludioxonil (PER10735)					Seed treatment		
Sclerotinia rot (White mould)	<i>Sclerotinia</i>	Boscalid (PER8819)				*	MRLs in Japan, US & UK. No MRL in Codex	pyraclostrobin - MRL in US & Japan @ 5.0, EU @ 0.1 mg/kg.	Potential issue over boscalid soil carryover. Possible desktop permit application for pyraclostrobin based on os data. MRL in US & Japan @ 5.0, EU @ 0.1 mg/kg. Data generation for thiophanate methyl

Capsicums

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
Soil fumigation		Chlopicrin, 1,3 dichloropene				*	Residues not anticipated	Priority?	
		Dazomet					Residues not anticipated	Priority?	
Weed Control									
Pre-plant knockdown of weeds		Diquat, paraquat				*	MRLs at LOQ,	Carfentrazone & sulfufenacil (application with APVMA)	Paraquat listed as a chemical of security concern
Pre-emergent residual herbicides		trifluralin					MRLs at LOQ,	Napropamide - MRLs in EU, US & Japan @ 0.1 mg/kg	
Post-emergent grass control		Fluazifop					MRL 0.1 with 49 day WHP. Only other MRL in Japan @ 2.0	Clethodim MRLs in Japan 0.1 & US 1.0.	Possible decline trials needed
		Clethodim					MRL 1.0 NR WHP. Only other MRL in Japan @ 10.0		
Growth regulator		NAA					Exempt?	Ethephon - MRLs in Codex & Japan @ 5, EU 3.	Ethephon registered in US to promote earlier uniform ripening and colour
Snails & slugs		Metalddehyde					No MRLs at Codex, Taiwan or EU	Copper sulfate	Confirmatory trials with alternative option if needed.
		Iron salts					Exempt		
		Methiocarb	*	*		*	No MRLs at Codex, Taiwan or EU		
		Chlopicrin, 1,3 dichloropene				*	Residues not anticipated		
Nematodes		Oxamyl		*		*	MRL in Codex, Japan & USA @ 2, EU @ 0.02	thiazosulfone (expt product), Sodium lauryl sulfate	Oxamyl listed as a chemical of security concern
Insect Control									
Aphids (Green peach aphid)		Pirimicarb		*			Equivalent MRLs in Codex & Japan. Lower in Taiwan. None	Pymetrozine - No Codex MRL but MRLs in US (0.2), EU (1.0) & Japan	Desktop application or Residue trials for pymetrozine &/or decline trials for

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
							elsewhere.	(2.0).	pirimicarb.
		Dimethoate	*				Lower MRLs elsewhere.	Thiamethoxam - MRL in US @ 0.25, EU @ 0.5, Japan @ 1	Thiamethoxam - Scheduled for Codex review in 2011
		Imidacloprid					Higher MRLs @ Codex & Japan. Equivalent in Taiwan, lower in Malaysia.	Fonicamid - EU MRL @ *0.05, US 0.4, Japan 0.4. No Codex MRLs	Fonicamid registered in the US against aphids, plant bugs and whitefly
		maldison	*				MRL of 0.5 in Aust, Codex, Malasia, Japan & EU No MRL in Singapore.		
		methamidophos	*	*		*	Lower MRL @ Codex & Taiwan. Equivalent in Japan.		Methamidophos - Listed as a chemical subject to the Rotterdam Convention on the Prior Informed Consent. Listed as a chemical of security concern
		Methyl parathion	*			*	Under review. No Codex MRL. Higher MRL in Japan.		Parathion-methyl listed as a chemical of security concern
Thrips + WFT		Acephate	*				No MRL @ Codex, Malaysia, Singapore or US. MRL in Japan @ 5.0ppm & Taiwan @ 1.0 ppm.	Abamectin - Equivalent MRLs @ Codex, Japan & Taiwan.	Permit application argue efficacy on extrapolation.
		Dimethoate	*	*			Lower MRLs elsewhere.	Spirotetramat - EU MRL @ 2, USA 2.5, Codex 1 mg/kg	Spirotetramat - Permit application based on extrapolation from OS uses. Temporary Aust MRL of 5 mg/kg
		Endosulfan	*			*	Codex MRL equivalent. Lower MRL in Japan. No MRLs elsewhere.		Endosulfan - POPs nomination. Listed as a chemical of security concern
		Methomyl	*			*	Equivalent MRLs @ Codex, Japan & Taiwan.		Methomyl - Listed as a chemical of security concern

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
		Methidathion	*			*	Equivalent MRL in Japan. No MRLs in Codex or elsewhere..		
		Pyrethrins					Generally exempt		
		Spinosad					Higher MRLs @ Codex & Japan. None elsewhere.		Spinosad decline trials.
Armyworm		Bt					Exempt	Spinosad & chlorantraniliprole	Spinosad & chlorantraniliprole - Desktop permit application based on extrapolation from OS uses.
		Methidathion (Seedlings only)	*			*	Equivalent MRL in Japan. No MRLs in Codex or elsewhere..		
Cluster caterpillar	<i>Spodoptera</i> spp.	Chlorpyrifos	*				Under review. Codex MRL higher. MRLs elsewhere lower.	Spinosad & chlorantraniliprole	Spinosad & chlorantraniliprole - Desktop permit application based on extrapolation from OS uses.
		Methoxyfenozide					MRL in Japan @ 3, EU @ 1, USA & Codex @ 2 mg/kg		
		Thiodicarb					No Codex MRL. Lower MRLs in Japan & Taiwan.		
Cutworm	<i>Agrotis</i> spp.	Diazinon	*	*		*	Lower MRLs @ Codex, Japan, Malaysia & Taiwan.	Spinosad & chlorantraniliprole	Diazinon - Listed as a chemical of security concern
		Carbaryl	*				Under review. Equivalent MRL @ Codex & Japan. Lower MRLs elsewhere.		Spinosad & chlorantraniliprole - Desktop permit application based on extrapolation from OS uses.
		Endosulfan	*			*	See above		Endosulfan - POPs nomination. Listed as a chemical of security

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment	
									concern	
		Methyl parathion	*			*	See above		Methyl parathion - Listed as a chemical of security concern	
Cucumber fly		Dimethoate	*	*			See above	Importance?		
Crickets		Chlorpyrifos	*	*			See above	Importance?		
Helicoverpa		Bt					See above	Metaflumizone - EU MRL of 10. Nominated to 2010 Codex	Metaflumizone residue trials.	
		Carbaryl	*				See above			
		Chlorantraniliprole					EU MRL 1, Codex 0.6, US 0.7 mg/kg			
		Endosulfan	*				See above			Endosulfan - POPs nomination, Listed as a chemical of security concern. ECRP trial data suggests that 21-28 day WHP would be required for non-detect. Possible confirmatory residue trials.
		Emamectin					MRL in US @ 0.02, Japan 0.2. No MRL in EU or Codex			Scheduled for Codex review in 2011
		Flubendiamide					MRL in EU @ 0.2, US @ 0.6, Japan 3			Scheduled for Codex review in 2011
		Indoxacarb					Higher MRL in Japan. None elsewhere.			Indoxacarb decline trials.
		Methamidophos	*	*			See above			Methamidophos - Listed as a chemical subject to the Rotterdam Convention on the Prior Informed Consent. Listed as a chemical of security concern
		Methomyl	*				See above			Methomyl - Listed as a chemical of security concern
		Methoxyfenozide				Methoxyfenozide - MRLs in Codex, US & Japan.				

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
		Pyrethrins					See above		
		Spinosad					See above		Spinosad decline trials.
Mites - Two-spotted mites & Tomato Russett mites		Abamectin					Equivalent MRLs in Codex & Japan. None elsewhere.	Bifenazate - MRLs in Codex, US & Japan.	Desktop permit application for bifenazate based on OS use pattern.
		Bifenthrin		*			Equivalent MRL in Taiwan. Lower in Japan. None elsewhere.		
		Dicofol					Lower MRLs @ Codex & Japan. None elsewhere		Dicofol - No manufacturer support
		Endosulfan	*			*	see above		Endosulfan - POPs nomination, Listed as a chemical of security concern
		Methyl parathion	*			*	Under review. No MRLs in Codex, Malasia & Singapore. Higher MRL in Japan.		Methyl parathion - Listed as a chemical of security concern
		Propargite					Equivalent MRL in Japan. No MRLs elsewhere.		
		Sulfur					Exempt		
Greenhouse white fly		Beta-cyfluthrin (PER7356)		*			Equivalent MRL @ Codex & Taiwan. Higher MRL in Japan. No MRLs elsewhere.	Pyriproxifen - MRLs US (0.2), & Japan (5.0). Temporary MRL in Aust @ 1.0 ppm.	Pyriproxifen permit application & possible residue trials.
Fruit fly		Dimethoate	*	*			Under review. Lower MRLs elsewhere.		
		fenthion	*				No MRLs elsewhere.		
Grasshoppers		Chlorpyrifos	*	*			see above		
		Carbaryl	*				see above		
Green Vegetable bug	<i>Nezara viridula</i>	Dimethoate	*	*			Under review. Lower MRLs elsewhere.	Deltamethrin approved for control of pest in Aust.	Deltamethrin decline trials.

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
		Maldison	*				See above	MRLs in US (0.3), EU (0.2) & Japan (0.5). No Codex MRL.	
		Methyl parathion	*			*	See above		Methyl parathion - Listed as a chemical of security concern
Rutherglen bug	<i>Nysius sp.</i>	endosulfan	*			*	see above	Deltamethrin as above.	Endosulfan - POPs nomination. Listed as a chemical of security concern
Potato moth		methamidophos	*	*		*	See above	Importance?	Methamidophos - Listed as a chemical subject to the Rotterdam Convention on the Prior Informed Consent. Listed as a chemical of security concern Spinosad decline trials.
		Spinosad					See above		
Jassids, leafhoppers		endosulfan	*			*	Australian MRL T2 higher than key markets 0.2 ppm	OxamyI Codex MRL 0.1, Japan MRL 0.2 US MRL 0.1. However, identified as chemical of security concern	Endosulfan - POPs nomination, Listed as a chemical of security concern. ECRP Endosulfan decline trial data indicates WHP of 21-28 days required.
		pyrethrins					Generally exempt		
Vegetable weevil		Chlorpyrifos	*	*			See above	Importance?	
		Carbaryl	*				See above		
		Methidathion	*				*		See above
Disease control									
Target spot	<i>Alternaria solani</i>	mancozeb					MRLs in Codex, Japan, Singapore, Taiwan & EU lower.	Iprodione - Approved for diseases in tomatoes. Azoxystrobin MRLs in Japan, EU & US (2.0). Malaysia (1.0) for Chili. Submission to be lodged with Codex. Boscalid - MRLs in US & Japan (1.2) EU No MRL & Codex.	Concerns over potential boscalid soil carryover and indirect exposure to livestock.

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
								Trifloxystrobin MRLs in USA & Japan @ 0.5, EU & Codex @ 0.3 mg/kg	
Pythium/phytophthora		metalaxyl					Australian MRL Lower	Nil Dimethomorph - US MRL of 1.5, Fluopicolide - EU MRL of *0.01, USA 1.6 mg/kg, EU 0.5 mg/kg	Dimethomorph registered in US Suppression only. Fluopicolide registered in US for control. Scheduled for Codex review in 2010.
Rhizoctonia		Quintozene					Equivalent MRL in Codex & Japan.		
Anthraco nose		Chlorothalonil					MRLs @ Codex & Japan equivalent. Elsewhere lower.	Azoxystrobin - Approved for this disease in US.	Possible residue decline trials with azoxystrobin
Bacterial spot, Bacterial canker		Copper					Exempt	Acibenzolar (Actigard) - MRL in US & Japan @ 1, EU *0.02, No Codex MRL	Actigard - Registered in the US in chili pepper & tomato
Grey mould	<i>Botrytis cinerea</i>	Chlorothalonil					MRLs @ Codex & Japan equivalent. Elsewhere lower.	Fenhexamid - MRLs @ Codex, EU & US (2.0ppm).	Fenhexamid desktop permit application underway.
		Pyrimethanil (PER10656)					MRLs in Japan & EU @ 2 mg/kg		
		cyprodinil + fludioxonil (PER9918)					Cyprodinil MRL in Codex @ 0.5, Japan 0.5, EU 1. Fludioxonil Japan 0.01, EU 2, Codex 1 mg/kg		
Sclerotium rot	<i>Sclerotium rolfsii</i>	Quintozene					Equivalent MRL in Codex & Japan.	Boscalid - MRLs US (1.2) & Japan (1.2) EU Nil & Codex review in '06. Submission lodged with APVMA.. Azoxystrobin MRLs in EU, US & Japan. .	Concerns over potential boscalid soil carryover and indirect exposure to livestock. Residue trials for azoxystrobin
		procymidone							
Powdery mildew	<i>Leveillula taurica</i>	Triadiminol					Lower MRL @ Codex.	Trifloxystrobin - Approved for this disease in US.	Possible residue decline trials with trifloxystrobin
		Bupirimate					No MRLs elsewhere.		Decline trials with bupirimate

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
		Potassium bicarbonate (PER9778)					Generally exempt		
		Sulfur					Exempt		
		trifloxystrobin (PER9920)					MRLs in USA & Japan @ 0.5, EU & Codex @ 0.3 mg/kg		

Carrots

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
Soil fumigation		Chloropicrin, 1,3 dichloropene				*	Residues not anticipated		Chloropicrin listed as a chemical of security concern
		Dazomet					Residues not anticipated		
Weed Control									
Pre-plant knockdown of weeds Pre-emergent residual herbicides		Diquat, paraquat	*			*	MRLs at LOQ, shouldn't be a problem	Carfentrazone - Registered in US for use with shielded sprayers	Paraquat listed as a chemical of security concern
		Linuron		*			MRLs at LOQ, shouldn't be a problem		
		Chlorthal					Aust MRL @ 5.0 mg/kg. No MRL @ Codex. Equivalent MRL in Japan. No MRLs elsewhere.		
		Trifluralin					Aust MRL 0.5 mg/kg. MRL of 1.0 in Japan, EU, USA & Korea	Possible residue residue trials needed.	
		Pendimethalin		*			MRLs at LOQ, shouldn't be a problem		
		Prometryn					MRLs at LOQ, shouldn't be a problem		
Post-emergent BLW control		Linuron		*			MRLs at LOQ, shouldn't be a problem		
Post-emergent grass control		Fluazifop					MRL 0.1 with 49 day WHP. MRLs in Japan, US & Korea @ 2.0, EU @ 0.3 & Taiwan @ 0.2	Possible residue decline trials needed	
		Quizalofop					MRL @ LOQ with 70 day WHP. Only other MRL in Japan @ 0.1		
		Sethoxydim					MRL 1.0 NR WHP. MRLs in Japan @ 10.0 and EU 0.5 mg/kg		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
Growth regulator		Maleic hydrazide (PER10829)					Aust MRL higher than Japan, Taiwan and EU. No Codex MRL.	Possible residue decline trials needed	
Pests									
Snails & slugs		Metaldehyde					No MRLs at Codex, Taiwan or EU	Copper sulfate, Iron phosphate, iron-EDTA complex. Generally exempt from MRLs	
		Methiocarb	*	*		*	No MRLs at Codex, Taiwan or EU		Methiocarb - Listed as a chemical of security concern
Nematodes		fenamiphos	*	*		*	Aust MRL higher than Taiwan & EU	thiazosulfone (expt product), Sodium lauryl sulfate	Fenamiphos - Potential issue over dietary intake. Listed as a chemical of security concern
		Chlopicrin, 1,3 dichloropene				*	Residues not anticipated		Chloropicrin listed as a chemical of security concern
		Dazomet						Residues not anticipated	
Insect Control									
Aphids (carrot aphid, fennel aphid etc)	<i>Aphididae, Cavariella aegopodii, Dysaphis foeniculus</i>	Phorate				*	No MRLs in Codex & Malaysia. Lower MRL in Japan @ 0.3, Taiwan & EU 0.05. Singapore MRL equivalent.	Imidacloprid - MRLs US 0.4, Japan 0.1, EU 0.05 & Codex 0.5. Pirimicarb - No US MRL. EU 0.5, Japan 0.5, Codex 0.05. Pymetrozine No Codex, US or EU MRLs. Japan PMRL 0.6,	Listed as a chemical of security concern
		Dimethoate	*	*			Under review. Current MRL 2.0ppm. Japan 1.0, EU 0.02 No Codex MRL.	Possible desktop permit applications for imidacloprid and pirimicarb based on os data.	
		endosulfan					*	Australian MRL T2. MRL of 0.2 @ Codex & Japan. EU 0.05	

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
		Fatty acid K Salts							
		maldison	*	*			MRL of 0.5 in Aust, Codex, Malasia, Japan & EU. No MRL in Singapore or Taiwan.		
		parathion-methyl	*			*	Under review. Aust MRL 0.5. No MRL @ Codex, Malaysia or Singapore.		Listed as a chemical of security concern
Thrips		Dimethoate	*	*			Under review. Current MRL 2.0ppm. Japan 1.0, EU 0.02 No Codex MRL.		
		Phorate				*	No MRLs in Codex & Malaysia. Lower MRL in Japan @ 0.3, Taiwan & EU 0.05. Singapore MRL equivalent.		Listed as a chemical of security concern
Armyworm		Bt							
		Diazinon	*			*	Under review. Aust MRL 0.7, Codex, Malaysia, Singapore & Japan 0.5.	Spinosad - Aust MRL 0.02. No MRLs in Codex, Malaysia, Singapore, EU or US. Japan 0.2. Possible desktop permit application for spinosad based on os data.	Listed as a chemical of security concern
		Carbaryl	*				Codex and Japanese Provisional MRL @ 0.5 mg/kg, EU 0.05. Singapore @ 2 mg/kg & Taiwan with no MRL.	Methoxyfenozide - No Codex MRL, US & Japanese provisional MRL @ 0.5 mg/kg, EU MRL 0.02 mg/kg.	
Cutworm	<i>Agrotis spp.</i>	Diazinon	*			*	Under review. Aust MRL 0.7, Codex, Malaysia, Singapore & Japan 0.5.	Methoxyfenozide - No Codex MRL (possible nomination for 2010 Codex), US & Japanese provisional MRL @ 0.5 mg/kg, EU MRL 0.02 mg/kg.	Diazinon - Listed as a chemical of security concern

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
		Carbaryl	*				Codex and Japanese Provisional MRL @ 0.5 mg/kg, EU 0.05. Singapore @ 2 mg/kg & Taiwan with no MRL.		
		Chlorpyrifos	*				Aust MRL at LOQ	Possible residue decline trials needed	
Crickets		Chlorpyrifos	*				Aust MRL at LOQ		
Mites		Dicofol			*		No Codex or Malaysian MRLs. Singapore equivalent, Japan lower (3 vs 5ppm)		No manufacturer support
		Propargite					Equivalent MRL in Japan. No MRLs elsewhere.		
		Sulfur	*				Exempt		
Redlegged earth mites	<i>Halotydeus destructor</i>	Dimethoate	*	*			Current MRL 2.0ppm. Japan 1.0, EU 0.02 No Codex MRL.	Cypermethrin - approved for pest in Aust, MRLs in Codex, Japan, Malaysia Singapore @ 0.05	
		Maldison	*				MRL of 0.5 in Aust, Codex, Malasia, Japan & EU. No MRL in Singapore or Taiwan.		
Green Vegetable bug	<i>Nezara viridula</i>	Dimethoate	*				Current MRL 2.0ppm. Japan 1.0, EU 0.02 No Codex MRL.	Deltamethrin - approved for control of pest in Aust. MRLs in Codex & Malaysia 0.02ppm, Japan 0.2, US 0.2, Singapore 0.01.	
		Trichlorfon	*				MRLs in Singapore, Japan & EU equivalent. No MRL Codex & Malaysia		
Rutherglen bug	<i>Nysius sp.</i>	Trichlorfon	*				MRLs in Singapore, Japan & EU equivalent. No MRL Codex & Malaysia	Deltamethrin - approved for control of pest in Aust. MRLs in Codex & Malaysia 0.02ppm, Japan 0.2, US 0.2, Singapore 0.01.	

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
Jassids, leafhoppers		Phorate	*			*	No MRLs in Codex & Malaysia. Lower MRL in Japan 0.3 and EU 0.05. Singapore MRL equivalent.	Deltamethrin - approved for control of pest in Aust. MRLs in Codex & Malaysia 0.02ppm, Japan 0.2, US 0.2, Singapore 0.01.	Listed as a chemical of security concern
		endosulfan				*	Australian MRL T2. MRL of 0.2 @ Codex & Japan. EU 0.05	Thiamethoxam - MRL in EU @ 0.1, US & Japan @ 0.02. Nominated to Codex for 2011. Or thiamethoxam + chlorantraniliprole (Durivo)	Endosulfan POPs nomination, listed as a chemical of security concern
		pyrethrins					Generally exempt		
		maldison	*				No MRL in Singapore. Aust MRL equivalent to Codex, Japan & Malaysia		
Light brown apple moth	<i>Epiphyas postvittana</i>	Bt							
		Chlorpyrifos	*				MRLs at LOQ, shouldn't be a problem	Methoxyfenozide - No Codex MRL (possible nomination for 2010 Codex), US & Japanese provisional MRL @ 0.5 mg/kg, EU MRL 0.02 mg/kg.	
		Spinosad					Aust MRL 0.02. No MRLs in Codex, Malaysia, Singapore, EU or US. Japan 0.2		
Disease control									
Leaf spot	<i>Alternaria dauci</i> and <i>Cercospora dauci</i>	Copper					Exempt	Iprodione - Codex MRL 10.0, Japanese MRL 5.0. Boscalid - MRLs - US & Japan 0.7, EU 1 & Codex nil. Azoxystrobin MRLs in EU, US & Japan. Codex proposed MRL of 0.5	Potential issue over boscalid soil carryover.

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
								mg/kg.	
		Chlorothalonil					MRL of 1.0 in all markets. Australian MRL 7.0ppm.	Switch - Cyprodinil & Fludioxonil MRLs in EU, Japan and the USA	
		Difenoconazole		*			No MRLs except Japan		
		mancozeb	*	*			Singapore, Taiwan & EU lower		
		metiram		*					
Pythium/phytophthora		metalaxyl					Codex MRL @ LOQ (*0.05 mg/kg)	Fenamidone US MRL 0.15, EU *0.02, Japan 0.15. No Codex MRLs	Fenamidone registered in the US
		Phosphorous acid					Exempt in Japan & US		
Downy mildew	<i>Peronospora spp</i>	Phosphorous acid					Exempt in Japan & US	Azoxystrobin - MRLs in EU, US & Japan. Proposed MRL 0.5 @ Codex. Pyraclostrobin - Codex MRL 0.5, US, Japan 0.4, EU 0.1.	

Celery

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
Soil fumigation		chlopicrin, 1,3 dichloropene				*	Residues not anticipated		Chloropicrin listed as a chemical of security concern
Weed Control									
Pre-plant knockdown of weeds		diquat, paraquat	*			*	Codex MRL for paraquat. Aust MRL at LOQ, shouldn't be a problem	Carfentrazone - Registered in US for use with shielded sprayers. US MRL 0.1 mg/kg	Paraquat listed as a chemical of security concern. Nominated on priority list for spray drift label review
Pre-emergent residual herbicides		metolachlor/S-metolachlor (PER10675)					MRLs at LOQ, shouldn't be a problem	Boxer Gold - prosulfocarb registered for use in Germany. EU MRL 2 mg/kg	
		linuron (PER10946)							
Post-emergent BLW control		linuron							
		prometryn							
Post-emergent grass control		clethodim							
		fluazifop							
Pests									
Snails & slugs		metaldehyde					No MRLs at Codex, Taiwan or EU	Copper sulfate. Generally exempt from MRLs	
		Iron-EDTA							
		methiocarb	*	*			*	No MRLs at Codex, Taiwan or EU	Listed as a chemical of security concern
Nematodes		chlopicrin, 1,3 dichloropene				*	Residues not anticipated	fluensulfone - new compound from Farnoz	Listed as a chemical of security

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
									concern
		fenamiphos	*						
Insect Control									
Aphids (Green peach aphid, Cotton aphid etc)	<i>Myzus persicae</i> ,	dimethoate	*			*		Acephate registered in US. MRL US & Japan 10 mg/kg	Endosulfan POPs nomination, listed as a chemical of security concern
		endosulfan				*		Pymetrozine registered in US and EU. MRLs 0.6 - US *0.02 EU	Nominated for POPs list
		fatty acid K Salts							
		fenamiphos	*						
		imidacloprid (PER9160)							
		maldison							
		parafinic oil							
		parathion-methyl	*	*		*			
pyrethrins									
Armyworm	<i>Spodoptera</i> spp.	Bt					Emamectin - Registered in US MRL 0.1 mg/kg Methoxyfenozide - Registered in US. Codex MRL 0.3 , US @ 0.05, Japan @ 0.05 mg/kg, EU MRL 0.02 mg/kg.		
		carbaryl	*						
		cypermethrin						Chlorantraniliprole - Registered in US	
		diazinon	*			*	Indoxacarb - Registered against the pest in US. MRL in US @ 0.3 mg/kg		
		permethrin (PER9839)					Flubendiamide - Registered in US Nominated to 2010		

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
								JMPR	
		pyrethrins							
Crickets	<i>Orthoptera</i>	chlorpyrifos	*						
		imidacloprid (ST)					Aust MRL at LOQ	malathion registered in other crops in Aus.	
Cutworm	<i>Agrotis spp.</i>	carbaryl	*					Spinosad approved in crop in Aus, registered against pest in other crops.	
		chlorpyrifos	*					Methoxyfenozide - Registered in US. MRL 25, Japan 15 mg/kg Bifenthrin - Registered in the US, MRL 0.05 mg/kg Flubendiamide - Registered in US Nominated to 2010 JMPR	Parathion listed as a chemical of security concern
		diazinon	*						
		parathion-methyl	*						
		trichlorfon	*						
Earwigs	<i>Forficula auricularia</i>	carbaryl					Indoxacarb - Approved for earwig control in other crops in Aus.		
Green Vegetable bug	<i>Nezara viridula</i>	carbaryl	*						
		dimethoate	*						
		malathion							
		parathion methyl	*						
		trichlorfon	*					MRLs in Singapore, Japan & EU equivalent. No MRL Codex & Malaysia	

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
Heliothis	<i>Helicoverpa sp.</i>	Bt						Emamectin benzoate - Registered in US MRL 0.1 mg/kg	
		carbaryl	*					Flubendiamide - Registered in US Nominated to 2010 JMPR	
		chlorantraniliprole							
		endosulfan					*		Nominated for POPs list
		esfenvalerate (PER9161)							
		indoxacarb (PER10316)							
		NPV							
		permethrin (PER9839)							
		pyrethrins							
spinosad									
Leafhoppers	Cicadellidae	pyrethrins						Imidacloprid - Registered in US	
		dimethoate	*						
		endosulfan					*		Nominated for POPs list
		malathion							
Leafrollers	<i>Merophyas divulsana</i>	esfenvalerate					Spinosad registered in US against similar pests Methoxyfenozide registered in US against similar pests. MRL in US 25, Japan 15		
		indoxacarb (PER10316)							
		Permethrin							
Lightbrown apple moth	<i>Epiphyas postvitana</i>	indoxacarb (PER10316)							
Loopers	Geometridae	Bt						Emamectin - Registered in US MRL 0.1 mg/kg	
		permethrin (PER9839)						Indoxacarb - Registered against similar pests in US.	

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
								MRL in US @ 14 mg/kg	
Mites	<i>Tetranychus sp.</i>	dicofol		*	*			Abamectin - Registered in US	No manufacturer support
		dimethoate	*	*	*				
		fatty acid K Salts							
		parafinic oil							
		parathion-methyl	*						
		propargite					Equivalent MRL in Japan. No MRLs elsewhere.		
		sulfur	*				Exempt		
Rutherglen bug	<i>Nysius sp.</i>	carbaryl	*					Deltamethrin - approved for control of pest in Aust.	
		maldison							
Thrips	<i>Thrips tabaci</i>	fatty acid K Salts		*					endosulfan nominated to POPs list
		dimethoate	*						
		endosulfan				*			
		fenamiphos	*						
		imidacloprid (PER9160)							
		pyrethrins							
		spinosad							
Weevils	<i>Listroderes difficilis</i>	carbaryl	*						
		chlorpyrifos	*						
		indoxacarb (PER10316)							
		parathion methyl	*						
Whitefly	Aleyrodidae	buprofezin (PER10729)						Imidacloprid - Registered in US Pymetrozine -	
		fatty acid K Salts							

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
		parafinic oil						Registered in US & EU	
		pyrethrins							
Wingless grass hopper	<i>Phaulacridium vittatum</i>	chlorpyrifos						Indoxacarb - Registered against the pest in Aust.	
		carbaryl							
Disease control									
Bacterial soft rot	<i>Erwinia carotovora</i> pv. <i>Carotovora</i>	copper		*					
Damping off	<i>Pythium/Phytophthora</i>	thiram						Propamocarb - Registered for use in glasshouse crop in Germany. EU MRL 10 mg/kg	
Cercospora early blight	<i>Cercospora apii</i>	chlorothalonil						Azoxystrobin - Registered in EU & USA. MRLs EU & Codex 5, US & Japan 30 mg/kg.	
		difenoconazole (PER9052)							
		metiram							
		propiconazole (PER9255)							
		trifloxystrobin (PER11641)							
		zineb							
Sclerotinia rot	<i>Sclerotinia sclerotiorum</i>	iprodione						Boscalid - MRLs EU 7, Japan 25, USA 45 mg/kg. Penthiopyrad - New Dupont fungicide. Nominated to 2011 JMPR	
Septoria leaf spot	<i>Septoria apiicola</i>	copper						Azoxystrobin - Registered in EU & USA. MRLs EU & Codex 5, US & Japan 30 mg/kg.	
		chlorothalonil							penthiopyrad - New Dupont fungicide.

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
								Nominated to 2011 JMPR	
		difenoconazole (PER9052)							
		mancozeb							
		metalaxyl/metalaxyl-M (PER10727)							
		metiram							
		propiconazole (PER9255)							
		propineb							
		thiram							
		trifloxystrobin (PER11641)							
		zineb							
		ziram							

Leeks

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
Soil fumigation		chlopicrin, 1,3 dichloropene				*	Residues not anticipated		Chloropicrin listed as a chemical of security concern
Weed Control									
Pre-plant knockdown of weeds		diquat, paraquat	*			*	Codex MRL for paraquat. Aust MRL at LOQ, shouldn't be a problem	Carfentrazone - Registered in US for use with shielded sprayers. US MRL 0.1 mg/kg	Paraquat listed as a chemical of security concern. Nominated on priority list for spray drift label review
		oxyfluorfen (PER10344)							
Pre-emergent residual herbicides		methabenzthiazuron (PER9904)					MRLs at LOQ, shouldn't be a problem		
		pendimethalin (PER10344)		*			MRLs at LOQ, shouldn't be a problem		
		simazine (PER1044)							
		propachlor (PER10344)		*			MRLs at LOQ, shouldn't be a problem		
Post-emergent BLW control		ethofumesate (PER10344)					MRLs at LOQ, shouldn't be a problem		
		cyanzaine (PER10344)							
		ioxonyl (PER10344)							
		linuron (PER11479)							
Post-emergent grass control		fluazifop							
Pests									
Snails & slugs		metaldehyde					No MRLs at Codex, Taiwan or EU	Copper sulfate. Generally exempt from MRLs	
		Iron-EDTA							
		methiocarb	*	*			*	No MRLs at Codex, Taiwan or EU	
Nematodes		chlopicrin, 1,3				*	Residues not	fluensulfone - new	Listed as a chemical

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
		dichloropene					anticipated	compound from Farnoz	of security concern
Insect Control									
Aphids (Green peach aphid, Potato aphid etc)	<i>Myzus persicae</i> , <i>Macrosiphum euphorbiae</i>	dimethoate				*		Imidacloprid - MRLs US 0.4, Codex 0.5, Japan 0.4 (sugar beet), EU *0.05 Spirotetramat - Registered in US in Group 1C.	Endosulfan POPs nomination, listed as a chemical of security concern
		fatty acid K Salts							
		parathion-methyl	*	*			*		
		pirimicarb		*	0.05 mg/kg				
		pyrethrins							
Thrips	<i>Thrips tabaci</i>	fatty acid K Salts	*	*			Under review. Current MRL 2.0ppm. Japan 1.0, EU 0.02 No Codex MRL.	Spinosad - registered in crop. Approved against thrips in other crops.	
		alpha-cypermethrin (PER9203)							
		maldison (PER8762)							
		dimethoate							
		phorate (PER9895)							
		pyrethrins							
Onion maggot	<i>Delia platura</i>	phorate (PER9895)							
Armyworm	<i>Spodoptera</i> spp.	Bt						Methoxyfenozide - Registered in US. Codex MRL 0.3 (sugar beet), US @ 0.5, Japan @ 0.05 mg/kg, EU MRL 0.02 mg/kg.	
		carbaryl	*				Under review.	Indoxacarb - Registered against the pest in US. MRL in US @ 0.3 mg/kg	Listed as a chemical of security concern

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
		diazinon	*			*			
		pyrethrins							
Cutworm	<i>Agrotis spp.</i>	carbaryl	*					Spinosad approved in crop in Aus, registered against pest in other crops.	Listed as a chemical of security concern
		diazinon	*			*		Possible residue decline trials needed	
		chlorpyrifos	*						
		parathion-methyl	*				Aust MRL at LOQ		
Redlegged earth mite	<i>Halotydeus destructor</i>	alpha-cypermethrin (PER9203)							
Crickets		chlorpyrifos	*				Aust MRL at LOQ	malathion registered in other crops in Aus.	
Earwigs	<i>Forficula auricularia</i>	carbaryl	*					Indoxacarb - Approved for earwig control in other crops in Aus.	
								Imidacloprid seed treatments	
Heliothis	<i>Helicoverpa sp.</i>	Bt						NPV - registered in other veg crops in Australia	
		carbaryl						Chlorantraniliprole MRL @ Codex 0.02 mg/kg	
		endosulfan					*		
		methomyl							
		pyrethrins							
		spinosad							
Mites	<i>Tetranychus sp.</i>	dicofol		*	*		No Codex or Malaysian MRLs. Singapore equivalent, Japan lower (3 vs 5ppm)		No manufacturer support
		dimethoate	*						

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
		fatty acid K Salts							
		parathion-methyl	*						
		propargite					Equivalent MRL in Japan. No MRLs elsewhere.		
		sulfur	*				Exempt		
Green Vegetable bug	<i>Nezara viridula</i>	carbaryl	*					Cypermethrin - approved for pest in Aust, MRLs in Codex, Japan, Malaysia Singapore @ 0.05	
		dimethoate	*						
		parathion methyl							
		trichlorfon	*				MRLs in Singapore, Japan & EU equivalent. No MRL Codex & Malaysia		malathion registered in other crops in Aus.
Rutherglen bug	<i>Nysius sp.</i>	carbaryl	*					Deltamethrin & lambda cyhalothrin - approved for control of pest in Aust.	
		trichlorfon	*				MRLs in Singapore, Japan & EU equivalent. No MRL Codex & Malaysia		Malathion registered in other crops in Aus
Light brown apple moth	<i>Epiphyas postvittana</i>	Bt						Methoxyfenozide - US MRL @ 0.5 mg/kg, EU MRL 0.02 mg/kg, Japan MRL @ 0.05 mg/kg.	
									Indoxacarb - Registered against similar pests in US. MRL in US @ 0.3 mg/kg
Leafhoppers		pyrethrins						Thiamethoxam registered in the US. MRL @ 0.05 mg/kg	

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
		dimethoate						Clothianidin - MRL in US @ 0.8 mg/kg. Malathion registered for leafhoppers in Australia.	
Loopers		Bt						Indoxacarb - Registered against similar pests in US. MRL in US @ 0.3 mg/kg	
		endosulfan						spinosad	
		lambda-cyhalothrin							
		methomyl							
Vegetable weevil	<i>Listroderes difficilis</i>	chlorpyrifos					Indoxacarb - Registered against similar pests in Aust. MRL @ 0.3 mg/kg		
Whitefly		fatty acid K Salts						Thiamethoxam registered in the US.	
		pyrethrins							
Wingless grass hopper	<i>Phaulacridium vittatum</i>	chlorpyrifos						Indoxacarb - Registered against the pest in Aust. MRL @ 0.3 mg/kg	
		carbaryl						Malathion - registered in other crops in Aus.	
Disease control									
Leaf spot		copper		*					
Downy mildew	<i>Peronospora destructor</i>	azoxystrobin (PER10914)							
		dimethomorph (PER10902)							
		copper (PER3850)							
		metalaxyl/metalaxyl-M							
		Phosphorous acid							

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
		(PER7905)							
		mancozeb (PER10088)		*				Phos acid registered for use in US	
Purple blotch	<i>Alternaria porri</i>	chlorothalonil							
		mancozeb (PER10088)							
		metalaxyl/metalaxyl-M							
White rot	<i>Sclerotinium cepivorum</i>	azoxystrobin (PER10349)							
		tebuconazole (PER8240)							
Rust	<i>Puccinia</i> spp.	copper						Tebuconazole - Registered in EU & US.	
		sulfur							

Lettuce

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
Soil fumigation		Chlopicrin, 1,3 dichloropene					Residues not anticipated		
		Dazomet					Residues not anticipated		
Weed Control									
Pre-plant knockdown of weeds		Diquat, paraquat	*			*	Aus MRLs at LOQ,	Carfentrazone & sulfufenacil (application with APVMA)	Paraquat listed as a chemical of security concern
Pre-emergent residual herbicides		Pendimethalin		*			Aus MRLs at LOQ,		
		Phenmedipham (PER10465)					MRL in Japan @ 0.2		
		Propachlor (PER5776)							
		Chlorthal-dimethyl					MRLs in Japan (3) and EU (0.5)		
Post-emergent BLW control		Propyzamide				MRLs in EU & US @ 1, Japan @ 0.1			
Post-emergent grass control		Fluazifop							
		Clethodim							
		Sethoxydim					MRL 1.0 NR WHP. Only other MRL in Japan @ 10.0ppm		
Pests									
Snails & slugs		Metaldehyde					No MRLs at Codex or Singapore. Equivalent MRL in Malaysia.		
		Iron-EDTA complex					No MRLs, exempt in EU		
		Methiocarb	*	*			*	Equivalent MRLs at Codex & Singapore.	
Nematodes		Fenamiphos	*	*		*	No MRLs at Codex or Malaysia. Equivalent MRL	Sesame oil - Regsitered in US for nematode control in turf	Fenamiphos - Potential issue over dietary intake. Listed as a chemical of security

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
							in Singapore.		concern
		Chlorpicrin, 1,3 dichloropene				*	Residues not anticipated	thiazosulfone (expt product), Sodium lauryl sulfate	Chlorpicrin - Listed as a chemical of security concern
		Dazomet					Residues not anticipated		
Insect Control									
Aphids (Lettuce aphid)	<i>Aphididae, Nasonovia ribis-nigri</i>	Fatty acid - K salts					Exempt in Aus, US & EU	Thiamethoxam - MRLs in Japan @ 2, US @ 4 & EU @ 5. Nominated to Codex 2011	Flonicamid registered in the US against aphids, plant bugs and whitefly
		Imidacloprid					Codex MRL 2 for head lettuce. MRLs in Japan @ 5, US 3.5, EU @ 2 and 3.5 & 5 in Korea.	Spirotetramat - Codex MRL @ 7, US @ 9, EU 5 (Head).	Temporary Aust MRL of 5 for head lettuce and 10 for leaf lettuce.
		Pymetrozine					MRLs in Japan @ 0.1, USA @ 0.6, EU @ 2 and Korea @ 1.	Flonicamid - EU MRL @ *0.05, US 4, Japan 4. No Codex MRLs	
		parathion-methyl	*			*	Codex MRL @ 0.05, Japan @ 1, Korea @ 0.5 & 1.		Parathion-methyl listed as a chemical of security concern
		Pirimicarb		*			Australian MRL T5 (3.0 FSANZ). MRL of 1.0 @ Codex for head lettuce. Singapore, Japan & Korea @ 1, EU @ 5.		
		Maldison	*				MRL of 2.0 in Aust. Codex, Malasia & Singapore @ 8.0. Japan & Korea @ 2.		
Helicoverpa	<i>Helicoverpa ammiger, H. punctigera.</i>	Alpha-cypermethrin		*			Codex MRL @ 0.7, EU, Japan & Singapore @ 2, US @ 4.	Methoxyfenozide - MRLs at Codex for head and leaf lettuce @ 15 & 30 ppm.	Methoxyfenozide registered in the US

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
		Bt					Exempt	Metaflumizone - EU MRL of 10. Nominated to 2010 Codex	
		Chlorantraniliprole					Codex MRL @ 20, US @ 13 & EU @ 10		
		Emamectin benzoate					Japan - cab & brocc 0.1 caul 0.5, US 0.05 mg/kg. No EU or Codex MRLs		Emamectin - Scheduled for Codex review in 2011
		Flubendiamide					MRL in Japan @ 15, US @ 11. Aus TMRL currently set @ 5. Nominated to 2011 Codex		Scheduled for Codex review in 2011
		Indoxacarb (Head only)					No MRLs in export destinations. MRLs proposed at Codex (7 & 15 ppm)		
		Methomyl	*			*	APVMA review. Codex @ 0.2, & Singapore, Japan & US @ 5.0, EU @ 0.3 (Head lettuce).		Methomyl - Listed as a chemical of security concern
		NPvirus					Exempt		
		Pyrethrins					MRL in EU, Japan, Singapore, Korea & exempt in Malaysia.		
		Spinosad					Codex MRL @ 10. Japan & US @ 10, EU @ 8. No MRL in Singapore.		
Thrips	<i>Thrips sp.</i> , <i>Frankliniella occidentalis</i>	Dimethoate	*	*			Under review. Equivalent MRL @ Singapore &	Abamectin - MRLs at Codex (0.05) & in EU (0.1) as per	Residue trials underway to maintain access via MT06022

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
							@ Codex for head lettuce.	PER7833. Resistance issues. Check status with Herron	
		Fatty acid - K salts					Exempt in most export markets.	Spirotetramat - Codex MRL @ 7, US @ 9, EU 5 (Head).	
		methamidophos	*	*		*	Japan, US & Korea @ 1, Singapore @ 1 (Head), EU @ 0.01.		Methamidophos - Listed as a chemical subject to the Rotterdam Convention on the Prior Informed Consent. Listed as a chemical of security concern
		Spinosad					Codex MRL @ 10. Japan & US @ 10, EU @ 8. No MRL in Singapore.		
		Fenamiphos	*	*		*	No MRLs at Codex or Malaysia. Equivalent MRL in Singapore.		Fenamiphos - Potential issue over dietary intake. Listed as a chemical of security concern
Loopers		Spinosad					Codex MRL @ 10. Japan & US @ 10, EU @ 8. No MRL in Singapore.	Flubendiamide - MRL in Japan @ 15, US @ 11. Aus TMRL @ 5. Nominated to 2011 Codex	
Cluster caterpillar	<i>Spodoptera litura</i>	Bt					Exempt		
		Methomyl	*			*	APVMA review. Codex @ 0.2, & Singapore, Japan & US @ 5.0, EU @ 0.3 (Head lettuce).		Methomyl - Listed as a chemical of security concern
		Permethrin			*		Codex MRL lower @2.0. Singapore MRL equivalent.		Permethrin - Manufacturer support uncertain
Cutworm	<i>Agrotis spp.</i>	Diazinon	*			Under review. Aust MRL 0.7,	Methoxyfenozide - MRLs at Codex for		

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
							Codex @ 0.5. Singapore @ 0.7.	head and leaf lettuce @ 15 & 30 ppm.	
		Carbaryl	*				Equivalent MRLs at Codex, Japan, US & Singapore. Korea @ 1 (Head) & EU @ 0.05.	Flubendiamide - MRL in Japan @ 15, US @ 11. Aus TMRL @ 5. Nominated to 2011 Codex	
		parathion-methyl	*			*	Japan MRL @ 1, Codex @ 0.05, EU @ 0.02, Korea @ 0.1 (Head) & 1 (Leaf)	Metaflumizone - EU MRL of 10. Nominated to 2010 Codex	Parathion methyl - Listed as a chemical of security concern
		Trichlorfon	*				No MRLs in export destinations.		
		Chlorpyrifos	*				Aust MRL at LOQ		
Fungus gnats		Vectobac (PER11472)						Cyromazine - MRLs in Codex @ 4, Japan @ 5, US @ 7 & EU @ 15	
Grasshoppers	<i>Phaulacridium vittatum</i>	Fenitrothion					Codex MRL for head lettuce. Singapore MRL higher.	Indoxacarb - Registered in head lettuce. Approved for the control of wingless grasshoppers in other crops.	
		Carbaryl	*				Equivalent MRLs at Codex, Japan, US & Singapore. Korea @ 1 (Head) & EU @ 0.05.		
		Chlorpyrifos	*				Aust MRL at LOQ		
Mites	<i>Tetranychus spp.</i>	abamectin (PER10807)					MRLs in US & EU @ 0.1, Japan @ 0.05		abamectin Registered in US
		Dicofol			*		Equivalent MRL in Singapore.		Dicofol - No manufacturer support

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
							Not supported by Dow at Codex		
		Fatty acid - K salts					Exempt		
		parathion-methyl	*			*	Japan MRL @ 1, Codex @ 0.05, EU @ 0.02, Korea @ 0.1 (Head) & 1 (Leaf)		Parathion methyl - Listed as a chemical of security concern
		Propargite					MRL in Japan @ 3. No MRLs in export destinations.		
		Sulfur					Exempt in most export markets.		
Silverleaf whitefly	<i>Bemisia tabaci</i> Biotype B	Bifenthrin (PER10058 & PER10105)		*			MRL in Japan @ 3, EU @ 2, US @ 3 (Head). No MRLs in current export destinations	Acetamiprid - MRLs in Japan (5.0) and USA (3.0). Buprofezin - ???? Pyriproxyfen - ????	
		Eco-oil (PER10311)					Exempt in most export markets.	Flonicamid - EU MRL @ *0.05, US 4, Japan 4. No Codex MRLs	
		Pymetrozine					MRLs in Japan @ 0.1, USA @ 0.6, EU @ 2 and Korea @ 1.		
Redlegged earth mites	<i>Halotydeus destructor</i>	Dimethoate	*	*			Under review. Equivalent MRL @ Singapore & @ Codex for head lettuce.	Alpha-Cypermethrin - approved for pest in Aust. MRLs in Codex, Malaysia & Singapore @ 2.0.	
		Chlorpyrifos	*				Aust MRL at LOQ		
		Maldison	*				MRL of 2.0 in Aust. Codex, Malasia & Singapore @ 8.0. Japan & Korea @ 2.		

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
Green Vegetable bug	<i>Nezara viridula</i>	Dimethoate	*				Under review. Equivalent MRL @ Singapore & @ Codex for head lettuce.	Flonicamid - EU MRL @ *0.05, US 4, Japan 4. No Codex MRLs	
		parathion-methyl				*	Japan MRL @ 1, Codex @ 0.05, EU @ 0.02, Korea @ 0.1 (Head) & 1 (Leaf)		Listed as a chemical of security concern
		Trichlorfon	*				No MRLs in export destinations.		
Rutherglen bug	<i>Nysius sp.</i>	Trichlorfon	*				No MRLs in export destinations.	Indoxacarb - Registered in head lettuce. Approved for the control of plant bugs in other crops.	
Vegetable weevil	<i>Listroderes difficilis</i>	Carbaryl	*				Equivalent MRLs at Codex, Japan, US & Singapore. Korea @ 1 (Head) & EU @ 0.05.	Indoxacarb - Registered in head lettuce. Approved for the control of plant bugs in other crops.	
		Chlorpyrifos	*				Aust MRL at LOQ		
Jassids, leafhoppers	<i>Cicadellidae</i>	Dimethoate	*	*			Under review. Equivalent MRL @ Singapore & @ Codex for head lettuce.	Flonicamid - EU MRL @ *0.05, US 4, Japan 4. No Codex MRLs	
		Pyrethrins					MRL in EU, Japan, Singapore, Korea & exempt in Malaysia.		
		Oil					Exempt in most export markets.		
		Maldison	*				MRL of 2.0 in Aust. Codex, Malasia & Singapore @ 8.0. Japan &		

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
							Korea @ 2.		
Disease control									
Septoria Leaf spot	<i>Septoria apiicola</i>	Copper					Exempt in most export markets.	Azoxystrobin - MRLs in Codex & EU @ 3, US & Japan @ 30	
		Metiram		*			MRL @ Codex for head lettuce. Higher MRL in Malaysia. Lower MRL in Singapore.	Switch (cyprodinil+fludioxonil) - MRLs in Codex & EU @ 10, US @ 30 and Japan @ 1.	
		Dimethomorph (Head)					MRLs of 10 in Japan & US, 1 in EU. No MRLs elsewhere.	Chlorothalonil - MRL in Japan @ 1, Taiwan @ 2 (Leafy). No MRL in Codex, EU or US.	
		Mancozeb	*	*			MRL @ Codex for head lettuce. Higher MRL in Malaysia. Lower MRL in Singapore.	Fenamidone US MRL 60, EU 2, Japan 20. No Codex MRLs	Fenamidone registered in the US
		Thiram	*	*					
Anthracnose	<i>Microdochium panattonianum</i>	Dimethomorph (Head)					MRLs of 10 in Japan & US, 1 in EU. Codex 10 in Head lettuce only	Azoxystrobin - MRLs in Codex & EU @ 3, US & Japan @ 30	
		Mancozeb	*	*			MRL @ Codex for head lettuce only. Higher MRL in Malaysia. Lower MRL in Singapore.		
		Prochloraz (Head only)		*			MRL in Japan @ 2, EU @ 5. No MRLs elsewhere.		
		Copper					Exempt in most export markets.		
Rhizoctonia		Quintozene				MRL @ Codex for head lettuce. Higher	Boscalid (Suppression) - approved for the	Concerns over potential boscalid soil carryover and indirect	

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
							equivalent in Singapore.	disease in the USA. US MRLs or 6.6 & 11 ppm for head and leafy lettuce. MRL in Japan @ 11ppm. No MRLs in export destinations.	exposure to livestock
Damping off	<i>Pythium/Phytophthora</i>	metalaxyl-M (PER11474)							
Bacterial leaf spot		Copper					Exempt in most export markets.		
Downy mildew	<i>Bremia lactucae</i>	Phosphorous acid (PER7905)					Exempt in most export markets.	Propamocarb - MRLs in Codex @ 100, Japan 10, US @ 50 and EU @ 50 (Head)	
		Mancozeb	*	*			MRL @ Codex for head lettuce. Higher MRL in Malaysia. Lower MRL in Singapore.	Fluopicolide - US MRL @ 25, EU @ 0.01. None elsewhere.	Fluopicolide nominated to 2010 Codex
		Copper					Exempt in most export markets.	Mandipropamid - MRL @ Codex @ 25, US @ 20, EU 10 (Head).	
		Metalaxyl					Equivalent MRL at Codex (Head lettuce only) & Singapore.	Fenamidone US MRL 60, EU 2, Japan 20. No Codex MRLs	Fenamidone registered in the US
		oxadixyl					MRL of 5 in Japan & 0.1 in US	Acibenzolar (Actigard) - MRL in US @ 0.25, Japan @ 0.3, EU *0.02, No Codex MRL	Actigard - Registered in the US in lettuce
		propineb					MRL @ Codex for head lettuce. Higher MRL in Malaysia. Lower MRL in Singapore.		
		Dimethomorph (Head)					MRLs of 10 in Japan & US, 1 in EU. Codex 10 in Head lettuce		

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
							only		
Powdery mildew		Ecocarb (PER9778)						Switch (Suppression only) (cyprodinil+fludioxonil) - MRLs in Codex & EU @ 10, US @ 30 and Japan @ 1. Myclobutanil - US MRL of 9. Quinoxifen	
Sclerotinia rot		Azoxystrobin (PER10261)					MRLs in Codex & EU @ 3, US & Japan @ 30	Switch (cyprodinil+fludioxonil) - MRLs in Codex & EU @ 10, US @ 30 and Japan @ 1.	
		Boscalid (PER8819)					No MRLs in export destinations. MRL in Japan @ 11, in EU @ 10. US MRLs of 6.5 & 11 ppm for head and leafy lettuce.	Fluazinam - MRLs Japan @ 0.1, EU @ *0.05 mg/kg, US - brassica leafy @ 0.01 mg/kg	Concerns over potential boscalid soil carryover and indirect exposure to livestock
		Iprodione		*			Higher MRLs at Codex. Equivalent MRL in Singapore.		
		Tebuconazole		*			Codex MRL of 5 (Head), 5 in Japan and 0.05 in EU. None elsewhere		
		Tebuconazole (PER9127)		*					
Grey mould	<i>Botrytis cinerea</i>	Iprodione		*			Higher MRLs at Codex, Japan, US and EU. Equivalent MRL in Singapore.	Fenhexamid - Codex MRLs proposed @ 30 ppm. US MRL @ 30ppm.	Fenhexamid desktop permit application underway.
		Cyprodinil + fludioxonil (PER9918)					MRL of 10 in @ Codex & EU, 1 in Japan, 30 in US	Switch (cyprodinil+fludioxonil) - MRLs in Codex & EU @ 10, US @ 30 and Japan @ 1.	

Use	Pest	Approved Products	APVMA Review	EU Reg	Codex	Other	MRL Status	Possible Alternative Options	Comment
		Thiram	*	*					

Sweet corn

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
Soil fumigation		chlopicrin, 1,3 dichloropene				*	Residues not anticipated		Chloropicrin listed as a chemical of security concern
Weed Control									
Pre-plant knockdown of weeds		diquat, paraquat	*			*	Codex MRL for paraquat. Aust MRL at LOQ, shouldn't be a problem	Carfentrazone - Registered in US for use with shielded sprayers. US MRL 0.1 mg/kg	Paraquat listed as a chemical of security concern. Nominated on priority list for spray drift label review
		2,4-D	*						
Pre-emergent residual herbicides		atrazine	*				MRLs at LOQ, shouldn't be a problem	Metribuzin registered for use in US MRL 0.05 mg/kg Pendimethalin registered in US (MRL 0.1 mg/kg)	
		dimethenamid-P					MRLs at LOQ, shouldn't be a problem		
		metolachlor/S-metolachlor							
		EPTC							
		propachlor		*					
Post-emergent BLW control		atrazine					MRLs at LOQ, shouldn't be a problem	Nicosulfuron registered for post-em grass control in US, MRL 0.1 mg/kg	
		cyanzaine					MRLs at LOQ, shouldn't be a problem		
		fluroxypyr							
		MCPA	*				MRLs at LOQ, shouldn't be a problem		
		linuron							
Post-emergent grass control		fluazifop							
Pests									
Snails & slugs		metaldehyde					No MRLs at Codex, Taiwan or EU	Copper sulfate. Generally exempt from MRLs	

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
		Iron-EDTA							
		methiocarb	*	*		*	No MRLs at Codex, Taiwan or EU		Listed as a chemical of security concern
Nematodes		chlopicrin, 1,3 dichloropene				*	Residues not anticipated	fluensulfone - new compound from Farmoz	Listed as a chemical of security concern
Insect Control									
Aphids (Green peach aphid, Cotton aphid etc)	<i>Myzus persicae</i> ,	dimethoate	*					Imidacloprid - MRLs US 1, Codex 0.5, Japan 0.4 (sugar beet), EU *0.05 Spirotetramat - MRL in US for Group 8 @ 2.5.	Being withdrawn by company in US
		fatty acid K Salts							
		maldison							
		parafinic oil							
		parathion-methyl	*	*		*			
		pirimicarb (PER10433)		*		*	Codex MRL @ 0.5 mg/kg		
		pyrethrins							
		spirotetramat (PER11775)							
Thrips	<i>Thrips tabaci</i>	fatty acid K Salts	*	*			Under review. Current MRL 2.0ppm. Japan 1.0, EU 0.02 No Codex MRL.		
		dimethoate	*						
		pyrethrins							
		spinosad							
		spirotetramat (PER11775)							
Onion maggot	<i>Delia platura</i>	phorate (PER9895)							Listed as a chemical of security concern
Armyworm	<i>Spodoptera</i> spp.	Bt						Methoxyfenozide - Registered in US. Codex MRL 0.3 , US @ 0.05, Japan @ 0.05 mg/kg, EU MRL 0.02 mg/kg.	

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
		cypermethrin						Flubendiamide - Registered in US	
		diazinon	*			*		Indoxacarb - Registered against the pest in US. MRL in US @ 0.3 mg/kg	
		pyrethrins							
Cutworm	<i>Agrotis spp.</i>	chlorpyrifos	*					Spinosad approved in crop in Aus, registered against pest in other crops.	
		diazinon	*					Methoxyfenozide - Registered in US. MRL 0.05 mg/kg	Listed as a chemical of security concern
		parathion-methyl	*					Bifenthrin registered in the US, MRL 0.05 mg/kg	
Crickets		chlorpyrifos	*						
		imidacloprid (ST)					Aust MRL at LOQ	malathion registered in other crops in Aus.	
Earwigs	<i>Forficula auricularia</i>	imidacloprid (ST)						Indoxacarb - Approved for earwig control in other crops in Aus.	
Heliothis	<i>Helicoverpa sp.</i>	Bt						Indoxacarb - Registered against the pest in US. MRL in US @ 0.02 mg/kg	
		carbaryl	*					Flubendiamide - Registered in US Nominated to 2010 JMPR	
		chlorantraniliprole							
		cypermethrin/alpha cypermethrin							
		deltamethrin							
		emamectin benzoate							
		esfenvalerate							
		methomyl							
NPV									

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
		permethrin							
		pyrethrins							
		spinosad							
		thiodicarb							
Mites	<i>Tetranychus sp.</i>	abamectin (PER11355)	*						No manufacturer support
		dicofol		*	*				
		dimethoate	*	*	*				
		fatty acid K Salts							
		parafinic oil							
		parathion-methyl	*						Listed as a chemical of security concern
		propargite					Equivalent MRL in Japan. No MRLs elsewhere.		
		sulfur					Exempt		
Green Vegetable bug	<i>Nezara viridula</i>	dimethoate	*					Cypermethrin - approved for pest in Aust, MRLs in Codex, Japan, Malaysia Singapore @ 0.05	
		parathion methyl	*						Listed as a chemical of security concern
		trichlorfon	*				MRLs in Singapore, Japan & EU equivalent. No MRL Codex & Malaysia	malathion registered in other crops in Aus.	
Rutherglen bug	<i>Nysius sp.</i>	tichlorfon	*					Deltamethrin - approved for control of pest in Aust.	
		maldison							
Leafhoppers		pyrethrins						Thiamethoxam registered in the US as ST. MRL @ 0.02 mg/kg	
		dimethoate	*					Malathion registered for leafhoppers in	

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
								Australia.	
Loopers		Bt						Indoxacarb - Registered against similar pests in US. MRL in US @ 0.3 mg/kg	
Weevils	<i>Listroderes difficilis</i>	chlorpyrifos	*					Indoxacarb - Registered against similar pests in Aust. MRL @ 0.3 mg/kg	
		parathion methyl	*						
Whitefly		fatty acid K Salts						Thiamethoxam ST registered in the US.	
		parafinic oil							
		pyrethrins							
Wingless grass hopper	<i>Phaulacridium vittatum</i>	chlorpyrifos	*					Indoxacarb - Registered against the pest in Aust. MRL @ 0.3 mg/kg	
		carbaryl	*						
Wireworm		imidacloprid (ST)						Malathion - registered in other crops in Aus.	
		terbufos							
Disease control									
Leaf spot		copper		*					
Downy mildew	<i>Peronospora destructor</i>	metalaxyl/metalaxyl-M							
Turcicum Leaf Blight	<i>Exserohilum turcicum</i>	chlorothalonil						Tebuconazole registered in US	
		propiconazole (PER7677)	*						
Seed decay/ seedling blight complex	<i>Rhizoctonia, Fusarium & Pythium spp.</i>	carboxin						Pyraclostrobin ST registered in US MRL 0.04 mg/kg	
		thiram							
		fludioxonil							
Rust	<i>Puccinia spp.</i>	copper						Tebuconazole -	

Use	Pest	Approved Products	APVMA Review	EU Regulation	Codex	Other	MRL Status	Alternative Options - Possible Actions	Comment
	Or <i>Uromyces</i> spp.							Registered in EU & US.	
	sulfur							Pyraclostrobin foliar registered for use in US.	