

Brassica leafy vegetable Agrichemical Regulatory Risk Assessment

March 2024

Regulatory pressures on agrichemicals are increasing globally, with many being either restricted or withdrawn from use. For older agrichemicals these pressures are often the result of reconsiderations involving new or refined risk assessment methodologies that requiring the generation of new data. A consequence of which can be that many of these agrichemicals are not meeting contemporary risk assessment standards as the necessary data is unavailable, or where data is available, the risk posed is considered unacceptable.

The use of agrichemicals can also be impacted through differences in standards between trading partners. The lack of an appropriate pesticide maximum residue limit (MRL) in an importing country can, for practical purposes, effectively prohibit use in the exporting country so as to ensure compliance, as a MRL breach would adversely affect market access.

The effects of the above are greater regulatory pressure placed on the use of individual agrichemicals or chemical groups. As a consequence it is possible that the number of approved agrichemical options could be adversely impacted.

To assist strategic planning, with respect to future pest management options, the following tables have been developed to highlight the regulatory threats to agrichemicals currently approved for the management of the pests and diseases in brassica leafy vegetables as well as current initiatives aimed at addressing identified pest management deficiencies.

Brassica leafy vegetable Agrichemical Regulatory Risk Assessment

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|-----------|--|
| R1 | Short-term: Critical concern over retaining access |
| R2 | Medium-term: Maintaining access of significant concern |
| R3 | Long-term: Potential issues associated with use - Monitoring required |

| Active Constituents | Chemical Group | Problem | Comments |
|--------------------------------|----------------|--------------------------------------|---|
| INSECT AND OTHER PESTS | | | |
| Abamectin | 6 | Western flower thrips | APVMA: Nominated for spray drift label review |
| | | Leafminers (PER81876) | EU: Use restricted to permanent greenhouses |
| Afidopyropen | 9D | Cabbage aphid | EU/UK: No authorisations |
| | | Cotton aphid | |
| | | Currant lettuce aphid | |
| | | Green peach aphid | |
| | | Silverleaf (Poinsettia) whitefly | |
| Alpha-cypermethrin | 3A | Plague thrips | EU/UK: No authorisations |
| | | Redlegged earth mite | |
| | | Vegetable weevil | |
| <i>B thuringiensis</i> aizawai | 11A | Cabbage white butterfly(PER87670) | EU: Under review for renewal |
| | | Diamondback (Cabbage) moth(PER87670) | |
| | | Helicoverpa(PER87670) | |
| | | Soybean looper(PER87670) | |
| | | Vegetable looper(PER87670) | |

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| Active Constituents | Chemical Group | Problem | Comments |
|------------------------------------|----------------|-----------------------------|---|
| Chlorantraniliprole | 28 | Cabbage cluster caterpillar | |
| | | Cabbage white butterfly | |
| | | Cabbage-centre grub | |
| | | Cluster caterpillar | |
| | | Diamondback (Cabbage) moth | |
| | | Helicoverpa | |
| | | Soybean looper | |
| Chlorantraniliprole + thiamethoxam | 28 + 4A | Brown sowthistle aphid | Thiamethoxam: APVMA: Under review Canada: Some field uses cancelled or amended EU/UK: Not authorised USA: Re-registration with new risk mitigation measures |
| | | Cabbage aphid | |
| | | Cabbage cluster caterpillar | |
| | | Cabbage white butterfly | |
| | | Cabbage-centre grub | |
| | | Cluster caterpillar | |
| | | Currant lettuce aphid | |
| | | Diamondback (Cabbage) moth | |
| | | Green peach aphid | |
| | | Green vegetable bug | |
| | | Greenhouse whitefly | |
| | | Helicoverpa | |
| | | Loopers | |
| | | Lucerne leafroller | |
| | | Onion thrips | |
| Silverleaf (Poinsettia) whitefly | | | |

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|------------------------------------|----------------|---|--|
| Chlorantraniliprole + thiamethoxam | | Soybean looper | |
| | | Vegetable leafhopper | |
| | | Western flower thrips | |
| | | Leafminers including Vegetable, Serpentine and American leafminer(PER91161) | |
| Chlorpyrifos | 1B | Blue oat mite | APVMA: Proposed deletion of uses. Codex: All Codex MRLs deleted Canada: Cancellation of all uses. EU/UK: No authorisation in place USA: Cancellation of uses |
| | | Field crickets | |
| | | Mole crickets | |
| | | Redlegged earth mite | |
| | | Vegetable weevil | |
| | | African black beetle(PER14583) | |
| | | False wireworm(PER14583) | |
| | | Wireworm(PER14583) | |
| Dimpropridaz | 36 | Cabbage aphid | EU: Authorisation pending |
| | | Green peach aphid | |
| Emamectin benzoate | 6 | Cabbage white butterfly(PER14907) | EU: Candidate for substitution |
| | | Cluster caterpillar(PER14907) | |
| | | Diamondback (Cabbage) moth(PER14907) | |
| | | Helicoverpa(PER14907) | |
| | | Loopers(PER14907) | |
| | | Vegetable looper(PER14907) | |

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|---------------------|----------------|--|--|
| Flubendiamide | 28 | Cabbage white butterfly | EU: Authorisation expiry August 2024 |
| | | Cluster caterpillar | |
| | | Diamondback (Cabbage) moth | |
| | | Helicoverpa | |
| | | Soybean looper | |
| Helicoverpa NPV | 31 | Helicoverpa | |
| Imidacloprid | 4A | Aphids(PER14584) | APVMA: Under review |
| | | Whiteflies(PER14584) | Canada: Field uses cancelled or amended |
| | | Thrips(PER14584) (Except Western flower thrips) | EU/UK: No authorisation USA: Re-registration with new risk mitigation measures |
| Indoxacarb | 22A | Helicoverpa | Canada: No authorisations |
| | | Fall armyworm(Chinese leafy vegetables) (PER89278) | EU/UK: No authorisation UK: Proposed non-renewal |
| Methomyl | 1A | Fall armyworm(PER89293) | APVMA: nominated for review Canada: Re-evaluation completed. Majority of uses removed EU/UK: No authorisations in place USA: Under review |
| Isocloseram | 30 | Diamondback moth | EU/UK: No authorisation |
| | | Cabbage white butterfly | |
| | | Heliothis spp. (Suppression) | |
| Petroleum oil | - | Aphids | |
| | | Green mirid | |
| | | Green vegetable bug | |
| | | Grey cluster bug | |
| | | Leafhoppers | |
| | | Mites | |
| | | Rutherglen bug | |
| Thrips | | | |

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| Pirimicarb | 1A | Cabbage aphid | Codex: JMPR re-evaluation scheduled EU: Candidate for substitution |
| | | Green peach aphid | |
| Pymetrozine | 9B | Cotton aphid | Canada: Restricted use to glasshouses only Codex: No registrant support EU/UK: Not authorised |
| | | Potato aphid | |
| Pyrethrins | 3A | Ants | Canada: Under review |
| | | Caterpillars | |
| | | Diamondback (Cabbage) moth | |
| | | Earwig | |
| | | Leafhoppers | |
| | | Thrips | |
| | | Two-spotted (Red spider) mite | |
| | | Whitefly | |
| Spinetoram | 5 | Cabbage cluster caterpillar | EU: Approval expiry June 2024 |
| | | Cabbage white butterfly | |
| | | Cabbage-centre grub | |
| | | Caterpillars | |
| | | Cluster caterpillar | |
| | | Diamondback (Cabbage) moth | |
| | | Helicoverpa | |
| | | Loopers | |
| | | Western flower thrips | |
| | | Leafminers (PER91155) | |

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| Spinosad | 5 | Cabbage cluster caterpillar | |
| | | Cabbage white butterfly | |
| | | Cabbage-centre grub | |
| | | Diamondback (Cabbage) moth | |
| | | Helicoverpa | |
| | | Loopers | |
| | | Western flower thrips | |
| | | Fall armyworm(PER89870) | |
| | | Leafminers (PER90928) | |
| Spirotetramat | 23 | Cabbage aphid | EU: Approval expiry April 2024 |
| | | Green peach aphid | |
| | | Silverleaf (Poinsettia) whitefly | |
| Spodoptera Nucleopolyhedrovirus (NPV) | 31 | Fall armyworm(PER90820) | |
| Sulfoxaflor | 4C | Brown sowthistle aphid | USA: Pollinator concerns EU: Restricted to permanent glasshouses only |
| | | Green peach aphid | |
| | | Greenhouse whitefly | |
| Trichlorfon | 1B | Cabbage White Butterfly | APVMA: nominated for review Codex: No MRLs EU/UK: No authorisations USA: No MRLs |
| | | Cabbage moth | |
| | | Green vegetable moth | |
| | | Rutherglen bug | |

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| DISEASES | | | |
| Ametoctradin + dimethomorph | 45 + 40 | Downy mildew | <u>Dimethomorph</u> EU: Under review |
| Azoxystrobin | 11 | Alternaria leaf spots | Canada: Review proposed |
| | | Sclerotinia rot | |
| | | White blister | |
| Azoxystrobin + oxathiapiprolin | 11 + 49 | Alternaria leaf spots | |
| | | Downy mildew | |
| | | Sclerotinia rot | |
| <i>B. amyloliquefaciens</i> | BM02 | Bacterial spot(PER87630) | Canada: Review complete. Continued use |
| Boscalid | 7 | Sclerotinia rot | Canada: Review initiated |
| Chlorothalonil | M5 | Grey mould | APVMA: nominated for review |
| | | Alternaria spot/blight(PER82895) | Canada: Cancellation of uses proposed |
| | | Downy mildew(PER82895) | EU/UK: No authorisation USA: Under review |
| Copper | M1 | Anthrachnose | EU: Candidates for substitution |
| | | Downy mildew | |
| Cyazofamid | 21 | Downy mildew | |
| Cyprodinil +fludioxonil | 9 + 12 | Sclerotinia rot | <u>Cyprodinil</u> Canada: Under review EU: Candidate for substitution <u>Fludioxonil</u> EU: Under review & Candidate for substitution |
| Difenoconazole | 3 | Ring spot(PER87973) | APVMA: nominated for review |
| | | Alternaria leaf spots(PER87973) | EU: Candidate for substitution USA: Under review |

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| Dimethomorph + mancozeb | 40 + M3 | Downy mildew (PER14958) | <u>Dimethomorph</u> EU: Under review <u>Mancozeb:</u> APVMA: nominated for review Canada: Many uses cancelled Codex: To be reviewed EU/UK: No Authorisation |
| | | White blister (PER14958) | |
| Fludioxonil + pydiflumetofen | 12 + 7 | Grey mould | <u>Fludioxonil:</u> EU: Currently under reviewed & Candidate for substitution <u>Pydiflumetofen</u> EU: Authorisation pending |
| | | Sclerotinia rot | |
| Fluopicolide + propamocarb HCl | 28 + 43 | Downy mildew | <u>Fluopicolide:</u> EU: Candidate for substitution |
| Iodine | M | Bactericide | |
| Iprodione | 2 | Grey mould | Canada: Majority of food crop uses deleted Codex: Review scheduled EU/UK: No authorisation in place USA: Proposed deletion or restriction of uses |
| | | Sclerotinia rot | |
| Mancozeb | M3 | Downy mildew | APVMA: nominated for review Canada: Many uses cancelled Codex: To be reviewed EU: No authorisation |
| | | Septoria leaf spot | |
| | | Anthraco nose (PER80538) | |
| Mandipropamid | 40 | Downy mildew | |
| Metalaxyl/metalaxyl-M | 4 | Downy mildew | <u>Metalaxyl</u> EU: Candidate for substitution <u>Metalaxyl-M</u> EU: Restricted use approval |
| Oxathiapiprolin | 49 | Downy mildew | |
| Penthiopyrad | 7 | Grey mould | |
| | | Powdery mildew | |
| | | Sclerotinia rot | |

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| Phosphorous acid | 33 | Damping off(PER14184) | |
| | | Downy mildew(PER14184) | |
| Potassium bicarbonate | M2 | Powdery mildew (PER13695) | |
| Zineb | M3 | Cercospora leaf spot(PER10845) | APVMA: nominated for review Codex: To be reviewed EU/UK: No authorisation in place |
| | | Downy mildew (PER10845) | |

| Active Constituents | Chemical Group | Comment |
|------------------------|----------------|-----------------------------------|
| WEEDS | | |
| Chlorthal-dimethyl | 3 | EU/UK: No authorisation in place |
| Clethodim (PER82459) | 1 | Codex: MRLs proposed for deletion |
| Fluazifop-P (PER81244) | 1 | |
| Pendimethalin | 3 | EU: Candidate for substitution |
| Propachlor (PER12008) | 15 | EU/UK: No authorisation in place |
| S-metolachlor | 15 | EU: No authorisation |

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