

PREFACE

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The production of cotton on a profitable basis often depends upon the type and/or frequency of sampling for insects, diseases, and fruitfulness, that is conducted in the field during the growing season. Wadley (1967) defined a sample as a portion of a population taken for study in the hope that it will be representative enough to tell us what we need to know about the whole population. The term "sampling" implies human effort. Thus, it involves time, energy, and monetary expense.

Numerous sampling methods have been devised, evaluated, and practiced and most methods have much to offer. The sample may be used to estimate sizes of populations of injurious and beneficial arthropods, measure current damage, and assess fruitfulness of the plant. Most decisions on what to do about insect control will be based on what was observed in a sample. Much interest has been expressed by scientists in other disciplines and commercial growers in selecting or devising a sampling procedure specific to their needs.

We know that, in general, when levels of fruitfulness, insect damage, or insect populations are low, more sampling must be done to obtain statistically reliable estimates. We also know that such conditions in the field are dynamic and that vigilance in the form of sampling at reasonable intervals is essential to knowing what is taking place in the cotton field.

Models are designed to predict; sampling informs us on the current situation. Thus, predictions are based on sampling information.

Herein we discuss the need to sample for insect pests or beneficial insects of cotton based on the age of the crop, levels of beneficial or pest arthropod populations, climatic and ecological conditions, and characteristics of the cotton cultivar.

We discuss sampling practices in an area-wide bollworm management community and the development and implementation of scouting techniques, ways to determine the appropriate sample sizes for fruiting forms of cotton, for boll weevils, *Heliothis* spp., and for beneficials, and how to analyze these data to insure their statistical reliability. Lastly, the cost of sampling for a pest species is assessed.