

ESTIMATING THE PRODUCTIVITY OF PESTICIDE USE IN BRINJAL AND CAULIFLOWER IN BOGURA DISTRICT

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Executive Summary

Growing populations are predicted to raise the demand for food production, largely due to emerging nations' altering dietary preferences for higher-quality goods, such as more meat, dairy, and grains for animals. Pests are a major cause of crop yield losses. Bangladeshi farmers are often accused of overusing pesticides that play a crucial role in enhancing crop yield by reducing losses to crop pests. Pesticide overuse has caused a series of negative health and environmental externalities. The objectives of this study were to investigate the relationship between pesticide use and behavioral variables among brinjal and cauliflower producers, as well as examine the farmers' pesticide use patterns to identify the driving factors affecting pesticide productivity in production. The respondents were selected by using simple random sampling from Shibganj and Shahjahanpur upzillas of Bogura district and the information was collected through face-to-face interviews during the 2022 harvest seasons. A structured questionnaire was used to collect information from 201 farmers. A Cobb-Douglas production function was utilized to accomplish the study's objectives. Results showed that pesticides have a statistically significant productivity effect on crop yield. By using the Cobb-Douglas production function, the marginal products of 1 kg of the active ingredients of pesticides for Brinjal are 62 and 65 kg and cauliflower are 50 and 54 kg in Shahjahanpur and Shibganj Upazila respectively. The result also found labor, capital, pesticide and highest education in the family statistically significant for crop yield. Nevertheless, the value of the pesticides' marginal product for cauliflower and Brinjal is insufficient to cover the associated marginal cost, or pesticide price, indicating pesticide misuse for these two crops, respectively. It is noticeable that the use of pesticides varies depending on the vegetable and age group. Thus, it can be said that farmers with more experience use pesticides more frequently, whereas new farmers are attempting to use fewer pesticides.

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