Transform™
INSECTICIDE
ISOCLAST™ ACTIVE

Superior aphid control.

Solutions for the Growing World
Features of Transform

- Superior aphid and whitefly control
- Fast knockdown and cessation of feeding to limit the spread of disease
- Systemic & translaminar movement to protect new untreated growth
- Extended residual control
- IPM friendly – safe to key beneficial insects
- New mode of action for resistance management
- Excellent environmental & toxicological profile – use with confidence

About Green Peach Aphid

Green peach aphid (GPA) feed extensively on many food sources, this is important because of its ability to transmit multiple viruses. GPA can overwinter as eggs, or reproduce asexually year-round on a large range of hosts, including potatoes, tomatoes, brassicas, beets or weeds, such as docks, sow thistle and capeweed. Some of the viruses transmitted by GPA include potato leaf roll, tomato yellow top, cucumber mosaic, lettuce mosaic and zucchini yellow mosaic. Direct feeding damage by low numbers of green peach aphid causes little damage to plants, although low numbers of aphids can spread unacceptable amounts of plant viruses. GPA is distributed worldwide and several resistant strains having been identified with recorded resistance to organophosphates, organochlorines, carbamates and synthetic pyrethroids (New Zealand Plant Protection Society, 2015).
FAST KNOCK-DOWN

**UNTREATED**

**TRANSFORM** *24g ai/hL*

1 HOUR

2 HOUR

6 HOUR

24 HOUR

Photos: R. Annetts (DAS).

SUPERIOR APHID CONTROL

Consistently, Transform outperformed market standards demonstrating a high degree of control over multiple trials. Trials conducted by Dow AgroSciences on green peach aphid, potato aphid and cabbage aphid repeatedly exhibit fast knockdown and long lasting residual control ranging from 14-21 days post treatment.

Compilation of global trial data of the effect of Transform against green peach aphid on multiple crops. Conclusion: Transform gave very high levels of control of green peach aphid in all crops.
Superior aphid and whitefly control

GREENHOUSE WHITEFLY - TRANSFORM 400 ML/HA

PERCENTAGE OF CONTROL

GREENHOUSE WHITEFLY - TRANSFORM 400 ML/HA

ABOUT GREENHOUSE WHITEFLY

Greenhouse whitefly (Trialeurodes vaporariorum) can become a problem in the summer months or under dry warm conditions. Adult whitefly can be found mainly on the underside of young leaves, as can the eggs and juveniles. Whiteflies are inclined to develop rapid resistance to some insecticide groups, particularly if those insecticide groups are frequently used. Whiteflies are vectors of plant viruses and cucurbits and Solanaceae crops are most susceptible to infestations. Farm hygiene is an important cultural practice, weed hosts include mallows and thistles.

Life Cycle: Once the egg is laid it is usually 7 days until the nymph emerges. Around 14-35 days later the nymph develops into a pupa. Then 9-23 days later the pupae opens and fully grown winged adults emerge, ready and able to lay eggs. Generally the lifecycle is 30–65 days in length, depending on environmental conditions (Jelinek, S, 2010).

UNIQUE ACTIVE

The powerful active ingredient in Transform, Isoclast™, belongs to a new insecticide group known as the ‘sulfoximines’ which are classified as IRAC group 4C. The Sulfoximines do not exhibit cross resistance to any other insecticidal group thereby making it an ideal rotation partner for resistance management purposes. It has excellent efficacy against a wide variety of sap-feeding insects, in particular aphids and whiteflies. Transform also has translaminar activity, moving from the leaf surface to its interior where it cannot be washed off – this provides residual control. Trials conducted by Dow AgroSciences demonstrate efficacy against aphids for 14–21 days after application, depending on the application rate, aphid species and crop.

RESISTANCE MANAGEMENT

Aphids have a history of developing resistance to insecticides; therefore the considered and appropriate use of insecticides with alternative modes of action is vital. Do not make more than four applications of Transform per crop in any in any one season.

- Rotate insecticides with different modes of action (i.e. IRAC groups)
- Use recommended rates
- Follow label restrictions on re-treatment interval and number of applications
- Avoid treating consecutive insect generations
Superior aphid control

Compatibility
Transform is a suspension concentrate formulation and is physically compatible with a wide range of crop protection products. Consult Dow AgroSciences and/or the manufacturer of the intended mixing partner if compatibility has not been established. Always conduct a “bucket” test prior to making an untested tank mixture.

Tank mixing order:
- Water conditioners (e.g. pH adjusters) if required
- Transform (and any other SC, WG or WP formulations)
- ECs and oils
- Water soluble products
- Wetting agents (where required)

Pre-Harvest Intervals
Do not allow livestock to graze treated vegetable paddocks after harvest.

Cucurbits field-grown only (excluding pumpkins and winter squash) Do not harvest for 1 day after the last application.

Systemic Activity
Transform is active against target pests by direct contact as well as moving systemically upwards and outwards through the sap stream via the xylem to provide protection to young, fast growing plants where new growth is particularly prone to aphid attack.

SAFETY TO BENEFICIAL INSECTS - IPM
Transform is selective to key beneficial insects such as lacewings, beetles (including ladybeetles), hoverflies, earwigs and spiders which aid in the natural control of aphid populations and undertake a valuable ‘clean-up’ role against any surviving aphids, thus lessening the risk of resistance developing in these survivors. Beneficials also help control other pest populations. This is in contrast to broad spectrum organophosphate & pyrethroid insecticides which significantly reduce beneficial insect populations resulting in an increased dependency on additional insecticide applications.

Note that Transform is toxic to bees on direct contact. Transform is safe to foraging bees once the spray deposit is dry and has no ill effect on hive health.

APPLICATION
Thorough coverage of the crop is essential. Ensure this by increasing water volume with plant growth stage. Avoid high temperatures, strong winds, inversion conditions, imminent rain or any other condition that may reduce the quality of spray coverage or result in drift from the target area.

Apply in a minimum of 250 L/ha of water. Increase spray volumes as the crop grows.

Wetting Agents
Not all wetting agents or adjuvants are of equal quality. Dow AgroSciences only recommends use of reputable non-ionic wetting agents with a proven history of safe use on vegetable crops. Consult Dow AgroSciences for further advice.

Safety to Beneficial Insects - IPM
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Crop Withholding Period

<table>
<thead>
<tr>
<th>Crop</th>
<th>Withholding Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruiting vegetables (excluding sweet corn and mushroom)</td>
<td>1 day after last application</td>
</tr>
<tr>
<td>Leafy vegetables</td>
<td>3 days after last application</td>
</tr>
<tr>
<td>Vegetable brassicas</td>
<td>3 days after last application</td>
</tr>
<tr>
<td>Root and tuber vegetables</td>
<td>7 days after last application</td>
</tr>
</tbody>
</table>
**Directions for use (refer to product label prior to use)**

<table>
<thead>
<tr>
<th>Crop</th>
<th>Pest</th>
<th>Rate (ml/ha)</th>
<th>Critical comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cucurbits, field-grown only [excluding pumpkins and winter squash]</strong></td>
<td>Aphids (including green peach aphid, Melon (cotton) aphid)</td>
<td>200 – 300</td>
<td>Use higher rate under heavy aphid infestations or if longer residual control is required.</td>
</tr>
<tr>
<td></td>
<td>Greenhouse whitefly</td>
<td>400</td>
<td>Ensure accurate species identification.</td>
</tr>
<tr>
<td><strong>Fruiting vegetables, including chili, capsicum, eggplant, okra and tomatoes [excluding sweet corn and mushrooms]</strong></td>
<td>Aphids (including green peach aphid)</td>
<td>200 – 300</td>
<td>Use higher rate under heavy aphid infestations or if longer residual control is required.</td>
</tr>
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<tr>
<td><strong>Leafy vegetables, including lettuce (all varieties), Asian greens, silver beet and spinach</strong></td>
<td>Aphids (including green peach aphid and brown sowthistle aphid) [excluding lettuce aphid]</td>
<td>200 – 300</td>
<td>Use higher rate under heavy aphid infestations or if longer residual control is required.</td>
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</tr>
<tr>
<td><strong>Root and tuber vegetables, including potatoes and carrots</strong></td>
<td>Aphids (including green peach aphid)</td>
<td>200 – 300</td>
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</tr>
<tr>
<td><strong>Vegetable brassicas, including Asian greens, broccoli, Brussels sprouts, cabbage and cauliflower</strong></td>
<td>Aphids (including cabbage aphid and green peach aphid)</td>
<td>200–300 (+ wetting agent)*</td>
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</table>

*Addition of a wetting agent may improve control under less than ideal application conditions. Use the wetter according to label directions, see Wetting Agents section.

**DO NOT** make more than 4 applications per crop in any one season. Apply when pest thresholds are exceeded at no less than 14-day intervals. Monitor crops for pest species by regular field scouting. Target sprays against insect populations when they exceed threshold level.

**CONTACT INFORMATION**
For more information on Transform, contact your local Dow AgroSciences representative on 0800 803 939 or visit www.dowagrosciences.co.nz

**REFERENCES**

**Transform**
**INSECTICIDE**
**ISOCLAST® ACTIVE**

**Dow AgroSciences**
www.dowagrosciences.co.nz

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**Confidence in a drum**

**Solutions for the Growing World**