

Contact. Contact herbicides only affect the portion of green plant tissue contacted by the herbicide spray. These herbicides are not, or are only to a limited extent, translocated in the vascular system of plants. Therefore, underground plant parts such as rhizomes or tubers are not killed. Usually repeat applications are needed with contact herbicides to kill regrowth from these underground plant parts. Adequate spray volumes and thorough coverage of the weed foliage are necessary for effective control. These herbicides kill plants quickly, often within a few hours of application. Contact herbicides may be classified as selective or nonselective. Bromoxynil (Buctril) and bentazon (Basagran T&O) are classified as selective, contact herbicides. Diquat is a nonselective, contact herbicide.

Herbicides from the same class of chemistry are grouped into families in much the same way plants are grouped into genus and species. In general, members of a herbicide family are similarly absorbed and translocated and have similar mode of actions.

TIMING OF HERBICIDE APPLICATION

Herbicides are also classified by when the chemical is applied in respect to turfgrass and/or weed seed germination. Although the majority of herbicides may be classified into one category, atrazine (AAtrex), simazine (Princep), dithiopyr (Dimension), and pronamide (Kerb) are exceptions. They are used as both preemergence and postemergence herbicides.

Preplant herbicides. These are applied before turfgrass is established, usually to provide nonselective, complete control of all present weeds. Soil fumigants, such as metam-sodium or methyl bromide, and nonselective herbicides such as glyphosate (Roundup) may be used as nonselective preplant herbicides.

Preemergence herbicides. Preemergence herbicides are applied to the turfgrass site prior to weed seed germination and form a barrier at, or right below, the soil surface. This group of herbicides prevents cell division during weed-seed germination as the emerging seedling contacts the herbicide layer (Figure 1). Weeds that already have emerged (visible) at the time of application are not controlled consistently by preemergence herbicides since their primary growing points escape treatment.

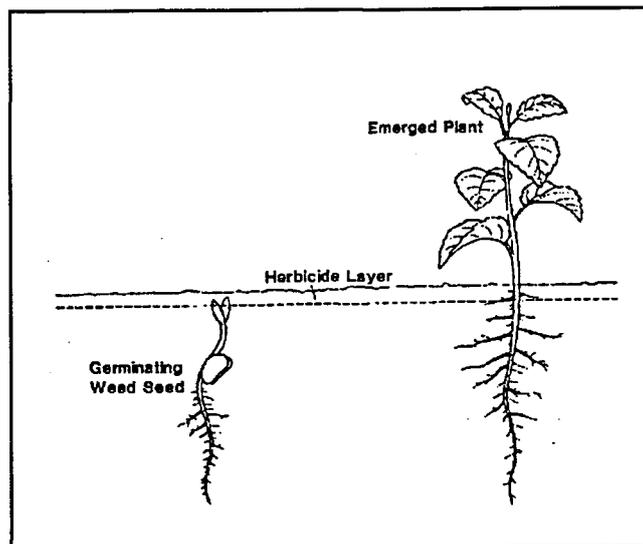


Figure 1. Preemergence herbicides form a barrier at or just below the soil surface and are relatively ineffective on emerged weeds.

Postemergence herbicides. Postemergence herbicides are applied directly to emerged weeds. In contrast to preemergence herbicides, this group of herbicides provides little, if any, soil residual control of weeds. A complete chemical weed control program can be accomplished with postemergence herbicides, provided multiple applications are used throughout the year. However, due to the necessity of repeat applications and temporary turfgrass injury, most turfgrass managers use postemergence herbicides in conjunction with a preemergence weed control program. Postemergence herbicides are useful to control perennial grasses and broadleaf weeds that are not controlled by preemergence herbicides. Certain postemergence herbicides may also be used on newly established turfgrasses.

SOIL FUMIGATION FOR NONSELECTIVE PREPLANT WEED CONTROL

Soil fumigants are volatile liquids or gases that control a wide range of soil-borne pests. Soil fumigants are also highly toxic and are expensive. Their use is limited to small, high cash crop acres such as tobacco, certain vegetables, fruits, bedding plants and turf. The expense usually occurs because of a cover necessary to trap the fumigant vapors in the soil. Fumigants control not only most weed species, but also many nematodes, fungi and insects. Weed species that have a hard, water-impermeable seed coat such as sicklepod, white clover, redstem