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Agricultural Biotechnology Annual

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Report Highlights:
This report describes the trade, production and research of genetically engineered (GE) plant products, the use of GE animals for research purposes, and related government policies in France.

French support for non-science based restrictions on genetically modified organisms deters adoption of promising agricultural biotechnology by developing countries. The recent G20 conclusions may encourage France to incorporate agricultural biotechnology as a key research, development, and innovation tool for achieving food security in the developing world. FAS/Paris has pushed for the use of new technologies to boost agricultural technologies to the center of discussion of agricultural productivity and sustainability issues in France.

Section I. Executive Summary

As a leading agricultural producer and exporter in the European Union (EU), France remains highly influential in agricultural policy both within the EU and globally. The recent G20 conclusions may encourage France to incorporate agricultural biotechnology as a key research, development and innovation tool for achieving food security in the developing world. The discussion of the need for the use of new technologies to boost agricultural technologies has moved from the back room to the center of discussions of agricultural productivity and sustainability issues in France. The various seminars sponsored by FAS/Paris have conveyed that biotechnology can help address global food security while increasing agricultural sustainability.

France is a major consumer and importer of plant biotech products, consuming roughly four million metric tons (MT) of soybean meal every year to feed its livestock and poultry herds. Imports of Dried Distillers Grains (DDGs) jumped from zero to almost 50,000 MT in 2011, indicating the need for feed ingredients, especially in the current situation of high prices and limited harvests in the European Union. France's plant biotechnology policy includes a socio-economic review, and is so restrictive for Genetically-Engineered (GE) crop cultivation, that there is currently no commercial cultivation of GE crops and no open-field research. France's commitment to significantly reduce pesticide use in agriculture has raised interest for biotech crops among researchers, although better agronomic practices are highly advertized to the public.

GE animals are used in public research, mainly for veterinary applications. No biotech animal is commercialized.

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Section II. Plant Biotechnology Trade and Production

A. Trade

As a major livestock producer and consumer of feed ingredients, France is dependent upon imported soybean meal, mainly from Brazil, the United States and Argentina. There are roughly 4 million MT soybean meal consumed in animal feed every year, supplied from the more than 3 million MT imported, and the remainder crush of imported soybeans. Although domestically-produced rapeseed meal has partially replaced soybean meal in animal feed rations, soybean meal remains a desired feed ingredient for the livestock and poultry industry, both in terms of quality and price.

France's imports of dried distillers grains (DDGs) increased in the past few months, mainly from the United States. U.S. DDG imports were nearly non-existent in the past, jumping to 47,000 MT in the first 10 months of MY 2010/11 (July-April); accounting for 43 percent of total imports.

B. Cultivation

The Government of France activated the safeguard clause in 2008 and MON810 was banned, resulting in no cultivation of GE crops. For more details, see GAIN report FR8008, dated June 6, 2008. French corn growers, General Association of Corn Producers (AGPM), have high expectations from genetics and biotechnology to meet the recent commitment by the government to significantly reduce the use of chemicals in agricultural production. AGPM often points out the discrepancy between the French ban on cultivation and authorization of imports of GE products.

C. Research

i. French National Research Institute on Agriculture (INRA) involved in national and international plant biotech programs

The United States is the country with whom INRA collaborates the most. INRA works on the bioeconomy, in order to "find ways to produce more, better, and something else." INRA's thematic focus includes (1) combining agriculture, environment and economy, (2) assuring healthy and sustainable food systems, (3) providing renewable carbon systems, and (4) adapting to and mitigating climate change. However, INRA considers other ways than genetic engineering in terms of innovation, as open field trials of biotech crops are almost impossible to conduct in France. INRAs research on biotech fan-leaf disease resistant grapevines was destroyed in 2009 and 2010 (see GAIN report FR9046, dated August 19, 2010).

At the national level, there are two main projects in which INRA is involved: The first, a public/private partnership research program created ten years ago under the name "Genoplante" and changed to "Green Biotechnology" (Biotechnologies Vertes), principally involved in crop genomics. The second, is the national program for research and higher education announced in December 2009 called "Invest for the Future" (Investissements d'Avenir), with a total budget of 35 billion euros. Two green biotech programs lead by INRA were selected as part of this program: an eight-year, 9 million euros program (BREEDWHEAT) to select corn varieties with high yields and reduced needs in water supply and

chemical inputs, and a nine-year, 9 million euros program (AMAIZING) to select high yield, high quality, and stress-tolerant wheat varieties, for a more sustainable production.

INRA is also involved in the following international research programs involving plant biotechnology:

- The Joint Programming Initiative "Agriculture, Food Security and Climate Change" (FACCE-JPI) is jointly led by France, through INRA and the UK, through the Biotechnology and Biological Sciences Research Council (BBSRC). On July 13, 2011, the FACCE-JPI announced the opening of a call for proposals for a pilot action on "A detailed climate change risk assessment for European agriculture and food security."
- The International Research Initiative for Wheat Improvement (IRIWI): This initiative was adopted by the Ministers of Agriculture of the G20 on June 23, 2011 and is supported by research organizations and funding agencies from about ten countries. INRA, with the BBSCR and the International Maize and Wheat Improvement Center (CIMMYT) based in Mexico, will contribute to the coordination activities of the IRIWI during the first four years of the project.

ii. Limagrain invests in biotechnology to improve wheat varieties

In 2010, the leading French cooperative group Limagrain announced its objective to conduct research and development of GE wheat varieties with reduced nitrogen needs and increased drought tolerance, through their partnership with a U.S. company. Limagrain plans to conduct this research and development in the United States, and then expand to Argentina and Europe. They expect these GE wheat varieties will be obtained in 2020 at the earliest. For more information, see Limagrain's 2010 Activity Report. Limagrain's budget for R&D totals 141 million euros, including 20 percent in plant biotechnology, mainly in the plant genomics project "genoplante," conducted in partnership with INRA and stakeholders.

iii. Increased visibility of French plant biotechnology researchers

Although less in the media than activists, there are some initiatives that promote the use of plant biotechnology to address global needs and challenges. For example, a large number of scientists united in the French Association of Plant Biotechnology (Association Francaise des Biotechnologies Vegetales (AFBV)), to create another voice in the public discussion other than activists and private companies. These scientists feel as if their opinions and research have not been taken into account by policy makers. They have expressed concerns that political decisions are not based on science, i.e., when France implemented its national ban on biotech corn cultivation.

Section III. Plant Biotechnology Policy

A. Biotechnology to Increase Agricultural Productivity and Sustainability

i. Biotechnology for a more productive agriculture

In France, global food security was not identified by the government as a strategic necessity until the G8 food security initiative in 2008, and more recently, when France decided to put agriculture as a top priority issue to be discussed within the G20, under the current French Presidency of the G20. This is a

major change from the past decades' perspectives, when agriculture was mainly perceived by policy-makers and the public opinion as over-productive, damaging the environment, and when most the of the policy measures in place in France and in the European Union converged towards limiting production to reduce stocks, and adapting agricultural production to more environmentally-friendly practices.

The agricultural ministerial meeting within the G20 took place in Paris on June 22-23, 2011, resulting in a ministerial declaration adopted unanimously by the ministers of agriculture of the 20 countries. Although not specifically indicated, biotechnology does belong to the "improved agricultural technologies" and "innovation in plant breeding" that the ministerial declaration calls for "to increase the agricultural production and productivity."

ii. Biotechnology for a more sustainable agriculture

France's environmental legislation, Grenelle for the Environment, adopted in the past few years by the French Parliament aim to make agriculture more sustainable, for example though commitments to significantly reduce pesticide use while maintaining productivity in the "Ecophyto 2018" initiative to reduce pesticide use by 50 percent, in order to address environmental and health concerns. Although not advertized as much as sustainable agronomical practices, seed technology (and more specifically, genetic engineering) is a way to meet France's goal to maintain productivity while reducing chemical pressure. For more information, see GAIN report FR9050, dated October 14, 2010.

B. Specific French Policy on Plant Biotechnology

i. French Parliament perspectives

The French Parliament has not been involved in plant biotechnology since the vote of the biotech law in June 2008. The law restricted domestic biotech plant cultivation, created a new national biotech authority (the High Council on Biotechnology) including not only a scientific but also a socio-economic committee, set the scene for coexistence measures (which the HCB is still working on), and mandated transparency through public disclosure of biotech fields planted for commercial production at the plot level (see GAIN report FR8008, dated June 6, 2008).

Despite this law, many French Parliamentarians would show their open perspectives on biotechnology, especially in private. Some admit that they "have not always been brave in that respect," favor open-field research on biotech plants, condemn test plot destructions, and stand for biotech research on environmental and health issues in order to be better perceived by the public in France. For more information, see GAIN report FR9067, dated May 17, 2011.

Finally, the French Parliament's Science Committee (Office Parlementaire d'Evaluation des Choix Scientifiques et Technologiques (OPECST)) is preparing a report on the public perception and fear of innovation, including biotechnology. The objective of this report is to set a scale of risks, to provide citizens with means to make their own opinion. Public hearings were conducted on May 26, 2011 by OPECST, who met with two U.S. Government officials on the U.S. biotech regulatory framework and perception of the public opinion on plant biotechnology to prepare this report. The report is expected to be released in the coming months.

ii. French government remains extremely cautious

The French Ministry of Ecology is the leading Ministry involved in biotechnology issues within the Government of France. France voted in favor of the "technical solution" recently adopted by MS to tolerate traces of unapproved GE products, under extremely strict conditions.

The inter-ministerial website on biotechnology http://www.ogm.gouv.fr/ explains the articulation of the French biotech policy with the EU regulatory framework.

iii. French biotech authority: the High Council on Biotechnology (HCB)

The HCB has a unique composition of two committees including a science committee and a socio-economic and ethics committee, both reviewing biotech products and issues and releasing their own conclusions and recommendations. As the opinions of these committees are difficult to reconcile into a joint HCB recommendation, the committees have functioned as two separate bodies since their creation, thus slowing down the biotech review process.

The HCB is expected to release its proposal on biotech coexistence in fall 2011, based on its definition of "biotech-free production" in its report released in October 2009 (see GAIN report FR9032, dated November 16, 2009), and on the HCB's recommendation on the labeling of food products with "biotech-free" released in January 2011, both defining a 0.1 percent threshold.

iv. National Agency for Health Safety of Food, Environment, and Work (ANSES)

ANSES is in charge of reviewing the food safety of GE products in food, and some of its works overlaps with the HCB's. Both organizations provide their expertise to the French government, which takes decisions based on the recommendations of the HCB and ANSES. ANSES recently released a number of reports on these issues: report on the market release approval of low-amylose GE potato, report on the market release approval of GE cotton, and recommendations on the statistical analysis of the toxicity of GE products on rats.

Section IV. Plant Biotechnology Marketing Issues

There is overall reluctance within the public opinion regarding GE products in food, due to various factors including the lack of objective sources of information to the public, which mainly hears from two extreme "pros and cons" sources. The public opinion generally expresses distrust of private international biotech companies, which are the most visible. On the other hand, academic and public research exists, but is not visible to the public, while they would be perceived as more credible and neutral, as non-profit organizations. In addition, environmental NGOs have gained credibility with the environmental legislation, Grenelle, where they were fully involved in the past few years. Although biotech opponents are usually considered marginal in number, their communication is top flight and well-transmitted by the media to a public overall receptive to fears culturally and traditionally associated with food.

The Institute for Radioprotection and Nuclear Protection (in French, "Institut de Radioprotection et de Surete Nucleaire," or IRSN) recently released its 2010 annual report on French perception of risks and security. This report, based on polls conducted on more than 1,000 people in December 2009, indicates that the leading concerns of the French are economic (mainly unemployment) and environmental (mainly air and water pollution, as well as greenhouse effect). Among the risks to which the French feel mostly exposed, biotech products rank 17, well after tobacco, drugs, air and water pollution, pesticides, and others.

Section V. Plant Biotechnology Capacity Building and Outreach

FAS/Paris organized a number of visits in the past years of official U.S. visitors (including policy makers, researchers and farmer groups) to France on biotechnology issues, primary focusing on global food security, agricultural sustainability and agricultural productivity. Please see the FAS/Paris website for more information:
http://www.usda-france.fr/biotechnology-en.htm
http://www.usda-france.fr/sustainable-agriculture.htm

FAS/Paris reported on the outcome of these visits, as well as on local events of interest through the GAIN system. Please see FAS/Paris website at: http://www.usda-france.fr/biotechnology-en.htm with links to these reports since 2006.

Additionally, FAS/Paris has prepared newsletters on the United States and biotechnology for contacts since 2006, available at http://www.usda-france.fr/biotechnology-en.htm.

These various actions indicated that the French audience is receptive to a message conveyed by scientists and non-profit organizations indicating that plant biotechnology is not a panacea but one tool among others to address global challenges that France needs to consider as well as any other country. Therefore, FAS/Paris will to continue its efforts in this direction in the coming months.

Section VI: Animal Biotechnology

Animal biotechnology is mainly used by INRA in its Animal Genetics unit. Programs are conducted on the following three main themes: study of the structure of the genome (including gene expression, mapping), analysis of the phenotypic variability (analysis of resistance to diseases, biomedical models), and methods of population management (including the conservation of genetic resources and the selection of animal population). For example, INRA conducts research on the genetic resistance to infectious diseases in sheep. In 2010, INRA collaborated to the characterization of the gene and mutation responsible for a hair character in rabbits, used high debit genome analysis to assess genetic potential of dairy bulls, and studied the genetic factor of some hereditary genetic disorder in dogs.

There is no GE animal commercialized in France; therefore, there is little visibility of animal biotechnology in the public opinion.