



# **DIAZINON RISK MANAGEMENT AND STEWARDSHIP PLAN**

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# **PHASE-OUT SCHEDULE**

Booklet available at: [www.ipco.ca](http://www.ipco.ca)

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## **DIAZINON RISK MANAGEMENT PLAN SUMMARY**

As of 31 December 2013 the Pest Management Regulatory Agency (PMRA) requires the implementation of the Diazinon Risk Management Plan (Re-evaluation Note, REV2013-01). The objective is to further minimize potential health and environmental risks associated with diazinon uses identified for phase-out. The plan outlines the mandatory risk mitigation measures to be implemented and specifies the diazinon phase-out schedule.

### **Health and Environmental Risks Associated with Diazinon**

An overexposure to diazinon may occur by contact, ingestion and vapour action. Symptoms may include headaches, giddiness, blurred vision, nervousness, weakness, nausea, cramps, diarrhea, discomfort in the chest, sweating, miosis, tearing, salivation and other excessive respiratory tract secretion, vomiting, cyanosis, papilledema, uncontrollable muscle twitches, convulsions, coma, loss of reflexes and loss of sphincter control.

Diazinon released into the environment can be found in soil, surface water, air and rain. It volatilizes from moist surfaces and water, reaches surface water readily and may be a concern for groundwater contamination. Granular applications of diazinon pose a high risk to birds and wild mammals. Foliar applications of diazinon are a concern for pollinators, birds and small herbivorous wild mammals, aquatic invertebrates, amphibians, and fish.

### **Risk Mitigation Measures**

These measures aim to further reduce health and environmental risks stemming from exposure to diazinon.

Further details on the mandatory Risk Mitigation Measures (personal protective equipment required for each use, restricted-entry intervals, and required buffer zones by application method and crop) can be found on the registrant's webpage. The link to the registrant webpage can be found on the decal on each carton of the product.

Mandatory posting signs to be placed around areas treated with diazinon are available at the point of purchase or can be obtained from the registrant directly.

Specific requirements pertaining to each particular product under the Diazinon Risk Management Plan can be found on corresponding product labels. In order to protect human and environmental health these directions must be followed by law. All product labels have been updated accordingly.

### **Diazinon phase-out schedule - Phase out dates for airblast, foliar and granular applications, by crop**

<b>Last Date of Use</b>	<b>Crop</b>
31 December 2013	Apricot, peach, plum and prune
31 December 2016	Cherry, apple, blackberry, carrot, cranberry, currant, gooseberry, loganberry, onion (bulb and green), parsnip, pear, raspberry, rutabaga, strawberry, turnip

### **Changes to Current Application Practices**

Implementation by December 31, 2013:

- Use of mist blower sprayers as an application method on cranberry and strawberry is prohibited where the use of field sprayers is considered to be an effective and feasible alternative.
- Use of hand-held sprayers as an application method on tree fruit is prohibited where the use of field sprayers is considered more effective. Spot applications using hand-held sprayers will still be permitted with a limit to a maximum of 500 m<sup>2</sup> per day.
- Use of chemigation is the preferred method of application for cranberries where the appropriate equipment/infrastructure exists. Exposure risk reductions are expected for applicators during chemigation, though risks to mixers/loaders are not likely to be affected.
- Updated buffer zones are required for airblast applications on stone fruit, apple and pear trees. Additional new buffer zones are also required for crops listed on the product label.



## INTRODUCTION

The chemical insecticide diazinon recently underwent a reevaluation resulting in the development of a diazinon risk management plan by the Pest Management Regulatory Agency (PMRA), a branch of Health Canada. As part of this risk management plan, a registrant-sponsored diazinon product **Stewardship Plan** is required to be implemented as of **December 31, 2013**. The overall objective of the risk management plan is to minimize potential health and environmental risks associated with the use of diazinon products during the phase-out period. The specific objectives of the stewardship plan are to:

- ❖ raise awareness of the potential risks of diazinon use and symptoms of overexposure;
- ❖ emphasize and promote the importance of adhering to product label requirements and phase-out timelines; and
- ❖ adopt additional risk management measures where required.

The risk management plan presented in the following pages details measures that include specific pest management and agronomic practices, and changes to product use conditions that may reasonably be expected to further reduce health and environmental exposures.

It is important to note that the information described here will apply specifically to IPCO Diazinon 50 EC and may or may not coincide with similar products commercially available.

If you have any comments or questions; or if you would like additional information, please contact us at (204) 233-3461 or [ipco@ipco.ca](mailto:ipco@ipco.ca)

## PHASE-OUT TIMELINES

The risk management plan includes a phase-out schedule for the uses of diazinon identified for phase-out. Though the risk management plan identifies additional requirements to further reduce exposure risks during the phase-out period, the adoption of these measures does not exempt those uses from eventual phase-out as required by the re-evaluation decision.

### Phase-out Schedule

Uses of diazinon identified for phase-out are grouped according to two timeframes based on the expected challenges involved in transitioning to alternative pest control measures. Phase-outs will occur as per the following timelines:

**Table 1 – Uses of Diazinon 50 EC Identified for Phase-Out**

Application Method	Last Date of Use	Crop
Foliar spray (Airblast; Field Sprayer; Mist Blower Sprayer; Handheld Sprayer)	December 31, 2013	Apricot, peach, plum and prune
	December 31, 2016	Apple, blackberry, carrot, cherry, cranberry, currant, gooseberry, loganberry, onion (bulb and green), parsnip, pear, raspberry, rutabaga, strawberry, turnip

## **REMOVAL OF MISTBLOWER AND HANDHELD SPRAYER AS APPLICATION METHODS FOR SPECIFIC CROPS**

Mistblower application methods generally result in higher rates of off-target application and drift than other field sprayer application methods. Occupational and environmental exposures can be reduced by limiting such drift and off-target application. Similarly, the use of handheld sprayers generally results in higher occupational exposures than does the use of field sprayers.

Therefore effective **December 31, 2013**, this risk management plan will require label changes **specifically prohibiting the use of mist blower sprayers as an application method**, where diazinon application by field sprayers is considered to be efficacious and widely feasible (i.e. uses on cranberry and strawberry).

Label changes to specifically limit the use of handheld sprayers as an application method will also be required for crops where pest issues are generally suited to the use of field sprayer applications. Spot applications using hand-held sprayer will still be permitted but labels will be updated to specifically limit hand-held spot applications to a maximum of 500 m<sup>2</sup> per day.

**Table 2 – Prohibitions on Application Method by Crop**

<b>Application Method</b>	<b>Specific Crop for Which Application Method Will Be Prohibited</b>
mist blower sprayer*	Cranberry, strawberry
hand-held sprayer (for applications > 500 m <sup>2</sup> per day)**	Tree fruit

\* Mist blower applications would be replaced by field sprayer.

\*\* Hand-held applications of > 500 m<sup>2</sup> would be replaced by airblast sprayer.

## **ALTERNATIVE REGISTERED SOIL DRENCH APPLICATION FOR ROOT MAGGOT IN ONION AND TURNIP/RUTABAGA**

The diazinon risk management plan requires the removal of granular applications to control root maggot in onions and turnip/rutabaga where existing liquid product formulations are available. IPCO Diazinon 50 EC is registered for control of root maggot in onions, turnips and rutabagas by soil drench application.

### **CHEMIGATION FOR CRANBERRIES**

Chemigation is the practice of applying agrichemicals (e.g. nitrogen, phosphorous, pesticides, etc.) to cropland using an irrigation system to distribute both the water and chemical. Though not currently a registered application method for cranberries, this risk management plan will add chemigation as an application method as of December 31, 2013. At that time the Diazinon 50 EC label will be updated to specify that application via chemigation is the preferred method of application where the appropriate equipment/infrastructure exists. However, the label will still allow for applications by foliar/field sprayer where the appropriate equipment/infrastructure for chemigation application does not exist.

Using chemigation for the application of diazinon to cranberries could potentially reduce occupational exposure since applicators are not required to be in close proximity to the application equipment during application. Equipment may also be flushed by irrigation water at the end of the chemigation cycle, thus reducing potential for exposure from contaminated equipment. Risk reductions would be expected for applicators, though mixer/loader risk is not likely to be affected. Diazinon is only slightly volatile from water surfaces, therefore drift and bystander exposure are not expected to increase due to chemigation.



## **PERSONAL PROTECTIVE EQUIPMENT REQUIRED FOR APPLICATION**

CAUTION: IPCO Diazinon 50 EC is harmful if inhaled or absorbed through the skin. In order to prevent exposure:

- wear an approved respirator when handling large amounts
- avoid contact with eyes, skin and clothing.
- avoid breathing fog, dust, or spray mist.
- wash thoroughly after handling and before eating, drinking or smoking.

Always keep the following personal protective equipment immediately available for use in case of emergency (a broken package, spill, or equipment breakdown): **chemical-resistant coveralls, chemical-resistant gloves, chemical-resistant footwear and a NIOSH-approved respirator.**

### **PPE Required by Application:**

1. **Mixers/loaders** must use a closed mechanical transfer loading system for liquid products. Mixers/loaders must wear: **a long-sleeved shirt and long pants, socks and shoes, and chemical resistant gloves.** If a closed loading system is not available, mixers/loaders must wear:
  - i. chemical-resistant coveralls over a long-sleeved shirt and long pants,
  - ii. chemical-resistant gloves,
  - iii. chemical-resistant footwear and a
  - iv. NIOSH approved respirator.
2. **Applicators** using:
  - a. **Handheld equipment**, including paintbrushes, must wear: **chemical-resistant coveralls over a long-sleeved shirt and long pants, head protection (if spray is directed upward), chemical-resistant gloves, chemical resistant footwear and a NIOSH-approved respirator.**
  - b. **Groundboom or Airblast equipment** with a closed cab must wear: **a long-sleeved shirt, long pants, socks and shoes.** Wear **chemical-resistant gloves** when leaving the cab for cleanup and repair. If a closed cab is not available with **airblast equipment**, applicators must wear:
    - i. Chemical-resistant coveralls over a long-sleeved shirt and long-legged pants
    - ii. Chemical-resistant hood
    - iii. NIOSH-approved respirator
    - iv. Chemical-resistant footwear plus socks
    - v. Chemical-resistant gloves

### UPDATED AND ADDITIONAL BUFFER ZONES

The diazinon risk management plan requires updated buffer zones for airblast applications of diazinon on stone fruit, apple and pear trees. Additional new buffer zones are also required for crops listed on the product label. As of December 31, 2013, these buffer zones are required to be implemented as per the table below.

**Table 3 – Required Buffer Zones by Application Method and Crop**

Method of Application	Crop		Buffer Zones (metres) Required for the Protection of:			
			Freshwater Habitat of Depths:		Estuarine/Marine Habitats of Depths:	
			Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m
Field sprayer	Carrot, onion, parsnip		80	40	10	4
	Rutabaga, turnip		90	45	10	5
	Currant, gooseberry		85	45	10	4
	Blackberry, loganberry, raspberry, strawberry		120	65	10	5
	Cranberries		120	120	35	20
Airblast	Apple/pear	Early growth stage	75	65	40	35
		Late growth stage	65	55	30	25
	Stone fruit	Early growth stage	70	60	35	30
		Late growth stage	60	50	30	20
	Blackberry, loganberry, raspberry	Early growth stage	65	55	35	25
		Late growth stage	55	45	25	15
	Currant, gooseberry	Early growth stage	60	50	25	20
		Late growth stage	50	40	20	10

### RESTRICTED ENTRY INTERVALS

**Table 4 – Restricted Entry Intervals by Crop**

Crop	Restricted-entry interval (days)
Carrot, cranberry, onion, parsnip	3
Apple, Rutabaga, Stone fruit (apricot, cherry, peach, plum and prune), Strawberry, Turnip	4
Pear	5
Raspberry, blackberry, loganberry, gooseberry, currant	6



**DIAZINON RISK MANAGEMENT AND STEWARDSHIP PLAN – PHASE-OUT SCHEDULE**

Registrant	Product Name	Implementation by December 31, 2013	Implementation by December 31, 2014	Implementation by December 31, 2016
Agrium Advanced Technologies RP Inc.	Pro Diazinon 50 EC, Registration Number 16518	<p>Last date of use is December 31, 2013 for foliar applications on:</p> <ul style="list-style-type: none"> <li>Apricot</li> <li>Peach</li> <li>Plum</li> <li>Prune</li> </ul> <p>Revised Application Practices:</p> <p>Cranberry: Chemigation is the preferred application method where appropriate equipment/infrastructure exists.</p> <p>Foliar/field sprayer will still be acceptable where chemigation application is not feasible.</p> <p>Cranberry and strawberry: Application with mistblower sprayers is strictly prohibited.</p> <p>Tree fruit: Application with hand-held sprayers exceeding 500 m<sup>2</sup> per day is strictly prohibited. Airblast sprayers are permitted for applications above 500 m<sup>2</sup> per day.</p> <p>Refer to product label.</p> <p>Additional Risk Mitigation Measures: Buffer Zones Updated buffer zones are required for airblast applications on:</p> <ul style="list-style-type: none"> <li>Apple trees</li> <li>Christmas trees</li> <li>Pear trees</li> <li>Stone fruit</li> </ul> <p>Additional/New buffer zones for all other crops are required.</p> <p>Refer to product label.</p> <p>Personal Protective Equipment (PPE) Follow PPE requirements as per revised label.</p> <p>Restricted-Entry Intervals (REI) Follow required REIs as per revised label.</p>		<p>Last date of use is December 31, 2016 for foliar applications on:</p> <ul style="list-style-type: none"> <li>Cherry</li> <li>Apple</li> <li>Blackberry</li> <li>Carrot</li> <li>Christmas Tree</li> <li>Cranberry</li> <li>Currant</li> <li>Gooseberry</li> <li>Loganberry</li> <li>Onion (bulb and green)</li> <li>Parsnip</li> <li>Pear</li> <li>Radish</li> <li>Raspberry</li> <li>Rutabaga</li> <li>Strawberry</li> <li>Turnip</li> </ul>



Registrant	Product Name	Implementation by December 31, 2013	Implementation by December 31, 2014	Implementation by December 31, 2016
Interprovincial Cooperative Limited	Diazinon 50 EC Insecticide, Registration Number 27538	<p>Last date of use is December 31, 2013 for foliar applications on:            Apricot            Peach            Plum            Prune</p> <p>Revised Application Practices:            Cranberry:            Chemigation is the preferred application method where appropriate equipment/infrastructure exists.</p> <p>Foliar/field sprayer will still be acceptable where chemigation application is not feasible.</p> <p>Cranberry and strawberry:            Application with mistblower sprayers is strictly prohibited.</p> <p>Tree fruit:            Application with hand-held sprayers exceeding 500 m<sup>2</sup> per day is strictly prohibited. Airblast sprayers are permitted for applications above 500 m<sup>2</sup> per day.</p> <p>Refer to product label.</p> <p>Additional Risk Mitigation Measures:            Buffer Zones            Updated buffer zones are required for airblast applications on:            Apple trees            Pear trees            Stone fruit</p> <p>Additional/New buffer zones for all other crops are required.</p> <p>Refer to product label.</p> <p>Personal Protective Equipment (PPE)            Follow PPE requirements as per revised label.</p> <p>Restricted-Entry Intervals (REI)            Follow required REIs as per revised label.</p>		<p>Last date of use is December 31, 2016 for foliar applications on:            Cherry            Apple            Blackberry            Carrot            Cranberry            Currant            Gooseberry            Loganberry            Onion (bulb and green)            Parsnip            Pear            Raspberry            Rutabaga            Strawberry            Turnip</p>





Registrant	Product Name	Implementation by December 31, 2013	Implementation by December 31, 2014	Implementation by December 31, 2016
Makhteshim Agan of North America Inc.	Diazol 50 EC, Registration Number 15921	<p>Last date of use is December 31, 2013 for foliar applications on:            Apricot            Peach            Plum</p> <p>Revised Application Practices:            Strawberry:            Application with mistblower sprayers is strictly prohibited.            Tree fruit:            Application with hand-held sprayers exceeding 500 m<sup>2</sup> per day is strictly prohibited. Airblast sprayers are permitted for applications above 500 m<sup>2</sup> per day.</p> <p>Refer to product label.</p> <p>Additional Risk Mitigation Measures:            Buffer Zones            Updated buffer zones are required for airblast applications on:            Apple trees            Pear trees            Stone fruit</p> <p>Additional/New buffer zones for all other crops are required.</p> <p>Refer to product label.</p> <p>Personal Protective Equipment (PPE)            Follow PPE requirements as per revised label.</p> <p>Restricted-Entry Intervals (REI)            Follow required REIs as per revised label.</p>		<p>Last date of use is December 31, 2016 for foliar applications on:            Cherry            Apple            Blackberry            Loganberry            Pear            Raspberry            Rutabaga            Strawberry            Turnip</p>



Registrant	Product Name	Implementation by December 31, 2013	Implementation by December 31, 2014	Implementation by December 31, 2016
Loveland Products Canada Inc.	Diazinon 500 E, Registration Number 11889	<p>Last date of use is December 31, 2013 for foliar applications on:            Apricot            Peach            Plum            Prune</p> <p>Revised Application Practices:            Cranberry:            Chemigation is the preferred application method where appropriate equipment/infrastructure exists.</p> <p>Foliar/field sprayer will still be acceptable where chemigation application is not feasible.</p> <p>Cranberry and strawberry:            Application with mistblower sprayers is strictly prohibited.</p> <p>Tree fruit:            Application with hand-held sprayers exceeding 500 m<sup>2</sup> per day is strictly prohibited. Airblast sprayers are permitted for applications above 500 m<sup>2</sup> per day.</p> <p>Refer to product label.</p> <p>Additional Risk Mitigation Measures:            Buffer Zones            Updated buffer zones are required for airblast applications on:            Apple trees            Christmas trees            Pear trees            Stone fruit</p> <p>Additional/New buffer zones for all other crops are required.</p> <p>Refer to product label.            Personal Protective Equipment (PPE)            Follow PPE requirements as per revised label.</p> <p>Restricted-Entry Intervals (REI)            Follow required REIs as per revised label.</p>	<p>Revised Application Practices:            Soil drench application permitted during phase-out period until December 31, 2016 for:            Carrots – Carrot rust fly maggots</p> <p>Parsnips – Carrot rust fly maggots            Radish – Root maggots</p> <p>Refer to product label.</p>	<p>Last date of use is December 31, 2016 for foliar applications on:            Cherry            Apple            Blackberry            Carrot            Christmas Tree            Cranberry            Currant            Gooseberry            Loganberry            Onion (bulb and green)            Parsnip            Pear            Radish            Raspberry            Rutabaga            Strawberry            Turnip</p> <p>Last date of use is December 31, 2016 for soil drench applications on:            Carrots – Carrot rust fly maggots            Parsnips – Carrot rust fly maggots            Radish – Root maggots</p>



	<p>Diazinon 5G Insecticide, Registration Number 12538</p>	<p>Additional Risk Mitigation Measures: Personal Protective Equipment (PPE) Follow PPE requirements as per revised label.</p> <p>Restricted-Entry Intervals (REI) Follow required REIs as per revised label.</p>	<p>Last date of use is December 31, 2014 for: Carrots – Carrot rust fly maggots Onion – Root maggots Parsnips – Carrot rust fly maggots Radish – Root maggots Rutabaga – Root maggots Turnip – Root Maggots</p>	
	<p>Diazinon 50 WSP Insecticide, Registration Number 29976</p>	<p>Last date of use is December 31, 2013 for foliar applications on: Apricot Peach Plum Prune</p> <p>Revised Application Practices: Cranberry: Chemigation is the preferred application method where appropriate equipment/infrastructure exists.</p> <p>Foliar/field sprayer will still be acceptable where chemigation application is not feasible.</p> <p>Cranberry and strawberry: Application with mistblower sprayers is strictly prohibited.</p> <p>Tree fruit: Application with hand-held sprayers exceeding 500 m<sup>2</sup> per day is strictly prohibited. Airblast sprayers are permitted for applications above 500 m<sup>2</sup> per day.</p> <p>Tobacco (seedlings): Automated fogging is required for widespread ant treatments for application areas exceeding 500 m<sup>2</sup> per day.</p> <p>Refer to product label.</p> <p>Additional Risk Mitigation Measures: Buffer Zones Updated buffer zones are required for airblast applications on: Apple trees</p>	<p>Revised Application Practices: Soil drench application permitted during phase-out period until December 31, 2016 for: Carrots – Carrot rust fly maggots Parsnips – Carrot rust fly maggots Radish – Root maggots</p> <p>Refer to product label.</p>	<p>Last date of use is December 31, 2016 for foliar applications on: Cherry Apple Blackberry Carrot Cranberry Currant Gooseberry Loganberry Onion (bulb and green) Parsnip Pear Raspberry Rutabaga Strawberry Tobacco (greenhouse seedlings) Turnip</p> <p>Last date of use is December 31, 2016 for soil drench applications on: Carrots – Carrot rust fly maggots Parsnips – Carrot rust fly maggots Radish – Root maggots</p>



		<p>Pear trees Stone fruit</p> <p>Additional/New buffer zones for all other crops are required.</p> <p>Refer to product label.</p> <p>Personal Protective Equipment (PPE) Follow PPE requirements as per revised label.</p> <p>Restricted-Entry Intervals (REI) Follow required REIs as per revised label.</p>		
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