Genetically Engineered Crop Committee
Subcommittee Report: Economics
June 29, 2009 (DRAFT)

Genetically engineered (GE) crops dominate many segments of American commodity agriculture: nationwide, it is estimated that 80 percent of corn, 86 percent of cotton, and 92 percent of soy include one or more GE traits, of which glyphosate-resistance and *bacillus thuringiensis* (Bt) expression are by far the most common[1]. This domination has occurred even though a number of foreign markets are closed to GE products, either by banning them outright or by imposing labeling requirements. Markets for GE crops are limited further by their complete exclusion from products defined as organic, and by the decision of a number of food manufacturers ranging from Gerbers to Trader Joe's to reject GE ingredients. As a result, non-GE commodities can enjoy a price advantage: for example, the April 14, 2009 Chicago Board of Trade price for GE soybeans ranged from $9.30-$10.28/bushel, with non-GE soybeans receiving a premium ranging from $.55-$1.80 depending on variety. The subcommittee did not attempt to analyze differentials in yield, production costs, or net returns for these crops.

Since the GE-free price advantage is market driven, and originates primarily in public perception of the unhealthfulness of GE foodstuffs, the introduction of labeling requirements in the United States would probably result in an increased differential.

In Lake County, where growers depend on niche as well as commodity marketing, the situation is very different. Although it is impossible to be certain, it is believed that only one GE crop (a plot of ornamental glyphosate-resistant corn grown for at least one season) has ever been planted here. Furthermore no GE varieties of our dominant crops —grapes, pears, and walnuts—are available, although several products are currently in the research stage. At the present time the GE crop with greatest probability of being planted in Lake County is corn. Both Bt and glyphosate-resistant corn offer practical advantages to the producer (especially Bt corn which would provide a simple way to avoid damage from earworms and borers (see Appendix A analyzing earworm control techniques and comparative costs), but since locally grown corn is also sold locally, primarily through farm stands and farmers markets, widespread consumer resistance can be expected to substantially reduce the incentive to grow it. Similar conditions apply to the numerous available varieties of mosaic-resistant summer squash. If future GE crops are developed for disease resistance, nutritional enhancement, or ornamental improvement these may arouse different categories of public perception than Bt and glyphosate-resistant products.

Looking into the future, introduction of GE varieties of both alfalfa and grass hay is probable within the next few years. GE alfalfa seed was commercially available several years ago, and some stands of this perennial crop are still in production (outside Lake County) although additional plantings were halted by the courts in 2007, pending environmental review which is now nearing conclusion. GE grass hay remains in the research and development phase, but commercial release may occur within five years. Local demand would probably materialize once either or both of these products was available. Research on GE walnuts and grapes may also result in a marketable product within the next five years, with development of GE pears far less likely in the foreseeable

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[1] Jorge Fernandez-Cornejo, "Rapid Growth in Adoption of Genetically Engineered Crops Continues in U.S." Amber Waves: the economics of food, farming, natural resources, and rural America (September 2008).
http://www.ers.usda.gov/AmberWaves/September08/Findings/GECrops.htm

future.

The economic benefits of planting GE crops vary with the crop in question, as do the possible disadvantages (see Risks and Benefits table for details), but the most significant potential risk applies to all: if a non-GE crop is inadvertently pollinated by a GE variety, the marketability of the non-GE crop could be reduced. This is especially true of organic crops, which enjoy a significant price advantage[2] and which allow for no admixture of GE inputs whatsoever, not even on a *de minimus* level. Loss of organic certification in the case of accidental gene flow does not appear to be an issue, nor does genetic drift into a cover crop not intended for sale or human consumption (even if the main crop is organically grown), but inability to market an organically-grown crop as organic would entail a significant financial loss for the grower, to the extent that some organic farmers might prefer to avoid purchasing land anywhere near an area where GE crops are cultivated. The same consideration applies to a conventionally-grown crop that is designated for a “GE-free” niche market.

Growers who sell locally, with a direct connection to their customers, face another hazard if any GE crops are cultivated in their vicinity, even if cross-pollination is not a possibility. Some consumers have such a strong negative perception of genetic engineering in general that the possibility of mere pollen drift could result in a form of “negative advertising” resulting in diminished sales. Since this effect would be very hard to measure, the possibility of recovering compensatory damages from the GE grower would be much less than that resulting from reduced marketability because of verifiable pollination.

Additional risks accompany the cultivation of pharmaceutical GE crops. If these are grown in open field conditions and any pollination of neighboring crops occurs, whether conventional or organic, they could become completely unsalable, and in some cases even dangerous to human health. Special considerations also relate to beekeepers, effects on invasive weed management, and Lake County's public image. See the chart for details.

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[2] In 2008 the wholesale price of Lake County organic walnuts was around $2.50/pound, conventional between $1.10-$1.40. Organic pears sold for processing brought $350/ton, and prime organic pears for the fresh market $550, compared to an average of $200 per ton for conventionally-grown pears at the sheds. Producers who sold direct to the public got much more: for example the Lake County Community Co-op was selling local organic walnuts at more than $6/pound.