

## LCA METHOD - TOOL FOR FOOD PRODUCTION EVALUATION

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### Abstract

Food is one of the basic human physiological needs which cannot be substitute in any way or by anything. Like every human activity, also the food production has impact on the environment. In particular, people from developed countries begin to be interested in the environmental impacts caused by satisfying their needs. For the environmentally friendly selection, they need to know about these impacts. One of the methodological tools providing such information is the Life Cycle Assessment - LCA. LCA is a method for assessment of product environmental impacts during its entire life cycle. The results can be used to identify hot spots during the cycle and thus, to define possibilities for improving product environmental profile, to inform key persons and to find the related marketing mark. In addition to other benefits, we can use the LCA to carry out comparative studies that means comparing alternative products that serve the same purpose. Food production is composed of an agricultural phase, a processing phase and a trade phase. In our studies within the SUKI - Sustainable Kitchen project, the aim was to compare approximately 20 kinds of most commonly used foods aiming to the public catering facilities in terms of GHG emission load. Alternatives were cultivation methods - organic/conventional in the agricultural phase, processed/unprocessed in the processing phase and imported/regional and storage/fresh in the trade phase. Project results confirm the general assumption about the less emission load of unprocessed, fresh and regional products. For example, production of one kilogram of chips produces 11 times more emissions than the production of one kilogram of raw potatoes. Storage of tomatoes in cooling boxes for 7 days causes up to 40% of total emissions. Remaining 60% go to agriculture and transport. Regarding the agricultural phase evaluation, we cannot clearly state that products from organic farming produce less emissions. Among 11 evaluated agricultural products, 8 organic products go better as compared to only 3 conventional ones. Regarding the total sum, the situation is more complicated. Among 22 evaluated foods, organic food goes better in 11 cases as well as the conventional food. This situation is mainly caused by a lack of processing capacity for organic products resulting into too long transport distances.

**Key words:** comparative LCA, food, organic/conventional production