



March 28, 2014

Ms Katrina Sideco
Air Resources Engineer
California Air Resources Board
Transportation Fuels Branch
1001 I Street
Sacramento, California 95814

Dear Ms. Sideco:

The Iowa Corn Growers Association represents farmers who grow corn in the largest corn growing state in the US. Iowans are very interested in providing renewable fuels to your state and Iowans also purchases many products made in California.

I would like to provide some credible data on the assumptions that impact the models used in California for the International Indirect Land Use for corn ethanol. The Iowa Corn Promotion Board worked with the University of Illinois Chicago and North Carolina State University to answer this basic question. Do high prices for corn minimize the impact of indirect land use from biofuels? Some farmers who are members of the Iowa Corn Growers Association met with the university professors who conducted this study and described in detail the decisions made on the farm and the impact that prices have on those decisions.

The study concluded that there is a statistical correlation showing that as prices increase, farmers make changes that result in higher per acre yields. Farmers also react to lower prices. The study's findings support the use of yield-price elasticity in indirect land use models, but found that commonly used models currently use factors at the low end of the actual range which underestimates real yield performance. The studies that indicate that there is zero correlation between price and changes in corn yield were not credible with the growers.

The study assessed two dimensions of this correlation known as yield-price elasticity: first, the extent to which realized yields tend to be influenced by planting-time futures prices; and second, the potential for in-season changes responding to significant price swings. The study found that not only do farmers respond to price from season to season, they also respond to price during the season in order to optimize productivity. These findings clearly show there is that price has an effect on yield. And given the factors involved in achieving higher yields, such as investment in new equipment, it is likely that new, higher yields resulting from high prices are sustained even after prices drop.



The study adds to the growing body of evidence that actual indirect land use effects are lower than current models indicate and assumptions that high corn prices do not positively affect yields and productivity are not supported by research.

It is a logical conclusion that when farmers are faced with a decision to rescue the crop using the economic threshold formula developed at the land grant universities, the higher prices result in different decisions to replant a field, spray for insects or control the spread of a disease in the fields. In corn production higher prices result in positive changes to operations such as investments in better equipment, seed, precision agriculture technology, etc. The higher prices result in investment on the farm and triggers yield growth so that farms produce more per acre to fully capitalize on the market opportunity of higher prices. It's logical that this holds up on the farm as well as other industries.

The study results show statistically significant response to yield occurs when prices strengthen or fall early (February – April) in the growing season. The results were consistent with qualitative research indicating that seeding rates, farm equipment upgrades and field inputs are influenced during the season by early price swings. Farmers noted that seed selection, investment in equipment purchases, information and navigation systems and other capital investments were considered on a multi-year timeframe.

Attached is a copy of the study conducted by the University of Illinois Chicago and North Carolina State University. Please review this study and let me know if you have any additional questions.

Sincerely,

Roger Zylstra
President
Iowa Corn Growers Association.

Enclosure: Goodwin, Barry K.; Marra, Michele; Piggott, Nicholas; Mueller, Steffen; *Is Yield Endogenous to Price? An Empirical Evaluation of Inter and Intra Seasonal Corn Yield Response*