

Energy-economic indices of greenhouse rice seedling production in Guilan Province

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Energy consumption and the use of agricultural inputs have a significant effect on economy and environmental conservation. To this end, this article aimed to study energy and economy indicators to produce rice transplanting in transplanting banks of Gilan, Iran. This is a field study. Data were collected using a questionnaire and interviews with 33 managers of rice transplanting bank of Gilan, Iran. Transplanting banks were divided into two types: Greenhouse and traditional. Green house transplanting banks were also assigned in three groups: Small (up to 15000 transplanting tray a year), Medium (15000-30000 transplanting tray a year), and Large (over 30000 transplanting tray a year). Mean indices of specific energy and energy efficiency were 1840.61 and 6.83 Tray 100 MJ⁻¹ in greenhouse transplanting production, respectively. They were reported 988.71 and 15.37 Tray 100 MJ⁻¹ in the traditional method, respectively. Gross profit, net profit, benefit-cost ratio, and economic productivity were 2201422.00, 1533278.45 Iranian Rial 100 Tray⁻¹, 1.66, and 3.72 Tray 100000 Iranian Rial⁻¹ in greenhouse transplanting production, respectively. They were reported 2404140.51, 1915382.67 Iranian Rial 100 Tray⁻¹, 1.89, and 4.83 Tray 100000 Iranian Rial⁻¹ in traditional method, respectively. Therefore, energy indices were better in traditional method than the corresponding values in greenhouse method. The results also indicated that energy-economy user indicators of rice transplanting were better in large banks compared to small and medium-sized banks. In terms of fossil fuels in greenhouse production, electricity accounted for the highest share of energy inputs and HR was the most important share of costs in rice transplanting tray production in Gilan transplanting banks. Correspondingly, fossil fuel and electricity consumption optimization and development of equipment, aiming to reduce the workforce, were emphasized. Keywords: Transplanting Bank, Energy Efficiency, Energy Ratio, Benefit-Cost Ratio,

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