



Office of Agricultural Affairs

U.S. Embassy, Paris

The United States and Agricultural Biotechnology Newsletter

December 2011

To our readers: We, the Office of Agricultural Affairs U.S. Embassy France, would appreciate you informing us of your upcoming visits to the United States, as we can provide assistance with administrative procedures and organizing meetings. Please do not hesitate to share your comments with us, as we are here to facilitate these exchanges.

Disclaimer: The articles in this newsletter are from a variety of sources, and some may not represent official US. Government positions.

Table of Contents

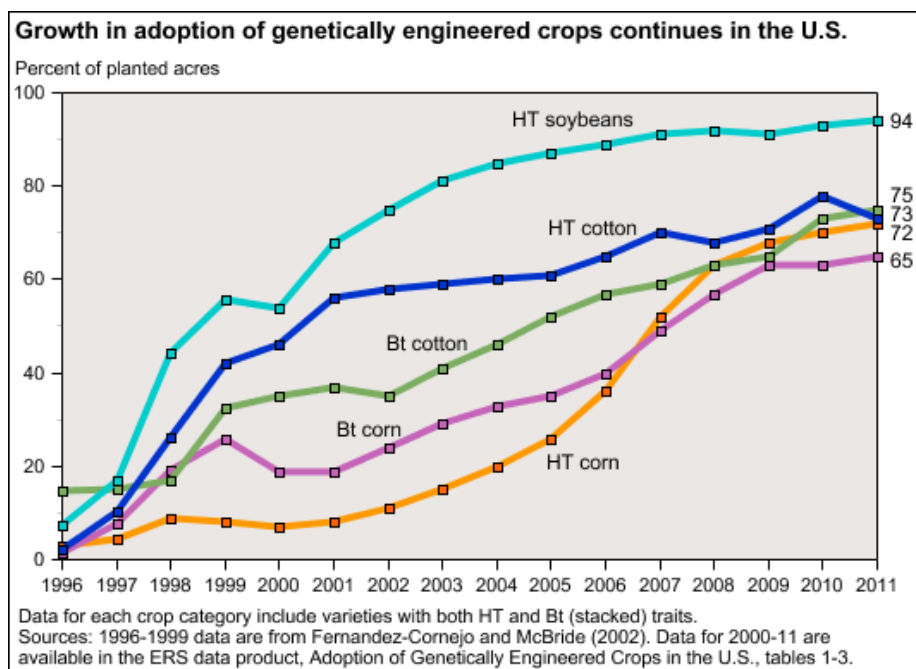
1.	Production of Biotech Crops in the United States.....	2
	July 2011 – USDA/ERS - Agricultural Biotechnology: Adoption of Biotechnology and its Production Impacts	2
	June 2011 – Updated USDA/NASS Acreage Estimates of Biotech corn, Soybean and Cotton	2
	Background Information on U.S. Biotech Regulation	3
2.	Biotech Crop Management in the United States.....	3
	December 2011 – University of Illinois Crop Science Conference: Managing Pest Resistance	3
	November 2011 - EPA –Biopesticide Registration Action Document - SmartStax Bt Corn Seed Blend ...	3
	November 2011 - USDA/NIFA Biotechnology Risk Assessment Research Grants Program (BRAG) Request for Application for FY 2012	4
	November and December 2011 – Actions of the Advisory Committee on Biotechnology and 21st Century Agriculture	5
	September 2011 – UC Davis/USDA Workshop: Science of Gene Flow in Agriculture and its Role in Coexistence	5
3.	Biotechnology and Food Security	6
	December 2011 - Science Magazine Editorial - Science Meets Farming in Africa, by Calestous Juma....	6
	November – December 2011 - FAO Biotechnology Forum	7
	November 2011 – Innovation with Impact – A Report by Bill Gates to G20 Leaders, Cannes Summit ...	7
	October 2011 – USDA/ARS: New Rice Varieties Offer Benefits to Growers.....	8

4. Biotechnology and Climate Change..... 8
 December 2011 - Fighting Hunger in a Climate Change – How can Agriculture Respond? 9

1. Production of Biotech Crops in the United States

July 2011 – USDA/ERS - Agricultural Biotechnology: Adoption of Biotechnology and its Production Impacts¹

Adoption of herbicide-tolerant (HT) crops, which carry genes that allow them to survive certain herbicides that previously would have destroyed the crop along with the targeted weeds, has been particularly rapid since they first became available to U.S. farmers in 1996 (see detailed explanation and excel spreadsheets in the data product, [Adoption of Genetically Engineered Crops in the U.S.](#)). HT soybeans expanded to 94 percent of U.S. soybean planted acreage, HT cotton reached 73 percent of cotton acreage, and HT corn expanded to 72 percent of the corn acreage in 2011. Adoption of insect-resistant (Bt) crops, containing the gene from a soil bacterium *Bacillus thuringiensis* (Bt), has also expanded. Use of Bt cotton reached 75 percent of planted cotton acreage in 2011 and Bt corn use grew from about 1 percent of corn acreage in 1996 to 65 percent in 2011.



June 2011 – Updated USDA/NASS Acreage Estimates of Biotech corn, Soybean and Cotton²

The National Agricultural Statistics Service conducts the June Agricultural Survey in all States each year. Randomly selected farmers across the United States were asked if they planted corn, soybeans, or Upland cotton seed that,

¹ <http://www.ers.usda.gov/Briefing/Biotechnology/chapter1.htm>

² <http://usda01.library.cornell.edu/usda/nass/Acre//2010s/2011/Acre-06-30-2011.pdf>

through biotechnology, is resistant to herbicides, insects, or both. In 2011, NASS estimated that biotech varieties represented 88 percent of the corn, 90 percent of the cotton, and 94 percent of the soybean acreage.

Background Information on U.S. Biotech Regulation

- U.S. Regulatory Framework: <http://usbiotechreg.nbio.gov/>
- USDA Biotechnology Website: <http://www.usda.gov/wps/portal/usda/usdahome?navid=BIOTECH>
- Regulated and Deregulated Products in the United States:
 - o http://www.aphis.usda.gov/biotechnology/brs_main.shtml
 - o http://www.aphis.usda.gov/brs/not_reg.html

2. Biotech Crop Management in the United States

December 2011 – University of Illinois Crop Science Conference: Managing Pest Resistance³

The conference took place on December 5-6, 2011. The general session theme focused on the challenges that pest resistance has created and examine potential solutions. Issues addressed included the importance of herbicides to U.S. agriculture, and the development of fungicide, herbicide, and Bt resistance. A panel of University of Illinois Extension specialists offered some comments about the 2011 season and provided some predictions for upcoming crop production challenges in 2012. The complete program and summaries of the presentations are available at:

<http://www.cropconferences.com/program/3/>

November 2011 - EPA –Biopesticide Registration Action Document - SmartStax Bt Corn Seed Blend⁴

The Environment Protection Agency (EPA) conditionally registered MON 89034 x TC1507 x MON 88017 x DAS-59122-7 in July 2009. MON 89034 x TC1507 x MON 88017 x DAS-59122-7 is a bioengineered corn Plant Incorporated Protectant (PIP) product containing two Bt PIPs active against corn rootworm (CRW) and three (3) Bt PIPs active against various corn borer pests. MON 89034 x TC1507 x MON 88017 x DAS-59122-7 currently requires a combined 5% refuge for corn rootworm and lepidopteran pests where the corn earworm is not a significant pest and a 20% combined refuge in cotton growing regions where the corn earworm is a significant pest.

1. Corn Rootworm

³ <http://www.cropconferences.com/AGMasters%202011/>

⁴ <http://www.epa.gov/oppbopd1/biopesticides/pips/smartstax-seedblend.pdf>

EPA's Biopesticides and Pollution Prevention Division (BPPD) has reviewed Monsanto's and Dow AgroSciences' submissions for a 5% SmartStax seed mixture including biological and efficacy data as well as simulation modeling. In addition, BPPD conducted independent modeling analyses of the applicants' proposal using a model (deterministic and probabilistic) developed by EPA/ORD. After careful review of the applicants' modeling and the analyses conducted by ORD, BPPD concluded that for corn rootworm (CRW), a 5% seed mixture and 5% structured refuge have comparable durabilities. Despite identifying a number of uncertainties with the CRW assessment, the FIFRA SAP (2011) verified BPPD's conclusion that a 5% MON 89034 x TC1507 x MON 88017 x DAS-59122-7 seed blend should have comparable durability to a 5% block refuge.

2. Lepidoptera (European Corn Borer and Southwestern Corn Borer)

Based on a review of the Science Advisory Panel (SAP) report (SAP 2011) and revised modeling submitted by Monsanto/Dow, BPPD concludes that a 5% seed blend for MON 89034 x TC1507 x MON 88017 x DAS-59122-7 corn will likely be less durable (perhaps significantly so) than a comparable (5%) block refuge for the product. BPPD notes, however, that a MON 89034 x TC1507 x MON 88017 x DAS-59122-7 5% seed blend should be more durable than a 20% block refuge for a single toxin Bt corn product or a comparable (5%) seed blend for a two toxin pyramid. Larval movement, potential survival (and selection) of heterozygote genotypes, and loss of refuge effectiveness during the growing season are the primary factors that are likely to reduce durability in seed blends.

BPPD's risk assessment focused on assessing the risk of resistance developing to a 5% MON 89034 x TC1507 x MON 88017 x DAS-59122-7 seed mixture in three main target pests: European corn borer, Southwestern corn borer, and corn rootworm. The registrants proposed the continued use of the existing 5% structured refuge requirement for MON 89034 x TC1507 x MON 88017 x DAS-59122-7 in most parts of the Cotton Belt so as to not further contribute to the risk of resistance evolution in corn earworm (CEW). Although it is known that CEW migrate northward during the growing season to corn-growing regions (i.e., the U.S. Corn Belt and Canada), CEW typically are not capable of overwintering in these regions. Rather, CEW are known to overwinter in the South, often in cotton fields. Some reverse migration from the Corn Belt to the Cotton Belt was observed by Gould *et al.* 2002, which sparked interest and the need to quantify the impact of south-north and north-south migration on the adaptation rates in CEW. Computer simulations by the Agricultural Biotechnology Stewardship Technical Committee (ABSTC) showed no significant interaction between the percent of the late summer adult CEW population in the south that is made up of immigrants and the date at which migrants return and no effect of return migration on the resistance gene frequency.

In the case of fall armyworm (FAW), a secondary target pest of MON 89034 x TC1507 x MON 88017 x DAS-59122-7 in the continental US, the species distribution is currently limited to areas of southern Florida and southern Texas; hence FAW are not currently a corn pest in the regions proposed for the adoption of a 5% MON 89034 x TC1507 x MON 88017 x DAS-591227 seed mixture. Should future climate change elicit a range expansion for FAW and expand its overwintering capacity into the Corn Belt, then a revised risk assessment will be needed for this target pest and the proposed 5% MON 89034 x TC1507 x MON 88017 x DAS-59122-7 seed mixture.

November 2011 - USDA/NIFA Biotechnology Risk Assessment Research Grants Program (BRAG) Request for Application for FY 2012⁵

Currently, the USDA Biotechnology Risk Assessment (BRAG) program supports risk assessment and risk management research regarding the introduction of genetically engineered animals, plants, or microorganisms into the environment. The BRAG program also supports conferences that bring together scientists, regulators, and other stakeholders to review the science-based data relevant to science-based risk assessment or risk management of genetically engineered organisms released into the environment.

⁵ <http://www.nifa.usda.gov/fo/biotechnologyriskassessment.cfm>

The purpose of the BRAG program is to support the generation of new information that will assist Federal regulatory agencies in making science-based decisions about the effects of introducing into the environment genetically engineered organisms (GE), including plants, microorganisms (including fungi, bacteria, and viruses), arthropods, fish, birds, mammals and other animals excluding humans. Investigations of effects on both managed and natural environments are relevant. The BRAG program accomplishes its purpose by providing Federal regulatory agencies with scientific information relevant to regulatory issues.

The BRAG program is supported by a two percent withholding on expenditures for biotechnology research within the U.S. Department of Agriculture. The **National Institute for Food and Agriculture (NIFA)** and the **Agricultural Research Service (ARS)** of the U.S. Department of Agriculture jointly administer the BRAG program.

November and December 2011 – Actions of the Advisory Committee on Biotechnology and 21st Century Agriculture⁶

The Advisory Committee on Biotechnology and 21st Century Agriculture (AC21) has been revived by Agriculture Secretary Vilsack to focus in the near term on a specific topic: to develop practical recommendations for strengthening coexistence among different agricultural production methods. The Committee will meet 3 or 4 times per year in public session to discuss this topic. Under its Charter, the committee is charged with examining the long-term impacts of biotechnology on the U.S. food and agriculture system and USDA, and providing guidance to USDA on pressing individual issues, identified by the Office of the Secretary, related to the application of biotechnology in agriculture. The AC21 is a broad-based committee representing a wide range of interests and agricultural expertise.

AC21 met on **December 6-7, 2011**. The topics discussed included (1) considering reports of two working groups on their initial deliberations relating to size and scope of risks and to potential compensation mechanisms; (2) listening to presentations from outside experts on topics relevant to the work of the AC21; and (3) continuing overall discussions on the Committee charge and planning subsequent work.

On **November 14-15, 2011**, USDA convened AC21 via webinar format. The purpose of the meeting was to provide background information in a webinar format to AC21 members three sets of existing USDA programs: (1) USDA's crop insurance programs under the Risk Management Agency, that could serve as an example to help in the development of potential compensation mechanisms for the committee to consider, should it deem compensation mechanisms appropriate to recommend; (2) USDA's activities under the Perishable Agricultural Commodities Act (PACA); and (3) indemnification in Animal Health Programs. Either or both (2) and (3) could serve as an example to help in the development of potential compensation mechanisms for the committee to consider, should it deem compensation mechanisms appropriate to recommend.

September 2011 – UC Davis/USDA Workshop: Science of Gene Flow in Agriculture and its Role in Coexistence⁷

Experts in agriculture, ecology, and plant biology gathered on September 7-8 in Washington, D.C., to examine the interface between diverse mechanisms of trait transmission among plants and the co-existence of different agricultural production systems. The movements of genes and traits between crops and among crops and their related wild relatives have potential economic and biological impacts, particularly with respect to genetically engineered (GE) plants. While genetic engineering has produced improved crop varieties that are utilized on over

⁶ <http://www.usda.gov/wps/portal/usda/usdahome?contentid=AC21Main.xml&contentidonly=true>

⁷ http://sbc.ucdavis.edu/events/Meetings_&_Symposiums/Coexistence_Workshop.htm

half of the crop acreage in the U.S., some agricultural sectors, particularly organic and export, serve markets that are sensitive to the inadvertent presence of even very low amounts of GE products.

More than 110 participants attending the conference on “The Science of Gene Flow in Agriculture and Its Role in Co-existence” discussed biological and management strategies to minimize gene flow and mitigate potential impacts. Speakers from seed and biotechnology companies, academic institutions, government research organizations, trade associations and certification agencies presented the latest information on the consequences of unwanted gene flow and methods for its prevention. Topics included management and stewardship guidelines that are utilized to produce identity-preserved products, the potential consequences if agricultural traits were transmitted to wild or weedy relatives, implications for biofuel crops, and economic impacts of both gene flow and mitigation strategies. The conference highlighted the latest scientific advances in methods to monitor gene flow and to modify flowering and fertility of plants to prevent unwanted pollen or seed dispersal. There was consensus that absolute containment or zero-tolerance thresholds were not achievable in practice but that gene flow could be reduced to very low levels that would meet end-use based standards and have minimal environmental impact.

The Seed Biotechnology Center at the University of California, Davis, organized the conference, which was funded by the USDA’s National Institute of Food and Agriculture and Biotechnology Risk Assessment Grant programs. Proceedings are available at: <http://sbc.ucdavis.edu/files2/geneflowcompleteproceedings2011.pdf>

3. Biotechnology and Food Security

December 2011 - Science Magazine Editorial - Science Meets Farming in Africa, by Calestous Juma⁸

“(…) The time has come for the scientific community to advance a new generation of international organizations that expressly promote scientific cooperation—agencies that can help foster technological cooperation for Africa's economic transformation.(…)

Unfortunately, major international agencies such as the United Nations (UN) have persistently opposed expanding biotechnology to regions most in need of its societal and economic benefits. The 1992 Earth Summit created the UN Convention on Biological Diversity (CBD) to promote the conservation and sustainable use of biological diversity as well as foster equitable sharing of the benefits of biotechnology. Yet for two decades this treaty has curtailed the use of genetically modified organisms (GMOs) in agriculture, even though the greatest threats to biological diversity are deforestation and invasive species. This is mainly because only 8 of the 196 national focal points for the CBD, which are located in environmental ministries, are not hostile to biotechnology. The role of the scientific community at these CBD meetings is often limited to negotiating texts that have been drafted by government officials and international civil servants with the intent of smothering agricultural biotechnology. For Africa, this has been a major distraction from addressing the threat of low agricultural productivity, a problem that innovative science could address and put an African agricultural revolution within reach. (…)

The global scientific community must foster international cooperation through new intergovernmental organizations and treaties that focus on innovation to improve human welfare. (…)

African countries should break the logjam by creating an “International Institute for Biotechnology.” (…)

The legislative authority should come from the government agencies, private enterprises, universities, scientific

⁸ <http://www.sciencemag.org/content/334/6061/1323.full>

associations, farmers' groups, and others charged with advancing biotechnology and allied fields. The agency would help African countries adopt biotechnology strategies enabling African farmers and the population at large to benefit from the world's wealth of scientific and technological knowledge. "

- ▶ **Comment by Matt Ridley published in the Wall Street Journal: Why Deny Biotech to a Hungry Africa?**
<http://online.wsj.com/article/SB10001424052970204770404577080264187783818.html>

November – December 2011 - FAO Biotechnology Forum⁹

The FAO Biotechnology Forum was established in March 2000 with the aim of providing quality balanced information on agricultural biotechnology in developing countries and to make a neutral platform available for people to exchange views and experiences on this subject. It has hosted 16 moderated e-mail conferences so far. Conference 17 ran from 14 November to 18 December 2011, and was entitled "**Strengthening partnerships in agricultural biotechnologies for the benefit of smallholders in developing countries: Discussing North-South, South-South, Public-Private cooperation and more**".

- ▶ [Background Document](#) published prior to the 2011 conference, providing information about the conference theme that participants will find useful for the debate.
- ▶ [Click here](#) to read the 62 messages posted in the conference.

November 2011 – Innovation with Impact – A Report by Bill Gates to G20 Leaders, Cannes Summit¹⁰

In a report presented to world leaders at the G20 summit in Cannes, France, Bill Gates outlined recommendations to encourage innovation and new partnerships that increase the value and delivery of development aid.

(...) "Despite the current economic crisis, I am optimistic that we can build on the generosity and innovations that worked in the past. The group of countries able to contribute resources to development is larger than ever before. The number of people who can spur innovations is much greater than in the past. For these reasons, I am convinced we can create a new era in development.

In this report I talk about the long-term investments and partnerships I believe will keep us on the path of economic growth and increasing equity. I begin the report by describing the paramount importance of innovation. Key innovations like new seeds and vaccines—and new ways to deliver them to the poorest—can multiply the impact of the resources we're already devoting to development. We've made a big difference, but we can improve the basic tools of development by making them cheaper, easier to use, and more efficient—or by inventing wholly new tools.

One of the newest resources for development—and potentially one of the most transformative—is rapidly growing countries' capacity for innovation. Countries like Brazil, China, India, and Mexico are in a great position to work closely with poor countries because they have recent experience in reducing poverty, as well as enormous

⁹ <http://www.fao.org/biotech/biotech-forum/en/>

¹⁰ <http://www.thegatesnotes.com/Topics/Development/G20-Report-Innovation-with-Impact>

technical capabilities. This unique combination gives them both the insights and the skills to create breakthrough tools for development. I am particularly excited about the possibility of "triangular partnerships" among rapidly growing countries, traditional donors, and poor countries, because they exploit the comparative advantages of many different countries. (...)"

- ▶ **Final Declaration of the G20 Summit, Cannes, November 3-4, 2011**, Chapter on Addressing Food Price Volatility and Increasing Agriculture Production and Productivity (paragraphs 40-51): <http://www.g20-g8.com/g8-g20/g20/english/for-the-press/news-releases/cannes-summit-final-declaration.1557.html>
- ▶ **Bill Gates Statement in Response to G20 Leaders Summit Final Communiqué**: <http://www.gatesfoundation.org/press-releases/Pages/g20-leaders-summit-statement-111104.aspx>

October 2011 – USDA/ARS: New Rice Varieties Offer Benefits to Growers¹¹

New rice varieties that offer new options for U.S. growers and expanded market opportunities for the U.S. rice industry have been developed by USDA scientists and cooperators.

[Agricultural Research Service](#) (ARS) scientists at the agency's [Dale Bumpers National Rice Research Center](#) (DBNRRC) in Stuttgart, Ark., and the [ARS Rice Research Unit](#) in Beaumont, Texas, developed the new varieties in collaboration with researchers at [Texas A&M University](#), the [University of Arkansas](#), [Clemson University](#), and the [International Rice Research Institute](#) (IRRI) in the Philippines. Rice quality is an area of interest to breeders, growers and researchers. An aromatic, soft-cooking, long-grain rice suited for the market predominantly filled by imports was developed. It has higher yields, is 5 inches shorter, and matures a week earlier than Jasmine 85, a variety currently grown for this market.

Another aromatic rice was derived from Carolina Gold (an heirloom variety that was the basis for establishing the U.S. rice industry) and genetic material from the Philippines and India. It has excellent yields, disease resistance, and good cooking quality. This cultivar may lend itself to production under organic conditions and will be used by the historically authentic cuisine market in the Carolinas. McClung was involved in the development of Charleston Gold.

Although conventional long-grain varieties are grown on more than 75 percent of the rice acreage in the United States, there is interest in developing cultivars that possess specific qualities required for certain value-added markets.

4. Biotechnology and Climate Change

¹¹ <http://www.ars.usda.gov/is/pr/2011/111031.htm>

December 2011 - Fighting Hunger in a Climate Change – How can Agriculture Respond?¹²

At the [International Conference on Climate Change and Food Security](#), organized by the Chinese Academy of Agricultural Sciences and the International Food Policy Research Institute, scientists from the BRICS countries (Brazil, Russia, India, China, and South Africa) plus Indonesia and the United States reported results on the food security and climate change challenges facing their countries. Based on the research and data needs identified in their reports, the authors recommend that the negotiators at the 17th Conference of Parties (COP 17) to the United Nations Framework Convention on Climate Change (UNFCCC) hosted in Durban, South Africa, establish a work program that includes (a) strengthening public sector agricultural research in 12 priority areas (pests and diseases, soil ecosystems, ruminant agriculture, irrigation structure and efficiency, perennial crops, grain quality, storage to reduce losses, biotechnology, land use, international trade, intellectual property, and human capital development) and (b) increasing the amount, appropriateness, and accessibility of spatial data.

- ▶ **Link to video:** <http://www.youtube.com/watch?v=1KpnyVpf6qo&feature=youtu.be>

Contact us:

U.S. Embassy: <http://france.usembassy.gov>
Office of Agricultural Affairs: <http://www.usda-france.fr>

Analyst: Marie-Cécile Hénard, Agricultural Analyst
Marie-Cecile.Henard@fas.usda.gov ou HenardMC@state.gov

Tel: (33-1) 43 12 23 68
Fax: (33-1) 43 12 26 62



[Become an Embassy Facebook fan](#)

¹² http://www.ifpri.org/sites/default/files/publications/climate_icccfs_rec.pdf



[Watch Embassy videos](#)



[Sign up for our Twitter feeds](#)