

## Investigation of Input Energy Efficiency in Corn (KSC704) Farming in Khoy City, Iran

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**Abstract :** Energy cycle is one of the essential points in agricultural ecosystems all over the world. Corn is one of the important products in Khoy city. Knowing input energy level and evaluating output energy from farms to reduce energy and increase efficiency in farms is very important if one can reduce input energy level into farms through the indices like poisons, fertilization, tractor energy and labour force. In addition to the net income of the farmers, this issue would play a significant role in preserving farm ecosystem from pollution and wrecker factors. For this reason, energy balance sheet in corn farms as well as input and output energy in 2012-2013 were researched by distributing a questionnaire among farmers in various villages in Khoy city. Then, the input energy amount into farms via energy-consuming factors, mentioned above, with regard to special coefficients was computed. Energy was computed on the basis of seed corn function, chemical compound and its content as well. In this investigation, we evaluated the level of stored energy 10792831 kcal per hectare. We found out that the greatest part of energy depended on irrigation which has 5136141.8 kcal and nitrate fertilizer energy with 2509760 kcal and the lowest part of energy depended on phosphor fertilizer, the rate of posited energy equaled 36362500 kcal and energy efficiency on the basis of seed corn function were estimated as 3.36. We found some ways to reduce consumptive energy in farm and nitrate fertilizer and, on the other hand, to increase balance sheet. They are, to name a few, using alternative farming and potherbs for biological stabilizing of nitrogen and changing kind of fertilizers such as urea fertilizer with sulphur cover, and using new generation of irrigation, the compound of water super absorbent like colored hydrogels and using natural fertilizer to preserve.

**Keywords :** corn (KSC704), output and input, energy efficiency, Khoy city

**Conference Title :** ICABR 2014 : International Conference on Agricultural Biotechnology Research

**Conference Location :** Barcelona, Spain

**Conference Dates :** October 27-28, 2014