

# THE OBSERVATION POST

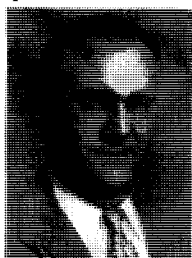
Philip H. Groggins



## Crop Protection Insurance

In this issue, Dr. Groggins turns over this page to Harold H. Shepard of USDA, whose studies convince him that chemical pesticides are good crop insurance

FEW ARE THE agricultural products not damaged by pests of one kind or another. Many are attacked by an assortment of insects, fungi and other types of pest organisms. Weeds also contribute heavily to crop losses by their competition for space, moisture and plant food.



Harold H. Shepard

In terms of dollar value, losses from insects, fungi, and weeds cost the United States an estimated \$13 billion annually. This is a staggering amount, especially so when we consider the chemicals, equipment, and man-hours spent in preventing further losses.

### Measure Saving Made Not Loss Prevented

To express damage to crops by pests in terms of dollar value, bushels, or man-hours lost is a customary practice, but fails to answer questions about the savings to be made through control measures applied by the growers. In order to justify adding heavy expenditures for pesticides to the other costs of crop production, we must measure the savings which were made—not the losses which were not prevented. In 1951, when gross farm returns were about \$27 billion, the estimated savings of farm crops and stored commodities was about \$5 billion. This was accomplished through the use of pesticidal chemicals which cost the farmers at least \$500 million, not including the costs of application.

Within about 10 years agricultural pest control has undergone a revolution. DDT comes to mind immediately as one milestone in that development. We are thinking now, however, of the chemical treatment of large expanses of field crops such as wheat, rice, and seed

alfalfa that could not have been economically sprayed or dusted previously. Instead of only 10 to 20% of the acres cultivated in the United States being subject to chemical protection from pest injury, perhaps 60 to 70% could now be protected. The airplane application of 2,4-D and similar weed killers has contributed heavily to this new practice of pest control on field crops and even on grazing land.

It has been stated that herbicides were applied to 30 million acres in 1951. This is an area equivalent to about one-half the country's harvested wheat acreage, or about 35% of the corn acreage. Even grazing lands can now often be treated economically. In one area where sagebrush was killed, beef production increased 50%.

Savings in man-hours required for crop production may be fully as important as other considerations. Chemicals used to control weeds and which eliminate most hand-hoeing are coming to the front in this regard. In one test, the cost of hoeing cotton by hand was nearly \$12 an acre while the cost for efficient weed control, using chemicals and only enough hoe work to kill surviving weeds, was as low as \$8.00 an acre.

### Return of 5 Times Cost

Community-wide demonstrations of cotton insect control in Texas by the use of insecticides showed a net profit of \$54 an acre in 1949 and \$74.84 an acre in 1950. Expenses usually budgeted for the control of insects on cotton are \$7.50 to \$10 per acre. Thus for a cost of about \$10 for insurance the cotton farmer received a return of more than five times his costs.

An expenditure of \$1,308,000 in Oklahoma for greenbug control on wheat in 1950 produced a net return of \$3,924,000 for the one state.

The average annual loss to the apple crop caused by the codling moth was

reduced from about 15% in the period 1940-44 to about 4% in 1945-48. Losses for the United States were reduced from over \$25 million to about \$9 million. DDT and other new insecticidal chemicals were largely responsible for this improvement in "insurance policies."

### Insurance Against Individual Losses

Often the question is asked as to why insecticides should be applied, for instance, to cotton in a year when the market is faced with a surplus of that commodity. This question involves a very fundamental point. Insect infestations are not distributed uniformly. Without the application of control measures, some growers might even lose their entire crop, while others would suffer little. Pesticides insure the individual against his own losses due to pests.

Pesticides used properly and extensively to prevent crop losses would increase the supply of agricultural products. Other things being equal, market value would then decline. The over-all quantity of a crop that would be saved from pests by the use of chemicals, therefore, should not be expressed in dollar value unless this situation is kept in mind. This does not affect calculations of dollar savings on an individual grower basis.

### More Crops and More Chemicals

Two points should be emphasized regarding the insurance value of pesticides in crop production. First, many more crops now receive this kind of insurance coverage than as recently as 10 years ago. Newly developed chemicals are so effective that small quantities, properly distributed over large areas of forest and field, now do as good a job (often better) as massive applications of older materials which could be used formerly only on limited areas of intensively cultivated land. And this, then, is the second point—that pesticides provide much better insurance returns now than 10 years or more ago. In fact, the old "insurance companies," such as the arsenicals, cannot obtain the business now that they formerly had.

(In the next issue, Frank App of Seabrook Farms will conclude this discussion.)