Rutgers Corner — Crabgrass control strategies for sports fields

By Brad Park, Rutgers University — *park@aesop.rutgers.edu*

"Crabgrass can grow on bowling balls in airless rooms, and there is no known way to kill it that does not involve nuclear weapons" – Dave Barry, Miami Herald

With spring soon to arrive, it is an important time to begin thinking about options for controlling crabgrass. If a significant soil seed bank exists and there are voids in the turfgrass stand which minimize competitive benefits of the turf, as a summer annual, crabgrass will germinate profusely in the spring, mature throughout the summer months, and die in early fall at the first killing frost leaving dead "skeletons" throughout the landscape. Crabgrass seed will typically begin germinating after April 10 in South Jersey and by April 20 in Central and North Jersey. Crabgrass will continue to germinate though mid-July.

Integrated Pest Management (IPM)

Recall that IPM attempts to reduce the risk that pest control strategies may have on the environment and people by incorporating all suitable techniques to maintain pests within acceptable limits. Although it is a common misconception, IPM ***does not*** entail the elimination of pesticide use.

Simply mowing at a cutting height suitable for the specific turfgrass species or mowing at a frequency such that scalping is avoided can constitute IPM. Improper mowing techniques leading to scalped turf will thin-out turfgrass areas, lead to voids in the stand, and subsequently provide opportunities for crabgrass to encroach. IPM also entails proper fertilization. Under-fertilizing turfgrass will often result in a weak stand, poor turf density, and an environment in which crabgrass can readily invade. Yearly nitrogen requirements per 1000 ft^2 for cool season turfgrasses used on New Jersey sports fields are: Kentucky bluegrass, 2-5 lbs; perennial ryegrass, 3-5 lbs; tall fescue, 2-4 lbs. High-use sports fields often necessitate the high-end of these nitrogen fertilization guidelines in order to encourage turfgrass recovery from traffic.

Preemergence herbicides: Are they an option?

For sports field managers whose cultural program includes spring overseeding of his or her fields, applying most preemergence herbicide products at the time of seeding will not only deter crabgrass emergence, it will also inhibit establishment of cool season turf. Products such as pendimethalin (Pendulum or Pre-M), benefin + trifluralin (Team), prodiamine (Barricade), oxadiazon (Ronstar), and dithiopyr (Dimension) are not viable options for preemergence crabgrass control if overseeding is a part of the manager's spring program. Depending on the product and the application rate, the residual of these products is such that the seeding of desired cool season turfgrasses may not begin for 2 to 6 months following the application of the herbicide. Additionally, these products many not be used in newly seeded turf as young turfgrass seedlings are highly susceptible to the phytotoxic effects of these herbicides.

Siduron

Siduron (Tupersan) is a herbicide that is labeled for preemergence crabgrass control in newly seeded Kentucky bluegrass, tall fescue, and perennial ryegrass. Tupersan is formulated as a wettable powder and should be applied in the spring to coincide with maximum crabgrass germination. The label calls for either a

single application of product at 4.0-12.0 lbs/Acre or sequential applications at 6.0-12.0 lbs/Acre followed by a 4.0-6.0 lbs/Acre application 4 weeks later.

Postemergence herbicides

In order to use the chemical tools available to selectively treat crabgrass postemergence, the sports field manager must be able to accurately identify crabgrass at various seedling stages. Large crabgrass seedlings are characterized by upright growth and leaves that are rolled in the bud, lack auricles, and have a jagged membranous ligule. Large crabgrass leaf blades and sheaths are covered with stiff hairs. Smooth crabgrass is similar to large crabgrass, however it has fewer hairs on its leaf blades and sheaths.

Quinclorac and fenoxaprop

Quinclorac (Drive) and fenoxaprop (Acclaim Extra) are labeled for the selective postemergence control of crabgrass in perennial ryegrass, Kentucky bluegrass, and tall fescue. Quinclorac is effective in controlling young, un-tillered crabgrass seedlings and may be applied up to 0.75 lbs/Acre (1.0 lb Drive/Acre). To increase the efficacy of weed control, the label recommends applying quinclorac with an oil-based adjuvant such crop oil concentrate or methylated seed oil.

Quinclorac may be applied up to 7 days prior to the seeding of tall fescue, Kentucky bluegrass, and perennial ryegrass, at the time of seeding for perennial ryegrass and tall fescue, 7 and 14 days after the emergence of tall fescue, and 1 month after the emergence of Kentucky bluegrass, perennial ryegrass and tall fescue. The label notes that adjuvants should not be added to quinclorac applications to newly seeded turf prior to 28 days after seedling emergence.

Fenoxaprop may be applied at rates ranging from 0.016-0.17 lbs/A (3.5-39.0 fl. oz Acclaim/A) depending on the stage of crabgrass growth and established turfgrass species. For example, 4-5 tiller crabgrass may be treated with fenoxaprop at 0.17 lbs/A (39.0 fl oz Acclaim Extra/Acre) in perennial ryegrass and tall fescue whereas no more than 0.12 lbs of fenoxaprop (28.0 fl oz Acclaim Extra/Acre) may be applied to 3-4 tiller crabgrass in Kentucky bluegrass turf.

Following applications of fenoxaprop, tall fescue and perennial ryegrass may be seeded immediately. Following germination of tall fescue and perennial ryegrass, fenoxaprop should not be applied until seedlings have matured for 1 month. Of the cool season turfgrasses used on sports fields in New Jersey, Kentucky bluegrass is the most susceptible to phytotoxic effects associated with fenoxaprop. For example, when utilizing fenoxaprop rates greater than 0.04 lbs/A (9.0 fl oz Acclaim Extra/A), Kentucky bluegrass seedlings must be at least 3 growing months old before fenoxaprop can be applied. Additionally, 21 waiting days should be allowed following the application of fenoxaprop prior to seeding Kentucky bluegrass

Due to the complexity of Drive and Acclaim Extra labeling with respect to crabgrass growth stage susceptibility, individual turfgrass species herbicide tolerances, and turfgrass seeding timings, pesticide labels ***must*** be thoroughly read and understood prior to the application of these materials.

Literature Cited

Hart, S. 2000. Crabgrass and goosegrass control in cool season turfgrass. Rutgers Coop. Ext., NJ Ag. Exp. Stn., E233. ◆