

Quantifying ecological sustainability of melon and wheat agroecosystems at Torbat-e-Jam and Saleh Abad

In order to compile an index for quantifying the ecological sustainability of agricultural production of wheat and melons in the city of Torbat-e-Jam and Saleh Abad, a study was conducted in 2010. These measures include information about the agricultural community-economically, producing crops and livestock, fertilizer and chemical materials, crop residue management, water and irrigation, tillage and mechanization, weed management and diversity of agricultural questions. The city of Torbat-e-Jam and Saleh Abad were analyzed. Average score sustainability index in wheat farming system is 62.5 and in melon farming system is 59.5. The results showed that the wheat system 94.66% and in melons system 86% of farmers have earned 50 or more scores. The results step by step regression analysis showed that the most important factors determining the sustainability index in the two farming systems of study were respectively, are: cultivation, crop yield, crop income, access to inputs, access to education and the promotion and management of plant debris. While the use of chemical fertilizers, especially nitrogen fertilizer effects was not on indicators of sustainability. The study critical points two system showed that for improving their sustainability, training of farmers, helping them to economic stability, improved crop management and water resource management has a priority.

Keywords: Sustainability indicator, farming systems, crop production, water resources management



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