



Research & Development Field Report 1st Edition – March 2023

The PBI-Gordon Research & Development Team is pleased to present the First Edition of the R&D Field Report. This report contains scientific information to support the important work underway by our agronomic partners, distribution representatives, and end-users. Our intent is to provide useful, research-based information prior to the seasonal emergence of pests. You can look for updated R&D Field Reports on a quarterly basis throughout 2023.

Weeds

- Pre-emergent crabgrass applications
 - Seedlings often emerge late-winter, but are subject to freeze/frost injury and are not likely to survive
 - Pre-emergent herbicides should be applied when soil temperatures consistently reach 50°F, or by using growing degree day (GDD) models to optimize timing
 - Bensumec™ 4LF Pre-Emergent Grass & Weed Herbicide is an excellent option for golf course greens; 2 apps 6 fl. oz./1,000 sq. ft. ~30 days apart; immediate post application irrigation required to prevent phytotoxicity
 - In bermudagrass or zoysiagrass, tank-mixing* Katana® Turf Herbicide with a pre-emergent product can control early-stage crabgrass plants, emerged nutsedge and kyllinga, and many winter annual broadleaves
- Pre-emergent goosegrass applications
 - Typically applied 4-6 weeks after pre-emergent crabgrass applications are applied
 - Oxadiazon, proflam, and indaziflam are highly effective
- Winter annual weed control in cool-season turfgrass
 - Cooler weather can limit broadleaf herbicide efficacy
 - Products such as TZone™ SE Broadleaf Herbicide for Tough Weeds or SpeedZone® EW Broadleaf Herbicide for Turf contain 2,4-D ester. The ester form of 2,4-D provides greater efficacy in cooler temperatures compared to 2,4-D amine formulations
- Spring broadleaf weed control in warm-season turfgrass
 - Spring transition for warm-season turfgrasses can be a susceptible time for herbicide injury especially for St. Augustinegrass and centipedegrass. Bermudagrass and zoysiagrass are also susceptible, but their recovery potential is typically greater.
 - Avoid high rates of 2,4-D for broadleaf weed control during spring transition. Products such as Avenue™ South Broadleaf Herbicide and SpeedZone® Southern EW Broadleaf Herbicide for Turf have less 2,4-D and can be less injurious
 - Oxadiazon interim registration review decision has been published; be prepared for label changes, including use restrictions to be coming soon

Diseases

- Early spring is optimal for preventive applications for fairy ring, yellow patch and Waitea patch control
 - 2 applications, 30-days apart of Pedigree SC Fungicide at 3.25 fl. oz./1,000 sq. ft. covers all three
 - Pedigree SC Fungicide is a liquid formulation of flutolanil; an active ingredient which has long been the industry standard for control of fairy ring
 - Immediate post application irrigation (~1/4") is essential; addition of wetting agent is preferable
 - Strobilurin and DMI fungicides are excellent rotational partners for fairy ring control
- Large patch frequently occurs on zoysiagrass and St. Augustinegrass during early-mid spring
 - Preventive program: 2 applications, 30-days apart with Pedigree SC Fungicide @ 3.25 fl. oz./1,000 sq. ft.
- Pythium blight and leaf spot are frequently observed on bermudagrass greens in the spring
 - Segway® SC Fungicide provides industry leading Pythium blight control (0.5 fl. oz./1,000 sq. ft. on 14-d interval)
 - Union® SC Fungicide (cyazofamid + azoxystrobin) will control Pythium blight and leaf spot

Insects

- Overwintered billbug adults are on the move and laying eggs in turfgrass plants (leaf sheaths) in early spring
 - Adult curative insecticide applications include: bifenthrin, deltamethrin, indoxacarb, and others
 - Larval preventive insecticide applications, such as chlorantraniliprole, imidacloprid, tetraniliprole or novaluron are most effectively applied when adults are detected
- Annual Bluegrass Weevil (ABW) adults migrate from tree lines, leaf litter and tall grass areas, and begin laying eggs in leaf sheaths of turf in the spring when Forsythia plants are in full bloom
 - Applications of insecticide(s) preventively targeting migrating adults and young larvae (in leaf sheaths) is a popular and effective management approach for ABW
 - Examples of adulticides include: chlorpyrifos, deltamethrin, and bifenthrin
 - Preventive larvicides such as novaluron or chlorantraniliprole are best applied in the spring when Dogwood plants are in full bloom

Formulation Chemistry

- Spring is an excellent time to check water quality
 - Use a reputable lab that tests for pH, dissolved solids, carbonates, bicarbonates, EC, and hardness
 - Test various water sources when topography affects runoff (ie. ponds below hills vs flat areas)
 - High TDS (total dissolvable solids) concentrations will affect product efficacy (ie. Al⁺³, Fe⁺², Mg⁺²)
 - Product safety data sheets (SDS) provide the pH for the formulated material; ensure product pH is +/- 2.0 from carrier water, particularly if mixture sits overnight
 - Check carrier water pH regularly with a digital handheld pH meter; use buffers as needed
- Use care using sulfentrazone use in spring when temperatures fluctuate drastically
 - Temperature swings >25 degrees in 24-hours may cause leaf-tip bronzing; goes away in 1-2 mowings

*Follow the most restrictive of the labeling limitations and precautions of all products used in mixtures.

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