Policies Affecting Production Practices and Adoption of Integrated Pest Management for Jamaican Farmers in Ebony Park, Clarendon

Joseph D. Ogrodowczyk

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Darrell Bosch, Chair
Daniel Taylor
Lawrence Grossman
David Orden

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Joseph D. Ogrodowczyk

Committee Chair: Dr. Darrell Bosch

Department of Agricultural and Applied Economics

(Abstract)

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Farmers' decisions to adopt Integrated Pest Management (IPM) technologies depend on the profitability of IPM systems relative to the traditional production methods. Government policies may affect the profitability of the IPM technologies. A linear programming model was developed and used to evaluate the economic incentives for adoption of Integrated Pest Mangement (IPM) practices by Jamaican farmers in Ebony Park, Clarendon. Further analysis was completed to determine the affect of policy changes on the profitability of the IPM systems. The objective function of the model was to maximize net returns above variable costs for the farm and included: ten cropping systems, resource constraints, relative prices, and government policies facing the farm. Resource constraints included risk constraints limiting the maximum acreage planted for each crop. Potential crops grown by the farm included: IPM and conventional hot pepper, IPM and conventional sweet potato, IPM and conventional callaloo, corn, pumpkin, cassava, and sugar cane. The trade and domestic policies incorporated into the model were: preclearance (farm level inspections of exportable harvest), elimination of the concessionary water rates to farmers, lowering the duty concession rate to farmers, lowering the

Common External Tariff, appreciation of the real exchange rate, elimination of the credit subsidy and a fall in the real interest rate.

The results of the model showed four major conclusions. First, the IPM systems for hot pepper, sweet potato and callaloo were more profitable than the conventional systems. Second, within the framework of risk constraints and preclearance, the IPM systems continued to be more profitable than the conventional practices. Third, the elimination of either the water or credit subsidies currently available to the farmers did not greatly affect the profitability of the IPM systems compared with the profitability of conventional production. Fourth, with a lower real interest rate, the elimination of the duty concession, a lowering of the Common External Tariff (CET) or an appreciation of the real exchange rate, the IPM systems were more profitable than the conventional technologies.

Four implications arose from the conclusions. First, extension efforts towards farmers should emphasize the increase in profits from the IPM technologies. Second, policy steps designed to liberalize the domestic economy will not require offsetting policies supporting the adoption of IPM by farmers in Clarendon. Further research is needed on the effects of water availability on IPM adoption and the potential barriers to IPM adoption by female-headed households. Finally, further research is on the economic returns of incorporating preclearance education with IPM.

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Dedication

I dedicate this research to my family for their unconditional love. For my mom and dad, Diane and John, for always encouraging me and never failing to be there whenever I needed them. For my sister, Karen, for lending an ear and then making me laugh. And for Dave, for being my Brother. There may be times we are miles away, but we are never far apart.

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