



Office of Agricultural Affairs
U.S. Embassy, Paris

Agricultural Biotechnology in the United States Newsletter - October 2009

To our readers: We in the Office of Agricultural Affairs of the U.S. Embassy in Paris would be happy that you inform us of your visits to the United States, so that we can help you organize your meetings and your administrative procedures. Please do not hesitate to share any questions with us on these issues as we are here to facilitate these exchanges!

1. U.S. Policy:

Agriculture Secretary Vilsack Launches National Institute of Food and Agriculture, and Announces Vision for Science and Research at USDA¹:

On October 8, 2009, Agriculture Secretary Tom Vilsack launched the **National Institute of Food and Agriculture (NIFA)** with a major speech regarding the role of science and research at USDA. Below are excerpts from Vilsack's prepared remarks:

" We can build on recent scientific discoveries - incredible advances in sequencing plant and animal genomes, for example. We have new and powerful tools -- biotechnology, nanotechnology, and large-scale computer simulations -- applicable to all types of agriculture.

"These discoveries and tools come not a moment too soon. The United Nations' Food and Agriculture Organization predicts that food production will need to double by 2050 to meet demand, and this has to happen in an environment where our production system already is under threat. For every one degree increase in temperature from global warming, we expect a 10 percent drop in yields. Water is in increasingly short supply in the U.S. and abroad for drinking, for irrigation, and for livestock production. Climate change already is disrupting farming and grazing patterns and food production, and not just overseas -- many sectors of the U.S. agricultural economy are exceptionally vulnerable to climate stress.

"Formed in the main from the existing Cooperative State Research, Education, and Extension Service, NIFA will be the Department's extramural research enterprise. It is no exaggeration to say that NIFA will be a research "start-up" company - we will be rebuilding our competitive grants program from the ground up to generate real results for the American people. To lead NIFA, President Obama has tapped a preeminent plant scientist from the Danforth Plant Science Center in St. Louis - Roger N. Beachy, winner of the Wolf Prize in Agriculture and a member of the National Academy of Sciences.

"I want USDA science to focus most of its resources on accomplishing a few, bold outcomes with great power to improve human health and protect our environment:

- USDA science will support our ability to **keep American agriculture competitive while ending world hunger**. At a time when disruptive climate change threatens production of some of the

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http://www.usda.gov/wps/portal/!ut/p/.s.7.0.A/7.0.10B/.cmd/ad/.ar/sa.retrievecontent/.c/6.2.1UH/.ce/7.2.5JM/.p/5.2.4TQ/.d/3/.th/J.2.9D/.s.7.0.A/7.0.10B?PC.7.2.5JM_contentid=2009%2F10%2F0501.xml&PC.7.2.5JM_parentnav=LATEST_RELEASES&PC.7.2.5JM_navid=NEWS_RELEASE#7.2.5JM

world's staple foods, some of the biggest gains we can make in ending world hunger will involve **development of stress-resistant crops.**

- USDA science will support our ability to **improve nutrition and end child obesity.**
- USDA science will support our efforts to radically **improve food safety for all Americans.**
- USDA science will **secure America's energy future.** President Obama has set ambitious but achievable goals for securing America's energy future from new domestic sources, including **60 billion gallons a year from biofuels by 2030.** We plan to focus specifically on rapidly improving the amount and quality of plant-based feedstocks that will be the source of biofuels.
- USDA science will make us **better stewards of America's environment and natural resources.** We believe that research in this priority area will identify agricultural operations in the United States that, within 10 years, will be net **carbon sinks.**"

USDA Awards \$11 Million for Applied Plant Genomics Research, Education and Extension²

On October 7, 2009, Agriculture Under Secretary for Research, Education and Economics Rajiv Shah announced more than \$11 million in Coordinated Agricultural Project (CAP) awards to significantly advance research, education and extension in applied plant genomics. CAP awards combine significant funding over time and across institutions to support discovery and applications and promote communication leading to innovative science-based solutions to critical and emerging national priorities and needs. These grants are awarded by USDA's National Institute of Food and Agriculture (NIFA).

Award amounts are:

- University of California, Davis, Calif., \$2,500,000
- Michigan State University, East Lansing, Mich., \$3,750,000
- University of Minnesota, Minneapolis, Minn., \$955,000
- North Dakota State University, Fargo, N.D., \$4,000,000

For more information, visit www.nifa.usda.gov.

USDA Seeks Public Comment on Deregulation of Pioneer High Oleic Soybean³

Since September 2, 2009, USDA's Animal and Plant Health Inspection Service (APHIS) has sought public comment on a petition to deregulate a soybean genetically engineered (GE) to have higher levels of oleic acid, a monounsaturated omega-9 fatty acid. APHIS has regulated the soybean, designated as event 305423, through its permitting process since 2002.

The petition for deregulation, submitted by Pioneer Hi-Bred International, Inc., is in accordance with APHIS' regulations concerning the introduction of GE organisms and products. As part of the decisionmaking process, APHIS has also prepared a draft environmental assessment (EA) for review and comment. Following the comment period, APHIS makes a determination of nonregulated status if it can

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http://www.usda.gov/wps/portal/!ut/p/ s.7 0 A/7 0 1OB/.cmd/ad/.ar/sa.retrievecontent/.c/6 2 1UH/.ce/7 2 5JM/p/5 2 4TO/.d/3/ th/J 2 9D/ s.7 0 A/7 0 1OB?PC 7 2 5JM_contentid=2009%2F10%2F0496.xml&PC 7 2 5JM_parentnav=LATEST_RELEASES&PC 7 2 5JM_navid=NEWS_RELEASE#7 2 5JM

³ <http://www.aphis.usda.gov/newsroom/content/2009/09/gesoybea.shtml>

conclude that the organism does not pose a plant pest risk. If APHIS grants the Pioneer Hi-Bred International, Inc., petition for deregulation, the soybean and its progeny would no longer be regulated articles. The product could then be freely moved and planted without the requirement of permits or other regulatory oversight by APHIS. □ In addition to APHIS review, Pioneer Hi-Bred International, Inc. has submitted the appropriate documents to FDA to address the requirements specific to that agency; FDA concluded their review and had no further questions regarding the safety of the GE soybean. FDA provides a consultation process to ensure that any human and animal feed safety issues are resolved prior to commercial distribution of a GE food.

USDA Deregulates GE Papaya⁴

On September 2, 2009, USDA/APHIS announced that after a thorough review of scientific evidence it will deregulate the genetically engineered (GE) papaya designated as event X17-2. The papaya and its progeny can now be moved freely and planted without regulatory oversight by APHIS. APHIS deregulated the papaya after concluding that it does not present a plant pest risk. APHIS' determination was based on an analysis of scientific data, comments received from the public and our environmental assessment (EA). The University of Florida submitted a petition to APHIS to deregulate the GE papaya, which is genetically engineered to be resistant to papaya ringspot virus. APHIS published a notice in the *Federal Register* seeking public comment on the University of Florida's petition and a draft EA on June 18, 2008. The public comment period closed Sept. 2, 2008.

USDA Reopens Comment Period on Biotechnology Quality Management System Draft Audit Standard⁵

On August 24, 2009, USDA/APHIS sought additional public comment on the draft audit standard developed for the biotechnology quality management system (BQMS) pilot project. Reopening the comment period allows interested persons additional time to prepare and submit comments. The BQMS is a voluntary compliance assistance program that aims to help stakeholders manage the regulatory requirements for field trials and interstate movement of certain genetically engineered (GE) organisms. Additional information about the program can be found at http://www.aphis.usda.gov/biotechnology/news_bqms.shtml.

APHIS reopened the comment period for an additional 60 days on the draft audit standard used in the BQMS pilot project. This feedback, as well as comments from the participants on the BQMS pilot project, will be used to inform the development of a BQMS audit standard and any future BQMS initiative.

USDA Reopens Public Comment Period on Deregulation of Syngenta Corn⁶

On June 8, 2009, USDA/APHIS sought additional public comment on a petition to deregulate corn genetically engineered (GE) to produce a microbial enzyme that facilitates ethanol production. APHIS has regulated the corn through its notification and permitting process since 2002.

The petition for deregulation, submitted by Syngenta Seeds, Inc., is in accordance with APHIS'

⁴ <http://www.aphis.usda.gov/newsroom/content/2009/09/gepapaya.shtml>

⁵ <http://www.aphis.usda.gov/newsroom/content/2009/08/bqmsaudit.shtml>

⁶ <http://www.aphis.usda.gov/newsroom/content/2009/06/corncom.shtml>

regulations concerning the introduction of GE organisms and products and is available for the public's review and comment. As part of the decisionmaking process, APHIS also has prepared a draft environmental assessment (EA) and plant pest risk assessment for review and comment. □ □ Reopening the comment period will allow interested persons additional time to prepare and submit comments on the petition. □ □ APHIS will make a determination of nonregulated status if it can conclude that the organism does not pose a plant pest risk. If APHIS grants the Syngenta Seeds, Inc., petition for deregulation, the GE corn and its progeny would no longer be regulated articles. The product could then be freely moved and planted without the requirement of permits or other regulatory oversight by APHIS. □ □ In compliance with agency policy, Syngenta Seeds, Inc. submitted a food and feed safety and nutritional assessment summary to FDA for this GE corn. EPA is not involved in evaluating this GE corn because it has not been engineered to produce a pesticide or to be tolerant to an herbicide.

UC Davis Study: Contraction of Agbiotech Product Quality Innovation ^{7 8}

Regulatory changes enacted a decade ago appear to be responsible for dramatically slowing the flow of quality-improving agricultural biotechnology innovations to a mere trickle, reports a team of agricultural economists and biotechnology experts. Findings from the study, funded in part by a grant from the Council for Biotechnology Information and published in the August issue of the journal *Nature Biotechnology*, suggest that the slowdown may have lasting social welfare costs, such as the delay of nutritional improvements, production efficiencies and environmental protections.

The retrospective study found that many research breakthroughs related to flower color and fruit ripening occurred in the 1980's, when agricultural biotechnology was in its infancy. It was expected that research and development in these areas would have grown during the 1990s as new products entered the market. Instead, innovation in product-quality innovation leveled off around 1998 and then declined.

2. U.S. production of GE Crops

Production of Roundup Ready Sugar Beets Questioned

On September 21, 2009, a U.S. District Court Judge ruled that USDA will have to complete an Environmental Impact Statement for Roundup Ready sugar beets. This is a procedural decision, in which the court concluded USDA needs to show a more thorough review process than was documented in the deregulation process the agency completed in 2005.

Reaction by the Sugar Industry Biotech Council⁹: It looks forward to the next phase of the proceedings

⁷ <http://www.nature.com/nbt/journal/v27/n8/index.html#>

⁸ http://www.news.ucdavis.edu/search/news_detail.lasso?id=9205

⁹ <http://www.sugarindustrybiotechcouncil.org/2009/09/23/statement-by-the-sugar-industry-biotech-council-on-us-district-court-decision/>

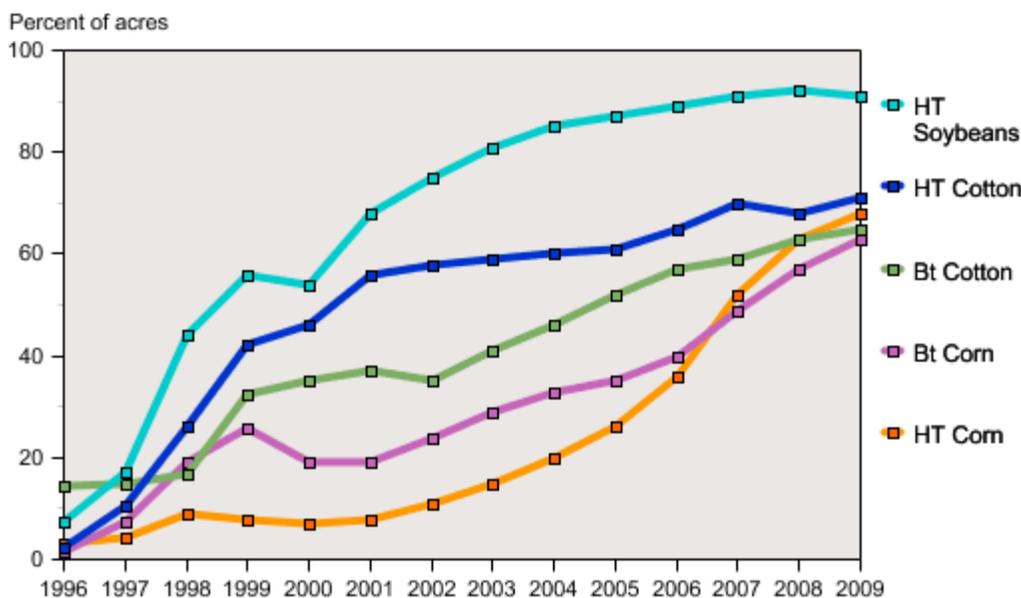
and the opportunity for growers, processors and seed producers to advocate the need for this technology and vigorously defend farmers' freedom to plant Roundup Ready sugar beets. The Council notes that the ruling found no issue with the safety or benefits of Roundup Ready sugar beets. The sugar from biotech sugar beets is the same as from conventional sugarbeets and sugarcane, and is widely accepted in the United States and worldwide markets. Farmers in the United States and Canada are choosing to plant Roundup Ready sugar beets on 95 percent of the acreage because of the environmental and economic benefits they bring to farming operations.

June 30, 2009 - NASS Estimates of Biotech Acreage in the United States¹⁰

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, through biotechnology, is resistant to herbicides, insects, or both. Insect resistant varieties include only those containing *bacillus thuringiensis* (Bt). The Bt varieties include those that contain more than one gene that can resist different types of insects. Stacked gene varieties include only those containing biotech traits for both herbicide and insect resistance.

NASS estimates that in 2009, biotech crops represented **91 percent of the soybean acreage, 88 percent of the cotton acreage, and 85 percent of the corn acreage** in the United States.

Rapid growth in adoption of genetically engineered crops continues in the U.S.



Data for each crop category include varieties with both HT and Bt (stacked) traits.
Sources: 1996-1999 data are from Fernandez-Cornejo and McBride (2002). Data for 2000-09 are available in tables 1-3.

3. Consumer Perspectives

¹⁰ <http://usda.mannlib.cornell.edu/usda/current/Acre/Acre-06-30-2009.pdf>

August 29, 2009 New York Times Article: 'Non-GMO' Seal Identifies Foods Mostly Biotech-Free, by William Neuman ¹¹

Alarmed that genetically engineered crops may be finding their way into organic and natural foods, an industry group has begun a campaign to test products and label those that are largely free of biotech ingredients. (...) The industry group, the Non-GMO Project, says its new label is aimed at reassuring consumers and will be backed by rigorous testing. (...)

Participants in the Non-GMO Project include major players in the organic and natural foods business, like Whole Foods Market. Whole Foods plans to place the project's seal on hundreds of products it markets under its "365" store brand. Nature's Path, a leading manufacturer of organic packaged foods like cereals, frozen waffles and granola bars, has also embraced the initiative.

The project's seal, a butterfly perched on two blades of grass in the form of a check mark, will begin appearing on packaged foods this fall. The project will not try to guarantee that foods are entirely free of genetically modified ingredients, but that manufacturers have followed procedures, including testing, to ensure that crucial ingredients contain no more than 0.9 percent of biotech material. (...)

The Non-GMO project works with companies to test their ingredients and improve manufacturing processes. It will also spot test products in stores. (...) Labeling of food products for biotech content, or lack of it, has long been controversial. Then, when some natural foods makers began using labels saying they were free of biotech ingredients, the Food and Drug Administration criticized the labels as potentially misleading. (...) Once a label is in use, the agency could initiate a review if it received consumer complaints or had concerns the label was misleading.

4. Biotechnology and Food Security

August 12, 2009 Wall Street Journal: Fight Droughts with Science - Better crops could ease India's monsoon worries, by Henry I. Miller ¹²

News that India may suffer a weaker-than-normal monsoon this year is raising concerns about crop yields and food supply. As worrying as those reports are, however, this is only a short-term element of a much bigger problem with the availability of water there. (...) India is the world's second-largest producer of cotton, the thirstiest of crops: It takes 11,000 liters of water to produce a single kilogram. In just one example of the consequences, consumption from irrigation and other human uses is depleting groundwater in the northwestern part of India at the unsustainable rate of four centimeters per year despite consistent rainfall levels, according to an article published this week in the British journal Nature.

The results of this research should get policy makers to focus on how water is being used, especially in India's agricultural sector. The introduction of plants that grow with less water would allow more to be freed up for other uses. Plant biologists have identified genes regulating water utilization that can be transferred into important crop plants. Some modifications allow plants to grow with less or lower-quality

¹¹ <http://www.nytimes.com/2009/08/29/business/29gmo.html?pagewanted=print>

¹² <http://online.wsj.com/article/SB10001424052970203863204574345290928452448.html#>

water. The first drought-resistant crop, maize, is expected to be commercialized by 2012. If field testing goes well, India would be a potential market for this variety. (...)

But research and development are being hampered by resistance from activists and discouraged by governmental overregulation. (...) This pressure both encourages overregulation in response to questionable science and also offers cover to those who want to overregulate these crops for other reasons. The United Nations agency that sets international food standards, the Codex Alimentarius Commission, has established requirements for data on genetic construction, composition, toxicity, and the like specific to genetically modified foods that are hugely expensive—and that could not be met by any food derived from conventionally modified plants. In addition the Cartagena "biosafety protocol," crafted under the aegis of the United Nations' Convention on Biological Diversity, has created unscientific and burdensome regulations of field trials and transport of genetically modified organisms (but not of other conventional plants such as invasive vines or weedy grasses that are far more worrisome). (...)

The U.N.'s misadventures in regulation fly in the face of the quarter-century-old scientific consensus that modern genetic modification is essentially an extension or refinement of conventional (but less precise and less predictable) ways of modifying crops to create or enhance desirable characteristics. The U.N.'s inconsistency is striking. The Food and Agriculture Organization calls for a greater allocation of resources to agriculture, but then makes those resources drastically less cost-effective via unnecessary, unscientific regulation of genetically modified plants. (...)

Some of the planet's biggest drought fears may be in India today, but no one will be immune to water worries in the future. It's essential that bureaucrats and activists stop blocking agricultural technologies that can give us more crop for the drop.

The Scientist Article: Where's the Super Food? By Bob Grant¹³

(...) In addressing global hunger and micronutrient malnourishment, biotechnology holds potential solutions: specifically, nutritionally enhanced, transgenic crops. (...) More than 250 million sub-Saharan Africans rely on the cassava, a starchy tuber native to South and Central America, as their staple food. Cassava supplies 38.6% of the caloric requirements in some parts of Africa, where hunger and nutrient deficiencies grip the populace and more than 40% of global cassava production takes place.

But cassava is not a particularly nutrient-rich food. It lacks much of the iron, zinc, and vitamins A and E that healthy bodies need to grow. University of Nebraska—Lincoln biochemist Ed Cahoon has worked for several years as part of the BioCassava Plus program, which aims to improve the nutritional profile of cassava through genetic engineering.

Launched in July 2005 with \$7.5 million from the Bill and Melinda Gates Foundation's Grand Challenges in Global Health Initiative, the program's overarching goal is to develop what essentially amounts to a super-charged cassava plant variety—one with increased levels of iron, zinc, protein, vitamins, and resistance to the cassava mosaic and brown streak viruses plaguing African farmers. (...)

Eventually, the BioCassava Plus program hopes to move into its second phase—set to commence in 2010 with an additional infusion of funding—in which nutritional modifications to increase iron, zinc, protein, vitamins, and virus resistance will be combined into one cassava plant.

¹³ <http://www.the-scientist.com/article/print/55926/>

There are reasons Cahoon and his colleagues picked Puerto Rico as the site of field tests for the beta-carotene–boosted cassava. Puerto Rico enjoys a tropical climate like much of the core cassava growing areas of Africa but, equally important, the island territory operates under the laws and regulations of the United States, not Africa.

It's this regulatory tangle facing GM crops in much of the world, including Africa, that largely explains why many transgenic plants that could address widespread nutrient deficiencies are trapped in laboratories instead of growing in soil. (...)

In 2004, American officials entreated EU officials to reassure three African nations—Zimbabwe, Zambia and Mozambique—that the hundreds of thousands of tons of GM food aid they had rejected was in fact safe; the EU refused. Add to this the influence that European importers and governments have over food producers in Asia and Africa, and the developing world's soil is rendered pretty infertile for GM crops. (...)

Funding came from philanthropic organizations, such as the Bill and Melinda Gates Foundation, the Rockefeller Foundation, and government aid agencies, such as the United States Agency for International Development. The BioCassava Plus program has also recently seen significant progress in its goal to introduce biofortified foods into the developing world. To ensure the cassava gets where it needs to go, the project will again call upon the infrastructure and local knowledge of national agriculture research institutions such as the NRCRI and nongovernmental organizations to distribute the cassava plants to poor farmers for free or for a nominal fee. The BioCassava Plus project will utilize the traditional dissemination scheme—where farmers share cuttings of their successful plants with friends and neighbors—to further disseminate their enhanced cassava. (The Gates Foundation, in fact, requires that the technology come with royalty-free humanitarian license.) (...)

5. Background information:

- U.S. regulatory framework: <http://usbiotechreg.nbii.gov>
- List of regulated and deregulated products:
http://www.aphis.usda.gov/biotechnology/brs_main.shtml
http://www.aphis.usda.gov/brs/not_reg.html
- Adoption of biotechnology and its production impacts:
<http://www.ers.usda.gov/Data/BiotechCrops/>

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