

WEED CONTROL

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Most turfgrass weeds can be satisfactorily controlled with various herbicides available to the turf manager. The exceptions, of course, are the undesirable perennial grasses for which there are no selective herbicides available. But it is not desirable to apply herbicides regularly to control weed problems. It is instead very important that a total weed control program combine proper sanitary, cultural, and chemical procedures to effectively produce weed free turf.

Sanitation - There are several procedures which should be followed to minimize the potential weed problems in a turf area. In a new area to be established, there will probably be large quantities of weed seed in the soil. Some of these, such as perennial grasses, cannot be selectively controlled after the turf is established. Therefore, the weed control program should start before establishment by using fumigants to kill weeds and weed seed in the soil. A number of soil fumigants are available to effectively eliminate these problems during establishment. A pre-emergent herbicide such as siduron may be required to prevent annual grasses where fumigation is not practiced.

Another important consideration when seeding a new lawn or overseeding during renovation is to use only high quality, weed-free seed. Low quality seed mixtures frequently contain undesirable quantities of weed seed and the resulting turf would require extensive weed control practices for the first year or two. Many "bargain seed lots" also have a significant quantity of undesirable annual or temporary turf-grasses. Where a high quality turf is the goal, these seed mixtures should definitely be avoided.

Another sanitation practice should be to prevent weeds in the turf or adjacent areas from going to seed. Weeds should be mowed, killed with herbicides, or otherwise eliminated prior to production of seed to prevent additional weed contamination in the turf.

Cultural - To be completely successful, every weed control program must be coupled with recommended turf cultural practices to prevent continued weed infestation. Maintaining a dense, vigorous turf is extremely important in reducing weed invasion. These cultural practices would include selection of adapted and improved turfgrass varieties, use of recommended fertility programs, proper cutting height and mowing frequency, adequate moisture, reduction of compaction and thatch, control of turf-grass pests, etc. This will reduce broadleaf weed invasion and will also reduce the quantity of annual grass seed which germinates due to the partial exclusion of light that reaches the soil surface. After a good cultural program has been in use and a quality turf established, herbicides can be used to eliminate the remaining undesirable weeds. In most cases, very few weeds will re-invade the turf area.

Chemical - There are many herbicides and formulations to choose from when composing a chemical control program. Some are, of course, only pre-emergent or post-emergent herbicides, some are only for broadleaves and others for grasses, some are selective, while others are non-selective. Specific herbicides will be discussed later.

It is very important that an accurate diagnosis of the weed problem be made and a herbicide selected accordingly. The first two steps in a chemical control program are proper pest diagnosis and accurate pesticide selection. A mistake in either one may result in unsatisfactory control of the target species. The third step to consider

is herbicide application. To get the job done properly we need to deal with equipment, calibration, drift, adequate coverage, timing, etc. If any of these factors are overlooked it is very possible complete kill of the weeds will not be obtained, or there may be phytotoxicity to the desirable species.

A problem that has developed with the easy accessibility of herbicides and the proliferation of lawn care companies is the routine use of herbicides. If we accept that cultural practices to produce a dense turf are an important consideration in a weed control program, then we could reasonably infer that it should not be necessary to apply herbicides on a routine basis. A broadleaf herbicide every two, three, or four years should be sufficient after the broadleaf population is adequately controlled. This has not been the practice, however, as many companies find it convenient to operate with one tank mixture. Serious consideration should be given to a system where pesticides are carried in a separate tank and applied only where the situation warrants it. This would certainly save on chemical usage and possibly be more acceptable environmentally. It would seem the engineering for this should be relatively simple. You may want to consider this for your operation.

Drift of pesticides is another common problem as they are frequently applied in all types of weather. I have observed clouds of drifting material from chemical applicators on windy days. This is, of course, undesirable near sensitive ornamental plantings and vegetable gardens in residential areas. Would it be feasible to develop and attach a light weight shield to your application equipment? It could be held several inches above the turf and the drift problem would be eliminated. You may wish to consider this suggestion.

Control Calendar - Herbicide application to broadleaf weeds should be done only when the weeds are actively growing and not during or prior to severe stress conditions. If the weeds are not actively growing, less herbicide will be absorbed and the weeds will not be as easily controlled. If applied during stress conditions, particularly high temperature, there will be greater chance of phytotoxicity. For Michigan the best time period is probably from late March to late May and again from early September to mid-October with variations in location and from one year to another. Weeds can, of course, be adequately controlled at other times but the success ratio will decrease. Another advantage of controlling broadleaves during peak growth periods is to allow the turf to fill in the bare areas where the weeds were growing.

Most broadleaf weeds can be controlled with either 2,4-D, silvex, mecoprop, dicamba, or combinations of these four herbicides, or at least require repeat applications. Additionally, dicamba must be used with extreme caution in the vicinity of ornamental plantings.

The recommended control for annual grasses is with pre-emergence herbicides. These include benefin, bensulide, DCPA, and siduron. Siduron is the only one that can be used in conjunction with seeding a turf area. The herbicides must be applied prior to annual grass germination, which will vary each year and each location, but will generally be from mid-March to mid-May in most northern locations. Most of these herbicides will not break down in cool weather and can be applied earlier with little residual loss until warm weather. In southern portions of the cool season region, a second application may be necessary because of the length of the germination period for annual grasses. Pre-emergent herbicide application about the time forsythia buds break is still a good rule to follow. Observations have shown the two correlate very closely in many locations.

Post-emergent control of annual grasses in turf is not highly recommended but can be accomplished from mid-June to mid-July with methanearsonates. Repeat applications are necessary and some phytotoxicity to the turf will probably occur.

Control of undesirable perennial grasses in turf continues to be a difficult

problem. There are no selective herbicides available to do this job. The non-selective herbicides have such a long residual that it makes renovation less desirable. However, amitrole and dalapon are available. The plant species should be actively growing and treated with either one or both herbicides in mid-July. A repeat application may be desirable 10 days later. This should be followed by tillage for more complete control. The herbicide will be gone by September so that establishment can proceed at the most desirable time.

Glyphosate is a new non-selective herbicide, but is not yet labeled for turf renovation. It effectively kills quackgrass, tall fescue, nimblewill, etc., in conjunction with tillage and will aid turf renovation greatly. The residual is very short and seeding can proceed a day or two after herbicide application.

There are additional herbicides used for turf other than the ones listed above. However, they are used infrequently and for specific situations. Recommendations can be obtained from bulletins published by your Cooperative Extension Service.