Science for a **better life**

# Chinch Bug Management

Targeted strategies and effective control for residential lawns in Canada

BAYER Tetrino™

BAYER DeltaGard® SC

# Complete Chinch Bug Control

Understanding the variables for effective results on residential accounts

## THE PROBLEM

Chinch bugs are above ground pests that feed on turfgrass throughout the growing season. They can cause severe damage to bluegrasses, ryegrasses, fescues and bentgrasses. Chinch bug populations tend to be highest in years with prolonged hot, dry weather. But with proper analysis of the conditions and effective application timing, you can neutralize this threat and keep your clients' turfgrass healthy year after year.

### Chinch Bug Life Cycle

In the spring, chinch bug adults migrate into lawns to begin feeding and mating. Females lay eggs when daytime temperatures exceed 15°C. For most regions in Canada, eggs will hatch in early-to-mid June, depending on the weather. Chinch bugs will complete five nymphal stages before maturing into adults by mid-to-late August. In years with sustained heat, a second generation can begin, but these second-generation nymphs will not successfully overwinter into the following year.

### Damage from Feeding

Nymphs and adults have piercing-sucking mouthparts that injure turf by withdrawing sap from leaf, sheath, crown and stem tissues. During feeding, chinch bugs inject salivary toxins into the plant causing coagulation within stem and leaf tissue, which affects the plant's ability to transport water and nutrients.

### Recognizing the Symptoms

One of the initial signs of feeding is reddish-purple discoloration of the leaf blade margin. As damage progresses, thinning can be observed and the affected leaves turn yellow. When populations increase and feeding intensifies, plants will turn straw colour and have a slower response to irrigation and fertilization. If left untreated, large swaths of turf will decline and permanent plant death can occur.

## BUILDING YOUR STRATEGY

Chinch bugs are most active during the early afternoon when it is sunny and warm. Adults can be seen in the spring on grass blades and nearby structures such as patios, foundation walls and fencing. Nymphs will be present from mid-to-late June through to August and will be found near the thatch layer. The use of a modified flush technique and growing degree models are valuable tools to improve scouting and monitoring.

### The Modified Flush Technique

This simple test can help you assess the extent of the problem. Start by taking an empty coffee can or soup can and removing both lids to make a cylinder. Lightly pound the cylinder into the ground with a rubber mallet until the bottom edge is approximately 5 cm into the ground. Fill the cylinder with water and keep refilling it to maintain a stable water level. After about 30 seconds, chinch bug nymphs and adults should begin floating to the surface.

## Growing Degree Day Modelling

Several variations of growing degree day models have been developed for Ontario, Quebec and Atlantic Canada. The most common base temperature is 7°C. Using this number, peak egg development occurs at 187-340 GDD, and first instar nymphs are observed between 250-500 GDD. Peak damage caused by third and fourth instar nymphs occurs between 500-1000 GDD, which will be from early-to-mid July for most years, depending on the region (see chart).

**Life Stage Development of the Hairy Chinch Bug in Quebec and Atlantic Canada.**

Bars indicate the time frame when a particular stage has the highest proportion of the chinch bug population.


The use of Growing Degree Days (GDD; base 7°C) and published hairy chinch bug sampling data (from ON, QC, NB, NS and NL) were used in the creation of this developmental stage model. The GDD values for each development stage are: Spring adult (<240 GDD), Eggs (187 – 325 GDD), 1st instars (250 – 500 GDD), 2nd instars (375 – 700 GDD, 3rd instars (500 – 800 GDD), 4th instars (650 – 1000 GDD), 5th instars (800 – 1050 GDD), and Fall adults (>1100 GDD).

# *CULTURAL MANAGEMENT*

- Fertility: maintain adequate nitrogen fertility during spring, summer and fall. Lawns that are deficient in nitrogen will be unable to recover from chinch bug damage.
- Irrigation: it is important to properly irrigate lawns to prevent wilt stress during the summer months and prevent further turfgrass decline. Turf grown on south-facing slopes in full sun may require more water.
- Overseeding: introducing endophyte-enhanced grasses will improve the lawn's tolerance against chinch bug activity.
- Mowing: maintaining a mowing height of 5-8 cm during the summer will help reduce the severity of chinch bug feeding.

# *THE RIGHT CHINCH BUG SOLUTIONS*

No matter what kind of chinch bug problems you're up against, Bayer has a full range of solutions to help you take control and maintain it. Always read and follow product labels before use.

**DeltaGard® SC**

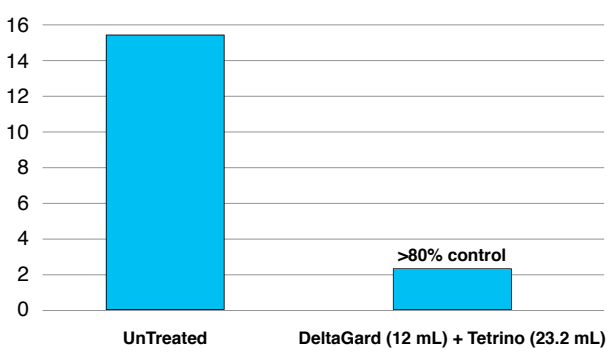
This highly effective, fast-acting contact insecticide can be used at low rates to control chinch bugs, ants, cutworms, webworms and ticks. DeltaGard® SC contains the active ingredient deltamethrin, which is a third-generation pyrethroid insecticide. It should be applied in enough water volume to achieve deeper coverage into the turfgrass canopy.

**Tetrino™**

This new, broad-spectrum systemic insecticide uses the active ingredient Tetranililprole for rapid plant uptake and translocation with excellent residual efficacy. It provides strong systemic activity for many root- and surface-feeding insects – including chinch bugs and white grubs. Tetrino™ works best when the plant is actively growing. Repeat applications at 28-day intervals may be necessary for large chinch bug populations.

**Curative Control of the Hairy Chinch Bug in 2020 (7 days after treatment)**

Trial conducted in Pennsylvania by Steve McDonald, Turfgrass Disease Solutions



# DeltaGard® SC

# Tetrino™

## EFFECTIVE APPLICATION TIMING

Using properly targeted products is half the battle for achieving effective chinch bug results. Understanding the right timing for application throughout the growing season is also crucial to your success.

### Early Season

For chronic chinch bug infestations, consider a spring adulticide application of DeltaGard SC (12 mL) just prior to egg laying. This application should be made before 200 growing degree days (base 7°C) have accumulated. In most years this application timing occurs in mid-to-late May, depending on the weather. Adding Tetrino (11.6-23.2 mL) in this application will improve control of spring adults and provide protection against younger nymphs after egg hatch.

### Mid Season

A sequential application of DeltaGard SC (12 mL) tank mixed with Tetrino (23.2 mL) should be applied when third instar nymphs reach peak activity. This tends to occur in early-to-mid July, when cumulative growing degree days are between 500-800 (base 7°C). Adding Tetrino at this time provides improved chinch bug control and control of annual white grubs, such as Japanese beetle or European chaffer.

### Watering and Mowing

Applications for chinch bug control should be applied in a sufficient water volume to ensure the spray solution is driven towards the base of the plant near the thatch layer. This becomes more important when targeting young nymphs (first through third instars). For best results, avoid mowing treated turf for 24 hours after application.

## MAINTAINING OUTDOOR SPACES

What you do makes outdoor spaces beautiful. Bayer is always ready to work with turf management professionals like you to achieve that goal together. Thank you for helping us provide science for a better life.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