

## Selective Weed Control<sup>1</sup>

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Maintaining today's modern, multi-million dollar turf complexes at the desired level of aesthetics requires knowledge of specific weeds, their biology and available control measures. The following discusses current selective weed control options turf managers have at their disposal. Weed control should be a carefully planned and coordinated program instead of being a hit-or-miss operation. Understanding how and why weeds are present on a site is more important than what control options are available once the weed is present.

Knowledge of the safety, and effectiveness at certain weed growth stages, tolerance or susceptibility of treated turf species, time required for control of species, and economics are important considerations when trying to choose between herbicides. The most effective herbicide is only as good as its application. Many variables influence successful herbicide application. These include: proper equipment, environmental factors at the time of application; proper and constant calibration and adequate agitation. Most herbicide failures involve using the wrong chemical at the wrong date, or they are applied at an improper time or manner. It is not by failure of the herbicide itself.

### PREEMERGENCE HERBICIDES

Preemergence herbicides form the basis for a chemical weed control program in turfgrasses and are used primarily to control annual grasses and certain annual broadleaf weeds. Preemergence weed control was first suggested in 1927 and again in 1930. Some

of the first chemicals evaluated for preemergence weed control included calcium cyanide, arsenate and naphthylacetic acid. In 1959, the first true and consistent preemergence herbicide was available for turf producers. DCPA (dimethyl tetrachloroterephthalate) provided more consistent control with less damage to the turf than was previously available. With the subsequent release of dinitroaniline chemistry the widespread acceptance of preemergence weed control in turfgrass was established.

When considering any herbicide, one of the first questions is the tolerance of the desirable turfgrass species to the chemical in question. Table 1 lists the most widely used turfgrass species on Florida golf courses and their tolerance to currently available preemergence herbicides. These herbicides such as bensulide, and members of the dinitroaniline herbicides family (e.g., benefin, oryzalin, pendimethalin, prodiamine, trifluralin), should be used only on well-established turfgrasses.

### Effectiveness of Preemergence Herbicides

The effectiveness of preemergence herbicides varies because of many factors. Included are application timing in relation to weed seed germination, soil types, environmental conditions (e.g., rainfall and temperature), target weed species and biotype, and cultural factors (e.g., aeration) that follow application. Preemergence herbicides generally are most effective for annual grass control although some annual small seeded broadleaf weeds also are suppressed. Table 2 lists the expected

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