



October 5, 2011

Floyd Vergara
Chief, Alternative Fuels Branch
Air Resources Board
1001 "T" Street
P.O. Box 2815
Sacramento, CA 95812

Mr. Vergara:

NCGA is the premier organization representing the United States corn industry and represents more than 36,000 individual corn growers, 48 affiliated state-level organizations, and hundreds of thousands of growers who contribute to state corn checkoff programs. On behalf of these farmers, I would like to thank the Air Resources Board (ARB) for the opportunity to comment on the indirect land use change (ILUC) carbon intensity values.

Increasing America's energy resources and protecting national security by reducing our dependence on foreign oil and continuing to grow our domestic renewable fuels industry are among the most important challenges facing our country. As corn growers, we play an important role in lessening our dependence on foreign oil. However, we have serious concerns regarding the current carbon intensity modeling and revisions in your state.

NCGA and its members look forward to providing the raw material so that California consumers can enjoy the benefits of lower-carbon transportation fuels through the use of corn-based ethanol. Please find our comments attached and feel free to contact us if you have any questions or require additional information. We thank you in advance for consideration of our comments and suggestions.

Sincerely,

A handwritten signature in black ink that reads "Garry Niemeyer". The signature is written in a cursive, flowing style.

Garry Niemeyer, President

NCGA Comments to the Air Resources Board
Regarding:
Low Carbon Fuel Standard Carbon Intensity Values

NCGA would like to comment specifically on the information concerning ILUC resulting from the recent LCFS Regulatory Amendments Workshop.

Proposed regulations and research regarding price-yield elasticity has been the subject of discussion and debate for quite some time as a part of the modeling process. The Expert Workgroup (EWG), which according to ARB's cover letter¹ on the EWG final report in January 2011, was made up of "world-class specialists and represent a breadth of experience in their respective disciplines," addressed the topic throughout 2010. In addition, a subgroup was formed to focus on elasticity issues, made up of individuals who specialize in the given subject matter.

The Subgroup final report² recommended to "[k]eep the yield elasticity with respect to price at 0.25." Now, ARB is revisiting this issue, through research from Berry and Schlenker. This work is updated from the previous evaluation of ARB's version of the GTAP model completed by Berry in January 2011 for ARB. This "technical note" estimates yield-price elasticities as "close to zero."

The final report from the EWG Elasticity Subgroup addressed Berry's research, as well as Roberts and Schlenker, whose research was cited by Berry. The Subgroup pointed out that Berry's paper looked at annual yield effects and found the yield-price effect to be small, which was not surprising. In one year, farmer choice is somewhat limited to have an immediate effect on production, if good management practices are already in place. What the GTAP model should be looking for is mid-term and longer-term effects, and CARB should be analyzing longer term elasticities. Farmers may adopt technological or cultural practices, which will have an effect over multiple years.

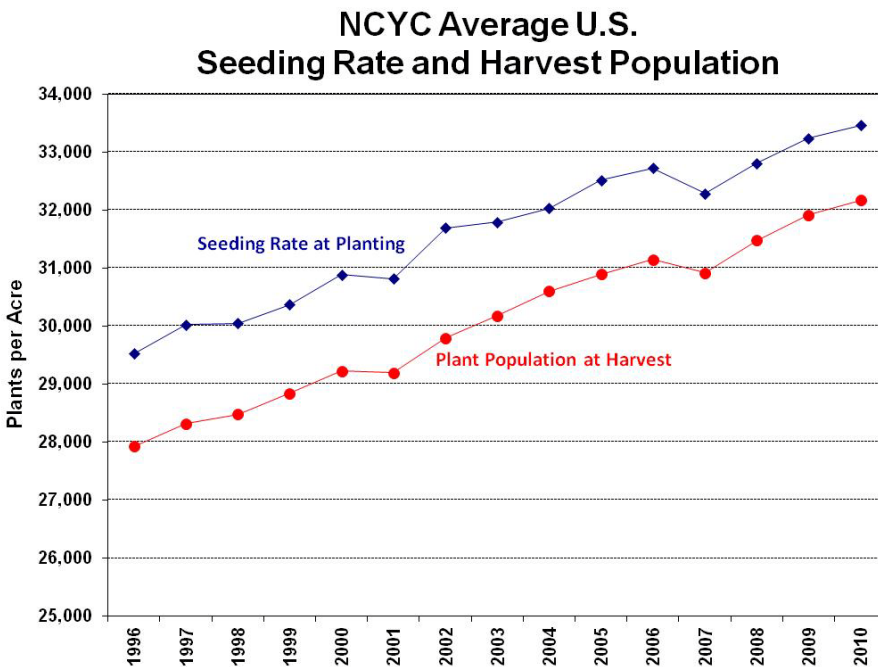
When prices are elevated over a sustained period, farmers, being rational decision makers seeking to maximize rents, have an added incentive to invest in production maximizing inputs, assets, and management techniques. Our members confirm this incentive. Yield increases resulting from such investments would cause yield-price elasticity to be positive. Empirically,

¹ ARB Staff Cover Report "Release of the Expert Workgroup Final Reports." January, 2011.
<http://www.arb.ca.gov/fuels/lcfs/workgroups/ewg/011211arb-ewg-rpt.pdf>.

² Final Recommendations From The Elasticity Values Subgroup. November, 2011.
<http://www.arb.ca.gov/fuels/lcfs/workgroups/ewg/010511-final-rpt-elasticity.pdf>

Keeney and Hertel³ found in a review of literature, that technology advances are induced by changes in prices. Examples of investments which influence yield may include investments in drain tile, new equipment, improved seeds (purchased in fall season before), site-specific or variable-rate fertilizer application, etc. Depending on which depreciation system is used, drainage tile specifically has a 15-20 year property recovery period.⁴ An investment in this capital improvement requires continued higher prices.

Another example is seeding rate. As technology has evolved, farmers have increased seeding rates to maximize yields. The NCGA has conducted a National Corn Yield Contest (CYC) for the last 47 years. In 2010, the 24 winners in eight production categories had verified yields averaging more than 301.7 bushels per acre, compared to the national average of 152.8 bushels per acre. As shown below, farmers have increased planting rates, both in the CYC and throughout their corn acres, in order to take advantage of new agronomics/technologies and maximize revenue.



Not only do farmers respond to sustained increase in prices, but the entire industry takes action. Seed companies, equipment manufacturers, and other input providers invest in new products

³ Keeney and Hertel. The Indirect Land Use Impacts of U.S. Biofuel Policies: The Importance of Acreage, Yield, and Bilateral Trade Responses. GTAP Working Paper No. 52.

⁴ IRS, Publication 225. Farmer’s Tax Guide. <http://www.irs.gov/pub/irs-pdf/p225.pdf>.

which may then be profitable, allowing new technologies and products to be available to farmers in the medium to long-term.

Additionally, NCGA considers some of Berry's assumptions to be incorrect. Berry states that "Weather is not observed at the time of planting and so does not affect input and land-use decisions at the time of planting."⁵ Producers do take weather into account – last year's, current planting conditions, and expected for the growing season. Expected weather and existing spring weather, which influences planting timing, impacts farmer's management decisions. Acreage, certain fertilizer rates, and chemical decisions are all affected.

The Subgroup Final Report also identified higher prices as an incentive for farmers to double-crop, effectively increasing productivity on existing acres. Babcock and Carriquiry⁶ "demonstrated that the share of U.S. soybean production grown on double cropped acres has closely tracked the price of soybeans," and "that the incentive to double crop soybeans with corn and cotton in Brazil justifies use of a yield elasticity of 0.24 by itself."

Berry discusses effects of rising prices having two effects – yields on existing land, and yields on "new" land. Certain technologies or cultural practices, such as improved seeds, variable rate technologies, double-cropping, etc. are mostly agnostic to "new" or existing land, transfer to different types of land well, and have similar effects of increasing yields.

The Subgroup recommendation is corroborated by additional literature. Keeney and Hertel (2008)⁷ find a range of yield elasticities in the literature from 0.22 - 0.76, in seven publications, covering the timeframe of 1951-1988. While these authors did not account for simultaneous equations bias in their estimates, an estimate of yield-price elasticity for input into GTAP must take double-cropping into account, since the model does not. The EWG Subgroup, having considered many factors, made a final recommendation of 0.25, as a central value, over a medium to long run.

The Expert Workgroup, convened at the request of ARB's Board, recommended that CARB "[k]eep the yield elasticity with respect to price at 0.25."⁸ CARB staff has provided no justification for disregarding the EWG recommendation and lowering this elasticity value, other than the white paper by Yale University economist Steve Berry, which was commissioned by

⁵ Berry and Schlenker. Technical Report for the ICCT: Empirical Evidence on Crop Yield Elasticities.

⁶ Babcock and Carriquiry. An Exploration of Certain Aspects of CARB's Approach to Modeling Indirect Land Use from Expanded Biodiesel Production. Staff Report 10-SR 105.

⁷ Keeney and Hertel. The Indirect Land Use Impacts of U.S. Biofuel Policies: The Importance of Acreage, Yield, and Bilateral Trade Responses. GTAP Working Paper No. 52.

⁸ Final Recommendations From The Elasticity Values Subgroup. November, 2011.

<http://www.arb.ca.gov/fuels/lcfs/workgroups/ewg/010511-final-rpt-elasticity.pdf>

CARB. At the final EWG meeting, the Elasticities Subgroup presented rebuttals to the contentions of the Berry paper, as discussed above, and used empirical data to defend the recommendation to leave the elasticity value at 0.25. Why is ARB disregarding the recommendations of their own expert from the Expert Workgroup?

Summary

In closing, Berry has not addressed the concerns from the EWG Subgroup Final Report in his updated research, and NCGA agrees with many of the researchers that improved data and further work in this area is needed.

Thank you for your time and consideration in this matter of mutual interest. Again, NCGA thanks ARB for the opportunity to provide the above comments on behalf of corn producers throughout the U.S. who participate in our programs.