

establishment of weeds. In addition, St. Augustinegrass and bahiagrass, the most widely used turf species in the state, have relatively poor tolerance to most postemergence herbicides. As a result, weed control becomes a challenge for most turf managers in the state.

Weeds often are the result of a weakened turf, not the cause of it. Understanding this helps to explain the major reason for weed encroachment into a turf area (e.g., thin turf density and bare spots). Reasons for weak or bare turf areas are numerous. These include: (a) improper turf species selection not adapted to environmental conditions; (b) damage from turfgrass pests such as diseases, insects, nematodes and animals; (c) environmental stresses such as excessive shade, drought, heat and cold; (d) improper turf management practices such as misuse of fertilizer and chemicals, improper mowing height or improper mowing frequency and improper soil aeration; and (e) physical damage and compaction from concentrated or constant traffic. Unless factors which contribute to the decline of a turf area are corrected, continued problems with weed establishment should be expected.

FORMULATING A WEED CONTROL PROGRAM

Weed control is an integrated process where good cultural practices are employed to encourage desirable turfgrass ground cover as well as the intelligent selection and use of herbicides. A successful weed management approach involves the following:

1. Proper weed identification
2. Prevention of weed introduction
3. Providing proper turfgrass management or cultural practices
4. If necessary, the proper selection and use of a herbicide.

WEED IDENTIFICATION

The first step to proper weed management and control is proper identification. Turf managers should be able to identify each weed to genus and preferably to species to select the appropriate control technique. Weed identification also is the first step in understanding why weeds occur and how to control them. For instance, most sedges prefer moist, wet areas while sandspur prefer drier sites.

Identification begins with classifying the weed type. **Broadleaves**, or dicotyledonous plant, have two seed cotyledons (young leaves) at emergence and have net-like veins in their true leaves. Broadleaves often also have colorful flowers. Examples include clover, spurge, lespedeza, plantain, henbit, pusley, beggarweed, and matchweed, among others. **Grasses**, or monocotyledonous plants, only have one seed cotyledon present when a seedling emerges from the soil. Grasses also have hollow, rounded stems with nodes (joints), and parallel veins in their true leaves. Examples include crabgrass, goosegrass, dallisgrass, thin (bull) paspalum and annual bluegrass. **Sedges** and **rushes** generally favor a moist habitat and have either stems which are triangular-shaped and solid (sedges), or round and solid (rushes).

Weeds complete their life cycles in either one growing season (**annuals**), two growing seasons (**biennials**) or three or more years (**perennials**). Annuals that complete their life cycles from spring to fall are generally referred to as **summer annuals**, and those that complete their life cycles from fall to spring are **winter annuals**. Summer annual grasses, as a class, are generally the most troublesome in turf.

In the past, proper weed identification was difficult to achieve due to the lack of a suitable guide. Most guides pictured weeds in unmowed conditions or did not list all the important turf weeds. Recently, a publication jointly produced by The University of Florida, Georgia and Auburn University has become available which covers most major weeds in the southern United States. *Weeds of Southern Turfgrasses* provides color photographs of 193 major weeds with detailed descriptions, life cycles, and world-wide distribution information. Most of the photographs were taken of mowed turf. This guide is available at the following address:

Weeds of Southern Turfgrass S-77
Publications
P. O. Box 110011
University of Florida
Gainesville, FL 32611-0011

The cost of the publication is \$8.00 per copy plus 6% sales tax for Florida residents. Checks should be made payable to the University of Florida.

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