

Mann pointed out that it is important to distinguish between toxicity and hazards. Toxicity, he defined as the capacity of a substance to produce injury. Hazard is the probability that the injury will result from a specific use of a toxic substance. Thus, it is necessary to know both the toxicity and use or exposure conditions to estimate possible hazard. Just because a material is toxic does not mean that it cannot be used with safety.

Herbicides might be classified, Mann said, as extremely toxic, highly toxic, slightly toxic, practically nontoxic, and harmless. In using these 6 ratings of toxicity, most herbicides now being used would fall in the 3rd and 4th categories, Mann believes. This type information is important to the ultimate user and the general public.

Trained supervision, according to Mann, is the key in safe herbicide use. Most important in this area is education, training, and supervision of persons working with or handling chemicals. Most users, he said, depend on common sense, awareness that herbicides are toxic, and on simple but regular personal hygiene habits.

Plants To Be Eradicated Dictate Special Equipment

Plant species dictate the type equipment and the chemical needed for their control. Important here, according to Chester L. Foy, plant pathologist at Virginia Polytechnic Institute, Blacksburg, Va., is the when, where, and how plants grow.

Foy pointed out that certain crops require that there be no contact between the crop plant and the weed killing herbicide. There is also a big difference, he said, in plant retention, penetration, and translocation of chemical to plant. For example, location of plants to be killed,

differences in growth habit and plant makeup determine equipment needed and the type herbicide which will be the most effective.

As examples, Foy cited the need to control spray drift of brush killers by using thickeners and antidrift agents. For this purpose, special orifices and centrifugal type applicators on aerial equipment are needed to confine the treatment pattern. Aquatic weed problems, he said, call for air boats, pontoons for walking on water, and similar equipment to place granules, to spray inaccessible immersed weed stands, or to inject or meter herbicides into water. Large tree tops cannot be sprayed with standard sprayers. For these, the cherry picker or similar devices, usually with off-set nozzles, are needed.

Other examples were presented by Foy to point up the engineering achievements which have made possible the growth of the vegetation care industry.

Conference for the coming year will be held Jan. 21-23, 1969, at the Statler Hilton Hotel, Dallas, Texas.

Renovation Is Severe Method For Improving Turf

Renovation of turfgrass requires both time and money. And because of these factors, it probably should be the last step undertaken for improvement of existing turf.

This was the view expressed by Dr. Robert W. Miller to turfmen attending the 39th annual short course for vegetation care management personnel at Columbus, Ohio. Miller, OSU agronomist, also serves as executive-secretary of the Ohio Turf Foundation.

Reasons for renovating are many. The original job may have been handled improperly and the

sod may be in a poor condition. Bluegrass turf may be threatened by annual grasses. Bentgrass may be mixed with bluegrass. Because these problems are difficult to handle and the mixed stands of grass may not permit selective removal, renovation may be the only solution.

If nimblewill, tall fescue, quackgrass, or Johnsongrass are present in a lawn, it may be best to dig out the individual areas and reseed or resod rather than renovating the entire lawn. Miller also said herbicides may be excellent for spot treatments. However, in the case of quackgrass and similar weed grasses, up to 3 treatments may be needed.

If renovation is to be the solution, the kill of existing turfgrass should start in early June for the mid-west area, according to Miller. Then the area can be ready for fall seeding in September. However, this ties up the lawn and it becomes a problem area for most of the summer and fall, or until the new seeding is established.

Because renovation does create problems, Miller believes lawn problem areas need to be carefully analyzed. Many times, he said, the turf only needs an aerification. In other cases, thatching or fertilizing along with deep watering may improve the stand and produce the desired lawn.

A good disease control program is mandatory in maintaining turf. The old adage that "a pound of prevention is worth a pound of cure" applies to turfgrass management, Miller believes. He emphasized that renovation is a drastic step and demands extreme measures to produce a desirable turf.

The Ohio short course is annually sponsored by the University, Ohio Nurserymen's Association, the Ohio chapter of the International Shade Tree Conference, and the Ohio Turf Grass Council.