Welcome to the 2023/24 dried grape spray diary

This spray diary is a mandatory component of the dried grape processors' quality assurance programs. A rigorous quality assurance program is now a basic requirement of food marketing worldwide. It is the key component to ensuring the dried grape industry meets Australia's and the rest of the world's food safety requirements.

The spray diary must be maintained accurately. All processors will require the spray diary or equivalent to be submitted by harvest or 5 February 2024 (whichever comes first). Ensure you meet this obligation by keeping it up to date throughout the growing season.

The recommendations in the tables have been developed to satisfy the lowest maximum residue limit (MRL) for any of Australia's major dried grape markets after considering available data on the persistence of the agrochemical in the fruit after the drying process. Markets with strict MRLs usually represent the highest value markets for dried grapes.

A processor may be prepared to relax these restrictions if the fruit will be sold exclusively into a market that has a MRL greater than the expected residue or if the market otherwise permits residues of the agrochemical. In this case, the label withholding period is the minimum delay that should be observed between spraying the grapes and harvest. An unlisted product can be used provided it is with the processor's prior, written approval and is used according to label specifications.

Instructions

1. Complete the property map and record each patch of a variety as a separate section (A, B, etc.), ensuring changes to plantings from previous years are shown.

2. Complete the Chemical Spray Record sheet at the time each spray is applied to your property.

3. By 5 February 2024, the original white copies of the map and chemical spray records must be forwarded to your processor. Failure to do so will jeopardise your approved supplier status and may lead to additional grading processes to ensure fruit quality. Any additional costs involved will be linked to the supplier. Retain the yellow copy for your records.

ASSISTANCE

If you have any questions regarding the use of the spray diary, please contact your processor or DFA:

- Sunbeam Foods – 03 5051 4400
- Australian Premium Dried Fruits – 03 5025 6210
- Dried Fruits Australia – 03 5023 5174

Disclaimer: Dried Fruits Australia has used all reasonable care in compiling this spray diary but does not warrant the accuracy or completeness of the information in this publication.

MAXIMUM RESIDUE LIMIT

A maximum residue limit (MRL) is the maximum amount of chemical residue acceptable in food products. They are established for all crops and vary between products and countries. MRLs are expressed as the quantity of chemical residue (mg) per quantity of product (kg). Australian dried grape growers must adopt management practices that ensure residues fall below the MRLs of domestic and export markets.

To avoid unwanted and unnecessary chemical residues at harvest, there are several steps growers can take:

· Strategies: focus on early season management to significantly reduce disease or pests.

· Spray timing: ensure sprays are timed to match the peak in pest or disease pressure. This will help to reduce the pest and disease load during the season. Poorly timed sprays can result in inadequate control, requiring subsequent treatments to remedy problems later in the season. Late season sprays may not be effective and increase the risk of excessive residues at harvest.

· Spray efficiency: optimise effectiveness of sprays applied by using the most appropriate nozzles, fan speed and filters. Adjust volume applied to canopy size and use water sensitive paper in canopy to test coverage.

· Encourage beneficial insects: wasps, ladybirds, lacewings and predatory mites are prevalent in some orchards and assist with the control of pests. Careful choice of insecticides can protect biological control agents throughout the season and prevent build-up of pest populations.

· Seek advice: if you have to spray within six weeks of harvest, contact your processing company's field officer. There are chemicals you should avoid using at that time of year, and local staff will be able to advise alternatives.

FUNGICIDE RESISTANCE

Fungicide resistance is the ability of a plant disease causing organism to survive doses of a fungicide. Resistance may develop after the frequent use of one fungicide or fungicides from the same activity group. Resistance to many commonly used fungicides is a serious problem worldwide.

With any resistance management strategy, it is important to prevent the build-up of resistant individuals in the disease population and minimise fungicide selection pressure by not overusing fungicides from the same activity group.

Croplife Australia incorporates two initiatives in fungicide resistance management that ensure the best control and least risk of developing resistance:

1. All fungicides have been classified by activity group, which appears as a number (or letter and number) code on the fungicide product label.

2. Strategies have been developed for the use of fungicides in crops where resistance by an organism is already evident or considered a risk.

Downy mildew

Resistance management strategy for:

Group 4 Phenylamide

Group 11 Quinone outside Inhibitor

Group 21 Quinone inside Inhibitor

Group 40 Carboxylic acid amide

Group 45 Quinone outside inhibitor and stigmatellin binding type fungicides

· Apply all these fungicides preventatively. Group 4 fungicides should be applied before the first sign of oil spots or as soon as possible after an infection period.

· Mixtures – co-formulations or tank mixes with label rate of alternative mode of action.

· Apply a maximum of two consecutive applications of any one group.

· Start preventative disease control sprays using non-group 4 protectant fungicides, typically when shoots are 10–20cm long. Continue spraying at intervals of 7–21 days depending on disease pressure, label directions and rate of vine growth.

· Limit the use of group 4 fungicides to periods when conditions favour disease development. Always apply group 4 fungicides in mixtures.

	Group				
	4	**11**	**21 (+M1)**	**40**	**45 (+40)**
Max. number of consecutive applications	2	none	2	2	2
Max. number of solo sprays	none	2	3	2 (50%)	none
Max. number of sprays per season	4-mix	2	3	4-mix (50%)	4-mix
Areas of higher agronomic risk	mix	mix	n/a	mix	n/a

Group 40

· Do not apply as the last spray of the season.

· Apply a maximum of 50% of the total number of downy sprays.

Group 11

· If applied alone, do not make consecutive applications.

· Apply a maximum of 2 sprays per season, including mixtures.

Powdery mildew

Resistance management strategy for:

Group 3 Demethylation inhibitors (DMI)

Group 5 Amines (morpholines)

Group 7 Succinate dehydrogenase inhibitors (SDHI)

Group 11 Quinone outside inhibitors (QoI)

Group 11 + 3 QoI and DMI co-formulation – refer to group 11 in table

Group 13 Aza-napthalenes

Group U6 Phenyl-acetamide

Group 50 Actin disruptors (aryl-phenyl-ketone) fungicides

· Apply all these fungicides preventatively.

· Consecutive applications include from the end of one season to the start of the next.

· Mixtures – co-formulations or tank mixes with label rate of alternative mode of action.

	Group						
	3	**5**	**7**	**11**	**13**	**U6**	**50**
Maximum number of consecutive sprays when applied as the only fungicide	2	2	none	none	2	2	2
Maximum number of consecutive sprays when applied as a tank-mix or co-formulant	2	2	2	2	2	2	2
Maximum number of sprays per season	3	3	3	2	3	2	4

Medium to high risk fungicides (group 7 and 11)

· If used consecutively, they should be applied in a mixture or co-formulation with a registered, alternative mode of action for which resistance is not known. Where these fungicides have been routinely used for many seasons, field research indicates there is an increased risk of powdery mildew resistance. To ensure effective powdery mildew control in these circumstances, either use alternative modes of action or apply in mixtures.

Group 11

· If applied alone, as the only fungicide, do not make consecutive applications. Apply a maximum of 2 sprays per season.

· If applied with another fungicide, can be used consecutively except where they have been used routinely for many seasons. Apply a maximum of 2 sprays per season.

These fungicide resistance management strategies were developed by the CropLife Australia Fungicide Resistance Management Review Group and industry researchers. They are a guide only and do not endorse particular products, groups of products or cultural methods in terms of their performance. Always follow the product label for specific use instructions.

While all effort has been taken with the information supplied in this document, no responsibility, actual or implied, is taken for the day to day accuracy of product or active constituent specific information. Readers should check the Australian Pesticides and Veterinary Medicines Authority (APVMA) product database for contemporary information on products and actives. The database can be sourced through www.apvma.gov.au.

The information in these strategies is provided in good faith and without any liability for loss or damage suffered as a result of its application and use. Advice given in these strategies is valid as at 27 June 2019. All previous versions of these strategies are now invalid.

Chemicals registered for dried grapes

This list has been developed with the input of dried fruit processors to meet MRL requirements of export markets. Do not use unlisted chemicals without first consulting your processors.

Chemicals listed in bold have an industry restriction on use so overseas MRL levels should not be exceeded in dried grapes. Please adhere to the industry recommended restriction rather than the label withholding period.

Some products that appeared in the previous season's spray diary have been deleted for reasons including loss of registration, pending loss of registration, or lack of MRLs in export markets.

Examples of deleted chemicals include: Botrytis – Captan, Iprodione; insecticide – Chlorpyrifos, Dimethoate; black spot – Mancozeb, Thiram, Chlorothalonil; downy mildew –Mancozeb, Propineb, Zineb, Oxadixyl; dormancy breaking – Cyanamide; plant growth regulators - chlormequat.

Chemicals recently added and allowed for use 2: Botrytis and Powdery Mildew – Fluopyram +Tebuconazole; LBAM – Spinosad, Tebufenozide; GV Moth-Spinosad.

Active constituent(s)	**Activity group**	**Some registered products**	**Restriction on use**
Black spot			
metiram	M3	Polyram DF	**'Use no later than E-L 25, 80% capfall**
ziram	M3	Ziragranz, Ziram DG, Ziram Granuflo, Ziram WG	
copper oxychloride	M1	Cobox 500 WP, Oxydul DF	**Use no later than 49 days before harvest**
dithianon	M9	Delan 700 WG, Dinon 700 WG, Dragon 700 WG, Dungeon 700 WG, Wrath 700WG	**Use no later than 30 days before harvest**
Botrytis bunch rot (review resistance strategies on page 16)			
fluopyram + tebuconazole	7 + 3	Luna Experience	Use no later than E-L 17, 12 leaves separated
boscalid	7	Filan (do not apply to set berries)	**Use no later than 5% capfall**
fenhexamid	17	Fenhexamid 500 SC, Teldor 500 SC	**Use no later than E-L 25, 80% capfall.**
pyrimethanil	9	Predict 600 SC, Pyrus 400 SC, Scala 400 SC, Scala 600 SC	
tebuconazole + azoxystrobin	3 + 11	Aztec, Custodia	
azoxystrobin	11	Affix 250 SC, Amistar 250 SC, A-star 250 SC, Avior (250 SC, 800 WG), Azoxy 250, AzoxyGuard 250 SC,Azoxystrobin (250, 250 SC, 500 WG), Connect 800 WG, Galoxy 250SC, Mirador 250 SC, Spartacus (250 SC, 500WG), Stellar, Supernova 250SC	
potassium salts of fatty acids	U1	Ecoprotector	Use no later than 14 days before harvest.
hydrogen peroxide + peroxyacetic acid	M + M	(Suppression only) Peracetic acid, Peratec, Peratec PLUS	Use no later than 7 days before harvest.
Aureobasicium pullulans	BM02	Botector	May be used until harvest
Bacillus amyloliquefaciens	44	Serenade Opti, Serifel	

Downy mildew (review resistance strategies on page 15)			
azoxystrobin	11	Affix 250SC, Amistar 250SC, A-star 250SC, Avior (250 SC, 800 WG), Azoxy 250, AzoxyGuard 250 SC, Azoxystrobin (250, 250 SC, 500 WG), Connect 800 WG, Galoxy 250SC, Mirador 250 SC, Spartacus (250 SC, 500WG), Stellar, Supernova 250SC	**Use no later than E-L 25, 80% capfall.**
metiram	M3	Polyram DF, Fruticote	
pyraclostrobin	11	Cabrio, Pavo 250 EC, Symbio 250 EC, Vipyr 250 EC	
tebuconazole + azoxystrobin	3 + 11	Aztec, Custodia	
mandipropamid	40	Revus	**Use no later than 70 days before harvest (EL 26 - complete capfall)**
trifloxystrobin	11	Flint 500 WG, Invictus 500 WG (suppression only)	**Use no later than 56 days before harvest.**
amisulbrom + tribasic copper sulphate	21 + M1	Amicus Blue	**Use no later than 49 days before harvest**
copper ammonium complex	M1	Copperguard, Liquicop	
copper cuprous oxide	M1	Nordox 750 WG, Red Copper WG	
copper hydroxide	M1	Blue Shield DF, Champ (500WG, Dry Prill WG), Flo-Bordo, Hydrocop WG, Kocide (Blue Xtra, Opti), Vitra 400 WG	
copper octanoate	M1	Tricop	
copper oxychloride	M1	Cobox 500 WP, Copper (Oxychloride, Oxychloride WP), Coppox (WG, WP), Cupro 375WG, Isacop 500WP, Neoram 375 WG, Oxydul DF, Uni-Guard 500 WP	
copper sulphate tribasic	M1	Bordeaux WG, Tri-Base Blue, Tribasic Liquid	
metalaxyl - M + copper hydroxide	4 + M1	Ridomil Gold Plus	
metalaxyl + copper oxychloride	4 + M1	Axiom Plus, Copper Plus, Metalaxyl + Copper Oxychloride WP, Zeemil Plus	

sulfur + copper oxychloride	M2 + M1	Mildex WG	
copper oxychloride + copper hydroxide	M1 + M1	Airone WG	
dithianon	M9	Delan 700 WG, Dinon 700 WG, Dragon 700 WG, Dungeon 700 WG Wrath 700WG	**Use no later than 28 days before harvest**
hydrogen peroxide + peroxyacetic acid	M + M	Peratec PLUS	Use no later than 7 days before harvest.
Phosphorous acid		Agri-Fos 600, CropDoc 600, Dominator 600, Fungacid 600 Fungi-Fos 400, Grow-Phos 600 Phos Phyt 400, Phospot 400, Phospot 600, Sprayphos 400, Sprayphos 600 Sprayphos 620, Throw Down,	Use no later than 5 days before harvest. **Use no more than 2 sprays per season**
Eutypa dieback			
cyproconazole + iodocarb	3 + 28	Garrison Rapid Pruning Wound Dressing	**Dormancy application only.**
fluazinam	29	Emblem, Gem	
tebuconazole	3	Gelseal, Greenseal	
Trichoderma harzianum	unspecified	Vinevax Bio-Implants, Vinevax Wound Dressing	
Phomopsis cane and leaf spot			
fluazinam	29	Emblem, Gem	Dormancy spray only.
metiram	M3	Polyram DF, Fruticote	Use no later than E-L 25, 80% capfall.
dithianon	M9	Delan 700 WG, Dinon 700 WG, Dragon 700 WG, Wrath 700WG	**Use no later than 28 days before harvest**

Powdery mildew (review resistance strategies on page 14)			
fluopyram + tebuconazole	7 + 3	Luna Experience	Use no later than E-L 17, 12 leaves separated
pydiflumetofen	7	Miravis	**Use no later than E-L 19, beginning of flowering when caps start loosening.**
boscalid	7	Filan (do not apply to set berries)	Use no later than 5% capfall
azoxystrobin	11	Affix 250SC, Amistar 250SC, A-star 250 SC, Avior (250SC, 800 WG), Azoxy 250, AzoxyGuard 250 SC, Azoxystrobin (250, 250 SC, 500 WG), Connect 800 WG, Galoxy 250SC, Mirador 250 SC, Spartacus (250 SC, 500WG), Stellar, Supernova 250SC	**Use no later than E-L 25, 80% capfall.**
difenoconazole	3	Digger	
metrafenone	U8	Vivando	
pyraclostrobin	11	Cabrio, Pavo 250 EC, Symbio 250 EC, Vipyr 250 EC	
spiroxamine	5	Prosper 500 EC, Spire 500 EC	
sulfur + tebuconazole	M2 + 3	Unicorn 745WG	
tebuconazole	3	Buzz Ultra 750WG, Laguna Xtreme 800WG, Orius 430 SC,Tebucon 430 SC, Ultrateb 750WG, Zolo 430SC	
tebuconazole + azoxystrobin	4 + 11	Aztec, Custodia	
tetraconazole	3	Domark 40ME, Mettle 40ME	
penconazole	3	Azotic, Delos, Pearl, Ruby 100EC, Topas 100 EC	Use no later than E-L 31, berries pea-size (not > 7 mm diameter) AND do not use within 60 days of harvest.
mefentrifluconazole	3	Belanty	Use no later than E-L 31, berries peasize (not > 7 mm diameter)
cyflufenamid	U6	Flute 50 EW	**Use no later than 56 days before harvest**
paraffinic oil	n/a	BioPest, isoCLEAR HPO	
pyriofenone	50	Kusabi 300 SC	
trifloxystrobin	11	Flint 500 WG, Invictus 500 WG	

copper ammonium complex	M1	Copperguard, Liquicop	**Use no later than 49 days before harvest**
proquinazid	13	Talendo	
sulfur + copper oxychloride	M2 + M1	Mildex WG	
quinoxyfen	13	Legend, Quinfen250 SC	Use no later than E-L 34, (before commencement of veraison) AND do not use within 42 days of harvest.
myclobutanil	3	Myclonil WG, Mycloss Xtra, Stamina	**Use no later than 35 days before harvest**
triadimenol	3	Allitron, Bayfidan 250 EC, Triadimenol 250 EC, Tridim 250 EC 250 EC	
sulfur, present as elemental or crystalline sulfur	M2	Dusting Sulphur, Dusting Sulphur 900	Use no later than 7 days before harvest.
hydrogen peroxide + peroxyacetic acid (suppression only)	M + M	Peratec PLUS (suppression only)	
potassium bicarbonate	M2	Ecocarb	
sulfur, present as elemental or crystalline sulfur	M2	Brimflo 800, Cosamil, Cosavet WG, Flosul 800, Fungisul 80, InnoSulph 800 WG, Sulphur, Kumulus DF, Microsul WG Elite, Microthiol Disperss, Nimbus WG, Sulfur, Solo 800WG, Sulfur 800 WG, Sulgran (80WG, WG), Sulphur (Spray, 800 WG, WG), Thiovit Jet, Top Wettable Sulphur, Uni-Shield, Wettable Sulphur, Zulfa 800WG	
Australian plague locust			
Metarhizium anisopliae var. acridum	n/a	Green Guard SC Premium	Use no later than 7 days before harvest
Bud mite and bunch mite			
sulfur, present as polysulfide	M2	Lime Sulphur	Apply as near as possible to budburst.
sulfur, present as elemental or crystalline sulfur	M2	Cosamil, Cosavet WG, Fungisul 80, InnoSulph 800 WG, Kumulus DF, Microsul WG Elite, Microthiol Disperss, Nimbus WG, Solo 800WG, Sulfur 800 WG, Sulgran (80WG, WG), Sulphur (800 WG, WG), Thiovit Jet, Top Wettable Sulphur,	No later than 7 days before harvest

		Uni-Shield, Wettable Sulphur, Zulfa 800WG	
Garden weevil			
abamectin + chlorantraniliprole	6 + 28	Voliam Targo (suppression only)	Use no later than E-L 29, berries pepper-corn size (not > 4 mm diameter)
indoxacarb	22A	Avatar, Incarnate 300 WG, Indoxacarb 300 WG, Lepta 300 WG, Persona 300WG, Spymaster 300 WG	Use no later than E-L 31, berries pea size (not > 7 mm diameter) AND do not use within 56 days of harvest.
Grapeleaf blister mite			
paraffinic oil	n/a	Heavy Paraffinic Dormant Spray Oil	Dormant spray only.
petroleum oil	n/a	Stifle, Vicol Winter Oil	
sulfur, present as polysulfide	M2	Lime Sulphur	Apply as near as possible to budburst.
sulfur, present as elemental or crystalline sulfur	M2	Brimflo 800, Cosamil, Cosavet WG, Flosul 800, Fungisul 80, InnoSulph 800 WG, Sulphur, Kumulus DF, Microsul WG Elite, Microthiol Disperss, Nimbus WG, Sulfur, Solo 800WG, Sulfur 800 WG, Sulgran (80WG, WG), Sulphur (Spray, 800 WG, WG), Thiovit Jet, Top Wettable Sulphur, Uni-Shield, Wettable Sulphur, Zulfa 800WG	No later than 7 days before harvest
Grapeleaf rust mite			
sulfur, present as polysulfide	M2	Lime Sulphur	Apply as near as possible to budburst.
abamectin + chlorantraniliprole	6 + 28	Voliam Targo	Use no later than E-L 29, berries pepper-corn size (not > 4 mm diameter)
sulfur, present as elemental or crystalline sulfur	M2	Brimflo 800, Cosamil, Cosavet WG, Flosul 800, Fungisul 80, InnoSulph 800 WG, Sulphur, Kumulus DF, Microsul WG Elite, Microthiol Disperss, Nimbus WG, Sulfur, Solo 800WG, Sulfur 800 WG, Sulgran (80WG, WG), Sulphur (800 WG, WG), Thiovit Jet, Top Wettable Sulphur, Uni-Shield, Wettable Sulphur, Zulfa 800WG	No later than 7 days before harvest

Grapevine moth			
chlorantraniliprole	28	Altacor Hort	**Use no later than E-L 25, 80% capfall.**
abamectin + chlorantraniliprole	6 + 28	Voliam Targo	Use no later than E-L 29, berries pepper-corn size (not > 4 mm diameter)
spinosad	5	Entrust Organic	Use no later than E-L 31 Berries Peas size (not > 7mm diameter)
indoxacarb	22A	Avatar, Incarmate 300 WG, Indoxacarb 300 WG, Lepta 300 WG, Persona 300WG, Spymaster 300 WG	**Use no later than 56 days before harvest**
spinetoram	5	Delegate	
Bacillus thuringiensis subspecies aizawai	11	Bacchus WG	May be used until harvest
Bacillus thuringiensis subspecies kurstaki	11	Delfin, DiPel DF	
Trichogrammanza carverae	n/a	Trichogramma parasitic wasp	
Grapevine scale			
paraffinic oil	n/a	Bioclear, BioPest, D-C-Maxx nC24, Heavy Paraffinic Dormant Spray Oil, isoCLEAR HPO, Trump Spray Oil	Dormant spray only.
petroleum oil	n/a	All Seasons White Oil, D-C-Tron Plus Spray Oil, Sacoa Summer Spray Oil, Stifle, Vicol (Summer Oil, Winter Oil) I	
spirotetramat (suppression only)	23	Movento 240 SC (suppression only)	**Use no later than E-L 18. Leaves separated, flower caps still in place, but cap colour fading from green**
Light brown apple moth			
chlorantraniliprole	28	Altacor Hort	**Use no later than E-L 25, 80% capfall.**
methoxyfenozide	18	Peregrine, Prodigy, Venturi	
tebufenozide	18	Ecdypro 700 wp	
abamectin + chlorantraniliprole	6 + 28	Voliam Targo	Use no later than E-L 29, berries pepper-corn size (not > 4 mm diameter)
spinosad	5	Entrust Organic	Use no later than E-L 31 Berries Peas size (not > 7mm diameter)

spinetoram	5	Delegate	**Use no later than 56 days before harvest**
indoxacarb	22A	Avatar, Incarmate 300 WG, Indoxacarb 300 WG, Lepta 300 WG, Persona 300WG, Spymaster 300 WG	
Bacillus thuringiensis subspecies aizawai	11	Bacchus WG	May be used until harvest
Bacillus thuringiensis subspecies kurstaki	11	Delfin, DiPel DF	
tetradecenyl acetate + tetradecadienyl acetate	n/a	Isomate LBAM Plus Pheromone, MD LBAM Corto, MD LBAM Flex Pheromone, MD LBAM Pheromone	
Trichogrammanza carverae	n/a	Trichogramma parasitic wasp	
Mealybug			
paraffinic oil	n/a	Bioclear, BioPest, isoCLEAR HPO Trump Spray Oil	Dormant spray only.
spirotetramat	23	Movento 240 SC	**Use no later than E-L 25, 80% capfall.**
buprofezin	16	Applaud, Scale & Bug, Strident, Uptown	
Mediterranean/Queensland Fruit Fly			
A baiting program that does not target fruit or foliage is recommended.			
Control options for fruit fly are subject to APVMA permit conditions.			
Contact your processor prior to any 1A, 1B, 2B or 3A insecticide.			
Snails			
copper complex	n/a	Escar-Go, Socusil	Dormant spray only.
metaldehyde	n/a	Meta, Metakill, Metaldehyde Snail and Slug, Metarex Snail and Slug, Pestmaster Snail and Slug, Slug Out, Slugger Slug and Snail, Snailex, Snail Trail	Ground application only. Use no later than 7 days before harvest.
iron EDTA complex	n/a	Eradicate Snail and Slug Killer, Multiguard Snail and Slug Killer	
Two spotted mite			
petroleum oil	n/a	Stifle	Dormant spray only.
sulfur, present as polysulfide	M2	Lime Sulphur	Apply as near as possible to budburst
sulfur, present as elemental or crystalline sulfur	M2	Cosamil, Cosavet WG, InnoSulph 800 WG, Microsul WG Elite, Nimbus WG, Sulfur 800 WG,	Use no later than 30 days before harvest.

		Sulgran (80WG, WG), Sulphur (800 WG, WG), Thiovit Jet, Zulfa 800WG	
Wingless grasshopper			
indoxacarb	22A	Avatar, Incarmate 300 WG, Indoxacarb 300 WG, Lepta 300 WG, Persona 300WG, Spymaster 300 WG	**Use no later than E-L 31, berries pea size (not > 7 mm diameter) AND do not use within 56 days of harvest.**
Metarhizium anisopliae var. acridum	n/a	Green Guard SC Premium	Use no later than 7 days before harvest.
Earwigs			
indoxacarb	22A	Avatar	Use no later than 80% capfall
Plant growth regulators			
ethephon	n/a	Ethephon (720, 720 SL, Xtra 900), Ethon 720, K-Ethephon, Promote (720, Plus 900)	
gibberellic acid	n/a	Accelerate 200 SG, Gala, GBR Acid, Gibb (100, 200), Gibber, N-Large, ProGibb SG	
methyl esters of fatty acids	n/a	Waiken	

Herbicides

Active constituent(s)	Some common trade names	Critical comments
2-2-DPA-sodium (dalapon-sodium)	Dalapon 740 SP	**Do not apply in vines between flowering and harvest.** Systemic herbicide, controlling grasses and broadleaf weeds.
amitrole + ammonium thiocyanate	Amitrole 250, Amitrole T	
amitrole + paraquat	Alliance, Para-Trooper	
bromoxynil + diflufenican	Bentley, Colt, Cougar, Difluken B, Jaguar, Kelpie DFF+Brom MX	Control of broadleaf Weeds. **Use only when vines are FULLY DORMANT.**
carfentrazone-ethyl	Artillery, Carfentrazone 240 EC, Carfentrazone-ethyl 240 EC, Elevate,Hammer 400 EC, Nail 240 EC, Nail 600 EC, Spotlight Plus	**Do not apply in vines between flowering and harvest.** Apply with a knockdown herbicide for improved control of certain broadleaf weeds.
dichlobenil	Casaron 4G, Casoron G	Soil applied pre-emergent control of weeds
diquat	Desiquat, Dia-Kill 200, Diquat 200, Reglone	Target weed applied desiccant controlling annual and broadleaf weeds.
diquat + paraquat	Blowout, Brown Out 250, Combik 250, Di-Par 250, EOS, Kwicknock 250, Paradat, Paradym 250, Paraquat + Diquat 250, Paraquat/Diquat Pre-Seed 250, Revolver, Scorcher 250, Speedy 250, Spray & Sow, Spray Seed 250, Spraykill 250, Uni spray 250	
fluazifop-P	Fusilade Forte, Fuzilier, Resilience, Rootout 212	Systemic herbicide for grass control only
flumioxazin	Chateau	Soil applied (residual) control of various grasses and broadleaf weeds
glufosinate-ammonium	Basta, Biffo, Cease, Commando 200 Exile, Exonerate, Exonerate 200 SL, Fascinate 200 SL Faster-TG 200, Fiestar, Gamma, Glufonium 200 SL Glufosinate 200, Glufosinate-Ammonium 200, Kelpie G-FOS 200, Sky-7th 200	Non-selective herbicide, partially systemic desiccant.

glyphosate-ipa	AllOut 450, BioChoice 360, ClearUp Glyphosate 450, Eradicator 540, Eraze 360 Bi-aquatic, Eraze 510 Bi-aquatic, Gladiator, Glister 360, Glister 450, Glymount 450, Glyphosate 360, Glyphosate 360 SL Glyphosate 450, Glyphosate 450 CT, Glyphosate 450 SL, Glyphosate 510, Glyphosate 510 SL, Glyphosate CT Kelpie Rico 450 GLY, Ken-Up 450 CT, Ken-Up Aquatic 360, Knockout 450, Pestmaster Aqua-Tech 360, Pestmaster Glyphosate CT, Raze,Roundup, Roundup Biactive, Roundup CT, Sanos 360, Sanos 450, Sickle 540, Square Down 360, Wipe-Out 450, Wipe-Out Bio,	Systemic herbicide, non-selective.
glyphosate- ipa + mas	Weedmaster Duo	
glyphosate-mas	Bazooka Dry 800 SG, ClearUp 700 Bio-Dri, ClearUp 700 Dri Broadacre, ClearUp 840 Dry-Flo, Gladiator Dry 680 WG, Glister 680 SG, Glyphosate 680, Glyphosate 700, Glyphosate 700SG, Glyphosate 875, Ken-Up-Dry 680 WG, Roundup Ready Plantshield,	
glyphosate-mea	Clear Up 450 SL, Glyphosate 450 SL	
glyphosate-potassium salt	Firebolt, Gladiator Optimax, Glyphosate 540K, Glyphosate K-Tech 500 SL, Kelpie GLY 540SL Max Out 540, Roundup Dura, Roundup Ready PL, Warlord 540 Hi-Load, Wipe-Out Accelerate	
glyphosate-potassium salt + ipa	Weedmaster Argo	
glyphosate-potassium salt + mas	Weedmaster Dual Salt Technology	
haloxyfop-R methyl ester	Convict, Exert 520, Firepower, Haloxyfop 520, Haloxyfop 520 EC, Haloxyfop 900 EC Haloxyken 520, Hermes 520, Jasper 520, Recon 520, Verdict 520	Herbicide for the control of grasses.
isoxaben	Gallery 750 DF	Soil applied, pre-emergence control certain weeds including broadleaf weeds.
napropamide	Devrinol WG	
norflurazon	Zoliar DF	Soil applied (residual) control provided for up to 6 months, non-selective.
oryzalin	Cameo 500, Oryzalin 500, Prolan 500, Stonewall, Surflan 500	Soil applied (residual), non-selective.

oxyfluorfen	Cavalier, Convert 240 EC, Crossbar 240, GoalTender, Gowel 240 EC, Ox 240, Oxen 240 EC, Oxyfan 240 EC, Oxyfluorfen 240 EC, Point, Striker	Soil applied (residual), non-selective, with some post-emergent activity on actively growing seedlings.
paraquat	Explode 250, Gramoxone 250, Nuquat 250, Paradox 250, Para-Ken 250, Para-Ken 334, Paraquat 250, Paraquat 250 SL, Powerquat 300 SL, Shirquat 250, Sinmosa 250, Spayquat 250, Spraytop 250 SL, Uniquat 250	Desiccant herbicide, non-selective.
pendimethalin	Cronos 440 EC, Fist 330, Panda 435, Panida Grande, Pendimethalin 330, Pendimethalin 330 EC, Pendimethalin 440 EC, Rifle 440, Romper 440 EC,	Soil applied (residual) for grasses and broadleaf weeds. **Do not apply after woolly bud stage.**
pine oil	BioWeed	Organic alternative herbicide.
quizalofop-P-ethyl	Atomic Selective Herbicide, Elantra, Electra Xtreme, Leopard, Leopard 200EC, Quinella 100 EC, Quinella Upgrade, Quiz, Quizalofop-P-ethyl 200 EC, Sextant, Tiger Gold 250	Systemic herbicide, for control of grasses.
simazine	Gesatop 600 SC, Gesatop Granules 900 WG Kelpie S-Zine900, Kelpie S-Zine900WG, Simagranz, Simanex 900 WG, SimaPhos 900 WG, Simaquest 900 WG, Simazine 500 Flowable, Simazine 900 DF, Simazine 900 WDG, Simazine 900 WG	Soil applied (residual), non-selective.
trifluralin	Trampoline 480, Tricon Flexi 480, Triflur X, Trifluralin 480, Trifluralin 480 EC, Triflurasip 480, Trilogy, Trilogy 600, Uni-Try	Soil applied, pre-emergent control of certain annual grasses & broadleaf weeds.