



The proper slant on pesticides

Virtues of chemical sprays for golf courses outweigh dangers to plants and animals.

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Development of pesticides over the past two decades has done much to improve golf course management. However, since Rachel Carson wrote "The Silent Spring," concern over the safety of many pesticidal agents has reached maniacal proportions. Perhaps her book will not make mountains, but it could turn our greens into molehills if her basic premise were taken seriously.

Certainly, many of the toxicants available for use today are potentially dangerous to man, to animals, to birds, to fish and to plants. If they were not poisons, they would not effectively do the job for which they were made. However, there are just enough accidental poisonings, just enough cases of contamination of food materials, and just enough evidence of damage to wild life resources to feed the fires of unreasoning prejudices against *all* pesticidal materials.

Resorting to the same kind of reasoning, we could hire gifted writers to persuade people that such common products as table salt, aspirin, mouthwash, gasoline and grain alcohol can be deadly if improperly used. It is a fact that misuse of aspirin causes more deaths each year than all pesticides combined. Fatalities in the U. S. from pesticide poisoning range from 88 to 141 per year. This loss of life is significant, however it should be pointed out that 7,500 deaths per year are caused by use of medicines (more than 150 attributed to poisoning by aspirin).

What does all this have to do with golf course maintenance? In 1962, the California Department of Agriculture placed sodium arsenite on its list as an "injurious material" and began to regulate its use. Such a list comprises those materials which the Director of Agricul-

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ture "finds and determines to be injurious to persons, animals, or crops other than the pest or vegetation it is intended to destroy." It would seem that almost every pesticide could be listed as well as many other products which are not pesticides.

Sodium arsenite is most certainly poisonous. If used improperly, it can cause death to "persons, animals, or crops." Yet the fact is that sodium arsenite has been used on golf courses as an herbicidal material *for more than 30 years*. If there has ever been a fatality attributed to its use on turfgrass, I have not heard of it. Sodium arsenite, properly used, is one of the most useful, most versatile, and safe herbicides available to the turf grower. It is also inexpensive enough to be economically feasible for any turf weed control program.

California's action with regard to sodium arsenite is not an isolated case. Several other states have taken steps to set up a licensing system and to restrict the

use of certain materials as pesticides.

This inclination to regulate the use of common pesticide materials through licensing and permit procedures is no doubt a result of good intentions to "guard the public interest." It is not in the interest of the welfare of golf clubs, however, to have to resort to the hiring of custom applicators and to be forced to use expensive materials as substitutes for such cheap and effective materials as sodium arsenite.

One need only compare today's method of golf course management with the period immediately preceding World War II to appreciate the impact of pesticides on maintenance practices. Insecticides at that time consisted of pyrethrum extracts, derris (rotenone), tobacco extracts and various arsenicals. One cannot conceive of the possibility of adequately controlling such pests as Japanese beetles, sod webworms and chinch bugs with this limited list of materials. DDT, chlordane, dieldrin, BHC, aldrin, malathion, diazinon, heptachlor, and many other highly effective insecticides

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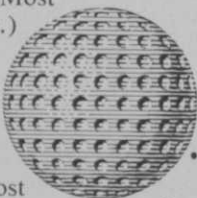
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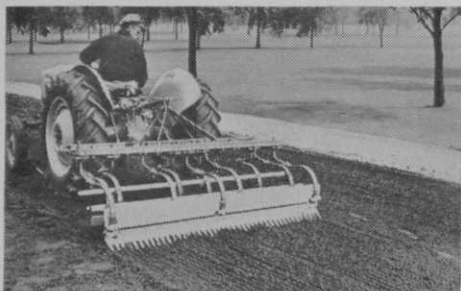


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have provided an effective means of controlling most of the insect pests that beset us. Similarly, spectacular developments in weed control and in disease control have revolutionized the maintenance of golf course turf.

Pesticides have benefited all of us in many other ways which are far more important than any contribution to better turf. Before the days of DDT, the United States was reported to have lost to death through malaria more than 50,000 persons annually. Also, typhus fever would have accounted for a tremendous loss of life in World War II had DDT not been used effectively.

Part of Environment

Despite all the advantages we have gained from the use of chemical pest control agents, there is another side to the question. Ecologists argue that many of the materials being used are becoming a part of the environment of man and of wild life to such an extent that they may pose a danger. The tremendous amount of heated writing and discussion on both sides of the argument is likely to leave the reader a bit confused about the validity of either side's position.

Those who are fearful of environmental contamination claim that pesticidal materials are harmful to wild life. Yet the Audubon Society continues to report increases in numbers of birds. In a speech printed in the *Congressional Record* of June 17, 1964, Representative Ralph F. Beerman of Nebraska reports substantial increases in the pheasant and prairie chicken populations. In the Gulf Coast area where the fire ant eradication program undertaken a few years ago created a great deal of controversy, the bag limits on quail have been increased. Therefore, while some instances of wild life destruction may undoubtedly occur, it would seem that in the broad view pesticides help rather than ruin our wild life resources.

There is a danger of pesticides causing damage to plants other than weeds which are to be eradicated. This danger is one of great importance to the golf course superintendent. He must not only be

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aware of proper dosages, but he must also judge the effects of weather and the possible interaction of effects of two different materials.

In light of the trend toward greater regulation of pesticide manufacture and use, it becomes important that each user of the products gives no cause for the imposition of greater restriction. *In other words, be sure you avoid accidents and needless contamination.* There are several cardinal rules to be followed:

- Store all pesticidal materials in a secure place and keep them under lock so that access to them can be strictly controlled.
- Store pesticides in original containers. Do not store remnants in unmarked containers, and do not re-use a container for some other product.
- Dispose of empty containers according to the manufacturer's instructions.
- Impress the need for care and cleanliness upon all workmen.
- Use appropriate protective clothing, masks and gloves.
- Read the label. The National Agricultural Chemicals Association call these the most important 21 words in pest control: Read *entire* label. Use *strictly* in accordance with label cautions, warnings and directions, and in conformity with federal and state regulations.
- Finally, know where your nearest Poison Control Center is located.

Research in pesticides continues and one of the goals of the research is a greater margin of safety for every pesticide use. In some cases biological controls can be employed. Male sterilization of insects through irradiation has been effective in some species of insects. Isolation of chemical sex attractants and their employment for trapping techniques offers a promising approach.

There is a political aspect involved in some of these approaches. The mounting of a broad scale attack on a given species must necessarily be a government sponsored program. Such programs invariably involve expanded organizations for control. This is in contrast to the use of an insecticide by an individual where he can direct one general purpose ma-

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terial toward the local control of numerous species—hopefully without restrictive regulations to hamper his attack.

Pesticides are necessary for golf course management, and it appears that these materials can be used effectively and harmlessly through the exercise of proper care. Therefore, all of us in this field should resist the imposition of needless regulation. At the same time, we should use pesticides safely, and spread the doctrine of safe and effective pesticide use to others.

It would be helpful in combating some of the unjustified claims against pesticides if every golf course superintendent and every person involved with golf course management were to arm himself with some of the facts about pesticide values. How can we tolerate an argument against the use of DDT because it may possibly contaminate an environment and may possibly be detrimental to wild life, when we have demonstrated that by controlling mosquitoes with DDT, we can practically eliminate malaria and encephalitis, thereby saving more than 50,000 U. S. lives per year? •