



BEYOND PESTICIDES

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April 5, 2011

National Organic Standards Board
Spring 2011 Meeting
Seattle WA

Re. CC: Corn Steep Liquor

Dear Board Members:

These comments are submitted on behalf of Beyond Pesticides. Beyond Pesticides, founded in 1981 as a national, grassroots, membership organization that represents community-based organizations and a range of people seeking to bridge the interests of consumers, farmers and farmworkers, advances improved protections from pesticides and alternative pest management strategies that reduce or eliminate a reliance on pesticides. Our membership and network span the 50 states and groups around the world.

We support the minority position on corn steep liquor and the reasoning in the minority report.

We can appreciate that the board is probably very tired of dealing with corn steep liquor. It has taken a lot of time of both the Crops Committee and the full board. The issue of determining whether CSL is synthetic or non-synthetic may appear to be an abstruse technical issue for experts to decide, of no interest to the organic consumer. But the synthetic/nonsynthetic determination really is a foundational issue in the determination of allowable inputs in organic production. The *Organic Food Production Act* creates a preference for nonsynthetic over synthetic inputs. Nonsynthetic inputs are presumed to be allowed unless petitioned and found to be unacceptable. Synthetic inputs are presumed to be prohibited unless petitioned and found to be acceptable.

The determination itself of whether an input is synthetic does not always determine whether that input is allowable in organic, but a determination that a material is synthetic ensures that the NOSB carries out its responsibility to review and evaluate whether the use of that synthetic material meets the law's standards of sustainability. Organic integrity is built on the principle of objective review and transparency to ensure that the organic consumers' expectations are being met and that there is a level playing field for all those engaged in organic production.

The minority position of the Crops Committee on corn steep liquor is a good demonstration of the application of OFPA to the evaluation of materials that are considered for

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use in organic production. It requires separating one's feelings about the usefulness of a product from careful consideration of the criteria in OFPA, the rule, and board guidance.

The rest of these comments are devoted to procedural issues around this decision.

First of all, we are disappointed that the majority opinion did not address the fact that the committee had received input from USDA/ARS researcher David Johnston, who is considered an expert on wet corn milling, and it did not explain why the majority had decided to discard his input in favor of the views of a person who clearly has a financial interest in the decision. The lack of attention to Dr. Johnston's input makes the decision appear arbitrary and capricious.

In the absence of the inclusion of that part of the committee decision in the public record, I believe it is imperative for me to describe a conversation on the topic involving Dr. Johnston, Jay Feldman, and myself. We talked with Dr. Johnston before he talked with the committee. We were able to locate David Johnston because he was the corresponding author on a paper concerning enzymatic wet milling, a new process he is helping to develop that would drastically reduce the use of SO₂, and hence the pollution caused by its release.

A crucial issue in determining whether corn steep liquor is synthetic is the role of the synthetic chemical sulfur dioxide in the traditional wet corn milling process. Dr. Johnston explained that the addition of SO₂ has three purposes: (1) prevent the growth of some microbes, (2) slow the growth of other microbes, and (3) act on the corn to break disulfide bonds, which helps release the starch. We asked about Dragan Macura's claim that the breakdown of the corn is caused entirely by the action of the lactic acid bacteria. Dr. Johnston said (1) without breaking the disulfide bonds, there would be poor recovery of starch and (2) the lactic acid bacteria cannot break the disulfide bonds.

Is breaking of disulfide bonds "chemical change"? Dr. Johnston said that when disulfide bonds are broken, a covalent bond is broken, and another bond formed. That is a chemical change. In this case, not only is the bond broken, but SO₂ binds to a side chain and is thus added to the protein.

In addition to failing to account for their apparent dismissal of the input of an invited expert, the report of the majority position is full of "determinations" that do not follow from the other expert advice that the committee has sought. The committee asked a number of questions of S&T in order to determine whether chemical change occurs during wet corn milling as a result of the addition of sulfur dioxide. The committee quotes the findings of S&T from the Technical Report: "The major objectives for corn steeping are to induce chemical and physical changes in the kernel by leaching the soluble components from the corn." It goes on to say that "sulfur dioxide is added at rates of 0.1 to 0.2 percent and is used to cleave disulfide

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linkages, resulting in the degradation of the corn protein that encapsulates the starch granules.
“ (TR 99-102)

The committee then referred to a presentation by Mr. Macura of AgroThrive (a company that sells products made from CSL), saying, “Throughout the detailed discussion it became clear that the sulfur dioxide was added at the end of the process to stop the fermentation process (a biological process) and prevent putrefaction.” Why does the NOP pay for scientific input into the decision-making process if it is to be overruled—without any explanation—by the opinions of someone with a vested interest in the outcome of the decision? Nowhere in the majority’s decision do they explain the basis of their conclusion—the evidence they rely upon to reject the judgment of their own experts.

Finally, as pointed out in the minority report, the question of whether CSL is synthetic or not depends not only on the issue of chemical change, but also on the issue of significant residues of the synthetic additive in the final substance. The terminology of the majority—referring to SO₂ as a “processing aid” is inappropriate here because “processing aids” are used in producing food rather than agricultural inputs.¹ The guidance on classification requires the board to consider the issue of significant residues, not sidestep it. Recent research, such as the attached report by DeFrain et al² shows the sulfur level in CSL measured at 1.90%, compared to 0.14% for corn.³ This, we believe, is a significant level.

Sincerely,



Terry Shistar, Ph.D.
Board of Directors

Attachments

¹ § 205.2 Processing aid. (1) Substance that is added to a food during the processing of such food but is removed in some manner from the food before it is packaged in its finished form;

(2) a substance that is added to a food during processing, is converted into constituents normally present in the food, and does not significantly increase the amount of the constituents naturally found in the food; and

(3) a substance that is added to a food for its technical or functional effect in the processing but is present in the finished food at insignificant levels and does not have any technical or functional effect in that food.

² J. M. DeFrain, J. E. Shirley, E. C. Titgemeyer, A. F. Park* and R. T. Ethington, 2002. A Pelleted Combination of Raw Soyhulls and Condensed Corn Steep Liquor for Lactating Dairy Cows, J. Dairy Sci. 85:3403–3410

³ David Johnston, personal communication, January 31, 2001.