Adapting Varieties for Intercropping Systems in the Tropics

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Intercropping is widespread on subsistence farms in developing countries of the tropics. Research in the tropics, however, has focused on the development of new technology directed toward the efficient production of single crops. With a shift to single crop systems, improved cultural practices, chemical fertilizers, pesticides, and other modern inputs the productivity of tropical soils has improved. Crop varieties have been developed for monocrop culture, and considerable progress has been made in increasing yield potential for those farmers who have put capital and available technology to work in the better agricultural regions.

We question the total validity of this approach to crop improvement. New technology has yet to reach small farmers who produce the food crops in many tropical countries. They insist on preserving traditional systems even when other alternatives, including new varieties best suited for monocrop cropping, become available. Although their decision-making criteria are poorly understood, diversity of diet and income source, stability of production, reduced insect and disease incidence, efficient use of family labor, and intensive production with limited land resources appear to be important. It is critical that we understand the farmer’s production systems into which new varieties and other technological advances are to be introduced, and evaluate new varieties in a range of environments and systems in which food crops are produced.

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