

Pea Management Schedule

*A guide to weed, insect and
disease management in peas in
Nova Scotia*



2019



GUIDE TO PEST MANAGEMENT IN PEAS



Nova Scotia Vegetable Crop Guide to Pest Management 2019
[PEA1-19]

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IMPORTANT

This publication was compiled by representatives from Perennia using information from the Pest Management Regulatory Agency of Health Canada, specific pesticide labels, previous Atlantic Provinces Vegetable Pest Guides and manufacturer's information. **This information is continuously changing and therefore it can cease to be current and accurate. Pesticide labels are the best source of information and should always be consulted prior to using a product.** The label is the best source of information on: registered crop uses, rates, days to harvest, compatibility with other pesticides, toxicity and other special information on its effective and safe use

By printing this publication, Perennia does not offer any warranty or guarantee, nor do they assume any liability for any crop loss, animal loss, health, safety or environmental hazard caused by the use of a pesticide mentioned in this publication.

WARNINGS

This publication is meant to be used as a reference for possible pest control options. Where there are multiple brand names of a specific active ingredient registered in Canada, Perennia has only listed a couple for reference purposes and as such does not endorse one brand over another. If you have purchased a generic product not specifically in this guide but has your crop and pest on the label, always follow that product label.

If any information in this or any other publication conflicts with the information on the label, always use the label recommendation. If you have an old label, your pesticide supplier should be able to give you the newest label. You are legally responsible for the safe use of pesticides you purchase. This means the safe transport and storage of these materials, the label rates used on crops, and the safe disposal of containers.

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted Entry Interval (REI)	Pre-harvest Interval (days)	Remarks
WEEDS:							
Preplant <i>Perennial weeds including quackgrass</i>	9	glyphosate	Roundup 356 Sn	1.25-2.5 L/ha	-	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 to actively growing quackgrass when at least 4 new leaves are present. The low rate (2.5 L/ha) will provide at least one season's control, higher rates (4.75 to 7 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. Wait 72 hours before plowing under. Best control of quackgrass is obtained when these herbicides are applied in the fall.
			Roundup WeatherMAX	1.67-8.0 L/ha	12 hours	7	
			Touchdown 480	2.5-7.0 L/ha	12 hours	7	
	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.
Preplant Incorporated <i>Germinating annual grasses and some broadleaves</i>	3	trifluralin	Treflan EC	1.2-1.7 L/ha	12 hours	-	Incorporate within 8 hours of application. Ragweed and mustards are not controlled. There is a carry-over effect on corn/cereal the next year. Use high rate in heavy soils.
			Rival	1.2-1.6 L/ha	12 hours	-	
	2	imazethapyr	Pursuit	0.312 L/ha	12 hours	50	Some rotational crop restrictions. Apply only to processing or snow peas. Can be applied PPI or PRE.

Preemergence <i>Germinating annual grasses and some broadleaves</i>	5	prometryn	Gesagard 480	3.75-4.58 L/ha	12 hours	55	Pre-emergence to crop and weeds. Will not control triazine resistant weeds. If soil is dry and rain is not expected, light incorporation by harrowing will improve control.
	15	s-metolachlor / benoxacor	Dual II Magnum	1.25-1.75 L/ha	12 hours	-	One application per year. Apply in 150-250 L of water/ ha.
	14	Fomesafen	Reflex	1.0 L/ha	12 hours	Dry peas: 77 days Succulent peas: 46 days	Apply after planting but prior to crop emergence. Spray volume: minimum 200 L/ha. Dry Shelled Peas: If target weeds have emerged, Reflex must be used with a non-ionic adjuvant or TurboCharge. For a non-ionic adjuvant use AGRAL 90 or Citowett at 0.1% v/v of spray solution. Succulent Peas: If target weeds have emerged, Reflex must be used with a non-ionic adjuvant or TurboCharge at 0.25 %v/v. For a non-ionic adjuvant use AGRAL 90 or Citowett at 0.1% v/v of spray solution.
Postemergence <i>Grasses</i>	1	fenoxyprop-p-ethyl	Excel Super	0.67 L/ha	12 hours	75	Apply when annual grasses are at the 1-6 leaf stage. DO NOT apply herbicides other than BASAGRAN within 4 days. 1 hour rain fastness.
	1	sethoxydim	Poast Ultra plus Merge	0.32-1.1 L/ha 1-2 L/ha	12 hours	30 (fresh processing) 60 (dry peas)	Apply to actively growing grasses at the 1-6 leaf stage. Do not apply on fresh edible pod peas. Apply high rate for quackgrass. 1 hour rain fastness.
<i>Broadleaf weeds</i>	6	bentazon	Basagran plus	1.75 L/ha	12 hours	30	Apply when peas have at least three pairs of leaves. Do not apply if rain is expected within 6 hours.

			Assist	1- 2L/ha			
	4	MCPB/MCPA	Tropotox Plus 400	2.75- 4.25 L/ha	12 hours	-	Apply when peas have 3-6 expanded leaves. Do not apply after 6 leaf stage, when temperature is above 27 C, high humidity or drought conditions.

Pest	Group	Active Ingredient	Pesticide Product Name	Rate	Restricted Entry Interval (REI)	Pre-harvest Interval (days)	Remarks
INSECTS:							
Seedcorn Maggot, Potato leafhopper, wireworm	4	thiamethoxam	Cruiser 5FS	50-83 ml/100 kg seed	12 hours	N/A	Seed treatment for commercial seed treatment facilities only. Use high rate for wireworm and to replace one foliar application for potato leafhopper.
Pea Moth	1B	malathion	Malathion 85E	1100 ml/ha	1 day	3	Apply in sufficient water volume to ensure adequate plant coverage.
Aphids	1B	malathion	Malathion 85E	1100 ml/ha	1 day	3	Apply in sufficient water volume to ensure adequate plant coverage.
	1B	dimethoate	Lagon 480 EC	275-425 ml/ha	12 hours	3	Max 2 applications/year. Use a spray volume of 100-300 L of water/ha.
	3	Lambda-cyhalothrin	Matador 120 EC	83-233 ml/ha	24 hours	14	May also control Lygus bug. Max 3 applications/yr.
			Warrior	83-233 ml/ha	24 hours	14	succulent shelled peas and edible podded peas Make no more than 3 applications per season. Apply when the presence of vulnerable pest developmental stages and significant populations occur. Apply in 100-200 L of water / ha.
	1A	methomyl	Lannate	510 g/ha	12 hours	1	
4	acetamiprid	Assail 70 WP Aceta 70 WP	56-86 g/ha	12 hours	7	Apply in a minimum finished spray volume of 200 L/ha. Do not apply more than 3 times per season. Do not apply more than once every 7 days. Do not use on crops after a soil, in-furrow or seed treatment application of a group 4 insecticide.	

	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.
Cutworms	3	cyhalothrin-lambda	Matador 120 EC	83 ml/ha	24 hours	14	Make applications in the evening, as this is when cutworm activity is greatest.
	3	permethrin	Pounce	180-390 ml/ha	12 hours	-	Apply up to 5 leaf stage. Do not disturb soil for 5 days after treating.
Western Bean Cutworm	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.
			Warrior		24 hours		
Slugs	-	Ferric phosphate	Sluggo	12-50 kg/ha	0 hours	0	
Brown Marmorated Stink Bug	1A	methomyl	Lannate	510 g/ha	12 hours	1	
	1B	Malathion	Malathion 85E	1100 mL/ha	1 day	3	Use sufficient water to guarantee thorough coverage. Use a minimum of 500 L water/ha. Apply prior to harvest when thresholds are reached, as determined by local monitoring.
European corn borer & Cabbage looper	18	Methoxyfenozide	Intrepid 240F	0.3 – 0.6 L/ha	12 hours	7	Apply at the first signs of feeding damage before the insect enters the pods. Repeat after 7-14 days if required based on monitoring. Use the higher rate for heavy infestations or advanced growth stages of the target pest.
Lygus Bugs (Tarnished Plant Bug)	29	Flonicamid	Beleaf 50SG	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
DISEASES:							
Angular leaf spot and Rust	7	boscalid	Lance WDG	420 g/ha	12 hours	7	Max 2 applications/year.
	11	pyraclostrobin	Headline EC	400-600 g/ha	12 hours	7	
	11	azoxystrobin	Quadris	500 ml/ha	12 hours	15	Dry shelled peas. Do not exceed 2 applications per year. Apply at 5% disease infection and then repeat after 14 days.
Sclerotinia	7	boscalid	Lance WDG	560-770 g/ha	12 hours	7	Max 2 applications/yr. 4 hr re-entry.
	44	<i>Bacillus subtilis</i>	Serenade Opti	1.7-3.3 Kg/ha	-	0	A biopesticide that will only suppress the indicated diseases. Make first application at planting and prior to crop emergence. Make another 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 on 7-14 day intervals if conditions for disease development persist.
Powdery Mildew	M	sulfur	Kumulus DF	1.5 kg/ha	24 hours	1	Apply at first appearance of disease and repeat at 7-10 day intervals as required.
	11	azoxystrobin	Quadris	500 ml/ha	12 hours	15	Do not exceed 2 applications per year. Apply at 5% disease infection and then repeat after 14 days.
			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.
	M1	Copper	Cueva	0.5% to 2% solution, applied at 470-940 L/ha	4 hours	1	Re-apply using 5-10 day intervals.
	3	Propiconazole	Propi Super 25EC	500-756 ml/ha	12 hours	30 (dry legumes) 15 (edible podded legume)	Make 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. Maximum 2 applications /season.
Asian Soybean Rust	11	azoxystrobin	Quadris	500 ml/ha	12 hours	15	Do not exceed 2 applications per year. Apply at 5% disease infection and then repeat after 14 days.
	11	azoxystrobin	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.
	3 11	propiconazole + azoxystrobin	Quilt	1-1.5 L/ha	12 hours	30 (dry legumes) 15 (edible podded legume)	Do not exceed 2 applications per year. Apply at first sign of disease and then repeat after 14 days. Apply with a minimum of 45 L/ha
	3	Propiconazole	Propi Super 25EC	500-756 ml/ha	12 hours	30 (dry legumes) 15 (edible	Make first application at the R2 to R3 developmental stage, or when there is 5% disease level in the field, followed by a second 14 days later if environmental

						podded legume)	conditions are favourable for disease development. Max 2 applications/season.
	7	penhiopyrad	Fontelis	1-1.75 L/ha	12 hours	0	Begin applications prior to disease development, continue on a 7-14 day interval. Use higher rate and shorter interval 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.
	M1	Copper	Cueva	0.5% to 2% solution, applied at 470-940 L/ha	4 hours	1	Re-apply using 5-10 day intervals.
Botrytis Pod Rot	44	<i>Bacillus subtilis</i>	Serenade Opti	1.7-3.3 Kg/ha	-	0	A biopesticide that will only suppress the indicated diseases. 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.
	7	penhiopyrad	Fontelis	1.0-2.25 L/ha	12 hours	0	Begin applications prior to disease development, continue on a 7-14 day interval. Use higher rate and shorter interval 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.
Alternaria Blight	7	penhiopyrad	Fontelis	1.0-2.25 L/ha	12 hours	0	Begin applications prior to disease development; continue on a 7-14 day interval. Use higher rate and shorter interval 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.

<i>Ascochyta blight</i> (<i>Mycosphaarella pinodes</i>)	M	Chlorothalonil	Echo 90DF	1.1-1.7 kg/ha	48 hours	32	Dry peas: Make first application beginning at early flowering and the second application at early pod set, approximately 10 days later. Apply the higher rate when conditions favor disease development. Make third application 10-14 days after the second during pod fill if conditions remain favorable for disease. DO NOT exceed 3 applications per season. DO NOT feed treated hay to livestock. DO NOT allow grazing of treated fields.
			Echo 720	1.4-2.1 L/ha			
			Bravo ZN	2.0-3.0 L/ha			
	M1	Copper	Cueva	0.5% to 2% solution, applied at 470-940 L/ha	4 hours	1	Re-apply using 5-10 day intervals.
	11	Azoxystrobin	Azoshy 250SC	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, when disease pressure is severe or when agronomic or weather conditions are conducive to disease development or movement.
<i>Pea Downy Mildew</i> (<i>Peronospora viciae</i>)	U15	Oxathiapiprolin	Zorvec Enicade	0.175-0.35 L/ha	12 hours	0	Begin applications prior to disease development and continue on a 7 to 14 day interval. Use higher rate and shorter interval when disease pressure is high.

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/ls-re/index-eng.php>

PESTICIDE EMERGENCY CONTACT INFORMATION

Poison Control Centres		
Nova Scotia	800.565.8161 or 902.428.8161	IWK, Halifax, NS
New Brunswick	911	Ask for Poison Information
Prince Edward Island	800.565.8161 or 902.428.8161	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	Oil-based emulsifiable concentrate	kPa	kilopascal
WDG	Wettable dry granule	kg	kilogram
WP, W	Wettable powder	g	gram
Sn	Solution	L	litre
		BIU	Billions of International Units
		ppm	parts per million (1000 ppb)
		ppb	parts per billion (1/1000 ppm)

Helpful Conversions¹	
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

¹ **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!