VOLUME FIVE

ISSUE ONE

JANUARY 2005

THE NON-GMO REPORT

Information and resources to help you capitalize on the market opportunities for non-genetically modified products

INSIDE

- **The Non-GMO Report** is published monthly by Writing Solutions, Inc.
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Demand for non-GMO and organic grains remains strong

The Non-GMO Report **surveyed suppliers and experts in identity preserved (IP), non-GMO and organic grains to get their input on the outlook for production and markets in 2005. Suppliers report strong demand but problems with supply of organic. Other challenges include low premiums, particularly for non-GM corn, GMO contamination, and the soybean rust threat. Traceability is a growing trend impacting the market.**

Most suppliers of IP/non-GMO and organic grains surveyed see continued strong demand for their products. "Demand is increasing every year," says Jennifer Tesch, marketing manager, SK Food International.

Roger Rivest, North American marketing manager, Great Lakes Organic Inc., says "Demand is the highest it has ever been."

"We have more inquires from buyers/end-users than we have product available," says Rebecca Boyar, contract manager, Cloutier Agra Seeds Inc.

More breeding of food-grade soybean varieties

Gary Beil, president, Minnesota Crop Improvement Association (MCIA), sees expanding markets for IP and organic based on soybean breeding at the University of Minnesota. "Breeding efforts on public varieties are focusing on food-grade soybeans," says Beil. MCIA has licensed new varieties to companies in the upper Midwestern United States and Canada that sell non-GM food-grade soybeans.

Overall, Beil believes farmers may be more interested in contracting IP and organic grains in 2005. "Commodity prices were high at the beginning of the 2004 growing season," he says. "Now prices have returned to a more 'normal' level and many organic and identity preserved supplies are low due to poor growing conditions in the far north."

Higher premiums needed on non-GM; price information needed on organic

Dale Drachenberg, general manager, Didion Milling, sees increasing demand for organic corn, but steady to decreasing demand for non-GM corn due to a lack of premiums to attract farmers and consistent markets.

Lynn Rundle, chief executive officer, 21st Century Producers, sees the same problem. "With low premiums, there is not much incentive to grow specialty corn," he says.

Ed Zimmer, sales manager, US Soy, says premiums for non-GM soybeans, which range from $.50 to $.60 per bushel, could also be higher. "Premiums need to be higher

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We have a new name!

As we begin our fifth year of publishing, we've changed our name to *The Non-GMO Report*. We believe the new name more accurately reflects the newsletter's role in reporting the trends, news, information, and markets of the global non-GMO market. While our name is new, our commitment is the same: to provide our readers with information and resources they need to successfully produce and sell non-GM products. We welcome your feedback; please email ken@non-gmosource.com.

to get growers," he says. The problem, says Zimmer, is "buyers do not want to pay more."

Boyar says, "It is the responsibility of the marketplace and the buyers to provide IP non-GMO and organic premiums to encourage continued production and viability." Canadian-based Cloutier offers its producers premiums of $1.00 ($.80 US).

Luc Labbe, president, Aalexx International, says it is difficult to contract with growers. "They never want to sign contracts and always hope on price increases," he says. As a result, Aalexx contracts some production in South America.

Lack of information

On the organic side, Drachenberg says there is a lack of pricing information. "We can sell organic corn products but cannot contract them out for yearly periods because we don't know what we can buy the grain for at a later date," he says. Organic grain suppliers and buyers lack a central source of pricing information such as the Chicago Board of Trade.

More information is also needed about production of non-GM and organic soybeans and corn. Specialty non-GM corn varieties account for about 5% of total US corn production or about 4 million acres. One estimate puts IP/non-GM soybean acreage at 2% of total US soybean production. USDA estimates for organic corn and soybeans production from 2001 show 93,500 acres of organic corn and 174,400 acres of organic soybeans. Those totals are likely higher now.

Market demand, traceability

Drachenberg and Zimmer say that demand for IP/non-GMO and organic is especially strong in Europe. Tesch says demand is strongest in both Europe and Japan, but that "the US and Canadian markets are growing at a faster rate." Rivest says all markets, including Europe, Japan, and US/Canada, are expanding with the North American growing fastest. Gary Bogenrief, president, Profiseed International, sees Taiwan as a promising new market. Boyar sees strong markets in Japan and China, as well as new markets in India and Malaysia.

The increasing need for traceability, particularly in Europe, is driving demand for IP and organic grains. This year, new rules requiring traceability of all food and feed become law in the European Union. Beil says a company he knows that produces sunflowers for export to Europe must now comply with the new traceability rules. "They are panicking," he says. Tesch says more food manufacturers want products identity preserved. "Manufacturers want traceability to the farmer's fields," she says.

Bogenrief and Zimmer both say that keeping grains free of GMO contamination continues to be a challenge.

Demand outstripping supply

While demand for non-GM and organic is strong, questions remain about supply, particularly organic. David Vetter, owner of Grain Place Foods, says a grain buyer approached him last fall wanting 50,000 bushels of organic corn, but there were no supplies available. "It's hard for a food manufacturer to introduce a new organic product if the supply isn't there," says Vetter.

Other suppliers see the same challenge. "The supply is not increasing as quickly as the demand," says Tesch.

"Organic is in short supply and the demand is high. There is a need for increased acres but those may come from foreign countries, and these markets are very competitive," says Zimmer.

Rivest says it will take a bumper crop to keep up with the demand for organic.

"We had an exceptionally bad (organic) crop year here," says Boyar. In addition, Boyar says farmers producing both organic and conventional are being forced out of organic because of stringent organic regulations.

Soybean rust

A major problem looming on the horizon is soybean rust, a destructive fungus that has been detected in nine southern US states so far, including Louisiana, Alabama, Georgia, Florida, Mississippi, Arkansas, Missouri, Tennessee, and South Carolina. Soybean rust, which can reduce yields by 50%, was a major topic of discussion at the recent American Seed Trade Association Seed Expo held in Chicago. "Soybean rust has potential to be a serious problem," says Beil. However, he says soybean rust may not be as big a problem in northern US states and Canada because it requires an alternative host plant, such as a kudzu in the southern states, to survive on during winter, and there are no such hosts that survive winter in northern regions. ■

Companies offering 2005 non-GMO and organic grain production contracts

The following North American buyers of organic and non-GMO grains are offering contracts to farmers for 2005 production.

Aalexx International, St-Augustin, Quebec, Canada
- CONTACT: Luc Labbé
- PHONE: 418-877-8786
- EMAIL: luc@aalexxintl.com
- CONTRACTS: IP non-GMO and organic Panther soybeans and organic SQWH

Ag-Land FS, Inc., Logan, Illinois
- PHONE: 1-800-322-9166
- CONTRACTS: Identity Preserved, US #1 yellow non-GMO soybeans

Ag Processing Inc., Manning, Iowa
- CONTACT: Jodie Johnson
- PHONE: 712-653-3985
- EMAIL: jjohnson@agp.com
- CONTRACTS: Non-GMO soybeans contracted through member cooperatives for 2005 growing season

Arrowhead Mills, Inc., Hereford, Texas
- CONTACT: Dale Hollingsworth
- PHONE: 806-364-0730 ext. 308
- CONTRACTS: Small grains—hard wheat, soft white

wheat, rye, kamut, spelt, corn-all colors, edible beans, soybeans, edible seeds-sesame, quinoa, amaranth. All commodities must be non-GMO and certified organic

Blanchard Valley Farmers Co-op,
Findlay, Ohio
- PHONE: (800) 283-2611
- CONTRACTS: Non-GMO soybeans

Clarkson Grain
Cerro Gordo, Illinois
- CONTACTS: Chris Corum
- PHONE: 800-252-1638
  217 763-2861
- EMAIL: chris.coru @clarksongrain.com.
- CONTRACTS: Organic and non-GMO corns (white, yellow, blue and popcorn, by hybrid for processors and feeders) and organic and non-GMO soybeans (by grade and/or variety for processing into ingredients as well as into foods and feeds) with minor organic/non-GMO programs in sunflowers and wheat

Cloutier Agra Seeds, Inc.
Winnipeg, Manitoba, Canada
- CONTACT: Rebecca Boyar
- PHONE: 204-261-0584
- CONTRACTS: Non-GMO soybeans

Dahlgren & Company, Inc.
Crookston, Minnesota
- CONTACT: Tim Petry
- PHONE: 218-281-2985
- CONTRACTS: Organic sunflowers

Didion Milling, Inc.
Cambria, Wisconsin
- CONTACT: Jeff Dillon
- PHONE: 920-699-3633
- EMAIL: jdillon @didionmilling.com
- CONTRACTS: Non-GMO and organic yellow corn

Earthwise Processors
Moorhead, Minnesota
- CONTACT: Jay Rehder
- PHONE: 218-287-5510
- EMAIL: jay@earthwisepro.com
- CONTRACTS: Non-GMO soybeans: Legend 0557, Byglands, Thunder 0598, Panther, Pio 91M10, Pio 9091, Colibri nattos, and Minori's, a new dark hilum high-protein variety, Premiums: $0.30 – $2.00. Organic soybeans: Panther, Atwood, S-08-80, clear hilum, and natto soybeans. Prices: $15.00 – $18.00/bu

Farmer's Elevator of Honeyford
Gilby, North Dakota
- PHONE: 800-633-7849
- EMAIL: fechoney @polarcomm.com
- CONTRACTS: IP non-GMO soybeans, SQWH non-GMO soybeans

Favored Grain
Windfall, Indiana
- CONTACT: Jim Traub
- PHONE: 765-404-2768
  765-945-7774
- EMAIL: JTraub @FavoredGrain.com
- CONTRACTS: Non-GMO and special use soybeans-clear and dark hylum, non-GMO corns and corns with elevated starch (HES) and elevated protein, and hard endo-white and yellow, organic soybeans for food and feed, and organic corns

Grain Millers, Inc.
Eden Prairie, Minnesota
- CONTACTS:
  Scott Ziegler
  PHONE: 507-934-0210
  EMAIL: scott.ziegler @grainmillers.com
  Cullen Harder
  PHONE: 800-328-5188
  EMAIL: cullen.harde @grainmillers.com
  Roger Mortenson
  PHONE: 800- 871-7356;
  EMAIL: roger.mortenson @grainmillers.com

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Companies offering 2005 non-GMO and organic grain production contracts FROM PAGE 3

Andrew Eilertson
PHONE: 800-328-5188;
EMAIL: Andrew.eilertson @grainmillers.com
Jay Brandau
PHONE: 800-328-5188
EMAIL: jay.brandau @grainmillers.com
- CONTRACTS: Conventional, non-GMO soybeans (Ziegler), organic corn (Harder), organic soybeans (Mortenson), organic wheat and barley (Eilertson), organic oats (Brandau)

Grand Prairie Coop
Tolono, Illinois
- PHONE: 1-217-485-6630
- CONTRACTS: Identity Preserved corn, waxy corn, and non-GMO soybeans

Great Lake Organic, Inc.
Petrolia, Ontario, Canada
- CONTACT: Sharon Jardine
- PHONE: 519-882-4526
- EMAIL: greatlakesorganic @on.aibn.com
- CONTRACTS: Soybeans (organic and transitional), spelt, wheat (all varieties of organic), corn (organic), feed peas (organic), oats (all varieties of organic)

Lakeview Organic Grain
Penn Yan, New York
- CONTACT: Mary-Howell Martens
- PHONE: 315-531-1038
- EMAIL: kandmhfarm @sprintmail.com
- CONTRACTS: Organic corn, soybeans, barley, and oats for use in organic animal feed ■

Technology Crops International to expand specialty crop production in 2005

Technology Crops International (TCI) announces plans for significant production expansion in response to increased demand from domestic and international clients for highly specialized crops.

TCI plans to contract more than 350,000 acres in 2005, introducing several exciting new crops into its portfolio. The company seeks to sign up qualified growers for its premium-priced identity-preserved crops and will host grower meetings throughout the Midwest. Approved growers will be provided with the highest quality seed, agronomic support, prompt and secure payments, and preferential access to premium contracts.

All crops are grown under TCI's Crop Assured 365™ proprietary process of identity preservation. By using segregation, isolation, and containment of genetic material throughout the supply chain, TCI ensures purity of raw materials from soil to oil.

Technology Crops International's production includes high erucic acid rapeseed oil, high oleic sunflower oil, meadowfoam, cuphea, lesquerella, camelina, and echium.

Interested growers can visit techcrops.com or call 1-877-780-5882. ■

COMPANY PROFILE

Producing "Favored" non-GM food and feed

At first glance, it may seem odd that a dentist would launch a company to produce identity preserved (IP), non-GM grains. But upon closer inspection, it makes sense. Dr. Claude Page, a dentist based in Ontario, is passionate about healthy foods and believes they best way to produce them is through "farm to fork" identity preservation and traceability. That's why he launched Favored® Grain, a US-based producer and marketer of IP, non-GM grains and food products.

Saw possibilities with IP

The seed for Favored Grain sprouted in 1992 when Page visited several Caribbean countries, including Haiti, Grenada, the Dominican Republic, and Cuba in 1992. "I saw that they have all the right conditions for agriculture, but couldn't seem to make it work," he says. Back in Canada, Page contacted people in the grain industry aiming to launch an agriculture project to bring healthier foods to the islands.

In his research, Page became interested in possibilities producing identity preserved crops. "I saw opportunities with traits, such as higher isoflavones and anti-oxidant properties that would benefit consumers," he says.

Page launched Favored Grain in 2002, and the company now employs 30 people at two Indiana facilities, an office in West Lafayette, near Purdue University, and an IP/organic grain handling facility in Windfall.

Dr. Claude Page, founder of Favored Grain

Non-GMO production

Favored has focused its initial efforts on corn and soybeans—all non-GMO. "We found that non-GMO is a niche where there is interest in, but not a lot companies supplying into," says Page. Corn products include high extractable starch, high protein, and gluten feed and meal. Favored has developed its own corn seed varieties. Soy products include flours and textured protein, as well as food-grade soybeans sold to Japan.

Favored is one of the few suppliers of non-GMO dry distillers grain (DDG), which is high in protein for feed use. DDG is produced at an ethanol plant in Missouri that runs a segregated batch to ensure it is non-GMO. "No one else has bothered to identity preserve their corn. They would not make the claim," says Page. GMO tests results on the DDG were 99.9% non-GMO.

Favored Beef

Much of Favored's production is now used as animal feed for a "seed to steak" program called Favored Beef. "We have a closed loop system from the seed to the grain and feed

given to the cattle," says Page. Cattle are raised without antibiotics and growth hormones commonly used in beef production. Favored supplies non-GM feed to cattle ranchers who follow strict protocols, including segregating cattle from those raised using conventional methods. The entire system is traceable.

Page says Favored Beef has caught on in a retail gourmet food chain, and several restaurants in Chicago. "The plan is to sell Favored Beef to white cloth restaurants," says Page. "It is more of a gourmet beef product than commodity product."

Favored Beef is the company's best-selling product. "It drives demand for other products. We have to ramp up production of corn and soybeans for feed," says Page.

Based on the beef program's success, Favored plans to launch similar programs for chickens, hogs, and lamb.

Traceability

Page sees branded, traceable food products such as Favored Beef as trends of the future. "In the past people knew who they were getting food from. Now with the way the grain trade works, no none knows," he says. "Traceability gives people confidence."

"Traceability will become more and more important," says Jim Traub, general manager. "People will know where their meat or tortillas come from."

IP, non-GMO

Page emphasizes the importance of non-GMO status in Favored's products. "It is essential that our cattle are fed non-GMO grains," says Page. "The fact that everything is traceable is key to our business model."

Favored contracts 50 to 100 producers who grow IP, non-GM corn and soybeans. Farmers must follow strict guidelines for production, harvest, storage, and transportation. Most farmers have on-farm storage, which helps ensure segregation from other grains that may occur at grain elevators. "Producers sign off on a strict program," says Traub.

Favored's Windfall facility contains 40 separate bins that are ideal for IP production. The facility is also certified organic. "We have a facility that we can identity preserve and be assured that the grain is segregated," says Traub.

Favored worked with Indiana Crop Improvement Association (ICIA) and Cert ID to certify its grains as non-GMO. Favored used Association of Seed Certifying Agencies' non-GMO standards as a guideline, but made their own standards stricter. "We wanted to be a little more stringent," says Page.

ICIA conducts field and bin inspections, audits non-GMO production, and issues a certificate verifying the system as non-GMO. Seed and grain are also tested for GM material.

Bright future

Page sees a bright future for IP, non-GMO products. "There's always going to be a market for non-GMO," he says. "If it's 2%, so be it. We don't need a huge percentage of the market to make it work."

Page says development of functional foods using identity preservation is key to future agricultural success in the US and Canada. "We will have to specialize, developing more nutritious soybeans, better amino acid composition, to stay ahead. Agriculture is key to the growth and health of the US and Canada." ■

Brazil's soybean crop will be 20% GM in 2004/2005

According to CONAB, a Brazilian agriculture ministry group, genetically modified soybeans will account for 20% of Brazil's 2004/2005 soybean harvest. Brazil will produce an estimated 60.8 million tons of soybeans in the coming year, a 22% increase from last year's crop.

Executive decree approves GM soy

In October, Brazilian President Luis Ignacio Lula da Silva issued an executive decree approving temporary plantings of genetically modified soybeans for the 2004-2005 crop year. Provisional Measure 223 allows for the legal planting and marketing of GM soybeans for farmers who signed a statement of responsibility.

Mato Grosso is key

According to Leon Klein, president of Klein Commodities, a Brazil-based supplier of organic soybeans, production of GM soy in Brazil will be significant once the crops get full approval. "There are a lot of different opinions on how much GM crops will be grown. It could be as much as 50% GM," says Klein.

Last fall, Brazil's Senate passed a biosafety bill that would have given full approval to commercial production of GM soy, but the bill has not yet been voted on by the lower house.

The majority of GM crop plantings will again be focused in the southern state of Rio Grande do Sul, the country's third leading soy producing state. Klein says the state of Mato Grosso, the leading soy producing state, is key to future plantings of GM soy. "There is lot of land there that can be converted to soybean production," says Klein.

The Brazilian Soy Producers Association (Aprosja) predicts that 80% of soybeans planted in Rio Grande do Sul will be GM and that GM plantings will also increase in Mato Grosso and Goiás.

Still, Klein says there is a strong market for Brazil's non-GM soybeans, particularly in Europe. However, he says farmers have not received premium prices for non-GM soybeans. "It's never been a clear issue regarding premiums on non-GM," says Klein.

Overall, Klein predicts "there will be a lot of GM soybeans from Brazil."

Meanwhile, Monsanto plans to double its "technology fee" charged to farmers planting Roundup Ready GM soy in Rio Grande do Sul and Santa Catarina, a move that has angered farmers in the states. Some say they will not pay the fee.

Impact on organic soybeans

Klein says production of GM soybeans will not impact Brazil's organic soybean production, which he expects to be about the same as last year. "The soybean industry does not have problems with commingling (of organic and GM)," says Klein.

Prices for Brazil's organic soybeans have been good, ranging from $400 to $600 per ton. Klein says soybean rust has impacted organic soybean production. "We haven't come up with a solution," he says. "It's the main reason why the organic soybean business hasn't increased."

(SOURCES: *Reuters*, *Agencia Estado Brazil*, *Dow Jones Newswires*) ■

Brazil's Paraná state aims to remain GM-free

Some regions of Brazil will remain GM-free, particularly the state of Paraná, which is the country's second-largest soybean-producing state. State governor Roberto Requiao is committed to keeping the state GM-free regardless of the provisional approval of GM soy and has asked the federal government to recognize it as a GM-free area.

Requiao has also made Brazil's main grain shipping port of Paranagua into a GM-free port.

Tests of soybeans grown in Paraná during the 2003/04 crop found minimal GMO contamination.

Requiao wants to keep Paraná GM-free to earn premium prices for non-GM soybeans sold to health conscious consumers in Asia and Europe. The governor has even aired testimonies on state television of US and Canadian farmers who said they regretted planting GM soybeans.

Requiao opposes transport of GM soy by truck, train, barge, or ship in states where laws allow only for non-GM soya to be grown. Authorities in Paraná have been intercepting truckloads of soybeans traveling through Mato Grosso on their way to Paraná. Requiao has recommended that the passage of GM soy to other countries be restricted to three Brazilian ports.

(SOURCES: *Lloyd's List*, *Reuters*) ■

US farm trade surplus to disappear in 2005

For the first time since the late 1950s, the United States is not expected to turn an agricultural trade surplus in 2005. The US Department of Agriculture predicts that U.S. farm exports in 2005 will drop by 10% to a little more than $56 billion, while farm imports would rise by 6.3% to $56 billion.

Writing about the lost surplus, Alan Guebert, a columnist with the *Peoria Star* (Illinois), states, "Bush administration economic and trade policies have taken American agriculture from a $13.6 billion trade surplus in 2001 to a flat line in four short years."

US agriculture has been hurt by increased crop production worldwide, particularly in Brazil. Farm exports have also suffered due to lost markets from GM grains, particularly in Europe, and last December's discovery of the first US case of mad cow disease, which hurt beef exports.

The overall US trade deficit in goods and services hit a record $496.5 billion in 2003 and topped $590 billion in 2004.
(SOURCE: *Associated Press*) ■

Germany to support Zambia in producing non-GMO crops

FECO GmbH Irrigation Systems of Germany will supply irrigation equipment to more than 20 Zambian farmers who will grow non-GM crops intended for export to Germany. FECO and the Zambian firm MASCROP are working together under a project called the "Emergent Farmers Support Project" to assist small-scale farmers to grow cash crops.

A MASCROP company representative, Mr. Mubita, said that the large market and high prices for non-GM produce in Europe and other developed countries was attractive to Zambian producers. "In many developed countries non-GMO produce fetch higher prices than the GMOs and this puts Zambia in a better position to export to these countries," Mr Mubita said.
(SOURCE: *The Times of Zambia*) ■

Farmers urged to learn about GMOs before planting 2005 crops

The commercial production of genetically modified organisms, or GMOs, has created a legal minefield for American farmers and requires that farmers be particularly sure footed, says *Farmers' Guide to GMOs*, just released by the Farmers' Legal Action Group (FLAG) and Rural Advancement Foundation International-USA (RAFI-USA).

Co-author and attorney David R. Moeller of FLAG says that whether farmers grow GMOs, conventional seeds, or are certified organic, the use of GMOs in commercial agriculture can affect operations and have costly legal ramifications. "No farmer should buy seed for next season without having a grasp of the information contained in this Guide," says Moeller.

Co-author Michael Sligh of RAFI, said, "The problems GMOs are creating for farmers are getting increasingly complex. We at RAFI felt it was time to invest in a collaborative effort to inform all farmers of the risks and legal liabilities involved and help them protect their self interests."

Copies of the *Farmers' Guide to GMOs*, the first comprehensive look at the subject, are available free at www.flaginc.org and www.rafiusa.org. ■

Non-GM soybeans wanted

Brentreposto, a Brazilian trading company, has two orders/bids for non-GMO soybeans:

1. 10 milo metric tons of 100% soybeans grade #2 non-GMO (certified); target price: US$135.00 per MT.

2. 5 milo metric tons for 100% physical Soybeans Grade #2 non-GMO; target price: US$155.00 per MT.

For more information contact Fernando Lima e Silva by email: fjlls@brentreposto.com.br. ■

Demand growing for non-GMO phytosterols

Many companies are developing functional food ingredients using phytosterols, and some are promoting them as non-GMO

A major trend in the food industry is "functional foods" that provide a health benefit beyond basic nutrition. Functional foods can be naturally occurring such as fruits and vegetables that increase anti-oxidants, for example. In addition, food manufacturers are formulating foods with specific ingredients to deliver health benefits.

"Exciting area"

Among these functional ingredients are plant sterols, also called phytosterols. These naturally occurring compounds are found in the cells and membranes of plants, grains, fruits, and vegetables. Phytosterols "functional" benefit is to reduce the amount of cholesterol in the bloodstream, an ability that has been documented since the 1950s. The US Food and Drug Administration has approved a health claim about phytosterols' ability to lower cholesterol that food manufacturers can state on product labels.

Phytosterols are a byproduct of the processing of oil from soybeans or pine trees. Extensive processing is needed to produce a small amount of phytosterols.

Several margarine-like spread products featuring phytosterols have been on the market for several years, including Benecol®, developed by a subsidiary of Johnson & Johnson, and Take Control®, developed by Unilever.

Today, more companies are developing phytosterol ingredients for food products, including major companies, such as ADM, Cargill, Cognis, Forbes Medi-Tech, Raisio Life Sciences, and Teriaka, as well as smaller manufacturers and suppliers, such as BTSA, Biodraga, SourceOne Global, and Enzymotec.

"A lot of companies are developing phytosterols for use in foods," says Ilija Gawrilow, business development manager at Spectrum Ingredients. "It's an exciting area right now."

In addition to food spreads, phytosterols can be formulated with yogurt, milk, milk-based fruit drinks, cheese, and soymilk.

Marketing as non-GMO

Many companies derive phytosterols from soybean oil, which raises concerns about genetically modified organisms. Several companies aim to address those concerns and gain a marketing advantage, particularly in GMO-regulated regions such as Europe.

ADM and Cargill produce their respective CardioAid™ and CoroWise™ phytosterol products from vegetable oils, including soybean, but do not claim their products are non-GMO.

Several companies do promote their phytosterols as non-GMO. The largest is Canadian-based Forbes Medi-Tech, which developed Reducol™, a phytosterol ingredient derived from wood. According to Darren Seed, manager of investor relations, Forbes recently received regulatory approval to sell Reducol in Europe. "A key advantage is that it is non-GMO," says Seed. "Europe has a demonstrated preference for non-GM products."

Seed says there is a growing demand among US companies for phytosterols, but they aren't as concerned about the GMO issue as European companies. In addition, he says, "The European market is more on the cutting edge of developing functional food products than the United States, which is more sensitive about ingredient costs."

Because they are highly processed and produced in small quantities, Phytosterols cost more than other food ingredients, as much as $25 per kg.

IP, non-GMO

Several companies, including BTSA, Biodraga, and SourceOne Global produce phytosterols from certified identity preserved (IP), non-GM soybeans.

Spain-based BTSA produces its phytosterols from soy and sunflower distillates. Spectrum Ingredients, based in Petaluma, California markets BTSA's phytosterols to food manufacturers in the United States. Gawrilow says major food companies, such as ConAgra, Kellogg's, Kraft, and General Mills are looking to incorporate phytosterols into their products to make the cholesterol-reducing claim. Regarding GMO concerns, Gawrilow says, "The GMO issue is not a big concern to companies here. It is more of an issue in Europe."

Biodroga, Inc., based in Quebec, sells Vitasterol® S-80, which is composed of approximately 85% mixed phytosterols from soybean oil. The product is certified IP, non-GMO by Genetic ID. Sales manager Fred Bernier says his company sells the product to a niche market in North America. "It's a small market in North America because we do more business with non-GM vitamin E," he says. Biodroga's parent company, Goerlich Pharma International, sells Vitasterol S-80 in Europe.

Israel-based Enzymotec developed MultOil, a product that incorporates phytosterols and diglycerides (DAG). Elzaphan Hotam, director of business development says MultiOil provides a more comprehensive solution to heart and obesity problems than phytosterols alone. MultiOil, which is derived from non-GM raw materials, can be used in energy bars, supplements, or cooking oil.

Importance of identity preservation

SourceOne Global Partners sells Ginnovay SterolSource™ 95%, a mixture of naturally occurring phytosterols

derived from vegetable sources and soy. Richard Staack, Ph.D., vice president of business development, technology, and science, says applications for SterolSource 95% include dietary supplements and food products, such as margarine spreads. The product, which was developed in China, is certified IP, non-GMO by GeneScan USA. "There is a demand for non-GM products," says Staack.

Staack emphasizes the importance of identity preservation as a competitive marketing advantage, particularly in Europe. "Most companies could say their product is non-GMO because it is so heavily processed that GMO tests can no longer find GM DNA. It's more important that a product is identity preserved, non-GMO," says Staack. Under new European Union traceability regulations, highly processed products such as phytosterols where GMOs are not detectable would still be labeled GM because documentation would show that were derived from GM soybeans. A phytosterol that is identity preserved non-GMO would avoid labeling because documentation would show that it is derived from non-GM raw materials. ■

Suppliers of identity preserved, non-GM phytosterols (soy-based)

Biodroga, Inc.
373 Joseph-Carrier
Vaudreuil-Dorion, Québec
Canada J7V 5V5
• PHONE: +1-450-510-5599, toll-free: 1-800-371-9668
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Suppliers of non-GM phytosterols (wood-based)

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US food supply vulnerable to contamination by GM drug and industrial crops

A new report by six agricultural experts warns that the US food supply is vulnerable to contamination by food crops genetically engineered to produce drugs, vaccines, and industrial chemicals unless substantial changes are made in the ways and places such crops are grown and managed.

Based on the experts' findings, the Union of Concerned Scientists (UCS) called on the US Department of Agriculture (USDA) to immediately ban the field production of corn, soybeans, and other food crops engineered to produce pharmaceutical and industrial chemicals. UCS recommends that the USDA spearhead a major campaign to encourage and fund safer alternatives like non-food crops or growing pharmaceutical food crops indoors.

UCS convened the panel of experts to determine whether it is possible to produce pharmaceuticals in food crops like corn or soybean without contaminating human food or animal feed. The panel—acting independently of UCS—analyzed the current system for growing food- and feed-grade corn and soybeans and concluded that the current corn and soybean production system cannot be used for pharmaceutical corn and soybean in the United States while ensuring virtually no contamination of the food and feed system.

"It is sobering that drugs and industrial chemicals could have so many routes to the food supply," said Dr. David Andow, editor of the technical report and a professor in the Department of Entomology at the University of Minnesota. "To protect the food supply, each potential route has to be blocked."

The technical report was written by scientists at Iowa Sate University, University of Central Florida, University of California at Davis, University of Illinois, and University of Minnesota, and an agricultural management expert based in Hudson, Iowa.

The report, titled *A Growing Concern*, can be found on the web at www.ucsusa.org. ■

Americans divided about GM foods, want strong regulations

Americans' attitudes about genetically modified (GM) foods remain divided, although their opinions appear not deeply held and can be influenced by new information and events, according to a new survey by the Pew Initiative on Food and Biotechnology. Many Americans remain unaware of GM foods.

Highlights of the survey include:

■ In 2004, 30% of consumers said that GM foods are "basically safe" (up from 29% in 2001 and 27% in 2003), while 27% say that they are "basically unsafe" (up from 25% in both 2001 and 2003).

■ Opposition to "introducing genetically modified foods into the US food supply" has declined from 58% in 2001 to 47% today.

■ The level of awareness about GM foods remains low, with only 32% of consumers reporting that they heard a great deal or some about genetically modified foods in 2004, a 12-point decline since 2001.

■ A majority of consumers (85%) felt strongly that regulators should ensure that GM foods are safe before they come to market.

■ A large majority of consumers (81%) believed that FDA should approve the safety of GM foods before they come to market, even if there would be "substantial delays." ■

Ignacio Chapela holds last class at UC-Berkeley

A University of California at Berkeley scientist at the center of controversies over genetically modified crops and the influence of corporations at public universities recently taught his last class after the university refused to grant him tenure.

Ignacio Chapela, Assistant Professor Division of Ecosystem Sciences, taught the class to an overflowing crowd of students, faculty, and supporters. As the class drew to a close, Chapela thanked the crowd and vowed to "keep raising hell." He received a standing ovation, and the group then marched to the Chancellor Robert Birgeneau, chanting: "Justice Now! Justice Now! Justice Now! Justice Now!"

In a controversial decision, UC-Berkeley refused to grant tenure to Chapela, who criticized the university's $25 million research deal with Syngenta in 1998, an arrangement that was recently criticized by a report published in *Chronicles of Higher Education*. Chapela also incurred the wrath of GM crop supporters when his research discovered GMO contamination among native corn varieties, a finding that has since been confirmed. ■

Soybean rust found in nine US states

Soybean rust, a highly destructive fungus that drastically reduces soybean yields, has been found in nine Southeastern state states, including Louisiana, Alabama, Georgia, Florida, Mississippi, Arkansas, Missouri, Tennessee, and South Carolina.

High winds of Hurricane Ivan, which hit the panhandle of Florida in mid-September of last year, are thought to have carried the disease from South America.

The fast-spreading disease has devastated crops in every major soybean-producing country except the United States. Soybean rust infected as much as 90 percent of Brazil's soybean crop last year, causing $2 billion in lost sales.

The soybean rust pathogen Phakopsora pachyrhizi easily spreads through windborne spores. The fungus causes small lesions on the foliage and pods of soybeans and other legumes. Soybean rust can reduce yields by 50 percent or more.

The US Department of Agriculture says a coordinated approach will be required by all soybean-producing states to manage the disease. (SOURCE: *ens-newswire.com*) ■

Scientists say GM crop safety tests flawed

A peer-reviewed scientific paper published in Biotechnology and Genetic Engineering Reviews debunks the myth that biotech or genetically modified (GM) crops are thoroughly tested, regulated, and proven safe.

The paper, "Safety Testing

and Regulation of Genetically Engineered Foods," reveals fundamental flaws in how biotech companies test and how the US government regulates GM crops. The paper thus raises serious questions about whether GM foods, which have been on the market since 1994, are in fact safe, as claimed by the biotech industry and U.S. regulators.

Authors Dr. David Schubert (cell biologist and medical researcher at California's Salk Institute) and William Freese (research analyst with Friends of the Earth US) base their meticulously documented, 25-page paper on nearly 100 sources, including little-known US regulatory documents and unpublished studies by biotech companies.

"The picture that emerges from our study of US regulation of GM foods is a rubber-stamp 'approval process' designed to increase public confidence in, but not ensure the safety of, genetically engineered foods," said Schubert. ■

GM CROP NEWS

GM rice could be grown in China by 2006; caution urged

China's Ministry of Agriculture says it will be at least two years before GM rice would be available for widespread cultivation, as scientists raise concerns about its safety.

Chinese scientists have developed six varieties of GM rice, which are modified to resist pests and diseases. The Chinese government could approve the varieties early this year, followed by field trials, which could lead to commercial production by spring 2006.

If GM rice were approved, China would become the first country in the world to grow a GM version of its main food crop; something scientists say carries special risks. Dr Doug Gurian-Sherman, a senior scientist at the Washington-based Centre for Food Safety, said "As far as I know, the Chinese experiment would be the first where a major genetically engineered food crop will be grown in a country where there are important native wild relatives that can interbreed with it."

Professor Xue Dayuan, scientist at the Nanjing Institute of Environmental Science and member of the State Environment Protection Administration, is worried about gene contamination. "If that happens, it would be a disaster," he says. "Genetically engineered rice kills the insects which eat it. But the consequences on other species are not known."

An editorial in the China Daily urged more caution in introducing GM rice, "Experiments on animals for months or even several years are not enough to convince consumers that GM rice is safe for humans in the long run. People should not be used as guinea pigs with food they eat every day."

(SOURCES: *Knight Ridder*; *South China Morning Post*, *China Daily*)

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Bio-pharming company leaves California for Missouri

After failing to win regulatory and public opinion approval in California to produce a genetically modified, drug-producing rice, a biotechnology company is leaving the state for Missouri, which has a more loose regulatory environment for the controversial plant-made pharmaceuticals.

Ventria Bioscience will move its headquarters from Sacramento, California to Maryville, Missouri in an effort to expand production of "pharma" rice, genetically modified to produce lysozyme and lactoferrin, proteins thought to reduce infections in nursing infants.

Ventria has contracted farmers in southeast Missouri to grow 200 acres of GM hybrid rice plants, planning eventually to grow 70% of its crops in Missouri. Ventria anticipates that its total pharma crop production will expand to 25,000 to 28,000 acres.

(SOURCES: *Associated Press*, *St. Joseph News-Press*, *Maryville Daily Forum*) ■

GM crops found growing around Japanese ports

Genetically modified corn, rapeseed, and soybeans have been found growing around several Japanese seaports.

Japanese civil groups, including Stop GM Seeds Network Japan, reported that GM corn and soybeans are growing wild at Shimizu port in Shizuoka Prefecture. GM rapeseed has been discovered growing wild near Hakata port in Fukuoka Prefecture and at ports in six other prefectures: Ibaraki, Chiba, Kanagawa, Aichi, Mie, and Hyogo.

The groups are concerned that the spread of the GM crops, believed to have dropped from containers being unloaded or in transport, may contaminate conventional crops and other agricultural products.

Several GM crops, including corn and soybeans are approved for planting in Japan, but none are grown because of strong consumer opposition.

(SOURCES: *Kyodo News International*)

Biotech companies halt GM crop plans in Europe and India

In response to difficult marketing conditions, several biotech companies are ending field trials of genetically modified crops in Europe and India.

Syngenta, the world largest agricultural chemicals group, ended all its European field trials of GM plants and seed. The company is moving all its biotech research to the US. Syngenta follows Monsanto and DuPont, which have abandoned their GM crop activities in the United Kingdom.

Syngenta's facility in England, the world's biggest private agricultural research center, is now focusing entirely on conventional techniques. Syngenta research director David Lawrence is quoted as saying that his business had found conventional methods to be more effective than biotechnology. "We have conducted many genetic engineering experiments for seed materials and plant protection and they have often failed."

Meanwhile, Bayer CropScience has withdrawn its last two applications in the UK for government permission for seed testing. Industry leaders, ministers, and environmentalists agree that GM crops now will not likely be grown in the UK within this decade.

In India, Bayer announced that it is ending research into GM cabbage, cauliflower, eggplant, tomato, and mustard seed.

(SOURCES: *news.independent.co.uk; Die Welt*) ■

REGULATORY NEWS

Consumer groups criticize new FDA guidelines on GM crops

The US Food and Drug Administration recently published draft guidelines that acknowledge the possibility that genetically modified crops could cross-pollinate with other crops before the FDA approves them for commercial production. The new guidelines encourage biotechnology companies to submit voluntary safety evaluations of such GM crops.

Food safety and consumer groups charge that the FDA is essentially saying it is okay that unapproved GM crops contaminate other crops. "With this policy, the government is condoning the contamination of our food and seed supply with genetic material from thousands of biotech crop experiments," said Bill Freese, a research analyst with Friends of the Earth.

"The government is admitting that genetically engineered field test sites are polluting our food supply and environment, yet it consistently exempts these field tests from full environmental review," added Joseph Mendelson, legal director of the Center for Food Safety (CFS). "We need the agencies to prevent pollution, not find new ways to make it okay."

The FDA will accept public comments on the guidelines until January 24, 2005. For more information visit http://www.thecampaign.org/alertFDA012405.php. ■

Mexico approves controversial GM crop law

Mexico's congress approved a new law to regulate genetically modified crops, but critics say it favors large corporations at the expense of peasant farmers and biodiversity.

The Biosecurity and Genetically Modified Organisms Law regulates the production, commercialization, and research of all GM products in Mexico.

Legislators in Mexico's lower house of congress approved the law by a vote of 319 to 105 with 17 abstentions.

The Party of the Democratic Revolution opposed the law, along with environmental groups such as Greenpeace, saying that it would threaten corn diversity in Mexico.

"It's important to make clear that we are not completely satisfied with the result, given it does not express many of the demands we come across in the course of our work," said PRD deputy Jose Luis Cabrera.

Greenpeace has derided the law as the "Monsanto Law," saying it protects the economic interests of the biotechnology giant.

A recent NAFTA report made several recommendations to prevent GMO contamination of Mexico's native corn varieties, including milling corn imported from the United States. However, Mexican trade authorities say they have no plans to change import policies. (SOURCE: *Reuters*) ■

Europe votes to keep GM crop bans

Europe's member states voted against proposals to overturn bans of genetically modified (GM) crops in five countries. The states voted overwhelmingly to maintain bans against five GM crops in several countries, including Germany, Austria, Luxembourg, France, and Greece.

Each of the Commission's proposals, calling on countries to repeal their bans within 20 days, failed to get the required "qualified majority" of 232 votes out of 321. For some of the bans the Commission narrowly escaped a qualified majority against them. The proposals will now go to a Council of Ministers meeting sometime early this year.

The votes were seen as a slap in the face to the European Commission, which is under heavy pressure from the United States to allow GM foods in Europe. Adrian Bebb, GMO campaigner of Friends of the Earth Europe, said "European countries should be congratulated for not supporting these outrageous proposals. This should serve as wake-up call for the Commission to start fighting for the right of countries to ban genetically modified foods instead of caving in to the pressure of the World Trade Organization and the Bush Administration."

In a separate action, EU governments failed to approve imports of Monsanto's GM rootworm corn, known as MON 863. The vote was 12 to 8 against approval with 5 abstentions. The case now goes to EU government ministers who will have three months to decide on approval. If they don't approve it, the European Commission is likely to rubber stamp approval, as it has with other GM crops that failed to win initial approval in the past year.
(SOURCE: *Associated Press*) ■

Canadian GM-free zone honored

Powell River, British Columbia, received a provincial agricultural achievement of the year award for being declared the first region in Canada to declare itself free of genetically modified crops.

Julie Bellian, manager of the Open Air Market and organizer of the Powell River Fall Fair, accepted the award on behalf of

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the community at the BC Association of Agricultural Fairs and Exhibitions annual conference held in Abbotsford last October.

Regional district directors declared the Powell River area as a GE free crop zone in June 2004.
(SOURCE: *The Powell River Peak*) ■

Italy's GM crop bill allows GM-free zones

A new bill allowing the production of GM crops in Italy contains a provision allowing regions to ban them. At the time of the bill's passage, 1806 municipalities, 27 provinces, and 14 of the country's 20 regions had declared themselves GM-free.

The bill aims to defend traditional farming methods and allow consumers and producers the right to choose between GM and conventional and organic products. The new law bans open-field production of GMOs, reflecting the Italians' apprehension about GM contamination of other agricultural crops. Italy is Europe's leading producer of organic crops.

Prime Minister Berlusconi delayed passage of the bill, saying he did not want to limit the freedom of Italian citizens, an odd stance since opinion polls show 70% of Italians oppose GM foods, including many farmers.
(SOURCES: *Agence France Presse*) ■

Japan region restricts GM crop cultivation

Japan's largest food-producing region is establishing rules that would effectively ban the commercial production of genetically modified food crops.

The new regulations established by the prefecture of Hokkaido would apply to all crops and would include constant monitoring to prevent cross-pollination of GM crops with other crops. The regulations will be the strictest in Japan.

The regulations respond to growing consumer interest in food safety. Research in Hokkaido shows that 80% of consumers are wary of GM foods.

Hokkaido officials are also concerned that its reputation as a food-producing region would suffer if fears of GMO contamination of food grow among consumers.
(SOURCE: *Nihon Keizai Shimbun*) ■

Germany passes tough law on GM crops

The German Parliament adopted a new law allowing the country's farmers to plant genetically modified crops, but the law assigns liability to farmers of GM crops if their crops cause economic damage to neighboring conventional or organic farmers through GMO contamination of non-GM crops.

Supporters of the law praised it as protecting consumers and farmers from risks of GM crops. Geert Ritsema of Friends of the Earth Europe said "This law is good news for hundreds of millions of Europeans who do not wish to participate in the biggest biological experiment of our time and who want to eat food that is GM-free. This law should now be the benchmark for similar legislation in other EU member states."

Opponents say the law is a defacto ban on cultivation of GM crops. Jens A. Katzek, chief executive officer of BIO Mitteldeutschland GmbH, which promotes the biotechnological industry in central Germany, told *The Scientist*, "This law is going to have dramatic consequences. Planting GM crops in Germany is now an economic risk." ■

GM FOOD LABELING

EDITORS NOTE: Food manufacturers in New Zealand and Australia face challenges labeling foods non-GMO as food safety authorities are very strict as the following two articles show:

NZ company fined after GMO trace found in non-GM labeled food

Bean Supreme, Ltd., a soy-food manufacturer in Auckland, New Zealand, was fined for marketing vegetarian sausages as "GMO free" and "Non-GM" after tests revealed the products contained an infinitesimal amount of genetically modified soy.

The company pleaded guilty to violating the Fair Trading Act and was fined $4250, according to the New Zealand Commerce Commission.

GMO tests conducted by the Food Safety Authority detected barely a trace level of GMOs in the company's vegetarian sausages, just 0.0088 %, which did not come close to exceeding New Zealand's GM food labeling standard of 1%.

Despite the trace amount, the commission said the fact that Bean Supreme promoted the product as GMO-free, when it wasn't, violated the Fair Trading Act.

After receiving advice from its soybean supplier, Bean Supreme changed the "GMO-free" label to "Non-GM" along with "Identity Preserved Soy" on the ingredient panel, a labeling scheme used by many other companies in Europe and North America. However, Commission chairwoman Paula Rebstock said the new label did not change the misrepresentation. "It is incumbent upon traders to ensure they accurately inform consumers about the GE content of their products," she said.

"Complete fallacy"

In a company statement, Bean Supreme manager, Paul Johnston, said, "Despite always demanding ingredients that are either organic at best or GE-Free, we were vulnerable to adventitious (accidental) contamination at the tiniest trace levels in the soy powders we were supplied from the USA."

The company has since changed to a Chinese supplier who provides greater non-GMO assurance.

Greenpeace New Zealand representative Steve Abel criticized the fine saying, "It is a complete fallacy that they were convicted for this tiny amount of trace contamination and it

sets a bad precident for companies like them who are doing everything they can to avoid GE."

Johnston concluded by saying, "Bean Supreme hopes that the debate continues with further informed legislation in the future acknowledging the IP system and its non-GM labeling."
(SOURCE: *www.stuff.co.nz*) ■

Australian poultry companies drop non-GMO labels

Two of Australia's three leading Australian chicken companies will remove non-GMO labels from their products because their chicken feed may contain genetically modified grains.

The two companies, Barter Steggles and Baiada, had been marketing their product as "not genetically modified." However, Louise Sylvan, deputy chairwoman of the Australian Competition and Consumer Commission (ACCC), said the labels were potentially misleading. "There is a possibility that GM feed can be given to chickens," Ms Sylvan said. "... we felt there was a possibility that consumers could be misled."

The two companies aim to remove the non-GM labels by May 2005.

"The ACCC is watching 'GM-free' claims closely in the market and reminds food producers more generally that within the strong wording of our misleading conduct laws, 'free' has to mean 'free'," said Sylvan.
(SOURCES: *Sydney Morning Herald*, *just-food.com*) ■

COMPANY NEWS/ANNOUNCEMENTS

SDI announces new vice president of marketing

Strategic Diagnostics, Inc. announced that Richard Rumble has joined the company as Vice President – Marketing. Mr. Rumble spent 14 years with 3M, where he advanced through a series of marketing and general management positions of increasing responsibility. Immediately prior to joining SDI, Mr. Rumble was with Steris Corporation, most recently as the VP and General Manager of their Healthcare Sterile Processing Business.

SDI also announced that Ms. Peggy Royer-Parisi has joined the company as Director-Human Resources, and that Mr. Mark Wood has joined the company as Director - Quality. ■

National Starch launches TRUETRACE™ to verify non-GMO products

National Starch has expanded its crop identity-preservation program and implemented a broader, documented identity-tracing program to verify the non-genetically modified organism (non-GMO) status of the company's food ingredients.

The program, named TRUETRACE(TM), provides customers with traceability for National's food ingredients at all stages of their development, from seed to crop, to production and distribution. The program covers all the company's food ingredients made from corn grown in the United States.

TRUETRACE adheres to the guidelines of the British Retail Consortium/Food and Drinks Federation (BRC/FDF) Technical Standard for the Supply of Identity Preserved Non-Genetically Modified Food Ingredients and Products. ■

Indiana Crop Improvement Association to host conferences

The Indiana Crop Improvement Association (ICIA) will host two back-to-back conferences, The 2005 Illinois/Indiana Seed Conditioning Workshop and The 2005 ICIA Annual Conference on Wednesday, Thursday, and Friday, February 2, 3, and 4 at the Sheraton Hotel, Keystone, in Indianapolis.

The Seed Workshop on February 2 will focus on seed cleaning, handling, treating, pest control, and related topics. The ICIA conference will feature a general session along with the usual workshops in the afternoon.

For more information about the conferences, visit the ICIA website at www.indianacrop.org. ■

Guelph Organic Conference

The 24th annual Guelph Organic Conference will be held at the University of Guelph, in Ontario, Canada, January 21-23 2005. The three-day conference features educational workshops, a trade show, and an Organic Expo Canada Tasting Fair. For more information and registration, contact Tomas Nimmo at 705-444-0923 or organix@georgian.net, or visit www.guelphorganicconf.ca. ■

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