

Predicting Fertilizer Prices

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Fertilizer is one of the most important and costly inputs used in crop production.

Unfortunately, fertilizer prices also tend to be very volatile. Because fertilizer expenditures are such a large portion of a farmer's operating costs, an accurate prediction of prices would help farmers with their planning as well as help farmers more easily obtain credit.

This poster shows the development of a model used to predict fertilizer prices. At one time, fertilizer prices could be accurately estimated using natural gas prices as the independent variable of a regression analysis. There is a futures market for natural gas so predictions of natural gas prices are already available. In addition, fertilizer prices lagged the natural gas prices so fall natural gas prices could be used to predict spring fertilizer prices. Unfortunately, this is no longer true as fertilizer prices have not followed natural gas prices the last two years.

This poster shows how demand factors and supply factors also need to be included into a prediction model. Natural gas can still be an important part of the model as nitrogen is produced directly as a process of natural gas and nitrogen from the air. However, crop acreage needs to be included as different crop mixes influence fertilizer demand. Also, any available information about fertilizer supply could be included as well.