Insecticides registered® or under permit in mungbeans as at April 2019

Pest	Pesticide/ group	Trade name examples	Rate/ha*	Registration status	WHP# (days)	Comments
Helicoverpa	Helicoverpa NPV (MOA not classified by CropLife)	Gemstar LC VIVUS Gold VIVUS Max	0.375 L 0.375 L 0.150 L	® ®	NA	Target larvae < 7 mm Preferred vegetative stage option if ppns <4-5/m^2 Ensure good spray coverage
	Bt group 11	Dipel, Farmoz Btk	1-4 L	®	NA	Target hatchlings for best results
	chloran-traniliprole **group 28**	Altacor	70 g	®	14	Highly selective and long residual. Only 1 spray per crop per season. Use only during the designated IRMS window for your region ✪ Ensure good spray coverage
	Indoxacarb **group 22**	Steward	0.4 L	®	**21**	Only 1 spray per crop. Use only during the designated IRMS window for your region ✪
	Spinetoram group 5	Success Neo	0.2-0.3 L	®	**14**	Target small larvae < 5 mm Only 2 sprays per crop per season.
	Emamectin group 6	Affirm	0.15 - 0.3 L	®	**21**	Target small larvae < 5 mm Add a non-ionic surfactant. Don't apply if crop is stressed. Only 2 sprays per crop per season.
	Thiodicarb group 1A	Larvin	0.5-0.75 L	®	**21**	Target larvae < 7 mm for best results
	Deltamethrin group 3	Decis Options Ballistic	0.5 L	®	**7**	Target larvae < 5 mm for best results. Least preferred option
	Alpha-cypermethrin group 3	Dominex 100	0.3-0.4 L	®	**7**	Target larvae < 5 mm for best results. Least preferred option
Loopers including soybean loopers	Bt group 11	Dipel, Farmoz Btk	1-4 L	®	**NA**	Preferred IPM option. Ensure good spray coverage
	Chloran traniliprole **group 28**	Altacor	70 g	®	**14**	Highly selective and long residual. Only 1 spray per crop in prescribed IRMS windows
	Indoxacarb **group 22**	Steward	0.2 L	®	**21**	Only 1 spray per crop in prescribed IRMS windows.
	Spinetoram group 5	Success Neo	0.2-0.3 L	®	14	Only 2 sprays per crop per season.
	Emamectin group 6	Affirm	0.15 - 0.3 L	®	**21**	Add a non-ionic surfactant. **Do not apply to crops under visible stress** Only 2 sprays per crop per season
	Deltamethrin group 3	Decis Options Ballistic	0.5 L	®	**7**	Only use post flowering. Least preferred option
Bean podborer	Chloran-traniliprole **group 28**	Altacor	70 g	®	**14**	Highly selective and long residual. Only 1 spray per crop in prescribed IRMS windows
	Methomyl group 1A	Lannate, Electra, Nudrin	1.5-2 L	®	**7**	Least preferred option as short residual activity and hard on beneficials.

WHP = withholding period (days to harvest/desiccation). * Maximum rate allowed for on label. ®= Registered.

✪ IRMS = Insecticide Resistance Management Strategy to slow the development of resistance to group 22 and 28 insecticides, i.e. for Steward (indoxacarb) and Altacor (chlorantraniliprole) respectively.

Note that soft products (highly selective – no impact on beneficials) are shaded **green**, moderately selective are **yellow**, hard (non-selective and disruptive to beneficials) are **orange**, and extremely hard are **red**.

Insecticides registered® or under permit in mungbeans as at April 2019

Pest	Pesticide	Trade name examples	Rate/ha*	Registration status	WHP# (days)	Comments
Green vegetable bug (GVB) and other podsuckers including redbanded shield bug	Deltamethrin group 3	Decis Options Ballistic	0.5 L	®	7	Effective option but hard on beneficials. Salt adjuvant (0.5% w:v) needed to control redbanded shield bug. Delay 1st spray until early podfill.
	Clothianidin group 4A a neonicitinoid	Shield	0.125 – 0.375 L	**Permit 86221**	21	Gives better redbanded shield bug control when applied with a 0.5% w:v salt adjuvant. **Do not graze or cut for cattle** **DO NOT apply to flowering crops** Permit expires 31 Aug 2021
Mirids	Dimethoate group 1B	Dimethoate	0.5 L	®	14	Dimethoate @1/2 rate (0.25L/ha) is moderately selective but the 0.5L/ha rate is harder on beneficials. Dimethoate is the most effective option. Add salt (NaCl) @ 5g/L spray volume by ground (100L/ha) or 10g/L by air (30L/ha)
	Indoxacarb **group 22**	Steward EC	0.4 L + 0.5% salt	®	21	
	Dinotefuran group 4A a neonicitinoid	Starkle	90 g	®	14	No more efficacious than dimethoate but harder on beneficials. No more than 2 sprays per crop 14 days apart.
Aphids	Pirimicarb group 1A	Aphidex Pirimor	250-300 g	**Permit 85152**	21	Don't apply consecutive pirimicarb sprays. Rotate with another group. Expires 31 July 2023
	Sulfoxaflor group 4C	Transform WG	50 g	®	14	Only 2 sprays per crop Don't spray while bees are foraging
	Dimethoate group 1B	Dimethoate	0.5 L	®	14	Mainly cowpea aphids
Jassids, Leafhoppers	Dimethoate group 1B	Dimethoate	0.8 L	®	14	Rarely a problem unless the brown leafhopper which can vector phytoplasma. The effectiveness of spraying leafhoppers to contain phytoplasma is debatable.
Thrips	Dimethoate group 1B	Dimethoate	0.8 L	®	14	Check for thrips in seedlings and flowers. Dimethoate at 0.8L/ha is very hard on beneficials. Abamectin permit is specifically for seedling thrips. Expires 31 Oct 2020.
	Abamectin group 6	Tradelands abamectin 18EC	0.3 L	**Permit 80936**	28	
Monolepta or redshouldered leaf beetle	Indoxacarb **group 22**	Steward EC	0.2 L	**Permit 83624**	21	Often only on crop edges so spray accordingly. Only 1 spray per crop as per the Helicoverpa resistance strategy Expires 31 March 2021
Beanfly	Dimethoate group 1B	Dimethoate	0.8 L	®	14	Repeat maybe needed in 7 days. Try lower rate and band spray for less impact on beneficials
Two-spotted mites	Abamectin group 6	Tradelands abamectin 18EC	0.3 L	**Permit 80936**	28	Act if > 33% of plants infested. Use soft options against other pests to reduce the risk of mite attack. Expires 20 Oct 2020. Also for adzukis & navy beans
Wireworm False wireworm Field cricket Earwigs	Chlorpyrifos group 1B	Chlorpyrifos 500	0.1 L/2.5 kg seed	**Permit 8522**	NA	Grain baits Avoid heaping to reduce risk of bird kill Expires 31 Mar 2021

WHP = withholding period (days to harvest/desiccation). * Maximum rate allowed for on label. ®= Registered.

✪ IRMs = Insecticide Resistance Management Strategy to slow the development of resistance to group 22 and 28 insecticides, i.e. for Steward (indoxacarb) and Altacor (chlorantraniliprole) respectively.

✠ **Softness/Hardness** **Note:** 'Soft' products are selective, i.e. have little to no impact on non-target species. Softness/Hardness does not relate to impact on target pests. From: Simone Heimoana *et al.* (2007) Impact of insecticides and miticides on beneficials in Australian cotton. Cotton Pest Management Guide 2017-18. pp. 8-9. CRC & NSW DPI publication.