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Master's Dissertation

2016

A Comparative Study on Life Cycle  
Assessment of Organic and Non-Organic  
Wheat Production

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## SUMMARY OF MASTER'S DISSERTATION

Student Identification Number	81533271	Name	ELHAM ZAREI FARKOOSH
Title: A Comparative Study on Life Cycle Assessment of Organic and Non-Organic Wheat Production			
Abstract			
<p>Sustainability has three key indicators: social, environmental, and economic. This research addresses the environmental and economic indicators. The emission equivalence and cost of production of organic and non-organic wheat imported to Japan is studied by using life cycle data. The model used for the calculations includes organic and non-organic wheat divided into pre-farming, farming, and post-farming phases. The transportation phase of wheat from the exporting country to Yokohama, Japan is included (port to port). To comprehend the differences and impacts of organic and non-organic wheat production the life cycle supply chain method is used. The equivalent CO<sub>2</sub> emissions of organic wheat during pre-farming and farming phases is 9.46 kg per hectare and 23.94 kg per hectare for non-organic wheat. The production cost per hectare is on average \$469 US dollars for organic wheat and \$328 US dollars per hectare for non-organic wheat. The cost and emissions of wheat imported to Japan from different regions have a linear relationship. In wheat production, emissions can be reduced by favoring organic production. Labor cost of organic and non-organic wheat production affect the total production price significantly. Adjustments in the type of wheat production and choice of exporting country can potentially contribute to a sustainable system.</p>			
Key Words: Sustainability, Life Cycle Assessment, Organic, Non-Organic, Wheat			