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Agricultural Pest Control

INTRODUCTION

This manual is intended to provide information to the pesticide applicator so that the applicator is able to meet minimum EPA standards for commercial applicators in Category 1—Agricultural Pest Control. Applicators must demonstrate practical knowledge of crops grown and the specific pests of those crops on which they may be using restricted use pesticides. Practical knowledge is required concerning soil and water problems, pre-harvest intervals, re-entry intervals, phytotoxicity and potential for environmental contamination, non-target injury and community prob-

lems resulting from the use of restricted use pesticides in agricultural areas.

The applicator is also expected to demonstrate practical knowledge of the principles and practices of pest control and the safe use of pesticides. This information is general standard information and is found in the publication "Apply Pesticides Correctly." This manual, as well as further information concerning proper and safe use of pesticides, is available from the Louisiana Cooperative Extension Service, a part of the Louisiana State University Agricultural Center.

ECOLOGICAL IMPACT OF PESTICIDES

Initially, it is necessary to examine the terminology that will be used in this discussion.

- **PESTICIDES — CHEMICALS USED TO CONTROL PEST POPULATION LEVELS**
- **PESTS — PLANTS AND ANIMALS THAT COMPETE WITH MAN FOR FOOD AND FIBER, OR ATTACK MAN DIRECTLY**
- **BIOLOGICAL VALIDITY OF THE "PEST" CATEGORY — ALL SPECIES AFFECTED SIMILARLY**

Pesticides can be simply defined as chemicals used to control or manage pest population levels. In reality, this objective may be achieved by killing pests directly or indirectly through some other action such as repelling, attracting, sterilizing, etc. Regardless of how they actually work, the overall purpose is to reduce pest populations to a non-economic level.

What are pests? This is a term used by man to denote those plant and animal species which cause him

problems. Pest species are generally those plants and animals that compete with man for food and fiber or that attack man or his animals. This artificial category has no evolutionary or physiological basis. Therefore the idea that pest species are "different" from other closely related species is incorrect. Pest species are affected similarly to other species with regard to any physiological function or response. These beneficial species develop resistance to pesticides the same as pest species. Following pesticide applications, resurgence of beneficial populations occurs just as does resurgence of pest populations.

Pesticide is a general term used in connection with any pest. More specific terms are available for individual pest categories.

Thus the chemicals used to control insects are called insecticides; those used to control weeds are termed herbicides, etc. It should be noted that some herbicides may inadvertently kill some insects and that some insecticides are phytotoxic. This kind of physiological activity is exhibited by the other pesticidal categories also. This broad spectrum activity is caused by the fact that plants and animals are very similar with regard to many of the basic cellular functions.