

# **FOR CONTROL OF LYGUS BUGS IN COTTON - MISSOURI**

## General Information

### PRODUCT INFORMATION

Carefully read, understand and follow label use rates and restrictions. Apply the amount specified in the following tables with properly calibrated aerial or ground spray equipment. Prepare only the amount of spray solution required to treat the measured acreage. The low rates may be used for light infestations of the target pests and the higher rates for moderate to heavy infestations. Transform WG insecticide may be applied in either dilute or concentrate sprays so long as the application equipment is calibrated and adjusted to deliver thorough, uniform coverage. Use the specified amount of Transform WG per acre regardless of the spray volume used.

### Use Precautions

#### Integrated Pest Management (IPM) Programs

Transform WG is recommended for IPM programs in labeled crops. Apply Transform WG when field scouting indicates target pest densities have reached the economic threshold, i.e., the point at which the insect population must be reduced to avoid economic losses beyond the cost of control. Other than reducing the target pest species as a food source, Transform WG does not have a significant impact on most parasitic insects or the natural predaceous arthropod complex in treated crops, including big-eyed bugs, ladybird beetles, flower bugs, lacewings, minute pirate bugs, damsel bugs, assassin bugs, predatory mites or spiders.

The feeding activities of these beneficials will aid in natural control of other insects and reduce the likelihood of secondary pest outbreaks. If Transform WG is tank mixed with any insecticide that reduces its selectivity in preserving beneficial predatory insects, the full benefit of Transform WG in an IPM program may be reduced.

#### Insecticide Resistance Management (IRM)

Transform WG contains a Group 4C insecticide. Insect biotypes with acquired

resistance to Group 4C insecticides may eventually dominate the insect population if Group 4C insecticides are used repeatedly in the same field or area, or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by Transform WG or other Group 4C insecticides.

To delay development of insecticide resistance, the following practices are recommended:

- Avoid consecutive use of insecticides on succeeding generations with the same mode of action (same insecticide subgroup, 4C) on the same insect species.
- Consider tank mixtures or premix products containing insecticides with different modes of action (different insecticide groups) provided the products are registered for the intended use.
- Base insecticide use upon comprehensive IPM programs.
- Monitor treated insect populations in the field for loss of effectiveness.
- Do not treat seedling plants grown for transplant in greenhouses, shade houses, or field plots.

#### Application Directions

##### Not for Residential Use

Do not apply Transform WG in greenhouses or other enclosed structures used for growing crops.

Proper application techniques help ensure thorough spray coverage and correct dosage for optimum insect control. Apply Transform WG as a foliar spray at the rate indicated for target pest. The following directions are provided for ground and aerial application of Transform WG. Attention should be given to sprayer speed and calibration, wind speed, and foliar canopy to ensure adequate spray coverage.

##### Spray Drift Management

**Wind:** To reduce off-target drift and achieve maximum performance, apply when wind velocity favors on-target product deposition (approximately 3-10 mph). Do not apply when wind speed exceeds 10 mph as uneven spray coverage and drift may result.

**Temperature Inversions:** Do not make ground or aerial applications during a temperature inversion. Temperature inversions are characterized by stable air and

increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

**Droplet Size:** Use only medium or coarser spray nozzles (for ground and non-ULV aerial application) according to ASABE (S-572.1) definition for standard nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size except where indicated for specific crops.

### Ground Application

To prevent drift from groundboom applications, apply using a nozzle height of no more than 4 feet above the ground or crop canopy. Shut off the sprayer when turning at row ends. Risk of exposure to sensitive aquatic areas can be reduced by avoiding applications when wind directions are toward the aquatic area.

### Row Crop Application

Use calibrated power-operated ground spray equipment capable of providing uniform coverage of the target crop. Orient the boom and nozzles to obtain uniform crop coverage. Use a minimum of 5 to 10 gallons per acre, increasing volume with crop size and/or pest pressure. Use hollow cone, twin jet flat fan nozzles or other atomizer suitable for insecticide spraying to provide a fine to coarse spray quality (per ASABE S-572.1, see nozzle catalogs). Under certain conditions, drop nozzles may be required to obtain complete coverage of plant surfaces. Follow manufacturer's specifications for ideal nozzle spacing and spray pressure. Minimize boom height to optimize uniformity of coverage and maximize deposition (optimize on-target deposition) to reduce drift.

### Orchard/Grove Spraying Application

**Dilute Spray Application:** This application method is based upon the premise that all plant parts are thoroughly wetted, to the point of runoff, with spray solution. To determine the number of gallons of dilute spray required per acre, contact your state agricultural experiment station, certified pest control advisor, or extension specialist for assistance.

**Concentrate Spray Application:** This application method is based upon the premise

that all the plant parts are uniformly covered with spray solution but not to the point of runoff as with a dilute spray. Instead, a lower spray volume is used to deliver the same application rate per acre as used for the dilute spray.

### Aerial Application

Apply in a minimum spray volume of 3 gallons per acre. Mount the spray boom on the aircraft so as to minimize drift caused by wing tip or rotor vortices. Use the minimum practical boom length and do not exceed 75% of the wing span or 80% of the rotor diameter. Flight speed and nozzle orientation must be considered in determining droplet size. Spray must be released at the lowest height consistent with pest control and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. When applications are made with a crosswind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind. Do not apply when wind speed exceeds 10 mph.

### Spray Adjuvants

The addition of agricultural adjuvants to sprays of Transform WG may improve initial spray deposits, redistribution and weatherability. Select adjuvants that are recommended and registered for your specific use pattern and follow their use directions. When an adjuvant is to be used with this product, Dow AgroSciences recommends the use of a Chemical Producers and Distributors Association certified adjuvant. Always add adjuvants last in the mixing process.

### Limitations, Restrictions, and Exceptions

### Directions for Use

Advisory Pollinator Statement: Notifying known beekeepers within 1 miles of the treatment area 48 hours before the product is applied will allow them to take additional steps to protect bees. If known apiaries are within one mile of cotton fields intended for treatment, applications should be made before 7:00 a.m. or after 7:00 p.m. local time during the flowering period. Growers are advised to refer to and, where feasible, observe the cooperative standards outlined in the Missouri Pollinator Conservancy Program for additional guidance and bee conservation stewardship efforts.

Application Timing: Treat in accordance with local economic thresholds. Consult your Dow AgroSciences representative, cooperative extension service, certified crop advisor or state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Use a higher rate in the rate range for heavy pest populations. Two applications may be required for optimum tarnished plant bug control under high pest pressure or heavy immigration of plant bugs from other crops.

Spray Drift Management: Applications are prohibited above wind speeds of 10 miles per hour (mph).

Restrictions:

- Minimum Treatment Interval: Do not make applications less than 5 days apart.
- Do not make more than two consecutive applications per crop.

Method

[Spray](#)

Pre-Harvest Interval

14 days

Restricted Entry Interval

24 hours

Timings

[Treat in accordance with local economic thresholds.](#)