

INTERDEPENDENCY PLANT PRODUCTION - PLANT PROTECTION

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Weather abnormalities and pest epidemics have been causal agents of production instability since the dawn of agriculture. The early answer to these twin threats to stability of yield was the cultivation of a mosaic of varieties differing in genetic characteristics of resistance and maturity period. Often, various forms of mixed cropping involving 2 or more crops were practised. As a result in a crop like rice, we now have nearly 120,000 different primitive cultivars and current cultigens occurring in different parts of the world. Such genetic variability as well as mixed cropping techniques provided an insurance against total loss of crops due to pest epidemics. Nevertheless, extensive damages to crops by pests and pathogens have been recorded throughout the evolutionary history of agriculture.

With the modernization of agriculture, incorporating the use of high yielding genotypes grown as monoculture, mineral fertilizer application and irrigation, the provision of a plant protection umbrella has become essential for elevating and stabilizing crop yields. When I asked an old Chinese farmer who has practised rice cultivation for over 50 years his views on priorities in agricultural research and development, he immediately said "the care of the soil and the health of the plant."

This illustrates vividly the interdependency of plant production and plant protection.

In most countries of Southeast Asia, there is practically no difference between the extent of cultivated land and cultivable land. Also, land is a shrinking resource for agriculture since constantly good agricultural land is lost for other purposes like roads, buildings and industrial uses. Therefore, the only pathways open to such countries for producing enough food to meet the needs of the growing population are first, to improve productivity per units of land, time, water and labor, and secondly, to increase the intensity of cropping through multiple cropping. To do this successfully, attention to plant health and appropriate plant protection measures is a must. The triple alliance of weeds, pests and pathogens must be successfully prevented from doing much damage to crop yields.

It is now possible to manage the health of the crop in a good condition through the adoption of scientific plant protection measures. In the tropics and subtropics where year-round cropping takes place, the problems of pests and diseases are even more serious than in temperate countries. Without appropriate plant protection, it will not be possible to get satisfactory yields.

Successful plant protection requires not only a vast cadre of trained personnel but also the understanding of the general public and active cooperation and involvement of farmers. New technologies can be classified into two major groups with reference to the ease and efficacy of their

adoption under conditions of individually owned small holdings. Some technologies like the cultivation of an improved variety lend themselves to individual adoption. On the other hand, technologies like integrated pest management and scientific water management require group or community action for profitable adoption. The challenge before plant protection experts and field level workers lies in promoting group endeavor without affecting the individual rights to land holdings. Farmers should not be viewed as passive consumers of pesticides. They must become active participants in the development and adoption of an effective and enduring plant protection umbrella for their areas. #