

**Research Poster Abstract from the  
*Structure and Performance of Agriculture and Agri-products Industries (SPAA) Network*  
*Enabling Research for a Competitive Agriculture***



**ABSTRACT SPAA-01**

**The Economics of Livestock Disease: The Impact of a Regionalization Policy**

Michael A. St. Louis (MSc Candidate)

Jill E. Hobbs (Supervisor)

Department of Bioresource Policy, Business & Economics

University of Saskatchewan

An outbreak of Foot-and-Mouth (FMD) disease in Canada could result in significant economic costs totaling millions of dollars. The 2001 FMD outbreak in the UK resulted in losses estimated at £9 billion. The loss of access to export markets is of particular concern in Canada as the livestock industry relies heavily on export revenue. In the event of an FMD outbreak, export markets in Canada would be closed for three months after the last detected case of the disease was found and eliminated.

A Regionalization Policy would be a way to reduce the impact from the loss of export markets. Under a Regionalization Policy, disease-free zones would be established that are fully open to export markets. In order for this to be effective it would be critical to monitor animal movements by producers in non disease-free areas seeking access to export markets or to implement policies that deter animal movement between diseased and disease free regions. In regions with multiple access points monitoring could be prohibitively expensive. The region of West Hawk Lake in southern Manitoba has been suggested as a natural separation point between eastern and western Canada because there is only a single access point on the Trans-Canada Highway.

This project is examining the effect a Regionalization Policy will have on the economic costs of an FMD outbreak in eastern or western Canada. The project includes an epidemiological model that will simulate an FMD outbreak using Geographic Information Systems to examine regional (spatial) impacts, and an economic model that will calculate the direct and indirect costs in the presence of disease-free zones that are open to export markets. The study area includes Alberta, Saskatchewan, Manitoba and Ontario.

***The Future of Farms and Food in Canada***

**January 13- 14, 2011**

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**ABSTRACT SPAA-02**

**Is the Price of Corn Driven by the Price of Oil?**

Eskandar Elmarzougui  
Ph.D candidate, CREA, U. Laval  
and Bruno Larue  
supervisor, CREA, U.Laval

CRÉA, U. Laval

We analyze the evolution of the relationship between corn and oil prices to determine how the emergence of the ethanol sector has impacted on it. The multiple structural change procedure of Bai and Perron (1998) was implemented on a dataset covering the period beginning in January of 1957 and ending in April of 2009. Three structural breaks were identified. The first break coincides with the second oil crisis while the second break occurred a year after the launch of the Uruguay Round of multilateral trade negotiations. The confidence interval of the last break spans the end of the 1990s, when the US ethanol industry began growing rapidly. We found that corn-oil price linkages are strong when oil prices are highly volatile. Furthermore, we show that corn and oil prices are more closely intertwined now than in previous decades. Even though corn prices systematically respond to oil price shocks, the converse is not true. Interestingly, the price of ethanol is influenced by corn and oil prices, but it does not trigger systematic adjustments in corn and oil prices. This might change as the ethanol industry keeps on growing and make agricultural prices even more responsive to the volatility of energy prices. Finally, we tested for the presence of nonlinearities in the adjustments of the price of corn and found that the nature of the adjustment is not affected by the size of the deviations from the long run relationship between the corn and oil prices.

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**ABSTRACT SPAA-03**

**Price Determination in a Regulated Market: The Quebec apple market**

Chokri Meddeb (M.Sc. candidate), Rémy Lambert (Supervisor, CREA, U.Laval)  
and Sébastien Pouliot (co-supervisor, Iowa State University)

The apple industry in Quebec is under a price management system. The *Fédération des producteurs de pommes du Québec* (FPPQ) manages a marketing agreement that sets a minimum for the price paid to Quebec apple producers. The floor price is determined by a committee composed of members of the FPPQ, members of the Quebec apple packers association and one representative of Quebec fresh apples buyers. This study predicts the price paid to Quebec producers for four varieties of apples (Cortland – McIntosh – Spartan – Empire) grown in Quebec and sold fresh in Quebec and in so doing will assist the FPPQ in the determination of the minimum price.

Specifically, the objective of this analysis is to develop an empirical model that explains the factors that influence the price paid to Quebec producers for fresh apples. This prediction tool will provide a precise prediction of prices therefore facilitating decision by members of the Quebec apple industry. The empirical model includes variables that affect both the demand for apple and the supply of apple. The model includes variables for the stock of apple, the quantity of apples marketed, the imports of apples, the exchange rate and the prices for the four varieties of apples.

The empirical model is at the cutting edge of the literature on time series that are jointly determined. The empirical model in this analysis allows for a precise prediction of the price for the four varieties of apple taking into account that the price for one variety affects and is affected by the price for all the other varieties. This approach allows for more precise prediction than under conventional models that do not account for simultaneity.

The results of the estimation show that the net imports of apple from the United States and the quantity of apples marketed are the two most important factors that affect the price of apples in Quebec. The model yields a precise prediction for a time horizon below three months.