

2023



EXTENSION AND ADVISORY TEAM

# SPRAY GUIDE FOR BEANS (DRY)

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Nova Scotia Vegetable Crop Spray Guide 2023  
[DRY1-23]



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**Nova Scotia Vegetable Crop Spray Guide 2023**  
[DRY1-23]

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## LIABILITY STATEMENT

Recommendations in this guide are given for general information only and do not give the user the right to use a product in a manner not in accordance with the pesticide label or Pest Control Products Act. Perennia, by funding and printing this publication, and the editors/authors, do not offer any warranty or guarantee and do not assume any liability for crop loss, animal loss, health, safety, or environmental hazard caused by the use of any pesticide, advice, or recommendation in this schedule. Pesticides used in this schedule are products labeled for the target and crop. This information was retrieved from the Pest Management Regulatory online of Registered Products Database. The list of products presented in this schedule is intended to be complete, based on products known to be available in the region, but in no way is guaranteed to be complete. Some of the products listed may not be available. Trade names are given as a convenience to producers and are neither an endorsement of the product nor a suggestion that similar products are not available or effective.

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## PESTICIDE EMERGENCY CONTACT INFORMATION

Poison Control Centres		
Nova Scotia	800.565.8161 or 902.470.8161	IWK, Halifax, NS
New Brunswick	911	Ask for Poison Information
Prince Edward Island	800.565.8161 or 902.470.8161	IWK, Halifax, NS
Newfoundland	709.722.1110	Dr. Charles A. Janeway Child Health Care Centre, St. John's, NF

Environmental Emergencies (Pesticide Spills)	
Transport Canada Regional Operations Centre (24 hours)	
Nova Scotia	800.565.1633
New Brunswick	800.565.1633
Prince Edward Island	800.565.1633
Newfoundland	800.563.9089

## ABBREVIATIONS & CONVERSIONS

Formulation and Measurement Abbreviations			
FORMULATIONS		MEASUREMENTS	
DF	Dry flowable	mL	millilitre
EC, E	Emulsifiable concentrate	kPa	kilopascal
L	Liquid	kg	kilogram
Sn / Su	Suspension	g	gram
WP/W	Wettable powder	L	litre
		BIU	Billions of International Units
		ppm	parts per million (1000 ppb)
		ppb	parts per billion (1/1000 ppm)

Helpful Conversions <sup>1</sup>	
kPa X 0.14 = pounds per square inch (psi)	millilitres X 0.035 = fluid ounces
hectares X 2.47 = acres	litres X 35 = fluid ounces
kilograms X 2.2 = pounds	litres X 0.22 = imperial gallons
kilograms per hectare X 0.89 = pounds per acre	litres per hectare X 14.17 = fluid ounces per acre
kilograms per hectare X 0.40 = kilograms per acre	litres per hectare X 0.40 = litres per acre
	degree-days C X 1.8 = degree-days F

<sup>1</sup> Pesticide Units of Measurement

It is not recommended to convert label rates to imperial units because there is a high probability of mathematical and rounding errors. Present day pesticides are formulated to be more effective in smaller amounts. Therefore, even small conversion errors can lead to the use of incorrect rates (either too high or too low). Use metric – you will be glad you did!

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
<b>WEEDS:</b>							
<b>Preplant</b>  <i>Perennial weeds including quackgrass</i>	9	Glyphosate	<b>Roundup Transorb HC</b>	1.67-4.67 L/ha	12 hours	7	Apply in the fall or spring prior to planting. Annual weed control programs will be necessary to control weeds germinating after planting. For quackgrass control, apply it to actively growing quackgrass when at least 4 new leaves are present. The low rate (1.67 L/ha) will provide a minimum of one season control, while higher rates (1.67-4.67 L/ha) will provide longer term control. The low rate of Roundup should be applied in 50 to 100 L/ha water. If higher water volumes are used, add a suitable surfactant. Allow 3 or more days after treatment before tillage. Best control of quackgrass is obtained when these herbicides are applied in the fall.
			<b>Touchdown Total</b>	1.8-5.0 L/ha			
	14	Carfentrazone-ethyl	<b>Aim EC</b>	36.5-117 mL/ha	12 hours	1	Apply in minimum spray volume of 100 L/ha. Refer to label for target weeds, buffer zones and rates. Use high flow rate nozzles to apply the highest spray volume. When using AIM® EC Herbicide alone, use a non-ionic surfactant at 0.25% v/v (0.25 litres per 100 litres of spray solution) or use Merge at 1% v/v (1 litre per 100 litres of spray solution). Max 2 applications per season.
	26	Pelargonic acid	<b>Beloukha</b>	12 – 20 L/ha	Until dry	1	Application volume: 200 – 300 L/ha. During seedbed preparation, apply either before or after seeding but at least 3 days prior to crop emergence.

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
<b>Preplant (Incorporated Treatments)</b>  <i>Germinating annual grasses and some broadleaf weeds</i>  <b>Note allowable tank-mixes in comments section</b>	2	Imazethapyr	Pursuit	312 ml/ha	12 hours	100	Apply one application per year to white or kidney beans only. Rotational cropping restrictions apply. <b>Also, can be tank mixed with Treflan or Dual II Magnum. (Check label for allowable varieties)</b>
	3	Trifluralin	Bonanza 480	1.25-2.3 L/ha	12 hours	-	Incorporate within 8 hours of application. Ragweed and mustard are not controlled. Corn or cereal grains may be injured when planted in fields treated with trifluralin the previous year. <b>Treflan EC: can be tank mixed with Pursuit or EPTAM (Check label for allowable varieties).</b>
			Rival EC	1.2-2.3 L/ha	12 hours	-	
			Treflan EC	1.2-2.4 L/ha	12 hours	-	
		Pendimethalin	Prowl H <sub>2</sub> O	2.37 L/ha	24 hours	90 (adzuki) 80 (lima)	Controls certain annual grass and broadleaf weeds as they germinate but will not control established weeds. Must be soil applied and incorporated into the soil prior to planting. Adequate soil moisture is required for optimum activity. Maximum 1 application/season.
		Ethalfuralin	Edge Microactive	7-11 kg/ha	12 hours	-	Applied and incorporated in the spring prior to seeding. Apply as soon as there are good soil working conditions early in the spring and complete the first incorporation within 24 hours.
	15	Eptc	EPTAM Liquid EC	4.25-5.5 L/ha	24 hours	-	Applied to a dry clod-free soil surface and incorporated shortly after application. <b>Can be tank mixed with Treflan (Check label for allowable varieties).</b>
		Dimethenamid-P	Frontier Max	860-963 ml/ha	24 hours	-	Use higher label rate on fine textured or high organic soils and for heavier weed problems. ( <i>Phaseolus vulgaris</i> only)

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
<b>Preplant (Incorporated Treatments)</b> <i>(Cont.)</i>	15	S-Metolachlor	<b>Dual II Magnum or Komodo</b>	1.15-1.75 L/ha	12 hours	100	Don't use on very sandy soils, or on soils high in OM. Use in conjunction with preemergence or postemergence herbicide for control of broadleaf weeds. Beans should be seeded 4 cm deep, or crop injury may occur. Max. 1 application per year. <b>Dual can be tank mixed with Pursuit (see label for details).</b>
<b>Preemergence Treatments</b> <i>Annual grasses and broadleaf weeds</i>	2	Imazethapyr	<b>Pursuit</b>	312 ml/ha	12 hours	100	Apply one application per year to white or kidney beans only. Rotational cropping restrictions apply. Can also be tank mixed with Treflan.
	15	S-Metolachlor	<b>Dual II Magnum</b>	1.15-1.75 L/ha	12 hours	-	Do not use it on very sandy soils, or on soils high in organic matter. Use in conjunction with preemergence or postemergence herbicide for control of broadleaf weeds. Beans should be seeded 4 cm deep, or crop injury may occur. Maximum 1 application per year.
	26	Pelargonic acid	<b>Beloukha</b>	12 – 20 L/ha	When dry	1	Application volume: 200 – 300 L/ha. During seedbed preparation, apply either before or after seeding but at least 3 days prior to crop emergence.
<b>Postemergence Treatments</b> <i>Broadleaf weeds</i>	6	Bentazon	<b>Basagran plus Assist Oil Conc.</b>	1.75-2.25 L/ha 1-2 L/ha	12 hours	50	Apply when bean area at the 4 trifoliate stage. Do not apply when rain is expected within 6-8 hours. <b>Does not control grasses.</b>
			<b>Basagran Forte</b>	1.75-2.25 L/ha	12 hours	-	
	14	Fomesafen	<b>Reflex plus Agral 90</b>	1 L/ha 0.1% v/v	12 hours	84	Do not apply to a field more often than once every two years. <b>Do not apply to a crop under stress.</b> Apply when beans are in the 1-2 trifoliate stage and weeds are small and actively growing.

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
<b>Postemergence Treatments</b> <i>Grasses</i>	1	Clethodim	<b>Select plus Amigo</b>	0.19 L/ha 0.5% v/v	12 hours	60	Apply a maximum of one application per year when grassy weeds are in the 2-6 leaf stage.
		Fenoxaprop-P-ethyl	<b>Excel Super</b>	670 ml/ha	12 hours	60	Apply when annual grasses are in the 1 to 6 leaf stage and are actively growing. May be tank mixed with Basagran for control of several broadleaf weeds. Use a minimum of 200 L of water per hectare with the mixture.
		Sethoxydim	<b>Poast Ultra plus Merge</b>	1.1 L/ha 1 to 2 L/ha	12 hours	80	Treat at the 1 to 6 leaf stage of annual grasses. Use the higher rate for control of volunteer cereals and quackgrass. Apply in 50 to 200 L/ha of water. Merge should be used at 1% of water volume used.
<b>Postemergence Treatments</b> <i>Annual grasses and broadleaf weeds</i>	1 Plus 6	Fenoxaprop-P-ethyl  Bentazon	<b>Excel Super</b>  plus <b>Basagran</b>	670 ml/ha  1.75-2.25 L/ha	12 hours	60	When mixing, add Basagran followed by Excel Super followed by Assist to a tank one-half full of water and then complete filling. Do not use excessive agitation. Temporary crop injury is possible during hot, humid conditions. When these conditions occur reduce oil concentrate (Assist) to 1 L/ha.
	2	Imazamox	<b>Daval® 80SL</b> Plus <b>Non-ionic surfactant</b>  <b>NEW 2023</b>	187.5 -250 mL/ha  0.25% v/v	12 hours	75	Application volume: 100L/ha. Apply from emergence to 3 expanded trifoliate leaves of beans after weeds have emerged. DO NOT apply more than once per year.
	6 Plus 14	Bentazon  Fomesafen	<b>Basagran</b> plus <b>Reflex</b> plus <b>Assist Oil Conc.</b>	1.75 L/ha  0.58 L/ha  2 L/ha	12 hours	84	Refer to Basagran and Reflex labels on specific weed usage and height.

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
Preharvest	9 & 10	Glyphosate and Glufosinate ammonium	Roundup FastForward Preharvest	3.0 L/ha	12 hours	-	Apply Roundup or Roundup FastForward Preharvest 7 to 14 days before harvest and when grain moisture is less than 30%. Do not apply Ignite to dry beans grown for seed. Apply Ignite when 50 to 75% of the pods are yellow brown. Apply Flumioxazin EZ when crop is physiologically mature and a minimum of 80% of pods are yellow – tan in colour and 20% are yellow. Can tank mix glyphosate with Flumioxazin + adjuvant to control larger weeds before harvest. Apply Reglone or Dessicash when 80% of pods have turned yellow
	10	Glufosinate ammonium	Ignite SN	2.5-3.0 L/ha	12 hours	9	
	14	Flumioxazin	Flumioxazin EZ + Adjuvant	112 – 149 mL/ha	12 hours		
	22	Diquat	Reglone plus Agral 90	1.25-1.7 L/ha	24 hours	-	
			Dessicash	1 L/1000 L		-	
Post-harvest Burndown	14	Carfentrazone-ethyl	Aim EC	36.5-117 mL/ha	12 hours	1	Apply in minimum spray volume of 100 L/ha. Refer to label for target weeds, buffer zones and rates. Use high flow rate nozzles to apply the highest spray volume. When using AIM® EC Herbicide alone, use a non-ionic surfactant at 0.25% v/v (0.25 litres per 100 litres of spray solution) or use Merge at 1% v/v (1 litre per 100 litres of spray solution). Maximum of 2 applications per season.

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
<b>INSECTS:</b>							
Seed corn Maggot, Wireworm, Potato leafhopper	4	Thiamethoxam	Cruiser 5FS	50 – 83 ml/100 kg seed	-	-	<b>Seed treatment for commercial seed treatment facilities only.</b> Use high rate for wireworm and to replace one foliar application for potato leafhopper.
Aphids	1B	Malathion	Malathion 500	1.4-3 L/ha	1 day	1	Apply with enough spray volume to ensure adequate spray coverage.
	3	Lambda-cyhalothrin	Warrior	83-233 ml/ha	24 hours	21	<b>Do not use more than 3 applications per season.</b> Apply when the presence of vulnerable pest developmental stages and significant populations occur. Apply in 100-200 L of water / ha.
			Labamba				
	4D	Flupyradifurone	BYI 02960SL	500 – 750 mL/ha	12 hours	7	Apply as a directed foliar spray ensuring thorough coverage. Minimum interval between applications: 10 days. Minimum application volume: 100 L/ha. Maximum allowed per crop season: 2000 mL/ha.
	29	Flonicamid	Beleaf 50SG	0.12-0.16 kg/ha	12 hours	7	Apply before aphid populations reach economic thresholds or as populations begin to increase but before damaging populations become established. Scout fields and reapply if necessary. Use higher rates for greater pest populations and/or dense foliage. Maximum 3 applications/season.
Two Spotted Spider Mite	20B	Acequinocyl	Kanemite 15SC	2.07 L/ha	12 hours	7	<b>Two-Spotted Spider and Broad Mite.</b> Apply as a full coverage spray to the foliage to drip. Application should be made as soon as the mite population reaches economic infestation levels. Allow a minimum of 14 days between applications.

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
European Corn Borer	3	Lambda-cyhalothrin	<b>Matador 120 EC</b>	83 mL/ha	24 hours	14	Apply with 100-200 L/ha of spray volume. Apply before larvae tunnel into stalk. Max 3 applications per season.
			<b>Labamba</b>				
	18	Methoxyfenozide	<b>Intrepid</b>	0.3 – 0.6 L/ha	12 hours	7	Apply at the first signs of feeding damage before the insect enters the pods. Repeat applications after 7-14 days if required based on population monitoring. Use the higher rate for heavy infestations or advanced growth stages of the target pest. <b>(Also, for Cabbage looper).</b>
Tarnished Plant Bug	1B	dimethoate	<b>Lagon 480 EC</b>	0.7-1 L/ha	12 hours	7	TOXIC to bees. Avoid application during the crop blooming period. If applications must be made during the crop blooming period, restrict applications to evening when most bees are not foraging.
	3	Lambda-cyhalothrin	<b>Matador 120 EC</b>	83 ml/ha	24 hours	14	Apply with 100-200 L/ha of spray volume. The need and timing of application should be based on the presence of vulnerable pest development stages.
			<b>Labamba</b>				
		deltamethrin	<b>Decis 5 EC</b>	200 mL/ha	12 hours	7	Apply when the insects are present at economic thresholds. Apply with 100 – 200 L/ha spray volume. Do not apply more than 3 times a year.
	3 & 28	Lambda-cyhalothrin, chlorantraniliprole	<b>Voliam Xpress</b>	225 mL/ha	24 hours	14	Apply no later than when the first feeding is seen on foliage. Reapply after 7 days depending on the presence of significant populations as determined by local monitoring.
	29	Flonicamid	<b>Beleaf 50SG</b>	0.20 kg/ha	12 hours	7	Apply when lygus bugs first appear in the field and before populations reach high levels. Beleaf™ 50SG Insecticide will stop lygus bug feeding rapidly but it may take several days to see a reduction in lygus bug numbers. Reapply when new insects are detected.

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
Cutworms & Army worms	3	Lambda-cyhalothrin	Matador 120 EC or Labamba	83 mL/ha	24 hours	14	Apply with 100-200 L/ha of spray volume. The need and timing of application should be based on the presence of vulnerable pest development stages. Applications should be made as close to cutworm feedings as possible (i.e. night).
		deltamethrin	Decis 5 EC	200 mL/ha	12 hours	7	Cutworms. Apply when larvae are present and feeding. Do not disturb the soil after application. Apply with 100 – 200 L/ha spray volume. Do not apply more than 3 times a year.
	11	<i>Bacillus thuringiensis</i> , subsp. <i>aizawai</i> ,	XenTari WG	500-1000 g/ha	4 hours	0	<b>Beet Armyworm, Corn Earworm.</b> Use sufficient spray volume to ensure thorough coverage but not to the point of run off.
Western Bean Cutworm	1	Chlorantraniliprole	Coragen	250-375 mL/ha	12 hours	1	Begin applications when treatment thresholds have been reached. Thorough coverage is important to obtain optimum control.
	3	Lambda-cyhalothrin	Matador 120 EC	83-187 ml/ha	24 hours	14	Repeat sprays at 4–7-day intervals. Do not use more than 3 applications per season.
			Labamba				
			Warrior			21	
	3 & 28	Lambda-cyhalothrin, chlorantraniliprole	Voliam Xpress	500 mL/ha	24 hours	14	Apply no later than when the first feeding is seen on foliage. Reapply after 7 days depending on the presence of significant populations as determined by local monitoring.
	18	Methoxyfenozide	Intrepid	0.6 L/ha	12 hours	7	Apply in sufficient water volume for complete coverage of the plant foliage. Applications should be timed at egg hatch or to small larvae. Repeat applications based on monitoring of insect populations. Apply a maximum of 3 application per year.

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
Potato Leafhopper	1B	dimethoate	Lagon 480 EC	0.7-1 L/ha	12 hours	7	TOXIC to bees. Avoid application during the crop blooming period. If applications must be made during the crop blooming period, restrict applications to evening when most bees are not foraging.
	3	Lambda-cyhalothrin	Matador 120 EC or Labamba	83 ml/ha	24 hours	14	Apply with 100-200 L/ha of spray volume. The need and timing of application should be based on the presence of vulnerable pest development stages.
	3 & 28	Lambda-cyhalothrin, chlorantraniliprole	Voliam Xpress	225 mL/ha	24 hours	14	Apply no later than when the first feeding is seen on foliage. Reapply after 7 days depending on the presence of significant populations as determined by local monitoring.
	4D	Flupyradifurone	BYI 02960SL	500 – 750 mL/ha	12 hours	7	Apply as a directed foliar spray ensuring thorough coverage. Minimum interval between applications: 10 days. Minimum application volume: 100 L/ha. Maximum allowed per crop season: 2000 mL/ha.
	NC	Kaolin	Surround WP	6.25-12.5 kg/ha	-	0	<b>This is an OMRI listed control product and is suitable for organic production.</b> Apply in 250 L of water. Apply at 7–14-day intervals once initial infestation is detected. Use high rate for early applications. Do not exceed 12.5 kg/ha per application.

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
<b>DISEASES:</b>							
<b>Botrytis (Grey Mold) and Sclerotinia (White Mold)</b>	7	Penthiopyrad	Fontelis	1.0-2.25 L/ha	12 hours	0	<b>Botrytis Only. Begin applications prior to disease development, continue a 7–14-day interval.</b> Use higher rate and shorter intervals when disease pressure is high. Max seasonal rate is 5.25 L/ha. Do not make more than 2 sequential applications before switching to another mode of action.
		Boscalid	Lance WDG	560-770 g/ha (white mold)	12 hours	21	Apply at 20-50% flowering to control <b>white mold</b> . Apply a second time 7-14 days later if disease persists, or weather conditions are favourable for disease development. Maximum 2 applications/season. Use a rate of 460 g/ha for <b>botrytis in chickpea and lentil only</b> .
	9 & 12	Cyprodinil and Fludioxonil	Switch 62.5 WG	775-975 g/ha	12 hours	7	Begin applications prior to or at the onset of disease & repeat applications at 7-day intervals if conditions remain favourable for disease development. For <b>white mold</b> control, make the first application at 10-20% bloom. In some locations, a single application at this timing will provide adequate disease control. Apply higher rate under conditions of high disease pressure. Apply in sufficient water to ensure thorough coverage Ground: 175–225 L water/ha. Do not apply more than 2.9 kg/ha per crop.

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
<b>Botrytis (Grey Mold) and Sclerotinia (White Mold)</b> (cont.)	BM02	<i>Bacillus subtilis</i>	<b>Serenade Opti</b>	1.7-3.3 Kg/ha	4 hours	0	<p><b>This is a biopesticide that will only suppress the indicated diseases.</b></p> <p><b>Sclerotinia:</b> Make the 1<sup>st</sup> application at planting and prior to crop emergence. Make a 2<sup>nd</sup> application as a directed spray with multiple nozzles per seed line in sufficient water to ensure thorough coverage of lower plant leaves and surrounding soil surface within 7 days of thinning. Repeat applications on 7–14-day intervals if conditions for disease development persist.</p> <p><b>Botrytis Pod Rot:</b> Begin applications at the first sign of disease, or when conditions become conducive for disease development. Repeat as necessary on a 7–10-day interval.</p>
<b>White Mold (Sclerotinia sclerotiorum)</b>	3	Metconazole	<b>Quash</b>	280 g/ha	6 days (hand irrigation) 1 day (scouting)	21	<p><b>Suppression.</b> Apply prior to disease development. Make the first application at 20–50% bloom stage, before disease symptoms are visible. Make a second application at full bloom. Do not make the second application before 9 days following the first application. Do not make more than 2 applications per season.</p>
		Tetraconazole	<b>Roxar</b>  <b>Mettle 210 ME</b>	333 – 533 mL/ha	9 days: hand-set irrigation, 5 days: scouting, 12 hours: all other activities	14	<p><b>Suppression.</b> Begin applications preventively and repeat if needed after 14 to 21 days after the first application. Apply at the beginning of flowering or disease development. Use the higher rates and shorter intervals when disease pressure is high. Apply a minimum of 100 L of water per hectare by ground application.</p>

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
<b>White Mold (<i>Sclerotinia sclerotiorum</i>)</b> (cont.)	7 & 3 & 11	Pydiflumetofen & Azoxystrobin & Difenoconazole	<b>A23089</b> <b>NEW 2023</b>	1.0 L/ha	12 hours	30	Maximum of 2 applications per year. Apply at the beginning of flowering or prior to disease establishment. The minimum spray volume is 100L/ha.
	11 & 3	Fluoxastrobin & tetraconazole	<b>Zolera FX</b>	350 – 550 mL/ha	11 days (Hand-set irrigation), 6 days (Scouting), 12 hours (other activities)	14	For optimum results, begin applications preventively and continue as needed on a 7- to 14-day interval. Use the highest rate and the shortest interval when conditions favour high disease pressure. Maximum number of 2 applications per year. Can be mixed with a non-ionic surfactant at 0.2 - 0.5% v/v.
	29	Fluazinam	<b>Allegro 500F</b>	0.6-1.0 L/ha	24 hours	30	<b>Maximum of two applications per year.</b> Apply in a water volume of 200-600 L/ha. Begin application when plants are at early to mid-bloom (10-30% bloom) and make one more application 7-10 days later.
<b>Bacterial Blights</b>	M1	Copper hydroxide	<b>Parasol F</b>	2.3-3.12 L/ha	48 hours	2	For protective sprays, apply the first application when plants are 15 cm high. Apply on a 7-to-14-day schedule depending on local conditions. Use high rate under high disease pressure and low rate under low disease pressure.
	M		<b>Kocide 2000</b>	1.6-2.3 kg/ha	24 hours		
	M1	Copper	<b>Cueva</b>	0.5% to 2% solution, applied at 470-940 L/ha.	4 hours	1	Re-apply using 5–10-day intervals.

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
<b>Bacterial Blights</b> <i>Seed treatment</i>	M	Copper hydroxide	<b>Kocide 2000</b>	113g in 200ml water for 100kg of seed	-	-	Add to warm water and stir until dissolved. Additional warm water can be added as required to create a slurry of suitable consistency for use with commercial seed treatment equipment. Add this mixture to the bean seed as it is being gently tumbled to ensure even coverage. Allow treated seed to dry before planting. Label Seed: <b>“This seed has been treated with Kocide® 2000; do not use treated seed for food, feed or oil processing”</b> . Kocide 2000 used as a seed treatment may cause some delay in seed germination. Treat a small quantity of seed using equipment similar to that planned for treating the total seed lot. Conduct germination tests on a small portion of seed before committing the total seed lot to a selected seed treatment. See label for further precautions.
<b>Rust</b> <i>(Asian Soybean)</i>	3	myclobutanil	<b>Nova</b>	340 g/ha	2 days scouting, 12 hours all other activities	30	<b>Max 3 applications per season with a 7–10-day re-treatment interval.</b> Apply as soon as weather conditions are favourable for rust. Apply as a foliar spray in 300 l of water/ha.
		Propiconazole	<b>Tilt 250E</b>	500-756 ml/ha	12 hours	30	Apply at first sign and at 14 to 21 days later. Two applications per season.
			<b>Propi Super 25EC</b>	500-756 ml/ha	12 hours	30	Make the first application at the R2 to R3 developmental stage, or when there is 5% disease level in the field, followed by a second application 14 days after the first if environmental conditions are favourable for disease development. Max 2 applications/season.

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
<b>Rust</b> <i>(Asian Soybean)</i> <i>(cont.)</i>	7	Penthiopyrad	Fontelis	1.0-2.25 L/ha	12 hours	0	<b>Begin applications prior to disease development, continue a 7–14-day interval.</b> Use higher rate and shorter intervals when disease pressure is high. Max seasonal rate is 5.25 L/ha. Do not make more than 2 sequential applications before switching to another mode of action.
	7 & 3 & 11	Pydiflumetofen & Azoxystrobin & Difenconazole	<b>A23089</b> <b>NEW 2023</b>	1.0 L/ha	12 hours	30	Maximum of 2 applications per year. Apply at the beginning of flowering or prior to disease establishment. Min spray volume is 100L/ha. Reapplication interval is 10-14 days.
	11	Azoxystrobin	Quadris	0.5 L/ha	12 hours	15	Apply at onset of disease no later than flowering and apply second application 14 days later.
			Azoshy 250SC	500 ml/ha	12 hours	15	Make first application at the R1 to R3 developmental stage, or when there is 5% disease level in the field, followed by a second application 14 days after the first if environmental conditions are favourable for disease development.
		Pyraclostrobin	Headline EC	0.4-0.6 L/ha	12 hours	30	<i>Phaseolus, Vigna, Lupinus</i> species only. Apply at the beginning of infection and 10-14 days later.
	M1	Copper	Cueva	0.5% to 2% solution, applied at 470-940 L/ha.	4 hours	1	Re-apply using 5–10-day intervals.
<b>Powdery Mildew</b>	3	Propiconazole	Tilt 250E	500 ml/ha	12 hours	30	Make the first application at the R2 to R3 developmental stage, or when there is 5% disease level in the field, followed by a second application 14 days after the first if environmental conditions are favourable for disease development. Two applications per season.

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
<b>Powdery Mildew</b> (cont.)	3	Propiconazole	<b>Propi Super 25EC</b>	500 ml/ha	12 hours	30	Make the first application at the R2 to R3 developmental stage, or when there is 5% disease level in the field, followed by a second application 14 days after the first if environmental conditions are favourable for disease development. Two applications per season.
	7 & 3 & 11	Pydiflumetofen & Azoxystrobin & Difenconazole	<b>A23089</b> <b>NEW 2023</b>	1.0 L/ha	12 hours	30	Maximum of 2 applications per year. Make the first application at the R1 to R3 developmental stage, or when there is 5% disease level in the field. A second application can be made 14 days after the first application, when disease pressure is high or when agronomic or weather conditions are conducive to disease development or movement. Minimum spray volume is 100L/ha.
	11	Pyraclostrobin	<b>Headline EC</b>	0.4 L/ha	12 hours	30	Also controls Anthracnose on <i>Phaseolus</i> , <i>Vigna</i> species. Apply at beginning of infection and 10-14 days later.
	M1	Copper	<b>Cueva</b>	0.5% to 2% solution, applied at 470-940 L/ha.	4 hours	1	Re-apply using 5–10-day intervals.
<b>Anthracnose, Blights (<i>Ascochyta</i>, <i>Mycosphaerella</i>)</b>	3	Tetraconazole	<b>Roxar</b>	333 – 533 mL/ha	9 days: hand-set irrigation, 5 days: scouting, 12 hours: all other activities	14	<b>Suppression of Ascochyta blight.</b> Begin applications preventively and repeat if needed after 14 to 21 days after the first application. Apply at the beginning of flowering or disease development. Use the higher rates and shorter intervals when disease pressure is high. Apply in a minimum of 100 L of water per hectare by ground application. EVITO 480 SC Fungicide at 292 mL/ha can be tankmixed with Roxar Fungicide for management of Ascochyta
			<b>Mettle 210 ME</b>				

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
<b>Anthracnose, Blights (<i>Ascochyta</i>, <i>Mycosphaerella</i>) (cont.)</b>	7	Penthiopyrad	Fontelis	1.0-1.5 L/ha ( <i>Ascochyta</i> ), 1-2.25 L/ha Anthracnose	4 hours	0	<b>Begin applications prior to disease development, continue a 7–14-day interval.</b> Use higher rate and shorter intervals when disease pressure is high. Max seasonal rate is 5.25 L/ha. Do not make more than 2 sequential applications before switching to another mode of action.
	7 & 3 & 11	Pydiflumetofen Azoxystrobin Propiconazole	<b>A21461 Fungicide</b>	1.0 – 1.25 L/ha	12 hours	30	<b>Use high rate for <i>Ascochyta</i>.</b> Apply at the beginning of flowering or prior to disease establishment. A second application can be made 14 days after the first if disease pressure is high or if conditions favour disease development.
	11	Azoxystrobin	<b>Quadris</b>	0.5 L/ha	12 hours	15	Apply at onset of disease no later than flowering and apply second application 10-14 days later.
	11	Azoxystrobin	<b>Azoshy 250SC</b>	500 ml/ha	12 hours	15	The first application must be applied before disease is established and no later than the onset of flowering. A second application can be made 10-14 days after the first application, when disease pressure is severe or when agronomic or weather conditions are conducive to disease development or movement.
		Pyraclostrobin	<b>Headline EC</b>	0.4 L/ha	12 hours	30	Anthracnose on <i>Phaseolus</i> , <i>Vigna</i> species. <i>Mycosphaerella</i> blight on <i>Vigna</i> , <i>Lupinus</i> species. Apply at beginning of infection and 10-14 days later.

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted-Entry Interval (REI)	Pre-Harvest Interval (days)	Remarks
<b>Anthracnose, Blights (<i>Ascochyta</i>, <i>Mycosphaerella</i>)</b> (cont.)	11 & 3	Fluoxastrobin & tetraconazole	<b>Zolera FX</b>	350 – 550 mL/ha	11 days (Hand-set irrigation), 6 days (Scouting), 12 hours (other activities)	14	<b>Anthracnose. <i>Ascochyta</i> on peas only.</b> For optimum results, begin applications preventively and continue as needed on a 7- to 14-day interval. Use the highest rate and the shortest interval when conditions favour high disease pressure. Maximum number of 2 applications per year. Can be mixed with a non-ionic surfactant at 0.2 - 0.5% v/v.
	M1	Copper	<b>Cueva</b>	0.5% to 2% solution, applied at 470-940 L/ha.	4 hours	1	<b><i>Ascochyta</i>.</b> Re-apply using 5–10-day intervals.
<b>Seed rot Pre/post-emergence damping-off. seedling blight</b>	3 & 4 & 7	Ipconazole + Carbathiin + Metalaxyl	<b>Rancona Trio</b> <b>NEW 2023</b>	500 mL / 100 kg of seed	-	-	Seed treatment. DO NOT use for food, feed, or oil processing.

Use the following web link to search for any pesticide label mentioned in this guide, or any other pesticide registered in Canada: <http://pr-rp.hc-sc.gc.ca/lr-re/index-eng.php>