

Evaluation of energy and economic productivity of vegetables greenhouses in Khuzestan province

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Abstract

In order to determine and evaluate the mechanization indices, including energy and economic, in production of greenhouse cucumber and tomato, a study was carried out using sequential design- factorial with three replications in Khuzestan province, Iran, during 2011-2012. The greenhouse structures and production methods in all the systems were similar. The evaluated treatments included two cultivated areas in the northern and southern parts of the province (first factor), cucumber and tomato plants (second factor) and area under cultivation of 1000, 3000 and 5000 m² (third factor). First, by preparing a questionnaire and conducting the interviews with greenhouse owners, the questionnaires were completed for all the studied greenhouses and consumer information needed to calculate the energy inputs and energy and economic indices were then obtained. Results of the energy section showed that cucumber production in 3000 m² areas in south of the province and tomato production in 5000 m² areas in northern regions of the province had the highest energy productivity. In addition, results of the economic evaluation indicated that cultivation of tomato had more income and final gross profit, and with respect to internal rate of return index, the greenhouse tomato grown in northern regions of Khuzestan province was more affordable. Therefore, cultivation of greenhouse tomato in 5000 m² areas in north of the Khuzestan province was suggested.

Keywords: Energy indices, Economic indices, Internal rate of return.

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