



**OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION**

WASHINGTON, D.C. 20460

January 27, 2026

Victoria Kleczewski Ph.D.  
Regulatory Manager  
Syngenta Crop Protection, LLC  
P.O. Box 18300  
Greensboro, NC 27419

Subject: Label Amendment - Registration Review Mitigation for Lambda-Cyhalothrin  
Product Name: TANDEM  
EPA Registration Number: 100-1437  
Case Number: 472211  
Application Dates: February 21, 2022

Dear Victoria Kleczewski:

The Agency, in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the Lambda-Cyhalothrin Interim Decision, and has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide, Fungicide, and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance Assurance.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling and must be used at your next label printing. You must submit one copy of the final printed labeling before you release the product for

shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 12 months from the date of this letter. After 12 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

If you have any questions about this letter, please contact Caleb Carr by phone at 202-566-0636, or via email at [carr.caleb@epa.gov](mailto:carr.caleb@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Julie R. Javier". The signature is fluid and cursive, with the first name "Julie" being the most prominent.

Julie Javier, Team Leader  
Risk Mitigation and Implementation Branch 4  
Pesticide Re-Evaluation Division  
Office of Pesticide Programs

ENCLOSURE: Stamped label

[Master Label]

THIAMETHOXAM	GROUP	4A	INSECTICIDE
LAMBDA-CYHALOTHRIN	GROUP	3A	INSECTICIDE

[Shake well [before using].]

**TANDEM®**

**Insecticide**

**For use in, on, and around buildings and structures for the control of listed pests on turf, ornamental trees and shrubs around institutional, commercial, and industrial buildings.**

**In the State of New York, this product may only be applied for indoor uses.**

Active Ingredients:

Thiamethoxam (CAS No. 153719-23-4):..... 11.6%

Lambda-cyhalothrin<sup>1</sup> (CAS No. 91465-08-6):..... 3.5%

Other Ingredients:..... 84.9%

Total:..... 100.0%

<sup>1</sup>Microencapsulated

Tandem contains 1.04 lb thiamethoxam and 0.32 lb lambda-cyhalothrin in a ZC formulation.

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION/PRECAUCIÓN**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

**See additional precautionary statements and directions for use in booklet.**

EPA Reg. 100-1437

EPA Est.

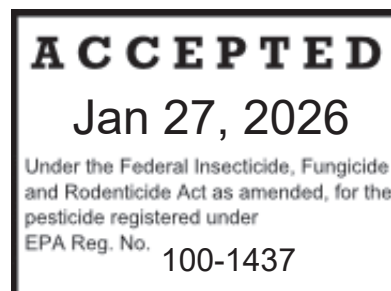
SCP 1437

8 fluid ounces

1 quart

2 quarts

Net Contents



<b>FIRST AID</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor or going for treatment.	
<p align="center"><b>HOTLINE NUMBER</b></p> <p align="center">For 24-Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill, Leak, Fire or Accident), Call <b>1-800-888-8372</b></p>	

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## PRECAUTIONARY STATEMENTS

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### Hazards to Humans and Domestic Animals

#### CAUTION/PRECAUCIÓN

Harmful if swallowed, absorbed through skin, or inhaled. Avoid breathing vapors. Avoid contact with skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

### Environmental Hazards

This product is toxic to wildlife, highly toxic to aquatic invertebrates, and extremely toxic to fish. Use of this pesticide adjacent to water may affect aquatic organisms. To protect these organisms, **do not** apply this pesticide within 25 ft of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds. **Do not** apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark.

To protect the environment, **do not** allow pesticide to enter or run off into storm drains, drainage ditches, gutters, or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid runoff to water bodies or drainage systems. **Do not** contaminate water when cleaning equipment or disposing of equipment washwater. Drift and runoff from treated areas may be hazardous to aquatic organisms in water adjacent to treated areas. Apply this product only as specified on this label. When making applications, care should be used to avoid household pets, particularly fish and reptile pets.

### **Non-Target Organism Advisory**

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area. Protect pollinating insects by following label directions intended to minimize drift and to reduce risk to these organisms.

### **Surface Water Advisory**

This product may contaminate water through drift of spray in wind. This product has a high potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall runoff. (See manual at the following internet address:

<http://www.wsi.nrcs.usda.gov/products/W2Q/pest/core4.html>.)

Runoff of this product will be reduced by avoiding applications when rainfall is forecast to occur within 48 hours.

### **Groundwater Advisory**

Thiamethoxam has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

### **Spray Drift Advisory**

Do not allow this product to drift.

## PROTECTION OF POLLINATORS



**APPLICATION RESTRICTIONS** EXIST FOR THIS PRODUCT BECAUSE OF RISK TO BEES AND OTHER INSECT POLLINATORS. FOLLOW APPLICATION RESTRICTIONS FOUND IN THE DIRECTIONS FOR USE TO PROTECT POLLINATORS.



Look for the bee hazard icon in the Directions for Use for each application site for specific use restrictions and instructions to protect bees and other insect pollinators.

**This product can kill bees and other insect pollinators.**

Bees and other insect pollinators will forage on plants when they flower, shed pollen, or produce nectar.

Bees and other insect pollinators can be exposed to this pesticide from:

- Direct contact during foliar applications, or contact with residues on plant surfaces after foliar applications
- Ingestion of residues in nectar and pollen when the pesticide is applied as a seed treatment, soil, tree injection, as well as foliar applications.

When Using This Product Take Steps To:

- Minimize exposure of this product to bees and other insect pollinators when they are foraging on pollinator attractive plants around the application site.
- Minimize drift of this product on to beehives or to off-site pollinator attractive habitat. Drift of this product onto beehives or off-site to pollinator attractive habitat can result in bee kills.

Information on protecting bees and other insect pollinators may be found at the Pesticide Environmental Stewardship website at:

<http://pesticidestewardship.org/PollinatorProtection/Pages/default.aspx>.

Pesticide incidents (for example, bee kills) should immediately be reported to the state/tribal lead agency. For contact information for your state, go to:

[www.aapco.org/officials.html](http://www.aapco.org/officials.html). Pesticide incidents should also be reported to the National Pesticide Information Center at: [www.npic.orst.edu](http://www.npic.orst.edu) or directly to EPA at: [beekill@epa.gov](mailto:beekill@epa.gov).

## Physical and Chemical Hazards

Do not use this product in or on electrical equipment due to the possibility of shock hazard from the water used in mixing this product.

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## CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of this product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and (2) Buyer and User assume the risk of any such use. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.**

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**For both indoor and outdoor use.**

### USE RESTRICTIONS



**DO NOT** apply Tandem while bees are foraging. Do not apply Tandem to plants that are flowering. Only apply after all flower petals have fallen off.



**DO NOT** allow to enter indoor or outdoor drains.  
*No permita la entrada a desagües internos o externos.*

Follow proper disposal procedures on this label.  
*Siga las indicaciones del etiquetado para el desecho apropiado del producto.*

Use in all indoor permitted sites, including food-handling establishments, must be restricted to areas that eliminate exposure to food-handling surfaces and areas that are not easily accessible to occupants.

Treat surfaces to ensure thorough coverage but avoid runoff.

**DO NOT** allow animals and people access to treated areas until the spray deposit has dried.

**DO NOT** apply this product in any room being used as a living, eating, sleeping, or recovery area by patients, the elderly, or infirm when they are in the room.

**DO NOT** apply to classrooms, nurseries, or daycare facilities when in use.

**DO NOT** apply to institutions (including libraries, sports facilities, etc.) when occupants are present in the immediate treatment area.

**DO NOT** apply directly to food or allow applications to contaminate food.

**DO NOT** treat surfaces likely to be contacted by food.

**DO NOT** apply when food-handling establishments are in operation or foods are exposed. Food must be removed from area being treated.

**DO NOT** apply to carpets and hard surfaces as a pin stream or coarse spray treatment.



**DO NOT** make broadcast spray treatments in warehouses using a manually pressurized handwand.

**DO NOT** apply this product to edible growing crops or stored raw agricultural commodities used for food or feed.

**DO NOT** allow applications to contact water inhabited by fish, such as in aquariums and ornamental fish ponds that are located in/around structures being treated.

**DO NOT** use water-based sprays of Tandem in conduits, motor housings, junction boxes, switch boxes, or other electrical equipment because of possible shock hazard.

For outdoor applications, **DO NOT** apply more than 32 fl oz of Tandem per acre per calendar year. **DO NOT** apply this product through any type of irrigation system. **DO NOT** apply this product by aerial application.

**DO NOT** apply directly to impervious horizontal surfaces, such as sidewalks, driveways, and patios, except as a spot or crack-and-crevice treatment. To treat insects harbored in voids and cracks-and-crevices, applications must be made in such a manner to limit dripping and avoid runoff onto untreated structural surfaces and plants.

Spot treatments must not exceed two square feet in size (for example, 2 ft by 1 ft or 4 ft by 0.5 ft).

All outdoor spray applications must be limited to spot or crack-and-crevice treatments only, except for the following permitted uses:

1. Application to pervious surfaces such as soil and vegetation;
2. Perimeter band treatments of 7 feet wide or less from the base of a man-made structure to pervious surfaces (e.g., soil, mulch or groundcover that abuts the perimeter of treated structure);
3. Applications to underside of eaves, soffits, doors, or windows permanently protected from rainfall by a covering, overhang, awning, or other structure;
4. Applications around potential exterior pest entry points into man-made structures such as doorways and windows, when limited to a band not to exceed one inch;
5. Applications to vertical surfaces (such as the side of a man-made structure) directly above impervious surfaces (e.g., driveways, sidewalks, etc.), up to 2 feet above ground level;
6. Applications to vertical surfaces directly above pervious surfaces, such as soil, mulch, or vegetation) only if the pervious surface does not drain into ditches, storm drains, gutters, or surface waters.

**DO NOT** apply or irrigate to the point of runoff.

**DO NOT** make applications during rain. Avoid making applications when rainfall is expected before the product has sufficient time to dry (minimum 4 hours). Rainfall within 24 hours after application may cause unintended runoff of pesticide application.

**DO NOT** apply when the wind speed is greater than 15 mph.

**DO NOT** allow the product to enter any drain during or after application.

**DO NOT** apply directly to sewers or storm drains, or to any area like a drain or gutter where drainage to sewers, storm drains, water bodies, or aquatic habitat can occur.

**DO NOT** allow pesticide to enter or runoff into storm drains, drainage ditches, gutters, or surface waters.

For soil or foliar applications, **DO NOT** apply by ground within 25 feet of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial farm ponds.

**DO NOT** apply the product into fish pools, ponds, streams, or lakes.

**DO NOT** apply this product, by any application method, to linden, basswood, or *Tilia* species.

**DO NOT** apply foliar spray treatments to landscaping trees and shrubs using a mechanically pressurized handgun.

**DO NOT** apply as broadcast spray application using a mechanically pressurized handgun in industrial and commercial areas (e.g., tires, rail yards, junk yards).

## **USE PRECAUTIONS**

**Shake well [before using].**

**Let treated surfaces dry before allowing humans and pets to contact surfaces.**

**Surface Staining:** Tandem **has not stained** or caused damage to painted or varnished surfaces, plastics, fabrics, tile, siding or other surfaces where water applied alone causes no damage. However, treat a small area and allow it to dry to determine whether staining will occur. To avoid contamination from previous treatments, thoroughly wash out sprayer, hoses, and screens with water and detergent before using Tandem.

## Resistance Management

<b>THIAMETHOXAM</b>	<b>GROUP</b>	<b>4A</b>	<b>INSECTICIDE</b>
<b>LAMBDA-CYHALOTHRIN</b>	<b>GROUP</b>	<b>3A</b>	<b>INSECTICIDE</b>

For resistance management, please note that Tandem contains both a Group 4A/Thiamethoxam and Group 3A/Lambda-cyhalothrin insecticide/acaricide. Any insect/mite population may contain individuals naturally resistant to Tandem and other Group 4A or Group 3A insecticides. The resistant individuals may dominate the insect/mite population if these insecticides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed.

To delay insecticide resistance, take the following steps:

- Rotate the use of Tandem or other Group 3A or Group 4A insecticides with different groups that control the same pests.
- Use tank mixtures with insecticides from a different group that are equally effective on the target pest when such use is permitted. Do not rely on the same mixture repeatedly for the same pest population. Consider any known cross-resistance issues (for the targeted pests) between the individual components of a mixture. In addition, consider the following recommendations provided by the Insecticide Resistance Action Committee (IRAC):
  - Individual insecticides selected for use in mixtures should be highly effective and be applied at the rates at which they are individually registered for use against the target species.
  - Mixtures with components having the same IRAC mode of action classification are not recommended for insect resistance management.
  - When using mixtures, consider any known cross-resistance issues between the individual components for the targeted pest(s).
  - Mixtures become less effective if resistance is already developing to one or both active ingredients, but they may still provide pest management benefits.
  - The insect resistance management benefits of an insecticide mixture are greatest if the two components have similar periods of residual insecticidal activity. Mixtures of insecticides with unequal periods of residual insecticide activity may offer an insect resistance management benefit only for the period where both insecticides are active.
- Adopt an integrated pest management program for insecticide use that includes scouting, uses historical information related to pesticide use, record keeping, and which considers cultural, biological, and other chemical control practices.

- Monitor after application for unexpected target pest survival. If the level of survival suggests the presence of resistance, consult with your local university specialist.
- Contact your local extension specialist for any additional pesticide resistance-management and/or IPM recommendations for the specific site and pest problems in your area.
- For further information or to report suspected resistance, contact Syngenta at 1-866-SYNGENT(A) (866-796-4368).

If resistance is suspected, do not reapply Tandem or other Group 3A or Group 4A insecticides.

SYNGENTA encourages responsible use of Tandem to ensure effective long-term control of the insects on the label. For additional information about implementing these or other resistance management practices, consult a local or state Extension specialist or, Syngenta representative.

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## STRUCTURAL AND PERIMETER PEST CONTROL

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### USE SITES

Use Tandem as a perimeter, crack-and-crevice, and/or spot treatment in and around structures or modes of transportation. Permitted areas of use include the following buildings, structures, and modes of transport:

- |   |                                |                       |
|---|--------------------------------|-----------------------|
| • aircraft (cargo and other non-cabin areas only) | • furniture                    | • offices             |
| • apartment buildings                             | • garages                      | • patios              |
| • boiler rooms                                    | • garbage rooms                | • pet kennels         |
| • buses   | • greenhouses (non-commercial) | • porches             |
| • closets   | • hospitals                    | • railcars            |
| • correctional facilities                         | • hotels and motels            | • restaurants         |
| • decks   | • houses                       | • storage rooms       |
| • dumpsters                                       | • industrial buildings         | • schools             |
| • entries   | • laboratories                 | • stores              |
| • factories                                       | • landscape vegetation         | • trailers            |
| • fencing   | • locker rooms                 | • trees               |
|   | • machine rooms                | • trucks              |
|   | • mausoleums                   | • utility passages    |
|   | • mobile homes                 | • vessels, vestibules |
|   | • mop closets                  | • warehouses          |
|   | • mulch                        | • wineries            |

- food manufacturing, processing and serving establishments, such as bakeries, breweries, canneries, granaries, grain mills, etc.
- nursing homes

For indoor applications, retreat at 21-day intervals or as necessary to maintain control.

Refer to the outdoor use restrictions in the **Outdoor Pests** section.

### **Mixing Instructions**

Tandem is intended for dilution with water for application using hand-held or power-operated application equipment as a coarse spray for crack-and-crevice, spot, and surface treatments. Application equipment that delivers low-volume treatments may also be used. A surface treatment of Tandem may be applied by using a paintbrush or other porous applicator attached to a handle. Fill applicator tank with the desired volume of water and add Tandem. Close and agitate before use in order to ensure proper mixing. Re-agitate applicator tank before use if application is interrupted. Mix only amount of treatment volume as required.

**DO NOT** use this product with oil.

### **Tank Mixing**

Tandem may be tank-mixed with other currently registered pesticides unless expressly prohibited by the product label. To ensure compatibility, conduct a small volume mixing test with the other products. If mixed with sanitizers, add Tandem to the tank first. If other chemicals are added to the applicator tank, add Tandem last. Fill tank to desired volume and re-agitate while making applications.

It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions and precautionary language of the products in the mixture (for example, first aid from one product, spray drift management from another).

### **Foam Applications**

Tandem may be converted to foam and the foam used to treat structural voids to control or prevent pests including ants, wasps, wood-destroying insects, or other arthropods harboring in walls, under slabs, or in other void areas. Mix end-use dilution with manufacturer's recommended volume of foaming agent. For applications inside wall voids, expansion ratios of 15:1 or drier are suggested.

### **Fixed In-Wall Delivery Systems**

Closed, in-wall insecticidal delivery systems such as permanently installed piping or flexible tubing may also be used to deliver diluted product to inaccessible areas.

Generally, about one ounce of finished liquid product is needed per 35-40 ft of tubing (based on 1/8"-diameter tubes). For these systems, use 0.065%-0.13% dilution rates as listed in the **General Household Pests** table. Prepare the finished product at the appropriate dilution, then inject into system as recommended by delivery system manufacturer.

### Spot Treatments

Spot treatments may be made by spraying, misting, painting, or otherwise applying to surfaces covering an area no larger than 2 sq ft. For areas limited to spot or crack-and-crevice treatments, multiple spot treatments can be made to surfaces as long as 20% of the total target area is not exceeded.

### GENERAL HOUSEHOLD PESTS

Use the rate specified to control the listed pests. For pests for which a rate range is given, use the lowest rate for low pest pressure or scheduled maintenance control programs and the highest rate for heavy pest pressure, pest-conducive environmental conditions (such as high temperatures or moisture), or when longer residual activity is desired.

**DO NOT** spray less than the labeled rate when treating for ants, fleas, flies, mosquitoes, ticks, bed bugs, scorpions, wasps, hornets, yellow jackets, carpenter bees, or termites.

**TABLE 1: General Household Pests (Indoor and Outdoor)**

Pests Controlled	Concentration of Combined Active Ingredients in Final Dilution
Ants <sup>1</sup>	0.065%–0.13%
Beetles (including Multicolored Asian Lady Beetle)	Mix 0.55 fl oz (16 ml)
Boxelder Bugs	to 1.1 fl oz (32 ml)
Carpenter Bees	of Tandem per gallon of water.
Carpet Beetles	
Centipedes	
Cigarette Beetles	
Clover Mites	
Cluster Flies	
Cockroaches	
Confused Flour Beetles	
Crickets	
Earwigs	
Firebrats	
Fleas (indoors)	
Flies	
Grasshoppers	
Lesser Grain Borers	
Millipedes	
Mosquitoes	
Red Flour Beetles	

Rice Weevils Saw-toothed Grain Beetles Silverfish Sowbugs Spiders Springtails Stink Bugs (including Brown Marmorated Stink Bug and Kudzu Stink Bug) Ticks	
Bed Bugs Elm seed bug Fleas (outdoors) Scorpions Spotted Lanternfly <sup>2</sup> Wasps, Hornets and Yellow Jackets	0.13%  Mix 1.1 fl oz (32 ml) of Tandem per gallon of water.

<sup>1</sup>For treatment of fire ant mounds, see **Applications to Turfgrass** section of this label.

<sup>2</sup>Not approved for use in California

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## INDOOR PESTS

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### Ants (Including Carpenter Ants and Nuisance Ants)

Apply a 0.065%-0.13% dilution as a spot, crack-and-crevice, and/or void treatment to ant trails around doors and windows and other places where ants may be found. Indoors, apply as a residual surface treatment to active areas such as baseboards; corners; around pipes; in and behind cabinets; behind and under refrigerators, sinks, furnaces and stoves; and in cracks and crevices. For best results, locate and treat nests. Outdoors, apply as a crack-and-crevice, spot, or perimeter barrier treatment; also see **Outdoor Pests**.

### Bed Bugs

Efficacy of this product is not affected by heat treatments, so applications can be made before and after heat treatments in integrated bed bug elimination programs.

Apply a 0.13% dilution as a spot, crack-and-crevice, or void treatment to harborage areas. Example harborages include voids behind [attached] non-upholstered headboards, bed frames (wood and metal only), baseboards, moldings, doorframes, window frames, and shelving; behind mirrors and picture frames; and around edges of carpet or other floor coverings.

Apply a 0.13% dilution with pin-stream, coarse spray or low-pressure equipment to cracks and joints of bed frames (wood and metal only), non-upholstered headboards and wood slats and metal coils of box springs. Apply only to areas where prolonged contact by humans or pets will not occur. **Do not use on bed linens, mattresses, or other areas where human contact is common.** Applications can be repeated at 7-day intervals as needed to achieve control.

To help remove bed bugs, clean and vacuum infested areas, such as floor surfaces, furniture, and mattresses before treatment. Dispose of vacuum bag off-site, and with bag-less vacuums, remove all bed bug eggs, nymphs and adults from the canister or capsule off-site.

### **Crawling Insects (Beetles, Clover Mites, Cockroaches, Crickets, Earwigs, Firebrats, Silverfish, and Spiders)**

Apply a 0.065%-0.13% dilution as a spot, crack-and-crevice, and/or void treatment to areas where these pests hide, such as baseboards; corners; storage areas; closets; around water pipes, doors, and windows; attics and eaves; cabinets; behind and under refrigerators or other household items such as furniture, sinks, furnaces, and stoves; and to the underside of shelves, drawers, and similar areas. Pay particular attention to cracks and crevices.

### **Flying Insects (Flies, Mosquitoes, and Wasps)**

Tandem may be applied as a spot or crack-and-crevice treatment directly into cracks and crevices or other non-exposure areas as a low-pressure spray using equipment capable of delivering a pin stream of insecticide inside residential buildings (in attics, crawl spaces, and other non-living spaces), as well as in and around carports, garages, and storage sheds; also see **Outdoor Pests** for specified rates. **Do not** make surface applications to living spaces. For wasps, hornets, and yellow jackets, see section on **Control of Yellow Jackets, Hornets, and Wasps**.

### **Occasional Invaders (Boxelder Bugs, Centipedes, Millipedes, Multicolored Asian Lady Beetles, Pillbugs, Scorpions, Sowbugs, Spotted Lanternfly\* and Stink Bugs)**

Apply a 0.065%-0.13% dilution as a crack-and-crevice and/or void treatment around doors and windows, baseboards, and other places where these pests may be found or where they may enter premises. Apply outdoor treatments to prevent infestation as described below; also see **Outdoor Pests – Perimeter Treatments around Structures**.

\*Not approved for use in California

### **Pantry Pests (i.e., Carpet beetle, Cigarette beetle, Confused flour beetle, Lesser grain borer, Red flour beetle, Rice weevil, and Saw-toothed grain beetle)**

Apply a 0.065%-0.13% dilution as a spot or crack-and-crevice treatment to cupboards, shelving, and storage areas. Remove all utensils, uncovered foodstuffs (or any having original package opened), and shelf paper before making application. Allow treated surfaces to dry and cover shelves with clean paper before replacing any utensils, foodstuff, or other items. Any foodstuff accidentally contaminated with treatment solution should be destroyed.



**Application within Food-Handling Establishments (places other than private residences in which exposed food is held, processed, prepared, or served, including, but not limited to, areas for receiving, storing, packing (canning, bottling, wrapping, boxing), and preparing foods; edible waste storage; enclosed processing systems (mills, dairies, edible oils, syrups); and serving areas)**

Use as a crack-and-crevice, spot, or void treatment in and around both food and non-food areas. Apply a 0.065%-0.13% dilution in small amounts directly into cracks and crevices, using equipment capable of delivering a pin stream of insecticide; in points between different elements of construction; between equipment and floor; in openings leading to voids; and in hollow spaces in walls, equipment, and bases. Clean food-contact surfaces and equipment with an effective cleaning compound and rinse with potable water before using.

Limit spot treatments to an area no larger than 20% of the treated surface. Individual spot treatments should not exceed 2 sq ft. Take extreme care that the product is not introduced into the air.

**Application within Food-Serving Areas (facilities where foods are served, such as dining rooms)**

Apply a 0.065%-0.13% dilution as a crack-and-crevice, spot, or void treatment to selected surfaces such as under elements of construction and into cracks and crevices. **Do not** contaminate food and food-processing surfaces. **Do not** treat surfaces likely to be contacted by food. **Do not** apply when food-handling establishments are in operation or foods are exposed. Food must be removed from area being treated. **Do not** apply directly to food or allow applications to contaminate food.

*Application of this product in the food areas and/or food-serving areas of food-handling establishments, other than as a spot, crack-and-crevice, or void treatment, is not permitted.*

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## **OUTDOOR PESTS**

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To control ants, bees, centipedes, cockroaches, crickets, fleas, flies, millipedes, mosquitoes, pillbugs, scorpions, sowbugs, spiders, stink bugs, ticks, wasps, and other similar perimeter arthropod pests, apply Tandem at the rate specified for that particular pest (Table 1) with either hand or power application equipment as a residual treatment around buildings and to surfaces of buildings, porches, screens, window frames, eaves, patios, garages, refuse dumps, and other similar areas where these insect pests are active. Apply a treatment volume of 1-10 gal/1000 sq ft (approximately 44-440 gal/A) unless specified otherwise.

**Do not** apply to or allow this product to contact plants in bloom or apply if bees are foraging in or adjacent to the treatment area.

## Ants

Apply a 0.065%-0.13% dilution of Tandem as a spot, crack-and-crevice, pin-stream, or perimeter-banded treatment to ant trails and potential entry points such as around doors or windows. As a banded application, apply according to instructions on perimeter treatments below.

Tandem contains thiamethoxam, a plant-systemic insecticide that can reduce populations of plant-feeding insects, such as aphids, mealybugs, and whiteflies. Control of these insects can reduce the amount of honeydew, a food source for ants foraging in and around structures. To reduce populations of honeydew-producing insects, apply Tandem at up to 0.13% as a foliar spray or directed treatment to soil at the base of the landscape plants. When targeting landscape ornamental pests, see directions for use in the **Application to Ornamentals** section.

## Fleas and Ticks

To control nuisance fleas and ticks (e.g., dog ticks), apply to kennels, yards, runs, and other areas where pets may frequent. For best coverage to control ticks, apply using a coarse fan spray to vegetation brush, branches, rock walls, and other areas near habitation where ticks may harbor or frequent. Apply a dilution of 0.065%-0.13% to control ticks. To control fleas, apply only at the highest concentration of 0.13%. Apply a treatment volume of 2-10 gal/1,000 sq ft to thoroughly wet the treated surface; use a higher volume when treating landscaping materials, such as mulch or stone, or under dense vegetation in order to obtain the coverage needed for best control.

**Do not** apply to pasture or cropland, and **do not** allow animals and people access to treated areas until the spray deposit has dried. Applications can be made on a monthly basis, beginning in the spring, and can continue until frost to control both larvae and adult ticks. **Do not** apply directly to pets.

## House Flies and Cluster Flies

Apply a 0.065%-0.13% dilution as a spray or low-volume mist to outdoor surfaces of structures, patios, fences, or other areas where flies are likely to collect or rest, or to areas of structures that serve as entry points (doors, windows, under eaves). Applications under eaves may be made as a surface spray.

For cluster flies, use spot treatments around entry points or fly resting areas of structural surfaces, paying particular attention to south-facing surfaces. In winter and spring, when flies become active and are emerging, interior crack-and-crevice, spot, and void treatments can help reduce the infestation in areas such as attics, crawl spaces, or indoor non-living spaces.

## Mosquitoes

For adult mosquito control, apply a 0.065%-0.13% dilution as a structural perimeter spray or spot treatment to landscape plantings and turf, around buildings and foundations, under decks, or to other areas that are likely to serve as adult mosquito resting areas. Yards or other frequented areas enclosed by landscaping can benefit from a banded treatment to reduce invading adult mosquitoes by the treatment of

perimeter vegetation. Apply Tandem at specified rates at 2–5 gallons of water per 1,000 sq ft (87-218 gal/A). Low-volume mist blowers may be used as well. Application to vegetation away from structures may require additional state certifications, e.g., in ornamental categories. Consult your state regulatory agency for requirements.

**Occasional Invaders and Aggregating Pests (Beetles, Boxelder bugs, Centipedes, Clover mites, Crickets, Earwigs, Grasshoppers, Scorpions, Silverfish, Spiders, Springtails, Sowbugs, Spotted Lanternfly\* and Stink bugs)**

Apply a 0.065%-0.13% dilution in a spray volume of 1-10 gal/1000 sq ft to outdoor structural surfaces where insects are found and around likely entry points such as doors, windows, and utility penetrations. Banded applications as described in the **Outdoor Pests -- Perimeter Treatments around Structures** section can provide additional protection against these pests entering the structure.

For Spotted Lanternfly\* aggregations and egg masses on or near structures, or other similar surfaces, use spot treatments around entry points or on resting areas of structural surfaces. See directions for perimeter treatments around structures when targeting outdoor pests.

It is recommended that egg masses on trees, cement blocks, rocks, and any other hard surface be scraped and removed. Spray Spotted Lanternfly\* nymphs, adults, and eggs directly whenever possible.

\*Not approved for use in California

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**CONTROL OF YELLOW JACKETS, HORNETS, AND WASPS (LOCALIZED TREATMENT)**

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Use caution when treating nests of stinging insects as Tandem does not provide instant knockdown. Protective equipment for the applicator may be required to reduce the risk of insect stings during application. The use of an extension wand is recommended when applying the liquid or foam to nests to reduce the risk of being stung. For best results, treat nests in the evening when most insects will be present.

For control of ground-nesting yellow jacket wasps, make an application of 0.13% liquid or finished foam into the below-ground nest. Apply a sufficient amount of liquid or foam to fill the nest and coat the opening to the nest. The use of an extension wand is recommended when applying to reduce the risk of being stung.

For application to paper-covered wasp nests (e.g., bald-faced hornets), apply a 0.13% dilution of Tandem as a finished foam or as a spray into the opening of the nest. Apply a sufficient amount of foam to fill the nest without allowing runoff. As a spray, apply product to the entire outside surface of the nest as well as the nest opening. The use of an extension wand is recommended when applying the foam to reduce the risk of being stung.

For visible wasp nests, spray the outside of the nest with a 0.13% dilution. Apply spray to the entire surface of the nest. For wasp nests within voids such as under soffits and behind rain gutters, make an application of 0.13% liquid or foam into the nesting area. Apply a sufficient amount of foam to fill the nesting void.

**Do not** allow this product to contact plants in bloom if bees are foraging in or adjacent to the treatment area.

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## **OUTDOOR PESTS – PERIMETER TREATMENTS AROUND STRUCTURES**

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Applying a continuous band of insecticide around a building foundation and around windows, doors, service line entrances, eaves, vents, and other areas can greatly reduce the potential for entry by crawling pests. For best results, before application, remove debris and leaf litter from next to the foundation; cut back vegetation and branches that touch the foundation, walls, or roof; and move or rake back rocks, deep mulch, or other potential pest harborage next to the foundation.

Apply Tandem in a volume of 1-10 gallons per 1,000 sq ft or 44-440 gal/A around the structure (according to state regulations governing commercial pest control and the previously stated restrictions on outdoor applications) and upwards along the foundation to 3 feet and spot treatments around windows, doors, and roof overhangs. The amount of Tandem to be diluted in water will depend upon the pest species, the infestation level, and the service interval desired (see TABLE 1 for application rates). Apply as a coarse spray to thoroughly and uniformly wet the foundation and/or band area so that the insecticide will reach the soil or thatch level where pests may be active.

Agitate occasionally during application.

**TABLE 2: Dilutions for Structural Perimeter Applications**

Application Rate (amount of Tandem per 1,000 sq ft)	Application Volume (gallons of solution per 1,000 sq ft)	Amount of Tandem to Dilute in Water According to Spray Tank Volumes		
		10 gallons	25 gallons	50 gallons
0.55 fl oz (16 ml)	1	5.5 fl oz (163 ml)	13.8 fl oz (408 ml)	27.5 fl oz (813 ml)
	2	2.8 fl oz (83 ml)	6.9 fl oz (204 ml)	13.8 fl oz (408 ml)
	5	1.1 fl oz (33 ml)	2.8 fl oz (83 ml)	5.5 fl oz (163 ml)
	10	0.55 fl oz (16 ml)	1.4 fl oz (41 ml)	2.8 fl oz (83 ml)
1.1 fl oz (32 ml)	1	11.0 fl oz (325 ml)	27.5 fl oz (813 ml)	55 fl oz (1,627 ml)
	2	5.5 fl oz (163 ml)	13.8 fl oz (408 ml)	27.5 fl oz (813 ml)
	5	2.2 fl oz (65 ml)	5.5 fl oz (163 ml)	11.0 fl oz (325 ml)
	10	1.1 fl oz (33 ml)	2.8 fl oz (83 ml)	5.5 fl oz (163 ml)

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**CONTROL OF WOOD-DESTROYING INSECTS**


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Use Tandem to control the following wood-destroying insects. For specific application instructions, refer to label text.

**TABLE 3: Wood-destroying Pests**

<b>Pests</b>	<b>Application Method</b>	<b>Concentration of Combined Active Ingredients in Final Dilution</b>	<b>Comments</b>
Carpenter Ants <sup>1</sup> Carpenter Bees Drywood Termites Wood-Destroying Beetles and Borers	<i>Remedial Control:</i> Liquid or foam – Gallery treatment  <i>Preventive treatment:</i> Wood Surface Spray	0.13%  Mix 1.1 fl oz (32 ml) Tandem per gallon of water.	Re-treat as directed.

<sup>1</sup> Carpenter ants may be controlled at a lower rate of 0.065%; rates of 0.065% to 0.13% may be used per instructions under **Control of Carpenter Ants** section.

### **Control of Drywood Termites**

When used as specified in this label, Tandem provides effective remedial control of localized infestations of drywood termites, including species of *Incisitermes*, *Cryptotermes*, and *Marginitermes*. Knowledge of the biology and behavior of the drywood termite species involved, the locations, and the extent of the infestation(s) will help to ensure successful control.

Treatment requirements for drywood termite control may vary due to state and local regulations. For advice concerning current drywood termite control regulations under local conditions, consult your State structural pest control regulatory agency.

#### *Directions for Remedial Control of Drywood Termites in Infested Wood*

To control drywood termites in localized areas of infested wood in structures, apply 0.13% Tandem as a liquid or foam to voids and galleries in damaged wood, in spaces between wooden structural members, or between wood and foundations. Locate galleries by using visual signs (e.g., fresh fecal pellets or blistered wood), the presence of live termites, mechanical sounding techniques (e.g., tapping on the wood surface and listening for changes in sound to indicate changes in wood density), listening devices, motion detection devices or other technologies that help pinpoint drywood termite activity.

#### *Wood Injection Method*

Drill small diameter holes of appropriate size for the injection tip or use a self-puncturing tip positioned to intersect termite galleries within infested wood. Drywood termite emergence or pellet kick-out holes connect directly to galleries and are indicators of potential sites to drill and inject Tandem. Care should be taken to avoid electrical wiring, plumbing, etc. when drilling and injecting. Do not drill or puncture completely through wood. Spacing of the holes will depend on the distribution of insect activity and galleries. Injection holes may be clustered in areas with insect activity as indicated by damage, live insects, or other indicators previously described. Injection holes on opposite sides of large (4" x 10" or larger) structural beams may be necessary to effectively penetrate galleries.

Apply up to 50 ml (1.7 fl oz) of 0.13% dilution at each injection hole. If using Tandem as a foam preparation, inject a sufficient amount to fill galleries without allowing runoff.

Re-apply if insect activity within treated areas is detected four or more weeks following treatment. For best results in treating galleries, inject Tandem into new injection holes positioned between previous injection sites.

#### *Wood Surface Treatment*

Surface applications may also be used to supplement spot treatment for drywood termites as a means to prevent re-infestation by swarming adult termites. Apply a 0.13% dilution as a surface spray or mist to exposed wood surfaces in areas not used as living spaces, such as attics, crawl spaces, unfinished basements, or structural voids. Apply treatment until surface is thoroughly wetted.

#### **Control of Carpenter Ants**

Apply a 0.065%-0.13% dilution to ant trails around doors and windows and other places where ants may be found. Indoors, apply as a residual surface treatment to active areas such as baseboards; corners; around pipes; in and behind cabinets; behind and under refrigerators, sinks, furnaces, and stoves; and in cracks and crevices. For best results, locate and treat nests. Outdoors, apply as a crack-and-crevice, spot, or banded treatment; also see **Outdoor Pests**.

Inside voids where ants or nests occur, drill (or use existing opening) and inject spray or foam into the cavity. Inside decking materials or other structural materials, poles, or trees infested with carpenter ants, drill and inject spray or foam into cavities. Apply up to 50 ml (1.7 fl oz) of 0.065%-0.13% dilution at each injection hole. If using Tandem as a foam preparation, inject a sufficient amount to cover the area without allowing runoff.

#### **Control of Carpenter Bees (localized treatment)**

##### *Gallery Treatment*

Apply a 0.13% dilution of Tandem into carpenter bee galleries as a spray, mist, or foam application. As a liquid, apply up to 50 ml (1.7 fl oz) of finished solution of Tandem at each injection hole. If using Tandem as a foam preparation, inject a sufficient amount to fill galleries without allowing runoff.

##### *Wood Surface Treatment*



Apply coarse spray as a spot treatment to thoroughly wet wood surfaces where bees have been previously active or to provide protection against further damage. Apply early in the spring to prevent bees from invading wood. When bees have infested wood, surface applications can help control embedded larvae and bees that emerge from the wood. Applications can be made on a monthly basis to maintain protection of treated areas.

### **Control of Wood-Destroying Beetles and Borers**

For control of wood-destroying beetles or borers, including old house borers, powderpost beetles, false powderpost beetles, death-watch beetles, and ambrosia or bark beetles. Apply Tandem diluted to 0.13% as a spray, mist, or foam to galleries, in structural voids, and/or as wood surface treatments.

- For old house borers, or other beetles that form large galleries, treat the gallery system by drilling and injecting product with sufficient volume to cover the galleries.
- For beetles or borers that do not form galleries which can be readily injected (e.g., powderpost beetles), apply product as a liquid, mist, or foam to exposed wooden surfaces in non-living space areas in crawlspaces, basements, and attics; to structural voids; to spaces between wood elements of a structure; or at joints between wood and foundations.

Apply as a coarse liquid spray with low pressure (<25 psi), as a foam or mist application, or by brushing diluted product onto the surface. Applications should be made in sufficient volumes to coat the target surface, but less than the volume that creates runoff. Re-treat as needed to maintain protection. Allow treated surfaces to dry before contacting them.

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### **TURFGRASS AND ORNAMENTALS**

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**DO NOT** apply directly to residential lawns and turf in residential settings (e.g., homes, parks, schools, athletic fields, or any other area frequented by the general public).

Tandem contains two insecticides, thiamethoxam and lambda-cyhalothrin. Thiamethoxam and lambda-cyhalothrin provide long-lasting, broad-spectrum contact and systemic control of turf and ornamental plant insects.

Tandem may be used for applications to maintain outdoor areas where turf and ornamentals are grown on non-residential landscapes around institutional, public, commercial and industrial buildings. Consult your state extension office or pesticide regulatory officials for further information

### **USE RESTRICTIONS**

**Do not** apply this product to turfgrass or allow it to drift to blooming plants or weeds if bees are foraging in or adjacent to the treatment area. Time application during periods



when pollinating insects are not present, such as early morning or late evening. **Do not** apply to plants/ornamentals that are flowering. Only apply after all flower petals have fallen off.

Not for use on plants being grown for sale or other commercial use, or for commercial seed production, or commercial sod production.

### **Mixing Instructions (Turf and Ornamental Dilutions)**

Tandem may be mixed with water and used in all types of standard application equipment. Fill applicator tank with  $\frac{1}{2}$  to  $\frac{3}{4}$  volume of water and add Tandem. Adjust water pH with a buffering agent if necessary to achieve a pH of 5-7. Slowly add Tandem to applicator tank water with maximum agitation. Fill the tank to the appropriate volume as determined by the listed rates and the size of the tank and continue to agitate while making applications. Close and shake or re-agitate applicator tank before use if application is interrupted. Make up only the amount of treatment volume required.

### **Tank-Mixing (Turf and Ornamental Dilutions)**

Tandem may be tank-mixed with other currently registered pesticides unless expressly prohibited by the product label. To ensure compatibility, conduct a small-volume mixing test with the other products. If other chemicals are added to the applicator tank, add Tandem last. Fill tank to desired volume and continue to agitate while making applications. If mixed with EC formulations, use within 24 hours.

**It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions and precautionary language of the products in the mixture (for example, first aid from one product, spray drift management from another).**

## **APPLICATION TO TURFGRASS**

**Sites of Application** -- Tandem may be used for applications to turfgrasses around institutional, commercial, and industrial buildings.

**Broadcast Applications to Turfgrass** -- Apply Tandem as a broadcast application to turfgrass for control of targeted pests. Use sufficient water volume (2-10 gal/1,000 sq ft) to uniformly distribute Tandem over the area being treated and to adequately move the active ingredient into the canopy and thatch layers. Tandem is not phytotoxic to any major turfgrass species. Tandem can be applied to established turf or at seeding or during seed germination.

**Application Timing** -- Maintain adequate soil moisture before and after application for optimum control and healthy turfgrass growth. Excessively wet or dry conditions may impact the performance of Tandem against white grubs. Do not mow the turf until the treated area has been irrigated or rainfall has occurred to allow for maximum and

uniform uptake into the turfgrass or soil. Do not apply when turfgrass is waterlogged or when soils are saturated with water (i.e., will not accept irrigation).

**Do not** apply more than 32 fluid ounces of Tandem per acre per calendar year.

**KEEP PEOPLE AND PETS OFF TREATED AREAS FOLLOWING THE APPLICATION UNTIL SPRAY HAS DRIED.**

**TABLE 4: Turf Pests**

Pests	Dosage of Tandem
Ants Armyworms Black turfgrass ataenius (adults) Bluegrass billbug (adults and larvae) Chinch bugs <sup>1</sup> Crickets Cutworms Fire Ants Fleas Annual bluegrass weevil (adults and larvae) Japanese beetles (adult) Mole Cricket (young adults and nymphs) <sup>2</sup> Sod webworms White grubs <sup>3</sup> <i>Aphodius</i> Asiatic Garden Beetle Black Turfgrass Ataenius European Chafer Green June Beetle Japanese Beetle May or June Beetle Northern Masked Chafer Oriental Beetle Southern Masked Chafer	Make a single application of 0.6 fl oz (19 mL) per 1000 sq ft (or 28 fl oz per acre.)  or  Make two applications of 0.3 fl oz (10 mL) per 1000 sq ft (or 14 fl oz per acre) on a 3- to 5-week interval.
Chiggers Grasshoppers	Make three applications of 0.2 fl oz (7 mL) per 1000 sq ft (or 10.5 fl oz per acre) on a 3- to 5-week interval.

<sup>1</sup> **Chinch Bug** – Apply when insects are first observed. Repeat applications on a 3- to 5-week interval to obtain control.

<sup>2</sup> **Mole Crickets** – Apply from first egg hatch to peak egg hatch. If the soil is dry, irrigate after application to move insecticides into the soil.

<sup>3</sup> **White grubs** – Begin applications up to 45 days before the historical peak of adult flight to second instar grub of the species being targeted. For optimum control, treat from peak flight to peak egg hatch. Irrigate to move Tandem into the root zone. Full-season control of white grubs will be obtained with either a single 28 fl oz application or two 14 fl oz applications. Apply to turf prior to the establishment of high insect pressure or significant turf damage.

**Fire Ant Mound Treatment** – Treat individual mounds with a drench application using a watering can. Use 0.15 fluid ounces of Tandem per 2.5 gallons of water. Thoroughly soak each mound and a 3 ft diameter circle around each mound. Gently apply the mixture to avoid disturbing the mound. Disturbing the mound may cause the ants to migrate and reduce the effectiveness of the treatment. For best results, apply in early morning or late evening hours. Applications can be made on a monthly basis to maintain protection of treated areas.

**Surface Insect Control (including armyworm, cutworms, and fleas)** – Apply Tandem at specified rates in 2-5 gallons of water per 1,000 sq ft (87-218 gal/A). The use of a spreader-sticker may be useful if high rainfall amounts are forecast; otherwise, the addition of adjuvants is not necessary under normal conditions for surface insect control in turf.

Delay watering or mowing for 12-24 hours after application for optimum control of surface-feeding insect pests.

**Thatch-Inhabiting Insect Control (including chinch bugs)** – Apply Tandem at specified rates in 2-10 gallons of water per 1,000 sq ft (87-440 gal/A). The use of a nonionic wetting agent, penetrant, or similar adjuvant is recommended. Irrigate after application with up to ½ inch of water to move the Tandem into the thatch layer. If irrigation is not available, then use high water application rates volumes (>4 gal/1,000 sq ft or 174 gal/A) for optimum results.

For specific information about developmental stages of the target pest and optimal timing of applications, consult with your State Cooperative Extension Service.

## APPLICATION TO ORNAMENTALS

Apply to ornamentals in residential landscaped areas and landscaped areas around institutional, public, commercial and industrial buildings; parks; recreational areas; and athletic fields (including trees, shrubs, flowers, evergreens, foliage plants, and groundcovers).

**Do not** apply more than 32 fluid ounces of Tandem per acre per calendar year.



**DO NOT** apply Tandem while bees are foraging. **Do not** apply Tandem to plants that are flowering. **Only** apply after all flower petals have fallen off.

**Do not** apply this product, by any application method, to linden, basswood, or *Tilia* species.

**TABLE 5: Pests of Ornamental Plants**

Pests <sup>1</sup>	Dosage of Tandem
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<p>Adelgids (including Hemlock wooly adelgid)  Armyworms  Azalea caterpillars  Aphids  Bagworms  Black vine weevils (adult)  Boxelder bugs  Budworms  California oakworms  Cankerworms  Crickets  Cutworms  Elm leaf beetles  Fall webworms  Flea beetles  Grasshoppers  Japanese beetles (adults)  June beetles (adults)  Lace bugs  Leaf-feeding caterpillars  Leaf gall-forming insects  Leafhoppers  Leafminers (adults)  Leaf rollers  Leaf skeletonizers  Mealybugs  Midges  Oleander moth larvae  Pine shoot beetles  Pinetip moths  Plant bugs  Psyllids (including Asian citrus psyllid)  Root weevils  Sawflies  Scale insects (crawlers)  Spittlebugs  Striped beetles  Thrips  Tip moths  Tussock moth larvae</p>	<p>4.2 - 13.9 fl oz per 100 gallons   or   125 - 410 ml per 100 gallons</p>
<p>Broadmites  Brown soft scale  California red scale (crawlers)  Clover mites  Mealybugs  Pine needle scale (crawlers)  Whiteflies</p>	<p>8.5 - 13.9 fl oz per 100 gallons   or   250 - 410 ml per 100 gallons</p>
<p>Spotted Lanternfly<sup>2</sup></p>	<p>13.9 fl oz per 100 gallons</p>

	or
	410 ml per 100 gallons

<sup>1</sup> For nuisance pests other than plant-feeding pests (e.g., spiders, cockroaches, mosquitoes), refer to **Outdoor Pests** section for use instructions.

<sup>2</sup> Not approved for use in California

Start application to ornamentals prior to the establishment of high insect pest populations. Make reapplications as directed to keep pest populations under control, using higher rates within the listed rate range as pest pressure increases.

Apply at 7-day intervals if retreatment is necessary. Limit more frequent treatments to spot treatments.

Good spray coverage is necessary to provide the most effective level of control. Spray uniformly to wet plant, but not to the point of runoff or drip. Addition of a spreader-sticker at specified rates may enhance the control of insects on certain species of ornamentals having waxy, hard-to-wet foliage.

Consult your state university or local Cooperative Extension Service office for specific pest control application timing in your area.

**NOTE:** While phytotoxicity testing has been carried out on a wide range of ornamental plants under various environmental conditions, and no phytotoxicity has been observed, certain cultivars may be sensitive to the final spray solution. Spray a selection of ornamental plants and observe them for 7–10 days prior to treating large areas if local use experience is unavailable. This is especially advisable if Tandem is being mixed with another product or ingredient besides water. See **Tank Mixing (Turf and Ornamental Dilutions)** instructions.

**Scale:** Thoroughly cover the plant with Tandem spray, including trunks, stems, twigs, and foliage for control of scale insects.

**Bagworm:** Apply Tandem when bagworm larvae begin to hatch. Spray directly on the larvae. Application is most effective when the larvae are young.

**Spotted Lanternfly\*:** Successful control of this pest requires thorough coverage of plant trunks, stems, branches, and foliage. Applications of Tandem made with hydraulic spray equipment will require higher water volumes, up to 200 gallons per acre.

\*Not approved for use in California

### **Ornamental, Non-Bearing Fruit and Nut Trees and Woody Shrubs**

Tandem contains thiamethoxam, which is a systemic insecticide that will be translocated upward into the plant from root uptake. Tandem must be placed in an area where roots can absorb the active ingredient. It may take 2–4 weeks for the active ingredient to move from the root zone to the area of the trees affected. If insect pests are already

present and causing damage, consider making a foliar application and then follow up with a soil application. For best results, water in after application with enough water to move the insecticide into the root zone of the tree.

For trees and shrubs, use 0.2 fluid ounces (6 ml) of Tandem per inch cumulative trunk diameter (DBH) of the plant(s) or per foot of shrub height (less than 6 ft tall).

## **STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage or disposal.

### **Pesticide Storage**

Keep container closed when not in use. Do not store near food or feed. Shake well before use. Protect from freezing. In case of spill or leak on floor or paved surfaces, soak up with sand, earth, or synthetic absorbent. Remove to chemical waste storage area until proper disposal can be made.

### **Pesticide Disposal**

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative of the nearest EPA Regional Office for guidance.

**DO NOT** pour or dispose down-the-drain or sewer. Call your local solid waste agency for local disposal options.

[Note to reviewer: Container handling language appearing on the final printed labeling will be selected based on the actual net contents of the container.]

### **[Container Handling [(less than or equal to 5 gallons)]]**

Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Drain for 10 seconds after the flow begins to drip. Fill the container  $\frac{1}{4}$  full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.]

### **[Container Handling [(greater than 5 gallons)]]**

Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container  $\frac{1}{4}$  full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a

sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.]

**[Container Handling [(greater than 5 gallons)]]**

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the person refilling. To clean container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.]

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER.**

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For non-emergency (e.g., current product information), call  
Syngenta Crop Protection at 1-800-334-9481.

Manufactured for:  
Syngenta Crop Protection, LLC  
P.O. Box 18300  
Greensboro, North Carolina 27419-8300

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