



# MINUTES

## Genetically Modified Organisms (GMOs) Study Committee

October 21, 2005

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### MEMBERS PRESENT:

Senator Thurman E. Gaskill,  
Co-chairperson  
Senator Thomas Rielly,  
Co-chairperson  
Senator Joe Bolcom  
Senator Thomas Courtney  
Senator David Johnson  
Senator David Miller

Representative Sandra Greiner,  
Co-chairperson  
Representative Betty De Boef  
Representative Delores Mertz  
Representative Doug Struyk  
Representative John Whitaker

## MEETING IN BRIEF

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Organizational staffing provided  
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Minutes prepared by: Kathy  
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- I. Procedural Business.
- II. Sustainable Agriculture.
- III. Regulation and Approval of Transgenic Crops.
- IV. Seed Business Perspective.
- V. Organic Farm Perspective.
- VI. Issues Facing Identity-Preserved and Organic Crop Producers.
- VII. Issues Facing Transgenic Crop Producers.
- VIII. Committee Discussion.
- IX. Materials Filed With the Legislative Services Agency.



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### I. Procedural Business.

**Call to Order.** The first meeting of the Genetically Modified Organisms (GMOs) Study Committee was called to order by temporary Co-chairperson Rielly at 10:05 a.m., Tuesday, October 21, 2005, in Room 22 of the State Capitol Building in Des Moines, Iowa.

**Preliminary Business.** Senator Bolckcom moved, and Senator Courtney seconded, the permanent election of the temporary Co-chairpersons. The motion was unanimously approved on a voice vote. The members also unanimously approved by voice vote the rules governing the Committee.

Co-chairperson Rielly prefaced the day's presentations by noting the important realities facing Iowa that caused the Legislative Council to create the Committee — the emerging markets for organic foods and the state's prominence in the research and growth of transgenic agriculture. He asked members to consider, as they listened to the day's presentations, the question "Can GMOs and organics coexist?"

**Adjournment.** The meeting recessed for lunch at 11:47 a.m., reconvened at 12:50 p.m., and adjourned at 3:29 p.m.

**Next Meeting.** The Committee will meet for its second and last meeting on Tuesday, December 13, 2005, in the Ronald Reagan Committee Room (G-19) at the State Capitol Building in Des Moines.

### II. Sustainable Agriculture.

**Leopold Center for Sustainable Agriculture.** Dr. Fred Kirschenmann, Director of the Leopold Center for Sustainable Agriculture at Iowa State University (ISU), suggested that "transgenic" is a more appropriate description than GMOs, since humankind has been genetically modifying plants and animals through breeding for centuries. The advisory board for the Leopold Center determined that the center should not use its scarce resources to research transgenic modifications because the General Assembly, when creating the center, charged it with developing sustainable agricultural practices. The center's mandate is to reduce the socioeconomic impacts of agriculture for farmers. The center has relied on research conducted by Dr. Michael Duffy, a professor of agricultural economics at ISU, and until July 2005, the associate director at the center. Research conducted by Dr. Duffy in 1998 indicated that farmers who raised transgenic crops, compared with those who did not, experienced no significant difference in returns and, in his conclusions, Dr. Duffy suggested that the primary benefactors of transgenic technologies are seed and chemical companies.

**Research.** The importance of transgenic technologies should not, however, be underestimated, according to Dr. Kirschenmann. Such technologies may enable farmers to simplify their pest management practices, enabling them to manage more acreage, but the strategy does not lead to economic sustainability and claims that such technologies have led to reduced pesticide use have been disputed and require further research. Because it may take 20 to 30 years to discover the benefits and unintended consequences of new technologies, it is prudent to utilize ecological screens and test the potential effects of these technologies before they are released into the



environment. The role of the center is to encourage dialogue, be a willing participant in efforts that seek solutions to problems, and explore alternatives for farmers that are less costly to farmers and to the environment, and which enable farmers to produce and retain more value on the farm.

**Organic Production.** Dr. Kirschenmann noted that the state has adopted federal standards for the production of organic commodities. Federal regulations do not require that commodities advertised as organically produced be tested for transgenic contamination. However, commodities are sometimes subject to testing before they are accepted in foreign markets. Organic producers are required to maintain a 25-foot buffer strip on the edge of their crop if their cropland borders a neighbor's field which is managed by conventional methods (i.e., the use of pesticides and herbicides), though no special buffer is required if the neighbor uses transgenic seed. Surveys indicate that consumers want transgenic-related labeling and are likely to reject certain levels of contamination (such as contaminations from transgenically modified pharmaceutical crops). Though no losses due to transgenic contamination have been reported to the Department of Agriculture and Land Stewardship (DALs), organic growers in Iowa have had production destined for foreign markets rejected. Growers of heirloom seeds have also experienced losses. Zero tolerance is not possible. Nearly 50 percent of the corn and soybean seed sold as conventional, nontransgenic seed tested positive for traces of transgenic material in the seed, according to a recent study by the Union of Concerned Scientists. Whether transgenic and nontransgenic crops can coexist depends on levels of tolerance and consumer acceptance of those tolerance levels, what types of contamination the public accepts, and what kinds of markets producers are targeting.

**Recommendations.** According to Dr. Kirschenmann, stricter handling measures may reduce the potential for contamination at the harvesting, processing, and distribution levels; and neighboring farmers could work together to reduce risks associated with the production of transgenic crops. But the best solution, Dr. Kirschenmann urged, is the establishment by the state of a pilot insurance program or indemnity fund supported by moneys contributed to by farmers, which would compensate farmers for losses caused by transgenic contamination. If both parties followed accepted strategies for preventing contamination and contamination still occurred, the nontransgenic farmer would be compensated for a proven loss of market value and the transgenic farmer would not be held liable for the contamination.

### III. Regulation and Approval of Transgenic Crops.

**DALS.** Ms. Robin Pruisner, State Entomologist for DALs, briefly described the working relationship between DALs and federal departments responsible for regulating agriculture.

**Federal Agencies.** Dr. John Turner, Director of the Policy Coordination Division, Biotechnology Regulatory Services of the Animal and Plant Health Inspection Service (APHIS) of the United States Department of Agriculture (USDA), identified the three federal agencies tasked with regulating biotechnology: the USDA, which evaluates the potential risks to agriculture and the environment; the Environmental Protection Agency (EPA), responsible for food and feed safety; and the Food and Drug Administration (FDA), which evaluates environmental risks and sets the tolerance in food produced from genetically engineered plants and produce pesticides.

**USDA Oversight.** Dr. Turner stated that the USDA employs a full-time state liaison responsible for technology issues and making the system as responsive as possible. APHIS conducts reviews



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of crops using biotechnology, and thus far has found no examples of environmental harm. Biotech crops in large-scale production include soybeans, corn, cotton, and canola. Articles regulated under APHIS at 7 C.F.R. 340 are organisms that have been altered or produced through genetic engineering and organisms that could be plant pests. Plants producing pharmaceutical or industrial compounds are subject to greater controls, including increased separation distances from adjacent fields, and dedicated equipment and facilities.

Dr. Turner explained the process APHIS uses for the approval of transgenic crops: from permits, to notifications, inspections, field data reports, and finally determination of nonregulated status. It takes at least 180 days, and generally one year, to conduct the comprehensive scientific review that leads to the determination of nonregulated status. The transgenic crop must pose no more of a threat than a conventionally grown crop. APHIS has issued determinations of nonregulated status in response to 66 petitions, which means that the crops can be used in food, feed, and breeding. However, acceptance of products derived from these crops are determined by the market, and some crop varieties have been removed for commercial reasons. APHIS is in the process of revising its regulations, the first step of which is the drafting of an Environmental Impact Statement that will assess the impacts of all proposed changes taking into account a broad array of environmental impacts. Dr. Turner emphasized the need for increased transparency and stakeholder input in revising the regulations.

### IV. Seed Business Perspective.

**Latham Seed Company.** Mr. Bill Latham, President, Latham Seed Company, provided the perspective of the seed industry by reading from a news release published by the American Seed Trade Association (ASTA) which stated that the association believes that the presence of trace amounts of transgenic seed in conventional seed lots is accepted in crop production and presents no risk to humans or the environment, deregulated transgenic seed are not contaminants and have neither special rules regarding handling nor threshold levels to be maintained in food or feed, and some low level of commingling of transgenic seed with conventional seed is understood and expected.

**Experience.** Latham Seed Company is a family business that started in 1947 and currently has 450 dealers in six north central states. The company produces Roundup Ready transgenic soybeans and non-GMO soybeans. Latham Seed Company's soybean sales are now almost 95 percent Roundup Ready. A sister company, Latham Farms, produces nontransgenic soybeans for customers in Asian countries. He describes biotechnology as a tool that has been used with care and responsibility by the U.S. seed industry, the decisions of which have been made on the basis of sound science. He observed that since 1992, the FDA has determined that biotech foods are as safe as plants developed through conventional breeding processes and therefore should be regulated the same way as any other food entering the market. He cited the results of a nine-year study of transgenic crops from the United Kingdom, which found significant economic benefits at the farm level, reduced pesticide use by growers, and reduced greenhouse gas emissions.

**Consumer Education.** Mr. Latham read from an open letter submitted to the Wall Street Journal by Dr. Norman Borlaug and former President Jimmy Carter, which was published in October and essentially states that the political debate over biotechnology in industrialized countries is impeding



the acceptance of biotechnology in poor, food-insecure countries, thereby delaying the extension of the Green Revolution to small-scale farmers cultivating marginal lands in developing countries. Mr. Latham opined that sound science does not always change emotional or political opinions, though he suggested that consumers need to be educated regarding the safety of biotech crops, as consumers in Europe and other countries have been led to believe that conventionally produced soybeans are healthier.

**Other Observations.** In response to a question, Mr. Latham noted that the use of Roundup Ready seed is far less detrimental to water quality than the use of pesticide. He supports organic farmers as they are supplying a legitimate market. The ASTA has established an organic seed growers group. However, he observed that studies have shown that 99 percent of pollen transfer occurs within roughly 60 feet of field borders, and that very small amounts of commingling due to the use of the same harvesting, trucking, and storage equipment has the potential to occur, even though seed companies act carefully. Because federal standards do not prohibit the presence of transgenic material in organically produced commodities, state regulations should not impose further restrictions on producers of these crops. He urged the General Assembly to embrace the products derived from biotechnology and to refrain from passing laws that would impede their production and marketing.

### V. Organic Farm Perspective.

**Rosmann Family Farms.** Mr. Ron Rosmann of Rosmann Family Farms, an organic farm enterprise, discussed the difficulties of producing and marketing organic crops given problems associated with pollen drift from neighboring farms producing transgenic crops. Though the USDA's National Organic Program prohibits transgenic use in organic production, it accepts adventitious contamination and provides that transgenic presence does not affect the status of the organic product or operation if the organic farmer or processor conducts due diligence to exclude GMOs from their operations. However, foreign markets and organic grain buyers have lower thresholds of tolerance and an organic farmer is not compensated when a crop is rejected because of higher than allowed transgenic contamination. He opined that holding a farmer liable for transgenic contamination of nontransgenic crops is not fair, especially when the organic farmer has taken every reasonable measure to prevent contamination, such as using adequate buffer strips, adopting later planting dates, and collaborating with neighbors. Contamination also occurs at the grain-handling and transportation stages when the infrastructure does not support identity-preserved (IP) and specialty crop production by segregating grain.

**Economic Effects.** Mr. Rosmann noted organic farmers in Iowa and around the country have suffered substantial losses due to transgenic contamination. He observed that the drift from pharmaceutical crops is of particular concern, and questioned the wisdom of growing these crops in the corn belt. Mr. Rosmann stated that a recent study by the Rodale Institute indicates that organic farms use 30 percent less energy than conventional farms and have similar, not reduced, yields. Organic farming is growing as consumers increasingly demand value-added and IP foods. Iowa is missing opportunities to benefit from this trend by failing to promote the state's IP, transgenic-free, and organic products and by ignoring consumers' wants and demands. Other states, like Oregon and North Dakota, and countries, like Brazil and China, are taking action to support nontransgenic systems and serve these markets. Since the introduction of Roundup



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Ready soybeans in 1996, the U.S. market share of soybean exports has declined 20 percent. However, market realities are having little effect on multinational seed corporations, which have committed so much of their seed production to the transgenic varieties that farmers are often not able to buy nontransgenic crop varieties best suited for their soils and climates. These companies are also seeking global patents on gene sequences that could result in a "scientific apartheid."

**Recommendations.** Mr. Rosmann suggested that the state should place more financial resources into public plant breeding programs at Iowa State University that will result in greater seed diversity. He also would like the state to initiate a program designed to make Iowa a recognized leader of IP, specialty, and organic crops, develop and implement a low-cost and reliable audit trail from farm to table, assist in upgrading grain handling and transportation infrastructure for certifying and promoting IP crops (such as the USDA's "Process Verified Program"), and provide a mechanism for compensating losses of revenue for producers who are victims of transgenic contamination. In response to a question, he suggested that the state could conduct trade negotiations to expand exports of Iowa-produced, nontransgenic commodities, and support beginning organic farmers in the state. Co-chairperson Greiner asked Mr. Rosmann to provide additional recommendations for how the state can help market organic commodities.

### VI. Issues Facing Identity-Preserved and Organic Crop Producers.

**Food Identity.** Mr. Ken Roseboro, Editor of the Non-GMO Report, discussed the issues facing producers of IP, nontransgenic, and organic crops. Market trends indicate that consumers want organic and nontransgenic foods and to know where their food comes from. European and Japanese consumers are especially sensitive — and Korea has zero tolerance for grain produced from transgenic crops. United States consumers want their foods labeled if they are free from transgenic contamination. The markets for organic soybean and corn crops are large, at \$3.5 billion for soybeans and increasing, and with large corporations like Frito-Lay purchasing nontransgenic corn. National Starch developed a program called TrueTrace IP, which traces the nontransgenic supply chain from seed to final food ingredient product through documentation, testing, and auditing. IP and nontransgenic crops command higher prices, which is an opportunity for producers.

**Coexistence.** Mr. Roseboro described the extensive, and expensive, measures (such as testing) producers must take to protect IP crops from transgenic contamination and to find nontransgenic seeds in the first place. According to a Union of Concerned Scientists seed study, more than 50 percent of corn and soybean seeds and 83 percent of the canola seeds are contaminated at levels of 0.5 to 1 percent. Most organic grain buyers will not accept contamination of more than .01 percent. A study conducted by ISU found that pollen drifts at distances of up to 1,600 feet. Testing difficulties are increasing as seed companies are restricting access to reference materials. Patent lawsuits are also a threat. An organic producer whose crop becomes contaminated faces rejected grain shipments, and loss of premiums, customers, markets, and organic certification. Though 8 percent of the organic farms in the United States have suffered direct costs or damages, the problems are greatest in the Midwest, where 70 to 80 percent of the farms have reported negative impacts and the states of Iowa and Wisconsin are at the epicenter. Mr. Roseboro suggested that the biotechnology industry is not acting according to the basic principles of responsibility and accountability. He also noted that Governor Tom Vilsack has stated that



coexistence should be a national priority. Mr. Roseboro also cited an article by Professor Miguel Altieri (Division of Insect Biology in the College of Natural Resources at the University of California of Berkeley), "The Myth of Coexistence: Why Transgenic Crops are Not Compatible with Agroecologically Based Systems of Production."

**Recommendations.** Professor Altieri recommended establishing transgenic-free zones. Mr. Roseboro reviewed the status of legislation in various states related to transgenic crops and identified strategies to address the problems of coexistence, including the development of "PuraMaize" seed, a conventionally bred hybrid corn seed that rejects pollen from all other strains of corn except its own.

### **VII. Issues Facing Transgenic Crop Producers.**

**Iowa Biotechnology Association.** Mr. Doug Getter, Executive Director of the Iowa Biotechnology Association, focused on the economic benefits achieved in the 10 years agricultural biotechnology has been available and began with a short history of biotechnology. He described biotechnology as a collection of tools used to improve and enhance plants, animals and microorganisms for the benefit of society. He identified its value to a world with increasing rates of consumption, a population expected to grow by 50 percent by 2050, and limited land and water resources. He played a short video in which Dr. Norman Borlaug, 1970 Nobel Peace Prize winner, advocates use of the technology in developing countries. He reviewed the contents of a binder he provided members of the Committee, including the video, guides, and studies on the impact of transgenic crops, the global status of commercialized biotech and GM crops, the impacts of biotech crops on United States agriculture, and the economic status and performance of plant biotechnology.

**The Role of Science and Economic Growth.** Mr. Getter noted that scientific safety evidence has validated transgenic crops, and that 25 Nobel Peace Prize winners and 3,400 scientists from around the world support plant biotechnology as a powerful and safe way to improve agriculture and the environment. Iowa State University's Plant Sciences Institute is focused on the advancement of new crop traits and product development. He noted the General Assembly defined biotechnology as a target industry for economic growth several years ago, and cited the aggressive growth of renewable ethanol fuels and soydiesel, and new applications such as neutraceuticals and biobased products, as examples. He suggested that the Iowa Values Fund can be available to biotechnology-based businesses and observed that the Bioscience Alliance, a partnership of public, private, and academic interests, within the Iowa Department of Economic Development, is providing a common council for discussion and coordination. He opined that Iowans should feel proud to be at the forefront of advances in agricultural sciences, as the world looks to Iowa to help advance the agricultural biotechnology sciences.

### **VIII. Committee Discussion.**

The Committee discussed the property rights implications and liability issues of coexistence and transgenic contamination, the acceptance of the science behind biotechnology, the benefits and negatives of "golden rice," whether current regulations are sufficient, and whether there is a need to educate consumers or a need to value the consumers' opinions. There was a suggestion that the Committee invite a representative from the Department of Economic Development to present



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testimony at the next meeting. Co-chairperson Greiner offered her hope that at the next meeting the Committee explore strategies to ensure coexistence between the interested groups.

### **IX. Materials Filed With the Legislative Services Agency.**

The materials listed were distributed at or in connection with the October 21 meeting and are filed with the Legislative Services Agency. The materials may be accessed from the "Additional Information" link on the Committee's internet page:

<http://www.legis.state.ia.us/asp/Committees/Committee.aspx?id=71>.

1. Written testimony of Dr. Fred Kirschenmann.
2. *Does Planting GMO Seed Boost Farmers' Profits*, by Dr. Mike Duffy and Mr. Matt Ernst, submitted by Dr. Kirschenmann.
3. *Number of Biotech Field Test Sites*, submitted by Ms. Robin Pruisner.
4. *Regulation of Products of Agricultural Biotechnology in the United States: Role of the USDA*, a PowerPoint presentation submitted by Dr. John Turner.
5. Written testimony of Mr. Bill Latham.
6. American Seed Trade Association News Releases submitted by Mr. Latham, including the following:
  - A Seed Industry Response to Issues Raised by the Presence of Biotech Seed in Conventional Seed Lots — July 8, 2004.
  - A US Perspective on GM Cultivation and Labeling — March 9, 2004.
  - Position Statement on Intellectual Property Rights for the Seed Industry — July 15, 2004.
  - ASTA Comments on Vermont Senate Bill S.18 — February 18, 2004.
7. *Put Seed Costs In Perspective*, by Mr. Andrew Burchett, Farm Journal, November 2005, submitted by Mr. Latham.
8. Written testimony of Mr. Ron Rosmann.
9. Compact disc containing PowerPoint presentation submitted by Mr. Rosmann.
10. *GMO Issues Facing Producers of Identity Preserved, Non-GMO, and Organic Crops*, a PowerPoint presentation submitted by Mr. Ken Roseboro.
11. Written testimony of Mr. Doug Getter.
12. *GM Crops: The Global Economic & Environmental Impact — The First Nine Years 1996-2004*, submitted by Mr. Getter.
13. *Global Status of Commercialized Biotech/GM Crops: 2004*, submitted by Mr. Getter.
14. *Impacts on U.S. Agriculture of Biotechnology-Derived Crops Planted in 2003, An Update of 11 Case Studies*, submitted by Mr. Getter.



15. *The Economic Status & Performance of Plant Biotechnology in 2003: Adoption, Research and Development in the United States*, submitted by Mr. Getter.
16. *USDA Letter on Organics & Biotechnological Agricultural Methods*, submitted by Mr. Getter.
17. *Suggested Best Management Practices for the Coexistence of Organic, Biotech and Conventional Crop Production Systems*, submitted by Mr. Getter.
18. *Co-existence of GM and non GM Crops: Current Experience and Key Principles*, submitted by Mr. Getter.
19. *NU Research: Feeding, Grazing GM Corn Doesn't Affect Livestock Performance*, February 6, 2004, *Farm & Ranch Guide*, submitted by Mr. Getter.
20. Fox News.com: *Anti-Biotech Film a "Crockumentary,"* submitted by Mr. Getter.
21. *Food for Thought*, October 14, 2005, *Wall Street Journal*, submitted by Mr. Getter.
22. The following brochures were submitted by Mr. Getter:
  - *DNA: You Can Eat It!, A student's guide to Project SEMI*, produced by Heartland Area Education Agency.
  - *Imagine: A Bioscience Career*, produced by the Iowa Biotechnology Association.
  - *Iowa BioHistory*, produced by the Iowa Biotechnology Association.
23. Senator Joe Bolckcom submitted the following handouts:
  - A list of organic food producers, seed companies, and merchants by city and county of operation and product.
  - *Organic Food Producers Lose Ground to Imports: Market Has Been Seen as a Niche for Small United States Farms*, by Mr. Philip Brasher, published October 8, 2005, by *The Des Moines Register*.
  - Organic Agriculture in Iowa and United States Fact Sheet.

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