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April 13, 2009

Mary D. Nichols, Chairwoman
c/o Clerk of the Board
Air Resources Board
1001 I Street
Sacramento, CA 95814

Chairwoman Nichols,

I am writing in regard to incomplete information and technical inaccuracies related to distillers dried grains with solubles (DDGS) presented within Appendix C11, "Co-product credit analysis when using distillers grains derived from corn ethanol production", of the proposed regulations to implement the Low Carbon Fuel Standard (LCFS).

1. Air Resources Board (ARB) staff conducted an "extensive review" of the literature to determine whether Wang et al., (2008) proposed 1:1.27 DDGS-to-feed ratio should be adopted for use by CA LCFS. This extensive review constituted 24 citations from 1987 to 2009. A keyword search using corn distillers grains returned the following results:

| Journal | Time period | Citations |
|---|---|---|
| Journal of Animal Science | Jan 1987 – Dec 2008 | 204 |
| Journal of Dairy Science | Jan 1987 – Dec 2008 | 470 |

   Given the number of published studies available use of 24 citations should not be construed as an extensive review. Wang et al., (2008) was cited as using data from "a few studies" to analyze DDGS suitability yet they cited 27 references including communications with animal nutrition and feed industry experts.

2. ARB staff suggests livestock are only able to digest and metabolize 16.8-28.8 % of the DDGS protein fraction. This statement is not only inaccurate but demonstrates ignorance of the calculations used in Table C11-1. Nutrient content is multiplied by nutrient digestibility in Table C11-1 resulting in nutrient bioavailabilty. Without accounting for bioavailability of displaced feeds ARB staff is biasing the DDGS nutrient value.

3. ARB staff reports DDGS is deficient in lysine resulting in cattle requiring supplemental lysine. This is incorrect as the microbial population in the rumen of cattle and sheep (ruminants) can ferment DDGS protein and fiber fractions into microbial protein which passes into the lower digestive tract supplying necessary amino acids such as lysine.

4. Increased sulfur content was reported to limit DDGS inclusion in cattle diets. DDGS inclusion rates reported by Wang et al., (2008) reflect appropriate livestock feeding levels accounting for sulfur intake. Challenges associated with excessive water sulfur are regional issues and cannot limit use across the entire livestock industry.

5. ARB staff cited one study where replacing steam-flaked corn with DDGS decreased rumen pH and depressed rumen fermentation. A benefit commonly reported in cattle fed DDGS is prevention and/or reduction of sub-acute acidosis (reduced rumen pH) due to replacing corn with DDGS. Selecting a single study where DDGS reduces rumen pH demonstrates ARB staff is either outcome biased or failed to accurately review available data.

6. Transportation issues were raised by ARB staff related to moisture content, lot size and particle caking. This limitation to distillers grains adoption ignored
   - An ethanol plants' ability to modify drying processes to produce wet, modified or dry products to suit market needs relative to livestock feeding area proximity
   - Additives and storage methods available to increase storage time beyond 3-7 days
   - Feed mill and brokers ability to sell smaller lot sizes to farms unable to receive full loads
   - Research related to DDGS flow agents and pelleting technologies

7. ARB staff indicate livestock managers generally lack information regarding DDGS yet distillers grains feeding information is available through Extension web sites, industry publications and guide sheets. Increasing DDGS availability and recent research discoveries has increased educational efforts related to DDGS.

8. ARB staff conclude stating significant barriers exist to prevent widespread adoption of DDGS as livestock feed. Based on ARB staff analysis one would have to agree with this conclusion, however, ARB staff incorrectly interpreted and omitted key DDGS information.

The report entitled "Co-product credit analysis when using distillers grains derived from corn ethanol production" ignores current data, presents a biased view, and failed to utilize appropriate scientific justification in refuting the report of Wang et al., (2008). Development of public policy using inaccurate and incomplete information will result in detrimental environmental effects in direct contrast to the goals of the CA LCFS. Given the consultation of nutritional and feed industry experts by Wang et al., (2008) the Board should accept the proposed 1:1.27 DDGS-to-feed ratio rather than the 1:1 proposed by ARB staff.

Best regards,

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