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MEASURING THE IMPACT OF THE MODERN IRRIGATION SYSTEMS ON ECONOMIC AND PRODUCTION EFFICIENCY OF SUMMER VEGETABLES CROPS CULTIVATED IN NEW LANDS AT ALEXANDRIA GOVERNORATE (Case Study of Ameria Farms)

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Ahmed M.F. Kassem[1], Tamer M. El-Santresy[1] and Mohamed F.M. El-Danasury[1]
1- Agricultural Economics Research Institute, Agriculture Research Center, Giza, Egypt

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ABSTRACT

The Research aimed at measuring the impact of using different irrigations systems on the production and economic efficiency of the main summer crops cultivated in New Lands at Alexandria Governorate. In order to reach this objective, the research adopted the following:

1) Presenting the benefits and costs of the main summer crops cultivated useing different irrigation systems.
2) Measuring some of the economic efficiency indicators related to summer vegetables crops cultivated under some irrigation systems (3) Estimating the economic and production efficiency of the study crops cultivated under some irrigation systems (4) Presnting some possible economic recommendations which can improve and increase the production and productivity of the study summer vegetables crops.

The research applied some descriptive analysis method on the economic variables associated with the study, in addition to quantitative economic analysis method to assess the economic efficiency standards for vegetable crops under study. The stochastic frontier analysis (SFA) has been applied to estimate production functions using the FRONTIER (Version 4.1c). The research also relied on field questionnaire data collected from 100 farms representing the most important cultivators of summer vegetable crops including squash, pepper, and eggplant cultivated during 2011/2012 in Alexandria Governorate's New Lands using traditional and modern irrigation systems.

Analysis results showed the following results about the impact of applicating modern irrigation systems on the production and economic efficiency: (1) High indicators of economic efficiency of the vegetable crops cultivated using modern irrigation systems compared with those cultivated using traditional irrigation system, which means more efficient use of the economic resources used producing vegetable crops under modern irrigation compared with those under traditional irrigation, which calls agricultural economic policy makers to increase attention and spread the idea of using modern irrigation systems, especially in New Land, in order to increase agricultural production and reduce the deficit in the trade balance. (2) Production Efficiency Coeffecients for squash, pepper, and eggplant cultivated under modern irrigation system reachede about 75%, 80%, and 83%, while reached about 89%, 93%, and 91% for the same crops cultivated under traditional irrigation systems, which indicates that the chances of vegetable crops cultivated under modern irrigation system are larger than for those cultivated under traditional irrigation system due to more efficient use of production resources (3) The Economic Efficiency Coefficients of squash, pepper, and eggplant cultivated under modern irrigation systems reached about 73%, 77%, and 79%, while reached about 87%, 90%, and 88% for the same crops cultivated using traditional irrigation systems, which indicates that the chances of vegetable crops cultivated under modern irrigation systems are larger than for those cultivated under traditional irrigation system

تحكيم: أ.د. مسعـــد السعيـــــد رجب
أ.د. شوقى أمين عبد العزيز

due to more efficient use of economic resources and economic gain.

In order to expand the cultivation of vegetable crops under modern irrigation systems and raise the productivity rate, the research recommends the following: (1) Increasing the effectiveness of extension activities through agricultural extension officers to transfer the research recommendations to farmers, and train them in order to improve their experience, and enhance the trend towards adopting the use of modern irrigation methods to enhance agriculture advancement, (2) Encouraging the specialized scientific research centers to develop fertilization programs that match the needs of crop cultivated under modern irrigation methods and soil quality.