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From: Nancy Chandler [mailto:nchan@fairpoint.net]
Sent: Tuesday, January 20, 2009 8:47 AM
To: Jennings, Henry
Subject: Testimony for Board of Pesticide members on changes to Chapter 41

Dear Mr. Jennings and members of the Board of Pesticide Control,
I am submitting scientific evidence in my testimony requesting that the Board of Pesticide Control not allow any genetically modified sweet corn varieties that produce Bacteria thurigensis to be registered in Maine. I am an organically certified vegetable and fruit grower in Monmouth, whose produce feeds 100 people. I grow under .1 acre of sweet corn annually. I have been farming commercially as my major occupation for 7 years, and was a commercial flower grower for 9 years before farming. I hold a Masters in Biology Education, plus 2 years of additional graduate level courses in farming, ecology, organic chemistry, and education. Licensing BT sweet corn poses severe risks to public health through release of toxic protein allergens, physiological damage to people and farm animals eating this corn, probable contamination of other farmers' organic sweet corn through wind blown pollen, and likely development of corn larvae resistance to Bt, thus reducing the effectiveness of an essential biological control of organic and sustainable farmers. A much safer, proven solutions to corn caterpillar pests, Integrated pest management techniques for corn borer, armyworm and corn rootworm are available, and can be applied by conventional growers, in addition to various chemical controls for these pests. Of the 4 corn pests, only one of these insects winters over in Maine. Corn borers can be effectively managed by tilling in corn stalks in the fall after harvest, by monitoring corn borer thresholds on corn crops, and by applying conventional pesticides only after these thresholds have been reached. The potential risks to public health and the sustainable agriculture farmers of licensing GMO BT corn are much greater than the small labor advantage of introducing BT sweet corn in Maine. BPC should be working with Cooperative Extension to promote cultural and biological controls of sweet corn pests, adding links on the BPC website to specific websites such as Maine Organic Farmers and Gardeners pest alert, written weekly by Dr. Eric Sideman, the Experiment Station corn pest monitoring program, and the Massachusetts and Vermont IPM alert systems, that notify farmers of first arrival of migratory corn pests into their geographical areas. For farmers without computers, the BPC should mail literature recommending the use of IPM, corn pest monitoring and a mailed or phoned notification when corn borer thresholds have been reached each summer.
One of my greatest concerns about the widespread use of both already approved Bt field corn and BT sweet corn in Maine, is the preliminary evidence that both wild and domesticated animals, when given a choice of GMO versus non-GMO foods, will not eat the GMO corn. According to Jeffrey Smith in Genetic Roulette, Yes Books, Fairfield, IO. 2007, preliminary studies on the effects of GMO foods on domestic animals show extensive negative effects including reproductive, physiological, nutritional, teratogenic, and carcinogenic effects. Rather than continue and carry out long term feeding studies of GMO foods on animals, the Food and Drug Administration has given GMO foods a generally recognized as safe additive standard without requiring the necessary substantial amount of peer-reviewed published studies or an overwhelming consensus among the scientific community that the product is safe. The FDA has not required any rigorous, consistent standards for GMO product testing, accepting misleading, inaccurate, incomplete industry testing, nor required long term, large population nutritional studies of GMO food in domesticated animals. Some of the evidence that GMO corn is unhealthy for farm animals follows. The death rate for chickens fed Chardon LL GM corn for 42 days was 7%, compared to 3.5% among controls, according to Hilbeck and Meier, in "Critique of Monsanto's Environmental Safety Assessment for Cry3Bb Bt Corn". In farmer-run tests in Northwest Iowa in 6 farms in 1998 and 1999, cows and pigs repeatedly avoided eating GM corn in tests summarized by Arpad Pusztai and Bardocz, "GMO in animal nutrition:potential benefits and risks".
Another significant concern I have with GMO food crops is the crudeness of the GMO insertion process. When gene insertions occur, they are often not accurate with duplicate segments of DNA, or omissions of part of the genetic sequence. Both of these mistakes will cause changes in the cell's expression, including proteins new to the plant. Animals eating this abnormal corn may have physiological changes that create new allergens or elicit either adverse immune system responses, anti-nutritional, toxic, neurological, or hormonal effects. Jeffrey Smith's book, Genetic Roulette, documents numerous examples of industry trials in which mice, fed GMO food had completely changed behaviors, with much more aggression and nonsocial behavior than normal mice.
GMO crops have altered levels of nutrients, toxins, allergens and small molecule products of metabolism which may be potentially toxic." In BT-corn Mon 810, 8 out of 18 amino acids measured were significantly different than the controls. According to Ho, in "Exposed:More shoddy

science in GM maize approval", The Public Health Association of Australia concludes that since the new protein created from the transgene "constitutes less than 0.001% of the total protein...the change in amino acid profile cannot be attributed to the presence of this new, expected protein in the plant. It indicates that other proteins may have been produced, Roundup Ready corn and LIberty Link corn also had significant variations in five and 7 amino acids, respectively, and high-lysine corn "had higher levels in all of the 18 measured amino acids among the four commercial varieties used as references" according to Gurian-Sherman in "Holes in the Biotech Safety Net, FDA Policy Does Not Assure the Safety of Genetically Engineered Foods".

The precautionary principle, of not using untested materials until long term feeding studies on humans have been done, must be applied by the BPC in considering the licensing of BT corn for human use. All Americans are subjects in an irreversible biological experiment on the effects of GMO corn and soybeans on our physiology, reproductive health, and that of all future generations of AMericans. Only Europeans, where GMO food is wisely banned, are acting as a control to compare with the American gene pool. Maine has the opportunity to continue an important and necessary controlled environment for our human population of reducing people's exposure to highly risky, poorly evaluated GMO BT corn. Because most conventional U.S. human food grade corn and soybeans is now genetically modified, most processed supermarket foods contain GMO products, and no American is free of these untested GMO foods. The precautionary principle of avoid eating potentially harmful products, as evidenced in multiple animal feeding studies on corn, as well as soy, until proven safe in long term direct consumption studies must be followed.

I urge the Board of Pesticide Control not to amend Section 41 to allow GMO BT sweet corn to be planted in Maine. If the Board does approve GMO BT sweet corn, the Board must maintain a buffer between adjacent organic commercial growers and home gardeners. This buffering on the side of adjacent gardens or farms should be required of all growers in all circumstances, and should not be dependent on notification by those abutters. The buffer requirements for GMO BT sweet corn, if allowed in Maine, must be at least as great as the current buffer requirements for GMO BT field corn. Since corn pollen is wind blown, a 1000 foot or larger refuge would be essential to protect adjacent organic farmers from contamination of their organic corn with GMO BT pollen. The BPC should increase the buffer requirement for GMO Bt field corn to 1000 feet, and establish this same buffer requirement for GMO Bt sweet corn.

If the BPC does license GMO BT sweet corn, I do support the change in Section 41 to restrict GMO BT sweet corn to large, commercial users only. This strategy should limit cross pollination of organic and non-GMO conventional field corn crops in Maine.

Please print and give copies of this testimony to all members of the Board of Pesticide Control before their Jan. 23 meeting. Thank you for your consideration.

Sincerely, Nancy B. Chandler, Phoenix Farm, 191 S. Monmouth Rd., Monmouth, Me. 04259(207)933-9370