

Essays on Production Economics, Consumer Choice and Demand and Risk Analysis

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Abstract

Washington Biofuel Feedstock Crop Supply Under Output Price and Quantity Uncertainty

Biofuels, as alternative transportation fuels, are now being used globally. Taking advantage of in-state feedstock supply could be an efficient way to stimulate in-state biofuel industries and the local economy. This paper uses three models to estimate supply equations under output price and quantity uncertainty for major biofuel feedstock crops in Washington State. Farmers are expected to be risk averse and maximize the expected utility of profit and uncertainty. Based on our examination of state, regional, and national data, we find little likelihood that Washington crop producers will become a major source of biofuel feedstocks in the foreseeable future.

Estimating Multivariate Yield Distributions and Crop Insurance Using Nonparametric Methods

In this paper, we apply a nonparametric method to model yield distributions based on farm-level yield data of wheat and corn in Shandong province and wheat and rice in Yangtze River delta area in China. We found that nonparametric methods are very flexible in describing the shapes of yield density functions. We also provide a way of simulation for univariate and bivariate distributions when two crops are investigated together. The simulated yield distributions are then used to calculate the expected indemnity of a hypothesized crop insurance program.

Consumer Choice and Demand for Apples – Evidence on Heterogeneous Households

Revealed preference analysis of consumer's apple choice is analyzed in this paper using Nielsen HomeScan Data. We will use multivariate choice model and continuous demand model to analyze consumers' preference on different factors in order to provide implications to breeders/growers for them to make up breeding decisions.