

# Report Card on Genetically Engineered Food and Agriculture


## CALIFORNIA STATE LEGISLATURE

While there is debate about the potential impacts of genetically engineered (GE) food and crops, a number of peer reviewed studies indicate that these crops and foods can pose risks to wildlife and the environment, agricultural economies, and to humans. Novel genetic material has been shown to contaminate natural species,<sup>1</sup> create weeds that are more difficult to eradicate,<sup>2</sup> and increase pesticide use.<sup>3</sup> The introduction of GE crops could lead to export market losses for California's farmers and food industries, as export markets including the European Union and Japan have regulations that can restrict imports of GE crops. In addition, there are still questions as to whether GE foods can cause human health impacts such as increased allergic reactions, antibiotic resistance, immune-suppression, and cancer.<sup>4</sup> Because of these potential issues relating to GE foods and crops, farmers and consumers are increasingly concerned about this technology.<sup>5</sup> In response to these concerns, California should explore its policy options.

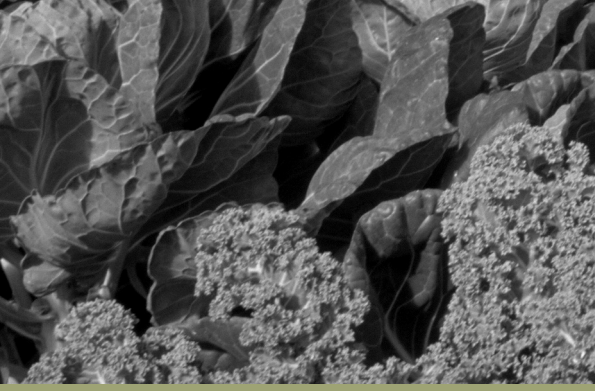
To date, nine bills that address GE crops and foods have been introduced in the state legislature, and out of those three have been signed into law. As evidenced in this report card, the state legislature has not proactively taken measures to address the potential impacts of GE crops and foods. The following is a summary of the legislation introduced, followed by the state legislature's record on bills relating to GE crops and foods.

### Food Biotechnology Task Force (SB 2065)

In 2000, the California Senate passed legislation to commission the Food Biotechnology Task Force Report (SB 2065). This task force investigated the economic, food safety, and environmental impacts of GE food. The main issues addressed in the report were: (a) the definition of biotechnology; (b) characterization of scientific literature on gene flow risks; (c) marketing of GE food; (d) potential benefits and risks to human health, the state's economy, and the environment; and (e) existing federal and state evaluation and oversight procedures. Despite the breadth of the Task Force's Report, it did not make policy recommendations.<sup>6</sup>



The federal government has not comprehensively addressed the environmental, economic, and human health issues relating to genetically engineered (GE) crops and foods. California should adopt policies that protect California's citizens, farmers, and economy from potential risks. Since 2000, nine bills that address GE crops and foods have been introduced in the California state legislature, and out of those three have been signed into law. Thus far, California legislators have only considered a few policies to address concerns relating to GE foods and crops.



## FAILING GRADE

The Assembly Committee on Agriculture receives a failing grade, as it has failed to act on a number of GE bills over the course of several years. In particular, the Committee blocked several initial attempts to create safeguards to protect California waterways from the hazards of GE fish. It also blocked attempts to label GE foods, despite overwhelming public support for such labeling.

## California Rice Certification Act of 2000 (AB 2622)

This legislation does not explicitly call for regulation and monitoring of GE rice, however GE rice does fall under its scope. Proposed by the major rice industry players, AB 2622 allows the California Rice Commission (CRC) to summon an advisory panel to review new varieties of rice of commercial significance.<sup>7</sup> The strengths and weaknesses in the Rice Certification Act as it relates to regulating GE rice were revealed in 2004. In this case, the CRC's Advisory Board approved a proposed planting protocol for a GE pharmaceutical rice produced by the company Ventria Bioscience. The protocol was forwarded to the California Department of Food and Agriculture (CDFA) and approval was requested under "emergency regulatory" guidelines. Under these "emergency" guidelines, there would have been no public hearings and no opportunity for public comment. In part due to public pressure, the protocol was not approved under emergency guidelines and CDFA sent the proposed regulation back to the advisory board for review.<sup>8</sup> This example served as a first test of vetting a GE crop through the Advisory Board. While this process revealed the need for improvements—such as better scientific and economic impact reviews, and more opportunity for public input—it also indicated the importance of having independent state review to determine whether or not to allow commercialization of a new GE crop in California.

## Regulating GE Fish (SB 245)

The greatest legislative efforts have focused on genetically modified fish. Of all the GE-related bills to fail in the legislature, three were precursors to the Transgenic Fish Moratorium (SB 245), which the Governor signed into law in October 2003. This legislation placed a moratorium on the spawning, incubation, or cultivation of GE fish in waters over which California has jurisdiction. The California Department of Fish and Game (CDFG) may issue permits for transportation, possession, importation, rearing of, and research on transgenic animals pursuant to stringent terms and conditions. In such cases, security and containment must be demonstrated before the permit is issued. The permit process may be expedited if the applicant has a federal permit issued under guidelines that meet or exceed state law.<sup>9</sup> To date, CDFG has successfully implemented SB 245. Because transgenic salmon have not yet been approved by the federal government, it is unclear how salmon will be handled under SB 245 should they be approved on the federal level. The sheer number of bills introduced to ban transgenic salmon suggests that this is an area of great concern in California.<sup>10</sup>



## HONOR ROLL

Retired Senators Tom Hayden and Byron Sher receive honorable mentions for their leadership on several bills to address the environmental and public health concerns surrounding GE plants and fish.



### Oversight of USDA Permits (SB 1513)

Other key issues relating to GE organisms remain unsettled, namely state oversight of field trials conducted under U.S. Department of Agriculture (USDA) permits, and perhaps most importantly, labeling GE foods. In 2000, Senator Tom Hayden (D-Los Angeles) introduced a bill that required label information specifying which ingredients were derived from GE organisms. Even though this legislation would have brought California into line with many European and Asian trading partners that require such labeling, it was met with great opposition and the final bill was amended to authorize CDFG to review USDA permits for field tests of GE crops. SB 1513 established a working group of experts to review and evaluate USDA permit applications/notifications that affect California agriculture. This legislation stated that CDFG should have appropriate staffing to review and comment on these permit applications/notifications. It also required a report to the legislature regarding the activities of the review board and any additional staffing needs. Though this bill passed the Committee on Agriculture and Water Resources in the Senate, it failed to pass in the Committee on Agriculture in the Assembly.<sup>11</sup>

### Labeling of GE Seafood (AB 791; AB 2962)

In 2002, the Assembly's Committee on Agriculture also failed to pass a bill that would require labeling of genetically modified seafood (AB 791; AB 2962). Originally, this bill was designed to require bottled water producers to obtain a certificate verifying bottling claims, but it was amended to require that the retail sale of any unpackaged seafood (other than by a restaurateur) containing any transgenic fish or shellfish (including but not limited to salmon) must be accompanied by a notice that clearly discloses that fact to the consumer. This bill also defined "transgenic fish and shellfish" for the purpose of labeling.<sup>12</sup>

### GE Food in School Lunches (SB 1514)

Labeling was the issue at the heart of the Healthfulness of GE Food in School Lunches legislation (SB 1514), which would have required the Superintendent of Public Instruction to convene an advisory task force to explore ways to inform parents about the nutritional value of public school food and the GE content therein. Though this bill passed both the Senate and the Assembly in 2000, the Governor vetoed it, arguing it was premature and unnecessary despite popular support.<sup>13</sup>

Labeling foods with genetically modified content remains a central concern. A variety of polls show that the vast majority of citizens nationwide want labeling of these foods.<sup>14</sup>

## SPECIAL MENTION Genetically Engineered Food Right-to-Know Act

Senator Barbara Boxer (D) has a well-deserved reputation as a champion for both the environment and California agriculture. On February 22, 2000, Senator Boxer introduced the Genetically Engineered Food Right-to-Know Act (106 S. 2080). Similar to a House resolution (106 H.R. 3377) introduced by Representative Dennis Kucinich (D-OH), Boxer's proposed legislation would have required labeling of GE foods at every phase of processing and handling. This would be accomplished not by mandatory testing, but rather through a system of guaranties: A food item must be labeled unless a guaranty from the prior handler certifies the item as non-GE. If a guaranty were suspected to be false, the FDA would be authorized to test.

Although Rep. Kucinich's bill found 59 co-sponsors in the House, Senator Boxer's found none, and ultimately both bills were referred to committee. Senator Boxer's bill was referred to the Senate Committee on Agriculture, Nutrition, and Forestry, where it failed. Since that time, Rep. Kucinich has introduced a number of bills requiring labeling of GE foods; Senator Boxer has not.

## Food Integrity and Farmer Protection Act (AB 984)

Introduced by Assemblyman John Laird in 2005, AB 984 shields a producer, handler, grain and seed cleaner, or processor who unknowingly comes into possession or uses patented seeds or plants as a result of inadvertent mixing of GE seeds or plant material from liability. The bill holds the manufacturer of the GE crops liable to any party economically injured by the release of its GE crop into California.<sup>15</sup> AB 984 passed the Assembly Judiciary Committee, but was held over by the Assembly Committee on Agriculture in 2005; it will be considered again in 2006.

## Conclusion

Faced with numerous opportunities to address the issues and concerns relating to GE crops and foods, the state legislature has been slow to adopt necessary legislation. The passage of the Transgenic Fish Moratorium (SB 245) shows a clear recognition on the part of California lawmakers that federal oversight is inadequate to protect the state's fisheries from transgenic fish. Federal regulation of GE food and agriculture is similarly weak. Therefore, California lawmakers are implored to show the same foresight and initiative in regulating GE plants and other forms of agricultural biotechnology as they demonstrated in the passage of SB 245.



# California State Legislature

## REPORT CARD

EXCELLENT

SATISFACTORY

UNSATISFACTORY

### Senate

**OVERALL GRADE: C+**

#### Public Accountability/Transparency

Conducting public hearings

According to available legislative information, the Senate has held only 2 public hearings on GE issues over the past five years.

✓

Passage of SB 2065: Food Biotechnology Task Force

While the intent of this legislation was to investigate the economic, food safety, and environmental impacts of food biotechnology, it did not require the task force to make policy recommendations.

✓

#### Protecting California's environment, farmers, and public from potential impacts of GE crops

Passage of SB 245: Transgenic Fish Moratorium

This bill establishes strong safeguards to protect CA waterways from GE fish.

✓

Failure to pass SB 1513: Oversight of APHIS Permits

The original intent of this bill was to require labeling of GE foods. It was amended to only grant agency authority to comment on APHIS permits; it failed in the agriculture committee.

✓

Passage of SB 1514: Healthfulness of School Food

Passed through Senate; vetoed by Governor.

✓

### Assembly

**OVERALL GRADE: D**

#### Public Accountability/Transparency

Conducting public hearings

According to available legislative information the Assembly has held only 1 public hearing on GE issues over the past five years.

✓

#### Protecting California's environment, farmers, and public from potential impacts of GE crops

Passage of AB 2622: Rice Certification Act

This bill establishes safeguards for protecting the California rice industry and the genetic integrity of California rice.

✓

Failure to pass AB 791/2962—bills on transgenic fish

These bills would have required labeling of GE fish. Both died in the Assembly Agriculture Committee.

✓✓

Held over AB 984: Farmer Protection from GE Contamination Liability

Bill would establish manufacturer liability for contamination from GE plants.

✓



## RECOMMENDATIONS FOR THE LEGISLATURE TO IMPROVE THESE GRADES

California legislators have not passed legislation to proactively protect the public, farmers, and the environment from the potential hazards posed by GE crops. The following are policy options that the California legislature could consider.

★ **Farmer protection from liability of contamination from GE crops**

★ **State-commissioned studies on economic, agronomic, environmental, and human health impacts of GE crops in California. Examples of such studies include, but are not limited to, the following:**

Economic impacts from contamination of conventional and organic seeds and crops with GE organisms;

Agronomic impacts from rapid development of herbicide-resistant weeds associated with GE herbicide-tolerant crops;

Environmental impacts from increased herbicide use associated with GE herbicide-tolerant crops;

Human health impacts from contamination of the food supply with untested experimental GE crops, including but not limited to GE pharmaceutical crops.

★ **Notification requirements for neighboring growers of GE crops and field trials**

★ **Labeling foods containing GE ingredients**

★ **Public participation in decisions regarding planting of GE crops, including but not limited to GE pharmaceutical crops**

★ **Public notification of GE field testing and/or commercial GE plantings**



## CALIFORNIA STATE LEGISLATION ON GE CROPS AND FOOD SINCE 2000

| BILL # / TOPIC   | AUTHOR(S)   | DATE | STATUS  |
|--|---|------|---|
| AB 984: Liability: GE Plants                           | Assembly Member<br>John Laird (D-Santa Cruz)  | 2005 | Held in<br>Assembly<br>Agriculture<br>Committee |
| SB 245: Transgenic<br>Fish Moratorium                  | Senator Byron Sher<br>(D-Palo Alto)<br>Assembly Member Patty Berg<br>(D-District Eureka)                | 2003 | Passed  |
| AB 791 / 2962:<br>Transgenic Seafood Labeling          | Assembly Member<br>Ed Chavez (D-La Puente)<br>Assembly Member Virginia<br>Strom-Martin (D-Duncan Mills) | 2002 | Failed  |
| AJR 38: Transgenic<br>Fish Moratorium                  | Assembly Member<br>Joe Nation (D-San Rafael)  | 2002 | Failed  |
| SB 1525:<br>Transgenic Fish Moratorium                 | Senator Byron Sher<br>(D-Palo Alto)   | 2002 | Failed  |
| SB 2065: Food Biotechnology<br>Task Force Report       | Senator Jim Costa (D-Fresno)<br>Assembly Member<br>Dean Florez (D-Shafter)                              | 2000 | Passed  |
| AB 2622: California Rice<br>Seed Certification Act     | Assembly Member<br>Dick Dickerson (R-Redding)   | 2000 | Passed  |
| SB 1514: Healthfulness of<br>GE Food in School Lunches | Senator Tom Hayden<br>(D-Los Angeles)   | 2000 | Passed,<br>Vetoed                               |
| SB 1513: State Oversight<br>of GE Food                 | Senator Tom Hayden<br>(D-Los Angeles)   | 2000 | Failed  |

## ★ ENDNOTES ★

- <sup>1</sup> “North Dakota Organic Farmers Worry About Biotech Contamination,” *Cropchoice News* Feb. 6, 2001.
- <sup>2</sup> Paul E. Arriola, “Risks of Escape and Spread of Engineered Genes From Transgenic Crops to Wild Relatives,” *AgBiotech News and Information* 9 (1997): 157-160.
- <sup>3</sup> Benbrook, Charles. “Genetically Engineered Crops and Pesticide Use in the United States: The First Nine Years,” October, 2004.
- <sup>4</sup> Julie A. Nordlee et al, “Identification Of A Brazil-Nut Allergen in Transgenic Soybeans,” *The New England Journal of Medicine* 334.11 (March 14, 1996). See also: Michael Hansen and Jean Halloran, “Jeopardizing the Future? Genetic Engineering, Food and the Environment,” Chapter 1 in *PAN AP Safe Food Campaign* (1998). Mae-Wan Ho, “Genetically Engineered Foods: The hazards are inherent in the technology,” *Third World Resurgence* 79. Stanley Ewen and Arpad Pusztai, “Effect of diets containing genetically modified potatoes expressing Galanthus nivalis lectin on rat small intestine,” *The Lancet* 354.9187 (October 16, 1999). T. Kimura et al., “Gastrointestinal Absorption of Recombinant Human Insulin-like Growth Factor-1 in Rats,” *Journal of Pharmaceutical & Experimental Therapy* 283 (1997): 611-618; S. S. Epstein, “Unlabeled Milk from Cows Treated with Biosynthetic Growth Hormones: A Case of Regulatory Abdication,” *International Journal of Health Services* 26.1 (1996): 173-85.
- <sup>5</sup> Poll conducted by Rutgers University, Food Policy Institute, October 2003; Poll conducted by American Viewpoint, November 2002.
- <sup>6</sup> California Food and Agricultural Code § 491-492, *State Administration, The Department of Food and Agriculture, Other Powers and Duties, Food Biotechnology Task Force*, <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=fac&group=00001-01000&file=491-492>. For the legislative history of SB 2065, see [http://www.leginfo.ca.gov/cgi-bin/postquery?bill\\_number=sb\\_2065&sess=9900&house=B&author=costa](http://www.leginfo.ca.gov/cgi-bin/postquery?bill_number=sb_2065&sess=9900&house=B&author=costa). The report itself is available online at <http://www.cdffa.ca.gov/publications.htm>.
- <sup>7</sup> California Food and Agricultural Code § 55000 et seq., *Processors, Storers, Dealers, and Distributors of Agricultural Products, California Rice Certification Act of 2000*, <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=fac&group=54001-55000&file=55000-55003>. For the legislative history of AB 2622, see [http://www.leginfo.ca.gov/pub/99-00/bill/asm/ab\\_2601-2650/ab\\_2622\\_bill\\_20000923\\_history.html](http://www.leginfo.ca.gov/pub/99-00/bill/asm/ab_2601-2650/ab_2622_bill_20000923_history.html).
- <sup>8</sup> Michael R. Taylor, Jody S. Tick, Diane M. Sherman, *Tending the Fields: State and Federal Roles in the Oversight of Genetically Modified Crops* (Pew Initiative on Food and Biotechnology and Resources for the Future: December 2004), 91-99; available online at <http://pewagbiotech.org/research/fields>.
- <sup>9</sup> California Fish and Game Code § 15007, *Aquaculture, General Provisions*, <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=fgc&group=14001-15000&file=15000-15007>. For the legislative history of SB 245, see [http://www.leginfo.ca.gov/cgi-bin/postquery?bill\\_number=sb\\_245&sess=PREV&house=B&author=she](http://www.leginfo.ca.gov/cgi-bin/postquery?bill_number=sb_245&sess=PREV&house=B&author=she).
- <sup>10</sup> Before the 2003 passage of SB 245, two similar bills were introduced in 2002: AJR 38, authored by Assembly Member Joe Nation (D-San Rafael); and SB 1525, authored by Senator Byron Sher (D-Palo Alto).
- <sup>11</sup> For the legislative history of SB 1513, see [http://www.leginfo.ca.gov/cgi-bin/postquery?bill\\_number=sb\\_1513&sess=9900&house=B&author=hayden](http://www.leginfo.ca.gov/cgi-bin/postquery?bill_number=sb_1513&sess=9900&house=B&author=hayden). Of particular note is the shift from labeling to permit oversight in the Assembly’s amendment of June 29, 2000; see [http://www.leginfo.ca.gov/pub/99-00/bill/sen/sb\\_1501-1550/sb\\_1513\\_bill\\_20000629\\_amended\\_asm.html](http://www.leginfo.ca.gov/pub/99-00/bill/sen/sb_1501-1550/sb_1513_bill_20000629_amended_asm.html).
- <sup>12</sup> For the legislative history of AB 791, see [http://www.leginfo.ca.gov/cgi-bin/postquery?bill\\_number=ab\\_791&sess=0102&house=B&author=strom-martin](http://www.leginfo.ca.gov/cgi-bin/postquery?bill_number=ab_791&sess=0102&house=B&author=strom-martin). For the legislative history of AB 2962, see [http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab\\_2951-3000/ab\\_2962\\_bill\\_20021130\\_history.html](http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab_2951-3000/ab_2962_bill_20021130_history.html).
- <sup>13</sup> For the legislative history of SB 1514, see [http://www.leginfo.ca.gov/cgi-bin/postquery?bill\\_number=sb\\_1514&sess=9900&house=B&author=hayden](http://www.leginfo.ca.gov/cgi-bin/postquery?bill_number=sb_1514&sess=9900&house=B&author=hayden). The Governor’s Veto Message can be read at [http://www.leginfo.ca.gov/pub/99-00/bill/sen/sb\\_1501-1550/sb\\_1514\\_vt\\_20000922.html](http://www.leginfo.ca.gov/pub/99-00/bill/sen/sb_1501-1550/sb_1514_vt_20000922.html).
- <sup>14</sup> The Mellman Group and Public Opinion Strategies, *Public Sentiment about Genetically Modified Food* (Pew Initiative on Food and Biotechnology: March 2001), 3; available online at <http://pewagbiotech.org/research/gmfood/survey3-01.pdf>. See also the 2003 update, available online at <http://pewagbiotech.org/research/2003update/2003summary.pdf>.
- <sup>15</sup> For the legislative history of AB 984, see [http://www.leginfo.ca.gov/pub/bill/asm/ab\\_0951-1000/ab\\_984\\_bill\\_20050427\\_history.html](http://www.leginfo.ca.gov/pub/bill/asm/ab_0951-1000/ab_984_bill_20050427_history.html).