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## Sweden

### Agricultural Biotechnology Annual

### Standing Biotech Report for Sweden

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**Report Highlights:**

This report provides an overview of the situation for genetically engineered products with regard to regulation, policy, and the marketing environment in Sweden. For information on the general EU situation, please refer to the USEU Agricultural Biotechnology Report.

**Section I. Executive Summary:**

As a member of the European Union (EU), Sweden fully applies EU regulations regarding approvals, traceability and labeling of genetically modified (GM) products.

In 1998, the breakdown of the EU's approval process for GE products blocked U.S. exports of several agricultural products to Sweden. Since then, the U.S. has lost its share of the Swedish market for soybean oilcake/meal. In 2010, Sweden's imports of soybean meal were valued at about USD120 million, of which only USD 50 thousand originated in the US.

Although a number of GM soy varieties have received approval to be imported into the EU since 1998, imports to Sweden have been very limited. This is due the fact that the Swedish meat- and dairy industry has voluntarily banned the use of GMO-feed the past 10-15 years. While the meat industry abandoned its ban in 2006 due to the higher cost for GMO-free feed (soy), the dairy industry still has its ban in place. However, pigs are so far the only animals in Sweden that have been fed with GM-feed. The quantities are still small, 95% of all imported soy to Sweden is GM-free soy from Brazil.

Sweden continues to import conventional sweet corn from the United States for human consumption. However, U.S. feed corn has been locked out of the market because of the industry's reluctance to use GMO feed. The availability of GMO-free corn is larger than that of soy. The value of the opportunity lost in supplying to Sweden a wide range of U.S. processed products containing GM ingredients is impossible to quantify.

The food processing and retail sectors remain concerned over the possibility of negative consumer reaction and the ever-present threat of disruptions from anti-biotech demonstrators.

## **Section II. Plant Biotechnology Trade and Production:**

Several seed companies in Sweden have developed their own GM varieties, including herbicide tolerant rapeseed and herbicide tolerant sugar beet, but the only commercially cultivated biotech crop in Sweden is the GM starch potato Amflora (for seed multiplication).

The GM Amflora potato was approved for cultivation in March 2010. It was grown on 150 hectares in MY 10/11. Another unapproved GM starch potato was detected in some of the fields where Amflora was cultivated. The other potato had been cultivated in field trials for six years in Sweden. After thorough investigations, it was found that the contamination happened in a laboratory and a greenhouse before planting. As a result of the contamination, stricter control measures for cultivating Amflora were imposed. Therefore, the cultivation of the Amflora potato is significantly lower in 2011, about 20 hectares.

Next year, control measures will be less strict and areas are expected to increase again.

Before 2005, Sweden did not import biotech products or crops. However, since the meat industry lifted its ban on GM feed in 2006, small quantities of GM soy products have been imported into Sweden.

## **Section III. Plant Biotechnology Policy:**

### **Regulatory Framework**

As an EU member, Sweden applies EU regulations on biotechnology. For information on EU regulations, please refer to the USEU Agricultural Biotechnology Report.

Responsibility for the monitoring and enforcement of laws and regulations on biotech in Sweden is divided between the Ministry for Rural Affairs and the Ministry of the Environment. The Swedish Board of Agriculture is the authority responsible for regulating the contained use, deliberate release and placing on the market of biotech feed and seed. The National Food Administration is the authority responsible for regulating the placement of biotech foods on the market. The Swedish Gene Technology Advisory Board monitors developments in the field of gene technology, including ethical considerations, and provides advice on its use. The National Environmental Protection Agency plays an advisory role, providing input to other authorities on issues including deliberate release and market placement. The Agency also provides advice on the formulation of regulations for activities related to genetic engineering.

The Government of Sweden is positive but cautious towards GM food, feed and crops. Within the EU, Sweden belongs to the "pragmatic" group of countries. In GMO policy discussions, Sweden tries to find solutions that are science-based as well as practically feasible. Sweden has voted positively on almost all applications since the restart of the approval process in 2004.

According to the Swedish Institute for Food and Agricultural Economics (SLI), growing biotech crops in Sweden would be economically beneficial for Swedish farmers. SLI has concluded that growing biotech crops instead of conventional crops would result in a 4-12% profitability increase. The largest potential benefit is noted for potatoes. Possible costs for co-existence measures such as safety distances between biotech and conventional fields are not considered in the analysis.

### **Approved Biotech Crops**

Please refer to the USEU Agricultural Biotechnology Report.

### **Field Testing of Biotech Crops**

Sweden allows field tests of biotech crops. Since 1989, the Swedish government has approved about 130 applications for field tests of biotech crops: potatoes, rapeseed, sugar beets, thale cress, apple rootstock, hybrid aspen, flax, and corn.

Currently, there are 8 ongoing field trials in Sweden, including roundup resistant rapeseed and starch potatoes for industrial use.

Table 1. Field Trials with Genetically Modified Plants in Sweden 2011

Crop	Genetic modification	Area	Permit owner
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		(ha)	
Hybrid aspen	Increased growth	1	Umeå University
Apple and pear root stock	Improved rooting ability	1.6	Swedish University of Agricultural Sciences
Sugar beet	Herbicide tolerance	1.4	Syngenta
Sugar beet	Herbicide tolerance and rhizomania resistance	1.4	Syngenta
Sugar beet	Resistance to downy mildew	1.4	Syngenta
Potato	Increased amylopectin content	6.8	Plant Science Sweden AB
Potato	Increased amylopectin content	4.1	Plant Science Sweden AB
Potato	Increased amylopectin content	0.8	Plant Science Sweden AB
Total area		18.5	

### **Co-existence**

In order to avoid the unintended presence of GMOs in conventional and organic products, the European Commission has published guidelines on co-existence for different types of farming. EU member states shall, based on the Commission's guidelines, develop national strategies and best practices for co-existence. In May 2007, the Swedish government adopted its national framework for co-existence measures. In June 2008, the Swedish Board of Agriculture issued detailed regulations, including:

- Farmers who plan to cultivate GM crops must notify owners/users of neighboring land 1 November the year before planting, at the latest.
- Farmers must notify authorities within two weeks after planting. The registration fee is SEK 200 (EURO 22).
- The distance requirement for corn is 50 meters, for potato 3 meters. Shorter distances are allowed if agreed between the parties.

Sweden has chosen to only include crops that can possibly be cultivated in Sweden in coming years; potato and corn.

### **Labeling**

Please refer to the USEU Agricultural Biotechnology Report.

### **Biosafety Protocol**

Please refer to the USEU Agricultural Biotechnology Report.

### **Biotech-related Trade Barriers**

Please refer to the USEU Agricultural Biotechnology Report.

## **Section IV. Plant Biotechnology Marketing Issues:**

As mentioned earlier, prior to 2006, Sweden did not import biotech products or crops. However since January 2006, when the meat industry lifted its ban on biotech feed, small quantities of biotech soy products have been imported. While demand for this product has been limited, there has reportedly been no negative reaction from the Swedish trade. The food processing and retail sectors remain concerned about the possibility of negative consumer reaction and anti-biotech demonstrations.

## **Section VI. Animal Biotechnology:**

### **Development and Use:**

There are no GE animals for food production in Sweden. However, GE animals, mainly mice, are used by universities and industry for biological, medical and biomedical research.

At present no research is going on in Sweden in regard to the genetic modification of aquatic organisms.

### **Regulation:**

The Swedish Board of Agriculture is the competent authority for GE animals in Sweden. The National Board of Fisheries is the authority responsible for the contained use, deliberate release and placing on the market of genetically modified aquatic organisms.

Genetic engineering of all life organisms is regulated in chapter 13 of the Swedish Environmental Code, which is supplemented by a number of ordinances and regulations. The use of GE animals is regulated in the Board of Agriculture's Regulations on the Use of Genetically Modified Animals (SJVFS 1995:33) and the National Board of Fisheries' Regulations on Genetically Modified Aquatic Organisms (FIFS 2004:2). The contained use of genetically modified animals is regulated in SJVFS 2000:271.

Anyone using genetically modified animals in contained conditions (e.g. in animal house or similar facility) must apply for consent to use the premises and then notify the Board of Agriculture of the intended contained use. Corresponding requirements apply to aquatic organisms which are the responsibility of the National Board of Fisheries.

Industry and universities developing GE animals also need approval from the Swedish Work Environment Authority. This in order to make sure that the people handling the animals in the laboratories are not exposed to any risks. In addition, approval is needed from an animal ethic committee.

### **Stakeholder/Public Opinion:**

The use of genetic engineering of animals for use in agriculture would most likely not be supported by the public in Sweden. The use of animals for medical research aimed at finding cures for diseases is found more acceptable.

### **International Organizations:**

Sweden is an active member in OIE and Codex. The GE animals issue has so far not been one of Sweden's focus areas in discussions in these organizations.