The Worms Won't Squirm
Intrepid® insecticide is in the MAC (molt accelerating compound) class of products and provides consistent, long-lasting control of lepidopterous pests, yet possesses the environmental characteristics associated with biological insecticides. Intrepid is registered on nearly 300 individual crops, including cole/leafy crops, fruiting vegetables, cotton, tree fruits and grapes, and is widely used in all of these crops.

**PESTS CONTROLLED**
- All armyworms
- Alfalfa caterpillar
- Alfalfa looper
- Webworm
- Cutworm, saltmarsh caterpillar (Intrepid has excellent activity on these pests and is labeled to control them in other crops.)

Intrepid controls worms by ingestion. Larvae typically stop feeding immediately and death occurs in 2-4 days. All larval instars are controlled, including those emerging from eggs.

**LONG-LASTING CONTROL**
Based on field research, Intrepid is not appreciably photoreactive and, therefore, not degraded by ultraviolet light. This characteristic gives Intrepid long-lasting residual – 14 days (and more depending on rate) on treated foliage. No other insecticide used in alfalfa provides a longer residual.

**IPM COMPATIBLE**
Intrepid does not disrupt beneficial insect predators, parasites or bees. In nine years of use, there has not been a single reported case of a secondary pest outbreak caused by an Intrepid application. Alfalfa serves as a prime refuge for beneficial arthropods. Use of Intrepid will allow those beneficials to thrive, helping to control pests in alfalfa and in neighboring crops.

**WORKER SAFETY**
Intrepid was reviewed and registered under the EPA’s Reduced Risk Pesticide Program. In 1998, the MAC family of insecticides received the Presidential Green Chemistry Award from the U.S. EPA.

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Lock-On® insecticide contains the active ingredient chlorpyrifos, the same as in Lorsban® Advanced insecticide. Lock-On is formulated with a low-volatile polymer carrier to enhance product performance in hot, dry conditions and extend residual control.

**PESTS CONTROLLED**
- All armyworms
- Alfalfa caterpillar
- Aphids (blue, pea, cowpea)

Lock-On provides superior control of all levels of infestation – larvae and adults. Pests are controlled via contact, ingestion and the unique redistribution (i.e. fuming) ability of Lock-On. Plus, Lock-On won’t cause secondary pest outbreaks.

**4-DAY PHI**
At all rates, the PHI for Lock-On is 4 days, allowing economical control of pests close to cutting.
Lorsban Advanced insecticide – a low odor, low volatile organic compound (VOC) formulation – contains the active ingredient chlorpyrifos, the same as in Lorsban-4E. It is the first and only chlorpyrifos-containing insecticide using this innovative emulsion in water (EW) formulation technology in the U.S.

The redistribution (i.e., fuming) ability of Lorsban Advanced is one of its most valuable characteristics. The redistribution of chlorpyrifos is often strong enough to control pests that are not otherwise controlled by direct contact or ingestion. (See data at right.) This characteristic is especially beneficial where pests are nearly immobile or located in hard-to-reach areas.

**PESTS CONTROLLED**
- All armyworms
- Alfalfa caterpillar
- Cutworm
- Aphids (blue, pea, cowpea)
- Webworm

Lorsban Advanced provides superior control of all levels of infestation – larvae and adults. It won’t cause secondary pest outbreaks.

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<table>
<thead>
<tr>
<th>Intrepid</th>
<th>Lock-On</th>
<th>Lorsban Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active ingredient</td>
<td>methoxyfenozide</td>
<td>chlorpyrifos</td>
</tr>
<tr>
<td>Class of chemistry</td>
<td>diacylhydrazine (IRAC Group 1B)</td>
<td>organophosphate (IRAC Group 1B)</td>
</tr>
<tr>
<td>Application method</td>
<td>ground and air</td>
<td>ground and air</td>
</tr>
<tr>
<td>Re-entry interval</td>
<td>4 hours</td>
<td>24 hours</td>
</tr>
<tr>
<td>Pre-harvest interval</td>
<td>7 days</td>
<td>4 days</td>
</tr>
<tr>
<td>Specific use restrictions</td>
<td>see label</td>
<td>Do not make more than 4 applications per year of any product containing chlorpyrifos or apply any product containing chlorpyrifos more than 1 time per cutting.</td>
</tr>
</tbody>
</table>

Fuming action helps control pests in thick canopies.
Field trial compared the fuming/vapor activity of Lorsban-4E and Lorsban Advanced. Lorsban-4E is formulated as an emulsifiable concentrate (EC). Lorsban Advanced is a water-based emulsion in water (EW) formulation.

The fuming action of Lorsban is a valuable characteristic for controlling pests in hard-to-reach areas, such as the thick canopy of an alfalfa stand.

For this trial, a randomized complete block design was used with five replicates for each formulation. Within each plot was an untreated sub-plot. Prior to application, a lettuce box was placed over the sub-plot, effectively creating an area not receiving direct contact with the insecticides. Boxes were removed immediately after application.

Aphid (pea, blue, cowpea) control was assessed in the main plots and in the sub-plots at 1, 3 and 7 days after treatment. The experiment was conducted twice.

As shown in these two charts, little to no difference was seen in the fuming/vapor activity between the two formulations. The fuming activity of Lorsban Advanced provides an important method to control pests.

Complete information about these trials can be found at http://ceimperial.ucdavis.edu
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Lorsban Advanced, Lorsban-4E and Lock-On are federally Restricted Use Pesticides. State restrictions on the sale and use of Intrepid apply. Consult the label prior to purchase or use for full details. www.dowagro.com
