

SOCIO-ECONOMIC IMPACT OF IPM-CRSP ECHNOLOGIES FOR VEGETABLE  
PRODUCTION IN SELECTED AREAS OF BANGLADESH

**Major Professor: Dr. S.M. Fakhru Islam**

Name of the author: Mahmuda Akter

Reg. No.: 2002-05-1049

Year: 2004

Abstract

The present study was conducted in Gazipur, Comilla, Jessore and Lalmonirhat districts during 1998-03 to examine the IPM technologies, its adoption and socio-economic and research impacts and related constraints. Eight vegetables namely, eggplant, cabbage, tomato, okra, onion, cucumber, sweetgourd and bittergourd were considered with seven technologies. These were: i) Soil-borne diseases management for vegetable production, ii) Soil-borne diseases management in seedbed nursery, iii) Crop loss due to weed infestation, iv) Bunching cultivation on onion under cost effective weed management, v) Grafted eggplant and grafted tomato production, vi) Fruit fly control management and vii) Cabbage production under lepidopteron pest management. A total of 61 experiments were conducted and 520 vegetable farmers were selected based on the technology related crops and 255 bisstop traps and 251 pheromone traps were considered in the farmers' fields. The field experiments and survey method were used for data collection with pre-designed interview schedules. The yields of eggplant, cabbage, tomato, okra, onion, cucumber, sweetgourd and bittergourd in the experimental plots were found much higher than the farmers' practices. The farmers' need the knowledge of using balanced doses of inputs. The farmers received much higher returns in terms of gross margins, benefit cost ratio and return to labor under each technology. The use of poultry refuse, mustard oilcake, bisstop traps and pheromone traps were found very much encouraging to the farmers. Per hectare labor requirement varied from 65 mandays to 490 mandays for different vegetables cultivation. Therefore, it is important to note that labor employment generation was very much encouraging under each technology. The marginal analysis indicated that the technologies like the use of poultry refuse, mustard oilcake, saw dust burning, 2 HW at 15 and 45 DAT, bisstop and pheromone traps, and grafted eggplants and grafted tomato were very found effective and profitable to the farmers. Since the use of spraying was not allowed in the experimental plots, the labor costs as well as the costs of insecticides were saved. Therefore, the total costs saved were Tk 4165/ha from cabbage, Tk 6840/ha from eggplant, Tk 5357/ha from sweetgourd, and Tk 7504/ha from bittergourd production. Under Economic Surplus Model with ex-post analysis, the internal rate of return (IRR) to investment was calculated at 26% for eggplant and 19%

for cabbage. During 2002-03, about 20.10% more eggplant production and 14.30% more cabbage production were made available because of the farmers' adoption of the improved technologies. The yields of eggplant under the use of mustard oilcake and poultry refuse were found 33% and 34% higher respectively over the local practices and the yields of cabbage were 22% and 26% higher respectively over the local practices. Under various assumptions about the research and extension expenditures, the IRR ranged from 20 to 32% and benefit cost ratio from 2 to 5 for eggplant and the IRR ranged from 13 to 23% and benefit cost ratio from 2 to 4 for cabbage. The most important constraints related to the improved technologies were nonavailability of pheromone, non-availability of poultry refuse in required quantity, attack of fruit fly, lack of quality seeds, high price of mustard oilcake and fertilizers, shortage of cash money, lack of knowledge of improved technology and drop of fruits in that order. However, the farmers in the study areas were very enthusiastic about the technologies for vegetable cultivation. For successful and effective dissemination of the technologies, the demonstration trials, field days, regular training of farmers and extension workers and distribution of leaflets and mass campaign for the technologies are useful tools to be followed. The economic surplus model with ex-post analysis indicates that the funding of eggplant and cabbage research and extension is a good investment. Therefore, both government and donor agencies should come forward to invest in eggplant and cabbage research and strengthen extension activities in the country.