WHAT IS DURIVO?

Insect Protection With Durivo

Durivo® insecticide is a broad-spectrum, systemic insecticide controlling key lepidopteran, sucking and chewing insect pests in vegetables. When Durivo is applied to the soil, it is readily taken up by the roots of germinating seedlings or transplants and is rapidly translocated throughout the plant. Because of its systemic activity, Durivo provides excellent residual control of key insect pests in fruiting vegetables.

Durivo Spectrum Of Activity

<table>
<thead>
<tr>
<th>SUCKING AND CHEWING INSECTS</th>
<th>LEPIDOPTERANS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aphids</td>
<td>Beet Armyworm</td>
</tr>
<tr>
<td>Colorado Potato Beetle</td>
<td>Fall Armyworm</td>
</tr>
<tr>
<td>Flea Beetles</td>
<td>Hornworm species</td>
</tr>
<tr>
<td>Leafhoppers</td>
<td>Loopers</td>
</tr>
<tr>
<td>Leafminers*</td>
<td>Southern Armyworm</td>
</tr>
<tr>
<td>Potato Psyllid</td>
<td>Tomato Fruitworm</td>
</tr>
<tr>
<td>Thrips</td>
<td>Tomato Pinworm</td>
</tr>
<tr>
<td>Whiteflies</td>
<td>Yellowstriped Armyworm</td>
</tr>
</tbody>
</table>

*Suppression

Suggested Fruiting Vegetable Programs For Insect Control

Western Production Areas Tomato Insect Control

Option One:
1) Durivo applied at planting or post-planting (about two weeks after planting as a shank or drip chemigation) provides significant residual control of key sucking and chewing insect pests, including flea beetles, whiteflies, aphids, thrips, leafminers and lepidopteran pests.
2) Apply Agri-Mek ® insecticide around mid-season when mite populations occur.
3) If necessary, apply Trigard ® insecticide mid-season to control stubborn leafminer populations. Rotate Trigard with Agri-Mek to provide resistance management in leafminer populations.
4) The use of Proclaim ™, Voliam Xpress ™ and Warrior II with Zeon Technology ® insecticides in rotation provides excellent late-season lepidopteran control while utilizing multiple modes of action for resistance management. Warrior II with Zeon Technology and Voliam Xpress will also provide good knockdown and control of stink bugs and plant bugs when present.

Option Two:
1) Platinum® insecticide applied at planting provides long residual control of sucking insects, including flea beetles, whiteflies, aphids, thrips and leafminers.
2) The use of Voliam Xpress, Proclaim and Warrior II with Zeon Technology in rotation provides excellent lepidopteran control while utilizing multiple modes of action for resistance management. Warrior II with Zeon Technology and Voliam Xpress will also provide good knockdown and control of stink bugs and plant bugs when present.
3) Apply Agri-Mek around mid-season when mite populations occur.
4) If necessary, apply Trigard mid-season to control stubborn leafminer populations. Rotate Trigard with Agri-Mek to provide resistance management in leafminer populations.

Option Three:
1) Syngenta has a broad portfolio of foliar-applied products to manage any pest situation in tomatoes:
   a) Actara ® insecticide applied early in the season provides control of flea beetles, aphids, thrips and whiteflies. Repeat as necessary to control recurring sucking insect pest populations.
   b) Fulfill ™ insecticide to provide another mode of action for control of aphids.
   c) Apply Agri-Mek around mid-season when mite populations occur.
   d) If necessary, apply Trigard mid-season to control stubborn leafminer populations. Rotate Trigard with Agri-Mek to provide resistance management in leafminer populations.

Timing of key pests

1. Western Production Areas Tomato Insect Control
   - Flea Beetles
   - Thrips, Beet Leafhopper, Leafminer
   - Whiteflies, Aphids (Green Peach, Potato)
   - Lepidopteran Complex: Armyworms, Loopers, Tomato Fruitworm, Tomato Pinworm
   - Stink Bugs, Lygus Species
   - Mitia

Option 1: At-planting/post-planting program followed by foliar program
- Durivo (at-planting/post-planting application)
- Agri-Mek, Trigard
- Proclaim
- Warrior II with Zeon Technology
- Voliam Xpress

Option 2: At-planting followed by foliar program
- Platinum applied at planting
- Voliam Xpress
- Proclaim
- Warrior II with Zeon Technology

Option 3: Foliar program only
- Actara
- Fulfill
- Agri-Mek
- Trigard
- Voliam Xpress
- Proclaim
- Warrior II with Zeon Technology
- Voliam Flexi
Use Agri-Mek for mites, pinworms and leafminers, and Trigard for leafminers as needed.

Platinum 75SG applied at planting provides long residual control of sucking insects, including flea beetles, whiteflies, aphids, thrips, leafminers and lepidopteran species. When Durivo is applied at planting, Coragen® insecticide may be applied through drip lines four to five weeks following Durivo for extended lepidopteran and leafminer control.

Fulfill applied before transplanting helps reduce the incidence of tomato yellow leaf curl virus (TYLCV).

Planthouse Three to five leaves after transplanting
Pre-bloom Early fruit set Green fruit Early ripening Ripe fruit

Option One: Fulfill at transplanting

- Whiteflies
- Flea Beetles
- Leathoppers

- Lepidopteran Complex: Fruitworm, Armyworms, Pinworm, Loopers

- Aphids (Green Peach)
- Mites
- Stink Bugs

Fulfill

- Durivo at transplanting
- Agri-Mek
- Trigard

- Proclaim
- Voliam Xpress
- Warrior II with Zeon Technology

Option Two: Durivo three to four weeks after transplanting

- Fulfill

- Imidacloprid or dinotefuran at transplanting

- Durivo 3-4 weeks after transplanting

- Agri-Mek
- Trigard

- Proclaim
- Voliam Flexi
- Voliam Xpress
- Warrior II with Zeon Technology

Option Three: Platinum at transplanting followed by a foliar program

- Fulfill

- Platinum applied at transplanting

- Proclaim
- Voliam Flexi
- Voliam Xpress
- Warrior II with Zeon Technology

- Agri-Mek
- Trigard

- Proclaim
- Voliam Xpress
- Warrior II with Zeon Technology

Florida Insect Control

Atlantic Coast District Insect Control

Flea Beetles
Leathoppers
Lepidopteran Complex: Armyworms, Fruitworm, Pinworm, Loopers
Aphids (Green Peach)
Mites
Stink Bugs

Platinum 75SG at planting

- Fulfill

- Voliam Xpress
- Warrior II with Zeon Technology

- Agri-Mek
- Trigard

- Proclaim
- Voliam Xpress
- Warrior II with Zeon Technology

Option One – At Transplanting:

1) Fulfill applied before transplanting helps reduce the incidence of bermuda yellow leaf curl virus (TLCY).

2) Durivo applied at transplanting provides five weeks of broad-spectrum insect control to get your stand off to a productive start. It provides residual control of sucking and chewing pests, including flea beetles, whiteflies, aphids, thrips, leafminers and lepidopteran pests. When Durivo is applied at transplanting, Coragen® insecticide may be applied through drip lines four to five weeks following Durivo for extended lepidopteran and leafminer control.

3) If needed, rotate Proclaim, Voliam Xpress and Warrior II with Zeon Technology for late season control of lepidopteran pests.

4) Use Agri-Mek and Trigard for control of late season leafminers.

Option Two – Durivo After Transplanting:

1) Fulfill applied before transplanting helps reduce the incidence of TLCY.

2) Durivo can be applied three to four weeks after transplanting on acres treated previously with imidacloprid or dinotefuran. Durivo will provide significant residual control of sucking and chewing pests, including flea beetles, whiteflies, aphids, thrips, lepidopteran species. When Durivo is applied three to four weeks after transplanting, Coragen® insecticide may be applied through drip lines three to five weeks following Durivo for late season lepidopteran and leafminer control.

3) If needed, rotate Proclaim, Voliam Xpress and Warrior II with Zeon Technology for late season control of lepidopteran pests.

Option Three – Platinum After transplanting:

1) Fulfill applied at transplanting provides five weeks of broad spectrum insect control to get your stand off to a productive start. It provides residual control of sucking and chewing pests, including flea beetles, whiteflies, aphids, thrips, leafminers and lepidopteran pests. When Durivo is applied at transplanting, Coragen® insecticide may be applied through drip lines four to five weeks following Durivo for extended lepidopteran and leafminer control.

2) Use Agri-Mek or Trigard for control of late season leafminers.

3) If needed, rotate Proclaim, Voliam Xpress and Warrior II with Zeon Technology for late season control of lepidopteran pests.
**TECHNICAL OVERVIEW**

**Technical Features**

- Broad-spectrum, systemic insecticide that controls key lepidopteran, sucking and chewing insect pests
- Combination of chlorantraniliprole (CTPR) and thiamethoxam (TMX)
- Readily taken up by the roots of germinating seeds or transplants and rapidly transported throughout the plant
- Low use rates
- Provides excellent residual control of key insect pests in vegetables
- Compatible with Integrated Pest Management (IPM) programs—minimal impact on beneficial arthropods
- Wide margin of plant safety when used in accordance with the label

**Technical Profile**

<table>
<thead>
<tr>
<th>Chemistry</th>
<th>Chlorantraniliprole: diamide, Insecticide Resistance Action Committee (IRAC) Group 28; Thiamethoxam: neonicotinoid, IRAC Group 4A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formulation</td>
<td>Soluble concentrate containing 2.5 lb a.i./gal</td>
</tr>
<tr>
<td>Precautions/Safety</td>
<td>Caution, Standard Personal Protective Equipment (PPE), 12-hour Restricted-entry Interval (REI)</td>
</tr>
<tr>
<td>Tank Mix Guidelines</td>
<td>Durivo is compatible with most commonly used tank mix partners; however, always consult the product label for complete use directions and precautions.</td>
</tr>
</tbody>
</table>

**Durivo Label At A Glance**

<table>
<thead>
<tr>
<th>Fruit Vegetables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rate</strong></td>
</tr>
<tr>
<td><strong>Maximum Amount per Growing Season</strong></td>
</tr>
<tr>
<td><strong>Preharvest Interval (PHI)</strong></td>
</tr>
<tr>
<td><strong>REI</strong></td>
</tr>
<tr>
<td><strong>Use Restrictions</strong></td>
</tr>
</tbody>
</table>

*Always consult the product label for a complete list of registered crops, use directions and application information.

**DIRECTIONS FOR USE**

**Best Use Guidelines**

- Durivo should be applied during planting or transplanting as an in-furrow spray, transplant hole drench or narrow surface band above the seedline; after planting as a post-seeding, post-transplanting or hill drench; drip chemigation; or root zone and shank application, which allow the insecticide to be absorbed by plant roots. Although Durivo is quickly taken up by plant roots and rapidly moves throughout the plant, the use of sufficient water volume will ensure the product contacts the roots, resulting in optimal uptake and performance.
- Some insect pests are known to develop resistance to products after repeated use. Because resistance development cannot be predicted, the use of Durivo should conform to sound resistance management practices established for the crop and use area.

*Always read and follow label instructions before buying or using this product.
PERFORMANCE RESULTS

TOMATOES: Thrips (*Frankliniella* spp.) Control

![Graph showing Thrips control from 11-Jun-08 to 3-Jun-08 and 9-Jun-08](image)

- **Platinum** 2SC - 11 fl oz/A - Drench Band - PT
- **Durivo** - 10 fl oz/A - Drench Band - PT
- **Durivo** - 13 fl oz/A - Drench Band - PT
- Untreated Check

**Notes:**
- PT = Post Transplant, PT – 29 May
- Source: USEB01042008 – T. Kuhar, Virginia Polytechnic Institute and State University; Painter, Virginia, 2008

PPERS: Western Flower Thrips (*Frankliniella occidentalis*) Control

![Graph showing Thrips control from 3-Jun-08 to 9-Jun-08](image)

- **Durivo** - 10 fl oz/A - Drench Incorporated - PT
- **Durivo** - 13 fl oz/A - Drench Incorporated - PT
- **Radiant** 1SC - 8 fl oz/A + Provado 1.6F - 4 fl oz/A
- Untreated Check

**Notes:**
- PT = Post Transplant, PT – 29 May, F – 29 May
- Source: USWA02252008 – D. Holden, CRO; Oxnard, California, 2008

TOMATOES: Tomato Fruitworm (*Helicoverpa zea*) and Beet Armyworm (*Spodoptera exigua*) Control

![Graph showing Pest Control from 14-Nov-09 to 19-Nov-09](image)

- **Durivo** - 13 fl oz/A - PP - Drench
- Untreated Check

**Notes:**
- Plant – 9 September; PP = Post Plant, PP – 30 September
- Source: USVH00222009 – Syngenta VBRC; Vero Beach, Florida, 2009

TOMATOES: Tomato Fruitworm (*Helicoverpa zea*) and Beet Armyworm (*Spodoptera exigua*) Control

![Graph showing Pest Control from 20-Oct-09](image)

- **Durivo** - 10 fl oz/A - PT - Drip Surface
- **Durivo** - 13 fl oz/A - PT - Drip Surface
- **Coragen** - 3.5 fl oz/A - PT - Drip Surface
- **Coragen** - 5 fl oz/A - PT - Drip Surface
- Untreated Check

**Notes:**
- Transplant – 13 July; PT = Post Transplant, PT – 10 September
- Source: USWCI0352009 – Syngenta; Visalia, California, 2009

For more information, visit www.syngentacropprotection.com, www.durivo-insecticide.com or call the Syngenta Customer Center at 1-866-SYNGENTA (796-4368).

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Important: Always read and follow label instructions before buying or using Syngenta products. The instructions contain important conditions of sale, including limitations of warranty and remedy.

Agri-Mek, Proclaim, Voliam Xpress and Warrior II with Zeon Technology are Restricted Use Pesticides.

Actara, Durivo, Platinum, Platinum 75SG, Voliam Flexi and Voliam Xpress are not currently registered for use or sale in all states. Please check with your state or local extension service before buying or using these products.

Actara, Agri-Mek, Durivo, Platinum, Platinum 75SG, Proclaim, Voliam Flexi, Voliam Xpress and Warrior II with Zeon Technology are highly toxic to bees exposed to direct treatment on blooming crops and weeds. Do not apply these products or allow them to drift onto blooming plants while bees are foraging in the treatment area.

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