

PRODUCT INFORMATION SHEET

Ladybugs



Hippodamia convergens “We are the Aphid Terminator”

WHO ARE WE? We are Native

- Our Ladybugs *Hippodamia convergens* are a native North American species of ladybird beetle.
- NIC’s ladybugs are gathered in California at specific times during the year. Our first collections are done after the ladybugs have broken their dormancy, flown, fed and laid eggs. It’s that season’s generations that are returning to the mountains to escape the California heat that we sell for outdoor release. These ladybugs are your garden’s “Aphid Terminator”. NIC sells ladybugs all year long, but only from July to September are they for outdoor release.
- When temperatures begin to drop, native ladybugs gather in the fall and hibernate on the ground under plant debris, pots etc. They DO NOT hibernate in your house and they do not bite.

WHAT CAN WE DO FOR YOU? We are not picky eaters

Excellent general garden predators, our favourite foods are aphids, small soft insects and insect eggs.

THE CHANGES WE GO THROUGH (Ladybug changing room)

Ladybugs have four (4) distinct life stages: adults, larva, egg and pupa. Each stage looks very different in shape and form.



Adult ladybugs are the typical beetle that you see with hard outer shell that is brightly coloured red, orange or yellow with varying black dots and black legs. The adult ladybugs eat pest insects but more importantly will lay eggs.



Ladybug eggs are white or yellow ovals and are laid in upright clusters on a leaf surface, often hidden from sight. The eggs hatch into larva in 3 to 5 days.



The larva look nothing like the adult; they are long black and orange alligator shaped with voracious appetites and are the true “Aphid Terminator”. Larvae have no wings so they live and feed on the plant they are laid on for 3 to 5 weeks. Ladybug larvae are like teenagers; all they do is eat and grow. It’s the larvae and the adults that control your pest problems.



Ladybugs go through the last change during pupation. The larvae changes into a hardened shell called pupa which is orange and black in colour and is attached to the leaf surface. The pupa is considered the insect ‘changing room’ and allows the larva to become the adult you see. The metamorphosis can last 7 to 10 days.

The whole lifecycle from egg to adult can take 3 to 4 weeks.

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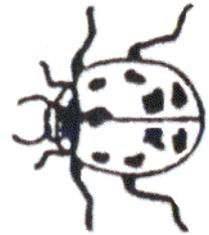
Ladybugs

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EASY 1-2-3-4 STEP RELEASE PROGRAM

1. Keep ladybugs refrigerated until time of release. Refrigeration keeps ladybugs dormant.
2. In the evening water or mist the plants that have the pest insect problems. This provides a drink for the ladybugs.
3. Release a few ladybugs on the ground under the infested plants at night.
4. Repeat every 2 to 3 days over a 2 week period.
5. Ladybugs feed primarily at night and rest in shady areas around plants during the day.
6. 1,000 Ladybugs covers 50m²

NOTE: Look at your pest problem. Watching it disappear tells you the ladybugs are doing their job. Do not be concerned if you do not see ladybugs around.



Conditions: 12 hours light, 18 to 37C (65 to 100F), humidity 20% to 80%

The Good News

Native Ladybug populations are slowly recovering with new release and with less chemicals being indiscriminately used.

WHAT ELSE CAN I DO TO CARE FOR MY LADYBUGS?

Beneficial Insect Food

Help the ‘ladies’ to lay more eggs and to stay around longer, Beneficial Insect Food provides an extra protein food which also attracts lacewings and other native ‘good bugs’.

Ladybug Lures

Simulate the smell of the aphids, a ladybug’s favourite food. This helps to attract ladybugs, lacewings and other beneficial insects to your garden.

WE ARE NOT NATIVE, BUT WE ARE STILL GOOD

Harmonia axyridis, The Asian Ladybug is an imported beneficial insect that was introduced by the US government many years ago. In 2001, there was a major aphid infestation in field soya crops; this produced many more Asian Ladybugs. In Asian countries the *Harmonia* Ladybug hibernates in cracks and crevices in the mountains. In Canada, our houses become their places to hibernate. Vacuuming is the easiest way to rid your home of the pesky but good insects. *Harmonia* are larger and more rounded with orange legs in comparison to our native ladybugs.



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2019 Crop Recommendation

Aphids

This pest can come on quickly, scout your plants on a regular basis (1 to 2 per week) and keep records. Aphids are drawn to plants that are high in nitrogen. Add your nitrogen in small amounts over a longer period of time as this can make the plants less like “aphid magnets”. You will find that some plants are more prone to certain pests, from your list keep an eye on Calibrachoa (we have other customers that find this is an aphid favorite and it needs to be treated chemically).

Know your Aphids Species:

Green Peach Aphids: can be green, pink or red in color. The cornicles (2 “tall pipes” that stick out the back of the insect) are green and slightly swollen at tip. This is the most common species, watch for this one on peppers.

Melon/Cotton Aphids: can be brown to dark green with black cornicles. Watch for this on peppers and cucumbers. This very common aphid species in greenhouses.

Potato Aphids: a long legged and spindle-shaped aphid with black cornicles. These can be found on tomatoes and peppers. Not as common, but a few greenhouses are seeing them.

Foxglove Aphids: can be whitish green to green body with a dark green spot at base of cornicles. These can be seen on tomatoes, peppers and many other annual crops.

Aphid Controls:

Ladybugs (*Hippodamia convergens*) -general predator will feed on many aphids species, does not feed well on melon/cotton aphids.

Lacewings (*Chrysoperla spp.*) -general predator and try our Lacewing on Strings for easy application.

Brown Lacewing (*Micromus variegates*)-Cool season predator (works at 4°C)

Aphelinus abdominalis -Potato and Foxglove aphids.

Aphidoletes aphidimyza -Green peach, melon/cotton, potato and foxglove. Your best Preventative Aphid control

Aphidius colemani -melon/cotton aphids.

Aphidius matricariae -Green peach, same melon/cotton aphids.

Aphidius ervi –Potato and foxglove aphids

Beneficial Insect	Pests	General Release Rates
Ladybugs	Most Aphid Species	1000 Ladybugs covers 50m ² (550 ft ²)
Lacewings	Most Aphid Species	1000 eggs cover 18.5 to 46.5 m ² (200 to 500 ft ²)/week
Brown Lacewing	Most Aphid Species	1/m ² (10 ft ²) or 100 per hotspot every 2 weeks.
<i>Aphelinus abdominalis</i>	Potato and Foxglove aphids	0.5-2/m ² (0.5-2/10ft ²)
<i>Aphidoletes aphidimyza</i>	Green peach, melon/cotton, potato and foxglove aphids	250 Aphidoletes per 500m ² (5500 ft ²)
<i>Aphidius colemani</i>	melon/cotton aphids	0.5 to 1 /m ² . (10 ft ²)/week
<i>Aphidius matricariae</i>	Green peach, same melon/cotton aphids	0.5 to 1/m ² (10 ft ²)/week
<i>Aphidius ervi</i>	Potato and foxglove aphids	0.5-1 <i>Aphidius</i> /m ² (10ft ²)/week

Many thanks to Applied Bionomics for these recommendations.

Looking for Prevention?

Aphid preventative program, use *Aphidoletes aphidimyza*. You should release 250 Aphidoletes per 5500 ft²/500m² every week. If the aphid population begins to rise, we can introduce other beneficials depending on the aphid species.

Bug Bites: Tips on Aphid Control

To improve the cool season performance of Aphidoletes, the addition of LED Christmas light (green range) will significantly increase the effectiveness. With these lights, Aphidoletes are able to control Green Peach aphids and then move on to other species like Foxglove.

For further Information Contact: **NATURAL INSECT CONTROL**, 3737 Netherby Road, Stevensville, Ontario, L0S 1S0
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For further Information on all NIC Beneficial Insects go to **www.naturalinsectcontrol.com**

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