

CULTIVAR SELECTION FOR REDUCED PESTICIDE USE

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"It isn't pollution that's harming the environment. It's the impurities in our air and water that are doing it."

– Former US Vice-President Dan Quayle

More and more, turf managers are under the gun to trim pesticide use. The environmental message – be it real or exaggerated – has gotten through to even the average homeowner. Turf maintenance is seen as a major user and abuser of pesticides. But is turf really a major pesticide consumer compared with other agricultural crops? Or is it just a scare tactic whipped up by the popular press? And what steps can a turf manager take to reduce the need for pesticides?

Scope of turf pesticide use. Frankly, a lot of pesticide is applied to turf in the US. A 1991 census of insecticide use found that 10.8-million lbs. of active ingredient were applied to turf across the US annually. More shocking was the fact that 60% of insecticides were applied by unlicensed homeowners, with no training whatsoever in safe pesticide handling (2).

Golf courses – a very visible user of pesticides – were also a big consumer. In a recent nationwide tally, the average 100-acre golf course applied 650 to 1000 lbs. of active ingredient per year. Totaled over the 1.4-million acres of golf turf in the US, that adds up to 2.5-million lbs. of herbicides, 2.1-million lbs. of insecticides, and 4.5-million lbs. of fungicides applied annually (1).

Now surely that would make turf one of the leading consumers of pesticides. No – not true. Among agricultural crops, homeowner turf came in 52nd and golf turf 31st in overall herbicide consumption according to a nationwide summary. Onions and citrus topped the dubious list of most herbicides used.

Homeowner turf and golf turf placed 66th and 47th in insecticide use among the crops. Pears and apples consumed 30 to 70 times more insecticide active ingredient than turf.

In fungicide use, homeowner and golf turf ranked 66th and 38th among ag crops. Grapes and peaches were by far the biggest users (1).

Bottom line: Yes, turf is a big consumer of pesticides. And yes, more pesticides are applied to turf by unqualified applicators than to any other crop. But considering the vast acreage of turf nationwide, turf receives only a moderate to low dosing of pesticide compared to other crops. Many of the food crops we eat receive far more. Chew on that.

Reducing turf pesticide use. The goal of all turf caretakers – whether professional or homeowner – should be to apply fewer pesticides, and apply them only when needed. A curative, rather than preventive approach should be used to treat pests. Apply pesticides safely and dispose of containers as recommended on the label. And above all, try to get to the root of the problem – find out why the pests occurred in the first place, so you can prevent their reoccurrence later on.

One way to trim pesticides is by use of *resistant varieties*. Turf breeding over the past 3 decades has produced a host of varieties that resist nearly every pest imaginable – from diseases to insects to weeds. Using resistant varieties in place of susceptible ones can cut your need for pesticides.

Trouble is, no *one* variety is resistant to *every* pest. Thus, the turf manager has to decide which pests are most important at their site and seek appropriate solutions. Oftentimes blends and mixtures can be employed to enhance the spectrum of resistance. For example, if variety A resists dollar spot but not brown patch, and variety B resists brown patch and not dollar spot, then a combination of the two would bring out the best in both. Resistance in one variety covers for susceptibility in the other.

The tables in this article were prepared from resistance data of current varieties. Only the most resistant varieties are presented. Varieties are listed in alphabetical order. Non-commercial experimental varieties are omitted.

Using these naturally pest resistant varieties can help you trim your chemical use.

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References Cited

1. Cohen, S.Z. 1995. Agriculture and the golf course industry: An exploration of pesticide use. *Golf Course Mgmt.* May, p. 96-104.
2. Welterlen, M.S. 1995. Turf insecticide use. *Grounds Maint. Apr.*, p. 6-8.