ORNAMENTAL BED WEED MANAGEMENT

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Introduction

Weeds are a concern for the professional grounds manager during the growing season. They can spoil the appearance of a shrub planting bed, a perennial bed, or an annual flowerbed that the grounds manager has devoted countless hours in achieving. Most grounds managers have experienced the consequences of a landscape maintenance project that does not meet a client's expectations for appearance.

Professional grounds managers and their teams have a vast array of management options available to help them succeed in achieving a superior appearance for the client's landscape. The focus of this article is on ornamental bed weed management practices.

Any discussion involving landscape weed management needs to involve the principles of Integrated Pest Management (IPM). IPM is the balancing of costs, environmental effects, public health, and pesticide management. In many instances, a combination of good cultural practices may result in the need for fewer pesticides.

Successful ornamental bed weed management must begin with a basic understanding of the weeds. Weeds usually posses one of three primary life cycles, annual, biennial, and perennial. Annual weeds complete their life cycle in one growing season. The occurrence of summer annuals and winter annuals must be considered for the timing controls to be most effective. Biennial weeds require two growing seasons to complete their life cycles. Controls are most effective if applied toward the end of the second year of growth, which is when seed production begins. Perennial weeds live longer then two years. They develop root systems and structures. This gives them the distinction of being the most difficult to control.

Management Practices

Keeping ornamental planting beds healthy and looking good involves a combination of several aspects. These include proper plant material selection for the location, watering, cultivating, mulching, soil composition and structure, plant nutrition, and herbicide weed management. Creating beds with properly prepared compost and having good density of ground cover plants will help eliminate weeds as well. These are just a few things to consider when planning ornamental planting beds which can be successful without a need for continuous applications of pesticides. Research into biological weed controls such as diseases, predators, and genetic manipulations, is just beginning to get under way. Some products are being introduced, and many more are being tested.

Preemergent Weed Management

An ornamental planting bed beginning its season with a fresh layer of mulch, not more than two inches, is well on its way to a successful season. However, mulching alone may not guarantee a desirable measure of weed suppression. An application of preemergent herbicide will insure the bed stays clean well into the summer with a minimum of time and cost intensive weeding. Preemergent herbicides work to control many annual grassy and broadleaf weeds as they germinate. This reduces the need for costly hand weeding later. In addition, it is important to observe the sunlight conditions that the bed is growing in. Many weeds do not grow well in shade. A bed with sun and shade will only need preemergent herbicide in the sunny portion.

Applications can be made by granule, liquid spray, or a combination of both. My preference is liquid spray application. With liquid application, there is no dust to breathe. It is easier to keep the application on target, and the coverage is more accurate. Sprayers also have a larger capacity than dry spreaders, thus improving efficiency. Preemergent herbicides require watering in to move the material into the soil. Liquid applications start the watering in process. It has also been my experience that most formulations for liquid application can remain a longer time on the soil surface before watering in must

occur. This is important as most preemergent herbicide applications are made before irrigation systems have been started in the spring, and we depend on rainfall to get this job done. Granular applications work well for me where plantings cannot be reached with a hose, where certain species may not be listed as safe for use by the liquid materials, and when doing in season touch-ups.

Always read and understand the label of preemergent herbicides. Most products will tell you which plants in the landscape beds will tolerate their active ingredient, without being damaged. Preemergent herbicides are active in the upper 1" to 2" of the soil. Shallow rooted plants may show some effects, the preemergent is trying to control them as well. Symptoms include discoloration (yellowing), leaf curl, stem curl, stunting, failure to grow, and death. If there is any question, always make a test application to a small area first and observe the plant material before applying to the entire area.

Annual flowerbeds can also receive preemergent herbicide applications. These plants will show adverse effects from preemergents until they become established. It is best to let these plants have two or three weeks in their new home before preemergent herbicides are applied. If weeds do start to grow, hand weed, or cultivate the beds until it is safe to apply the preemergent herbicide.

The final consideration of preemergent herbicides is application during mid-season, and/or near the end of the season. Late summer weeds and winter annuals will make their appearance just about the time the spring preemergent application is wearing off. This usually coincides with the departure of summer helpers that did most of the bed maintenance until now. Later applications will help manage these weeds, and provide some carryover into the next spring; which can come in handy if an early spring warms the soil faster then you can get to every client with that springs' application.

Post Emergent Weed Management

Weeds already existing in ornamental beds will not respond to preemergent herbicide management. These are quite often the perennial weeds that are harder to control because of their structure. Another complication added to post emergent weed control is that most materials used here will control the desirable plants as well as the weeds. There are very few control materials that can be applied over the top of an entire bed as is done with preemergents. Always read and understand the label of the product being used to prevent possible disasters.

Post emergent weed control materials work to control weeds either by systemic, or contact action. Systemic materials work throughout the weed to kill the foliage that produces the plant's food, and the roots that store the food and make regrowth possible. The most popular product in this category is Roundup™ (Monsanto Company). It is a non-selective control so one must be careful not to apply it to desirable plants. Contact materials work to defoliate, or "burn," the weed. An interesting product in this category is Scythe™ (Mycogen), which is a naturally occurring fatty acid. These products work very well with annual weeds in one application. Established perennial weeds may need follow-up applications to manage regrowth generated from stored food in these plants' root systems. These products are also non-selective.

Soil sterilants are also considered to be a type of post emergent control. They are most useful when the ornamental bed may not contain any plant material. Places like parking lot islands, and fence rows are examples. Extreme caution must be used when applying soil sterilants. Their control lasts a long time, and they are not always stable in the soil. They can move out or the target area and cause damage to desirable plants on your site or possibly a neighbor's.

Conclusions

I would like to thank Michigan Turfgrass Foundation for the opportunity to share my thoughts and experiences on this topic. We as grounds managers are continually being challenged by the public to be good stewards of the environment, and meet the demands of our clients at the same time. We need a strong partnership with the researchers to bring us new innovations to help us achieve these goals, and appreciation of the Michigan Turfgrass Foundation's support of these efforts.