

EMISSIONS OF GREENHOUSE GASES FROM THE EGG PRODUCTION WITHIN THE CONVENTIONAL AND ORGANIC FARMING SYSTEM

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Abstract

The study compared the environmental load arising from the GHG emissions within breeding of laying hens and egg production in the context of the representative organic and conventional farm. As a tool for evaluating this impact, the LCA method had been chosen, respectively its climate change impact category. The results are related to the functional unit of 1 egg and they are expressed as kg CO₂e where $CO_2e = 1x CO_2 + 23x CH_4 + 298x N_2O$. The system boundaries have been set on the farm base; fuels, energy (electricity, fossil fuels, natural gas) and feedstuffs have been regarded as inputs. From the results, it is obvious that organic farming produces less emission load within one egg production, mainly due to the breeding method, which is far less energy intensive. On the contrary, higher emissions within organic farming are produced within the feeding category (0.170496 kg CO₂e/egg in organic farming against 0.100781kg CO₂e/egg in conventional farming), due to the different feed ration in this system. In total, however, the emission load from egg production within the conventional farming system is almost twice the organic production (0.218853kg CO₂e/egg in organic farming against 0.392569kg CO₂e/egg in conventional farming).

Key words: Greenhouse gases, emissions, egg production, organic farming, conventional farming