Control versus Confusion and Controversy

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With the advent of many new and relatively effective insecticides there is some tendency to write insects off as a minor problem. Too often insect problems are not recognized and damage is attributed to some other cause. Too often growers who realize their problems plaster an area with whatever insecticide is on hand or whatever is cheapest. Too often insecticides are applied either improperly or at the wrong time.

Control implies knowledge, and we **must** know what we are dealing with, when to deal with it, and how to deal with it. By knowing the pest and its life cycle, we determine when to deal with it. We should attack during its most susceptible period.

We must also determine what type of material would best suit our needs, such as a contact poison or a stomach poison. This is very important.

The indiscriminate use of pesticides has caused much concern and has resulted in a great deal of criticism, including the denunciation of pesticides in the book, **Silent Spring,** by the late Rachel Carson. While much of the information is presented in a very biased manner, unfortunately much of it is true. Sadly enough, golf courses are not above reproach in this matter.

Remember, as we improve conditions for our plant materials, we also make them more favorable for insect pests. Obviously, we cannot and must not disregard chemical control, but we must exercise extreme care and good judgment. Stay away from highly toxic, broad spectrum

Unprotected turf and hungry chinch bugs—a poor combination.
(Photo courtesy University of Connecticut)

Chinch bug damage in apron (light area foreground) at Cornwells Golf Club, Eddington, Pa. 1965 was a good year for insects—any dry year is.

materials! These can upset an entire ecosystem, be it golf course, farm, or forest. Use materials with a broad enough spectrum to control insect pests, yet specific enough not to harm desired flora and fauna.

The question of resistance frequently crops up. Suppose we have been using an insecticide successfully and suddenly we notice that our control is decreasing. Frequently, we just increase the dosage.

This is wrong! Here is some data on a well-known chlorinated hydrocarbon which once served as a good control for chinch bug, but because of indiscriminate use has now been rendered useless.

MEAN NUMBER OF HAIRY CHINCH BUGS
(Blissus hirtus Mont.)
PER SQUARE FOOT

	September 23, 1964	August 24, 1964	September 23,1966
CHLORINATED HYDROCARBON	171.3	68.3	59.4
UNTREATED CHECK	89.0	25.1	14.2
RATIO	1.92x	2.45x	4.17x

Data furnished by Dr. H. T. Streu, Rutgers University.

The counts were made on the **same** plots. Plots were treated annually and established in 1962. It is natural to find variations in chinch bug populations from year to year. However, the important factor is the ratio.

The resistance problem is not new, but it has been compounded by increased and improper use of pesticides. Insecticides **per se** do not cause resistance. Natural genetic mutations account for resistance, and insecticides just increase the pressure of natural selection. In other words, they speed up evolution of resistant strains.

Whenever you suspect resistance to be affecting control, you should change to a different class of chemical compound. By class I mean chlorinated hydrocarbon, organo-phosphate, carbamate, etc. If you change soon enough, perhaps you can come back to the original material, and once again achieve effective control.

Factors to be considered in selecting an insecticide are toxicity, speed of action, residual, formulation, application and cost. If we adhere to basic principals our control will be more effective, our costs will be less, our materials will serve us longer and better, and our critics will be silenced. After all, shouldn't these be our objectives?