



Seeding Values



Values are what a company believes, stands for, and practices in all of its dealings.

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The Monsanto Pledge

INTEGRITY is the foundation for all that we do. Integrity includes honesty, decency, consistency, and courage. Building on those values, we are committed to:

DIALOGUE We will listen carefully to diverse points of view and engage in thoughtful dialogue. We will broaden our understanding of issues in order to better address the needs and concerns of society and each other.

TRANSPARENCY We will ensure that information is available, accessible, and understandable.

SHARING We will share knowledge and technology to advance scientific understanding, to improve agriculture and the environment, to improve crops, and to help farmers in developing countries.

BENEFITS We will use sound and innovative science and thoughtful and effective stewardship to deliver high-quality products that are beneficial to our customers and to the environment.

RESPECT We will respect the religious, cultural, and ethical concerns of people throughout the world. The safety of our employees, the communities where we operate, our customers, consumers, and the environment will be our highest priority.

ACT AS OWNERS TO ACHIEVE RESULTS
We will create clarity of direction, roles, and accountability; build strong relationships with our customers and external partners; make wise decisions; steward our company resources; and take responsibility for achieving agreed-upon results.

CREATE A GREAT PLACE TO WORK
We will ensure diversity of people and thought; foster innovation, creativity and learning; practice inclusive teamwork; and reward and recognize our people.

Letter to Stakeholders

In 2005, somewhere in the world, the one-billionth acre was planted with a biotechnology crop. The agricultural industry also reached another significant milestone — 10 years of biotechnology in farmers' fields around the world. Those 10 years have seen agriculture transformed. And they have seen Monsanto transformed — from an agricultural chemical company to a seed and technology company.

The next 10 years will be even more remarkable. The technologies encapsulated in the seed will increasingly benefit consumers and food processors alike. They will continue to allow farmers more convenience, greater time savings, and safer, more beneficial production practices.

As the technologies of agriculture become more complex, the relationships between people become more important. Relationships imply values — what we believe, what we stand for, and what we practice in all we do. Values don't exist outside relationships. Our Monsanto Pledge doesn't exist outside relationships. In fact, our Monsanto Pledge is the ultimate business expression of who we are and what we mean when we talk about values, because it is ultimately about relationships.

The values expressed by our Pledge are a constant. Their application is a work in progress, requiring considerable dialogue inside and outside of Monsanto. We spend a lot of time and effort understanding what the Pledge means, and what it should mean, for what we do and what we plan to do. We recognize and celebrate our people who are living the Pledge in their everyday work. You'll read about many of them in this report. We talk about what we're doing, and how we're doing it, with our board of directors, our Biotechnology Advisory Council, our Grower Advisory Council, and countless stakeholders around the world. And we listen and heed what they tell us.

As you'll see in this report, our Monsanto Pledge is forward-looking. It is less about where we came from than about what we aspire to be. We sometimes stumble, and we make mistakes. When we do, we pick ourselves up — guided by feedback from all of our stakeholders — and figure out how to do better and be better. Although we like to tell ourselves that we are doing many good things, we know that this is a journey, and that we have a long way to go.

We know that we are judged by how we and our products and technologies contribute to the greater good. Do we help farmers produce more with less? Do we help increase the world's food supply with better, more nutritious food? Do we help conserve topsoil? Do we help people achieve better nutrition? Do we help keep food affordable? Do we give stakeholders a voice in our decisions? Do we help farmers around the world meet their goals? And do we do all of this safely?

If so, we'll be judged as an asset to society — a good neighbor, a strong partner, and an important contributor. That is our goal.

We always invite your feedback on how we're doing. To reach us, please use the contact information on the back cover of this report.

Thank you for taking the time to review this report, and for joining with us as we work to bring value — and values — to everything we do. ■



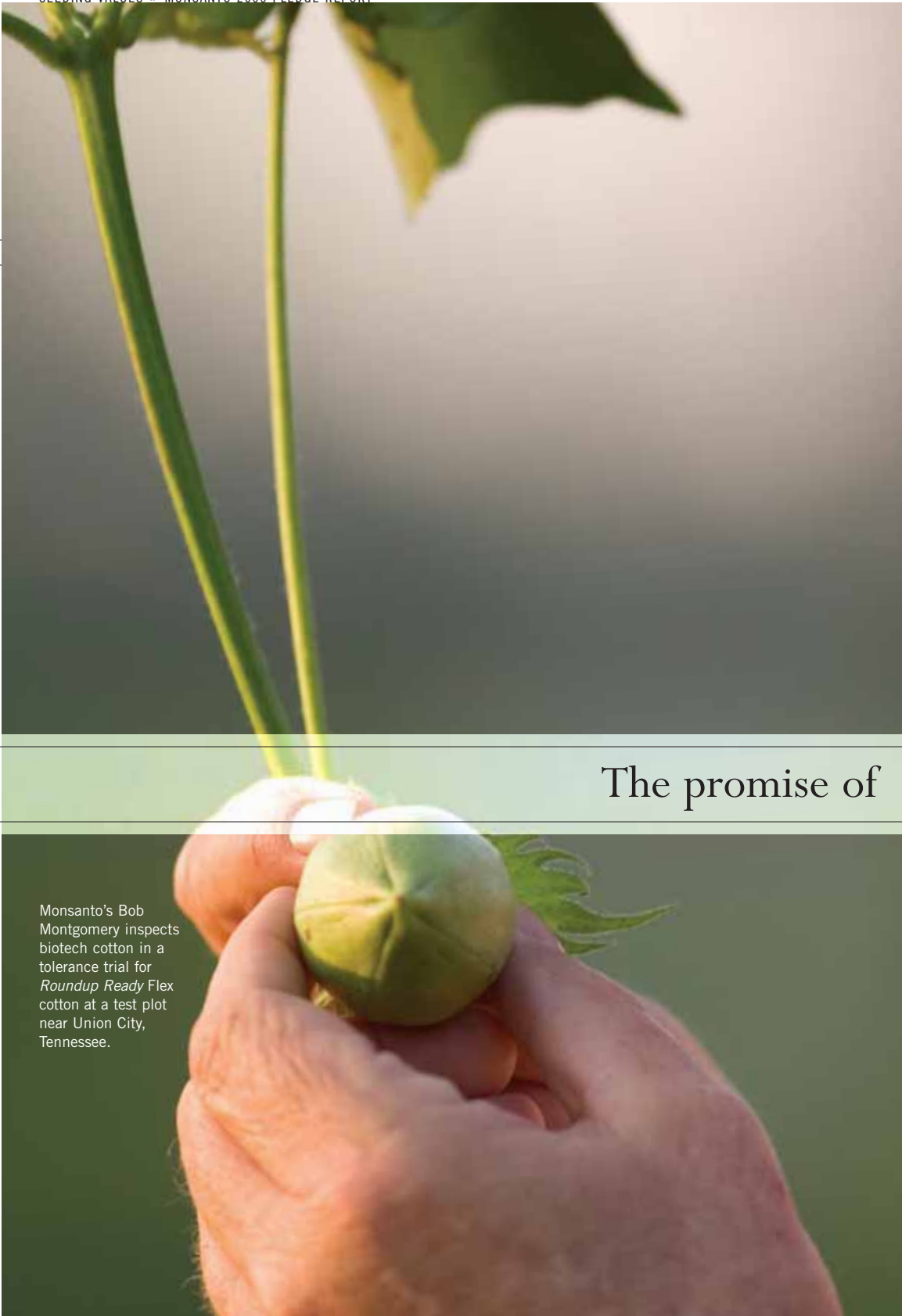
Sincerely,


HUGH GRANT

Chairman, President, and Chief Executive Officer

The promise of

Monsanto's Bob Montgomery inspects biotech cotton in a tolerance trial for *Roundup Ready Flex* cotton at a test plot near Union City, Tennessee.





In 2005, farmers planted and harvested the billionth acre of biotech crops. As the global population grows and cultivable land becomes scarcer, this proven technology, along with other advances in agriculture, provides greater options for addressing the problem of feeding the world's growing population sustainably.

4 Global Challenges

This section focuses on how Monsanto Company is helping smallholder farmers around the world become more productive and self-sufficient.

our technology

8 A Decade of Contributions

This section discusses some of the benefits biotechnology has created for farmers, processors, and consumers since 1996, as well as some of the promising benefits Monsanto Company is researching and developing.

Global challenges...

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Improving Self-Sufficiency Through Smallholder Farming Systems

The issues of hunger, rural poverty, and food insecurity are inextricably linked with low productivity agriculture for about half of the world's chronically hungry people. Despite food production improvements during the Green Revolution, hunger is ever-present in many areas that have not kept up with agricultural advancements.

According to the United Nations Millennium Project Hunger Task Force, 852 million people, mainly in the developing world, are still chronically or acutely malnourished.¹ In Africa, hunger statistics are getting worse.

The Task Force analysis concludes that about half of the world's hungry people live in smallholder farming households that cannot grow enough food to feed themselves adequately. The three biggest needs are healthy and fertile soil (replenished with either synthetic or organic fertilizer), improved water management, and quality seeds. Adequate labor for tillage and weeding in HIV/AIDS affected areas and effective pest control are also needed.¹ The key is to get the most useful and appropriate tools into the hands of these farmers.

Monsanto's products can help in important ways. Our *Roundup* agricultural herbicides are useful for conservation tillage. They let farmers control weeds without plowing or hoeing, thereby saving backbreaking labor and conserving soil and water. Our quality seeds help farmers establish the best possible crops. And where regulatory approvals have been obtained, biotech traits incorporated into crops have improved yields with less labor, less pesticide and less environmental impact. Longer-term agricultural advancements to address the challenges of nutrient deficiencies and water scarcity are under development.

Through Monsanto's commercial businesses around the world, the company is reaching and benefiting more than 25 million smallholder farmers (see related articles on page 5). Where infrastructure does not exist, Monsanto works with development groups to build infrastructure and test, adapt, and deliver products (see related article on page 6) to 250,000 farmers in Africa. Through the Monsanto Fund, Monsanto recently donated \$1 million to Friends of the World Food Program to be used for food aid in drought-stricken Malawi. Finally, Monsanto has shared access to proprietary technology with universities and other non-profit groups to be used to develop better subsistence crops for the benefit of subsistence farmers.

According to the Food and Agriculture Organization of the United Nations, an additional 2 billion people will have to be fed over the next 30 years from an increasingly fragile natural resource base.² Delivering agricultural advancements in culture- and size-appropriate ways will be critical to help countries meet the hunger challenge. ■

Combi-packs provide smallholder farmers with seed, herbicide, and other inputs in one package, and in quantities they can use.



Commercial Smallholder Case Studies



India » RAHUL MENON

Manager, Strategic Initiatives,
Monsanto India

In India, 82 million small-scale farmers produce much of the country's food crop while operating within a fragmented and underdeveloped agricultural market system. Low awareness of emerging techniques in agriculture, unavailability of credit and finance because of an insufficient credit infrastructure, and limited access to markets and technology have left them at a competitive disadvantage in the marketplace.

To assist Indian smallholders and encourage their commercial success, Monsanto and its partners provide packages of training, technical assistance, and input technologies. These packages include existing commercial technologies, such as better hybrid seeds and biotechnology (including the newly approved *Bollgard*), conservation tillage, and crop protection products. We also facilitate smallholder access to microcredit sources and grain processors, and connections among growers.

We conduct research and seek feedback to determine which products, training, and approaches will be most effective for commercial smallholders in a region. We ensure that our research samples consider the landholding patterns across regions and economic strata. We take all of this into account when assessing the best prices, products, and services to provide socioeconomic benefits and satisfaction for smallholders.

Ultimately, it is small-scale farmers who feed India. Through our commercial smallholder efforts, these farmers are seeing increased economic returns, and they are improving life for their families and their villages. In addition, the effort helps smallholders participate in the global economy. By facilitating access to microcredit, processors, technology, and modern agricultural practices, Monsanto's smallholder effort is improving the agricultural productivity of India. ■



Africa » KINYUA M'MBIJEWEE

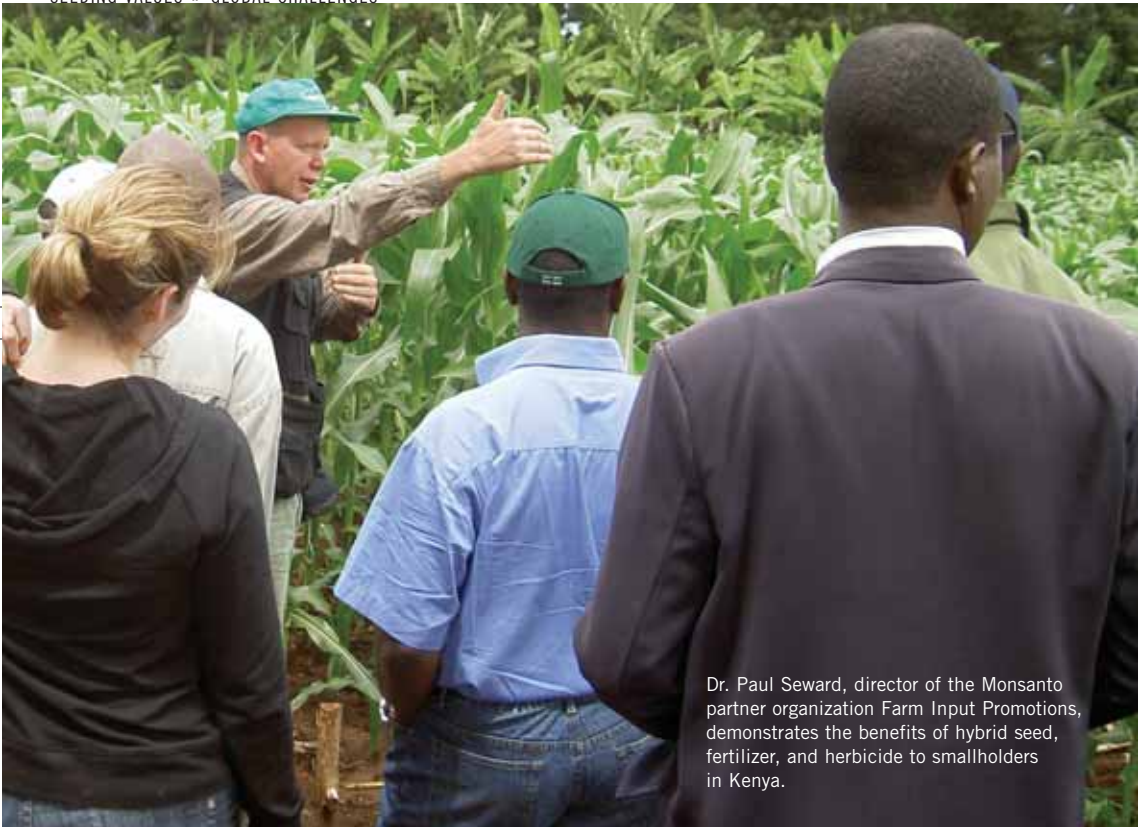
Lead, Government Affairs and Public Affairs,
Monsanto Africa

With the exception of South Africa, in Africa most of Monsanto's business is designed to serve smallholder farmers, who make up almost the entire continent's farming community. Our strategy focuses on providing products that meet the specific needs of these growers.

Because many farmers who can benefit from our products are in remote areas, we work closely with our distribution channel to ensure that products get to the places where they are needed. We collaborate with government research and extension services, and we partner with nongovernmental organizations that introduce farmers to the benefits of improved seed and weed control.

In addition, we provide seed and herbicides in pack sizes that smallholders can use at prices that they can afford. We analyze the adoption rates of our products, and then we develop new packs and prices from that experience. The recent launch of granular *Roundup* 680 in a 100-gram sachet has been a success with farmers because the product can be added to a 15- or 20-liter backpack sprayer, which is commonly used to control weeds on small plots of land.

For agriculture in Africa to realize its potential — providing adequate food and income — it must be considered not just a way of life, but also a business. **Smallholder farmers who adopt a commercial approach not only have sufficient food, they also develop surplus income.** In turn, this income affords them greater choices for personal spending and investment in their children's future. ■



Dr. Paul Seward, director of the Monsanto partner organization Farm Input Promotions, demonstrates the benefits of hybrid seed, fertilizer, and herbicide to smallholders in Kenya.

Partnerships Bring Modern Agricultural Training to Smallholder Farmers

Worldwide, many small-scale farmers operate within thin margins. They produce enough to feed their families and maybe just enough to maintain a small commercial business. Through improved inputs and agricultural methods, however, farmers can see significant gains on small properties. One way Monsanto is helping farmers to become effective commercial businesspeople is through partnerships with organizations that work to increase economic opportunity, enhance food security, and sustain natural resources through the adoption of productivity-enhancing agricultural practices.

In West Africa, Monsanto is collaborating with Sasakawa-Global 2000 (SG2000) and Winrock International, two nonprofit organizations, to help small-scale farmers adopt conservation tillage methods, which improve yield and field return and help to establish sustainable agriculture. The collaboration focuses primarily on maize in Ghana and Burkina Faso, and on maize and rice in Mali and Nigeria. The rice projects include collaboration with the Africa Rice Center (WARDA) for the promotion of improved rice varieties.

In the second phase of the projects, Monsanto expanded its circle of partners to include organizations such as the International Fertilizer Development Center (IFDC), which is helping establish privately controlled and sustainable agricultural input delivery systems. In Nigeria, private banks have also been included among the partners, because they can offer small-scale farmers the possibility of credit for the purchase of inputs.

Through these and other partnerships, **Monsanto is linking smallholder farmers and their communities with new ideas and technology**, helping to increase long-term productivity, commercial competitiveness, and responsible resource management among the world's smallholder farmers. ■

Drought-Tolerant Corn for Africa:

IN PARALLEL WITH THE UNITED STATES, NOT 20 YEARS LATER

The significant human and economic impact of food shortages caused by drought is well-documented. Given that agriculture uses as much as 70 percent of available fresh water, **improving agricultural water efficiency is a key to boosting food production and improving food security for farmers most at risk**, particularly in Africa, where more than 50 percent of the people are subsistence farmers.³

Drought tolerance is considered one of the most important targets of crop improvement programs, such as CGIAR 2004, a project run by the Consultative Group on International Agricultural Research. Both the United Nations Food and Agriculture Organization and the InterAcademy Council have identified biotechnology as a key tool to achieving global drought tolerance goals.^{2,4}

Monsanto's investment in the development of drought-tolerant corn, soybean, and cotton is a major focus of its commercial pipeline. Although it is still early in the research process, there have been promising results. Monsanto now has two years of field trial data demonstrating phenotypic and yield benefits in corn. Drought-tolerant corn will generate significant benefits and income for growers, including smallholders in many developing countries who have the choice to buy Monsanto products. However, many smallholder farmers are too far away from functioning markets and distribution systems to have access to any commercial products.

Although this year marks a decade of biotechnology use in many developed countries, most countries in sub-Saharan Africa do not even have systems for conducting field trials or granting regulatory approvals. Unless these countries begin now to establish regulatory and seed delivery systems, it is likely that their farmers will fall a full decade behind the developed countries in benefiting from biotechnology.

A NEW PARADIGM EMERGES: PARALLEL DEVELOPMENT

Given its Pledge commitment to sharing and the significant potential of this technology, **Monsanto and its Biotechnology Advisory Council (BAC) recognize the importance of providing humanitarian access to growers who could not otherwise benefit from drought tolerance technology, and to do so in a similar timeframe as commercial efforts. The BAC's recommendations were clear: Be bold, share, and begin early.**

Water availability projections indicate that there is no time to lose. Monsanto envisions a new paradigm for increasing the impact of biotechnology on hunger and poverty: parallel, not sequential development and access to new technologies for commercial and subsistence growers in developing countries. By working in partnership with governments, donor organizations, academics, policy experts, research institutions, other companies, and local farmers, Monsanto intends to help create a path for successful humanitarian access to this technology for those subsistence farmers who have the most to lose — and the most to gain. ■



Drought-tolerant crops, on the right, are showing increased yields in early U.S. field trials.

A decade of contributions...

8

Monsanto and farmers around the world are observing an important milestone in 2005. It is plant biotechnology's 10th year of significant use. This is especially important for Monsanto. During the 1980s and 1990s, the people of Monsanto were instrumental in the introduction of several of the first biotech crop products — products that are now being used by millions of people worldwide to provide important environmental and social benefits.

Since the first significant field plantings in 1996, biotech crops have been adopted at a faster pace than any previous agricultural innovation in history. According to the International Service for the Acquisition of Agri-Biotech Applications (ISAAA), a not-for-profit organization with the mission of bringing benefits of new agricultural biotechnologies to the poor in developing countries, from the first crop season in 1996 through 2004, the number of biotech acres rose from 4.25 million to over 200 million, a 47-fold increase.⁵

Biotech crops have been adopted at a faster pace than any previous agricultural innovation in history.

Double-digit growth in biotech crop plantings globally has been achieved for nine consecutive years since 1996, with growth averaging 15 percent annually for the past five years. Importantly for social development, much of this growth has occurred in developing countries. Resource-poor farmers now account for 90 percent of all farmers using biotech crops.⁵

Farmers around the world say the same things when asked about why they are adopting biotech crops. They say that the technology helps them to improve crop yields through improved pest control, to reduce environmental impacts through lower pesticide usage, to reduce labor (especially important for resource-poor farmers), and to increase profits significantly.⁶

The past decade has affirmed both the safety and consumer benefit of biotech crops. Hundreds of studies around the world have proved again and again the environmental and human health safety of biotech crops. As part of a program initiated by the AgBioWorld Foundation, 25 Nobel Prize winners and 3,400 scientists have signed a public letter supporting biotech methods as a “powerful and safe” way to improve agriculture and the environment.⁷

Important Milestones

IN THE DEVELOPMENT OF BIOTECH CROPS

» 1983

Monsanto scientists create the first transgenic plant — genetically modified petunias.



» 1987



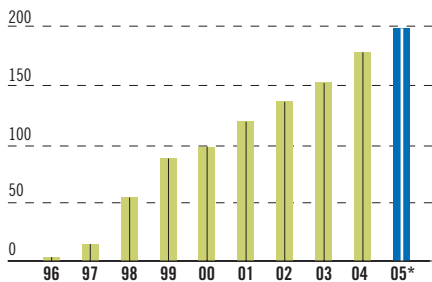
Monsanto scientists conduct the first field trial of genetically modified crops in the United States.

» 1990

Since the first U.S. field trials three years earlier, more than a dozen plants have been genetically modified and field-tested.

GLOBAL MONSANTO PLANTED BIOTECH ACRES

(in millions)



*Denotes YTD June 29, 2005

Source: Monsanto Company <http://www.monsanto.com/monsanto/content/investor/financial/reports/2005/Q32005Acreage.pdf>

Consumers around the world are living proof of the safety of biotech crops. In the 2003-2004 crop year, they purchased more than \$28 billion of biotech crops from U.S. farmers.⁸

Over the past decade of biotech adoption, agriculture has had a significant increase in productivity, with only a small increase in the amount of new land brought under cultivation. Food and feed crop yields have increased 21 percent since 1995, while cropland increased only 2 percent. Without the yield gains, this harvest would have required 400 million more acres of land to be brought under cultivation, an area equal to one-quarter of the Amazon rain forest.⁹

The next decade promises to be equally significant. A recent study shows that biotech research is being done on 57 crops in 63 countries. Half of these are developing countries.¹⁰ ■

BIOTECH AROUND THE WORLD » India



Until a few years ago, life was economically difficult for **KESHAVRAO BHAVRAO PAWAR**, who grows cotton in Patri, a farming region in

Maharashtra, India, with his wife, son, and four daughters. "Our family has farmed here for the last 50 years, but we were living a very poor life. There was no satisfaction in farming. We were living with loans on our heads."

According to Pawar, the problem was cotton bollworms. "These worms would eat the crop. Nothing remained. No matter how much we sprayed, nothing remained."

When genetically modified cotton designed to resist insects was introduced to India, Pawar says his family's fortunes began to change. "With the new biotech cotton, worms are not visible at all. There are no insects, there are no other worms and because of this there's more yield." Pawar also uses significantly less insecticide now, improving his family's health. "We would have to spray these insecticides again and again. Such dirty smell would come," he says. "Now we feel better."

The economic and physical wellbeing of the Pawar family has improved dramatically. "With the money that has come from better yield, I first got one daughter married, and next I built a new house," Pawar jokes, but he is also serious about the family's future: "If we keep making profits, I can make my son a doctor; I can also make my daughter a doctor. If the yield is good, we can do anything." ■

» 1995

Monsanto soybeans modified to be resistant to glyphosate herbicide complete the U.S. regulatory process.

Monsanto insect-protected cotton completes the U.S. regulatory process.

» 1996

Monsanto insect-protected corn completes the U.S. regulatory process.



» 1997

Monsanto corn modified to be resistant to glyphosate herbicide completes the U.S. regulatory process.

» 1998

First publicly developed biotech crop — virus-resistant papaya produced at Cornell University — completes the regulatory process and is introduced in Hawaii.

BIOTECH AROUND THE WORLD » Philippines



In the Philippines, the Due family has worked a small two-hectare farm for the past 14 years. **JERRY DUE**, 36, his wife, Gela, and their 3-year-old son live on the property, which was purchased by Due's father. The family grows corn as a cash crop on the land, earning a modest income.

A few years ago, however, an Asian corn borer infestation caused significant damage, wiping out almost 80 percent of the corn yield. This caused severe economic hardship for the family and many of their neighbors, who depend heavily on income from corn crops to provide for their livelihood. In addition, the only control options against corn borer available at the time were several toxic, marginally effective, and expensive insecticide sprays, which further narrowed the already thin profit margin for the operation.

The problem was made worse for Jerry Due when both his mother and father became ill and needed hospitalization and expensive treatments. Unfortunately, Due was unable to afford the expensive dialysis treatments they needed; both of his parents died.

Things began to turn around financially two years ago, when Due began using a hybrid corn variety that was genetically modified to be resistant to the Asian corn borer. Since then, his yields have increased, as has his income. Due says the Asian corn borer has been nearly eliminated.

"We no longer use pesticides," he says, "and we have more time to attend to other work, and at times visit our friends in their houses. We even do some recreation, like watching movies in town, and we sometimes go shopping."

Being able to control the Asian corn borer has completely changed Due's economic situation.

He is now optimistic about the future and says he has reason to dream for his son's future. "Jeremy is just 3 years old now," Due explains, "so by the time he reaches 7, perhaps I could put some money in the bank. And by the time he goes to school, he will have enough money to stay in the school." ■



» 1999

Four Monsanto scientists receive U.S. National Medal of Technology Award for their work in plant biotechnology.



» 2000

Golden rice, a crop that may help prevent childhood blindness in developing countries, is created, though field development continues.

An important and first-of-its-kind biotech crop, a virus-resistant sweet potato, is field-tested in Kenya.

» 2001

Researchers finalize the first complete genome map of a food plant, rice, well ahead of schedule thanks in large part to Monsanto's public release of its research data.



Researchers at the University of California in Davis transform tomato plants to create the first experimental crop able to grow in salty water and soil.

BIOTECH AROUND THE WORLD » Canada



The Red River Valley in Manitoba, Canada, is a fertile flood plain that presents daunting challenges for farming: adverse weather and frequent flooding. These challenges and the struggle to remain profitable are daily considerations for **ART ENNS**, who has farmed in the valley for 30 years with his brother and their two families. They plant 3,000 acres of canola and soybeans each year.

The Enns partners share a love of farming and the land. Farming “gives you the independence of being stewards of the land,” says Enns. “Not only taking out of the land, but providing so the next generations will have a future in farming.”

Enns has used herbicide-resistant biotech crops to help deal with the challenges the Red River Valley poses for eight years. “Because of excessive rains and flooding, our crops were under pressure from all kinds of different weeds,” he says. “Controlling them with conventional methods was very difficult....We were actually at times mixing two, three chemicals together and having to go back three, four times to try to get control of the weeds.”

With biotech crops, Enns says he has reduced chemical spraying to just one pass, which results in more profitability and better environmental stewardship.

“Yes, it does save us some money, but it also means less application of chemicals, less chance of any contamination or runoff that may pollute,” he says. ■



The Decade Ahead

The next 10 years for biotech crops are rich with potential products for consumers, farmers, and the environment.

Worldwide, areas of industry research include enhanced nutrition, convenience, and taste:

- Lycopene-enhanced tomatoes for heart and cancer protection benefits.
- Vitamin E – enhanced cooking oils for improved immune systems as well as heart and cancer protection.
- Resveratrol-enhanced lettuce to lower bad cholesterol and raise good cholesterol.
- Drought-resistant corn, soybeans, and wheat as well as other crops.
- Citrus canker – resistant oranges in Florida.
- Disease-resistant bananas in Africa.
- Saline-tolerant crops that can grow in salty soils.
- Crops modified specifically to enhance yields.

Research at Monsanto focuses on yield improvement, stress tolerance, pest resistance, food improvement, animal feed improvements, and improved processing traits:

- Soybeans with increased vigor and output through improving photosynthesis capacity.
- A class of genes for various crops to help manage drought and to increase yield.
- Omega-3 oils for cardiovascular benefits.
- Corn with greater levels of lysine and soybeans with higher levels of tryptophan for high-efficiency animal feed products. ■

» 2002

The National Center for Food and Agricultural Policy finds that six biotech crops — soybeans, corn, cotton, papaya, squash, and canola — produced 4 billion more pounds of food and fiber than traditional crops on the same acreage.¹¹

» 2003

A new Monsanto corn designed to control both the corn borer and corn rootworm pests is the first stacked-traits product to complete the U.S. regulatory process.

» 2004

Despite continuing member-state moratoria, the European Union completes the regulatory process and approves two varieties of genetically enhanced corn for food and feed use.

» 2005

Farmers mark the 10th year of commercial-scale planting and the billionth acre of biotech crops since their introduction. ■



Study Confirms Nine Years of Benefits from Biotech Crops

The year 2005 marks the 10th planting season since biotech crops were first grown. Graham Brookes and Peter Barfoot from PG Economics Ltd. in the United Kingdom conducted a study evaluating the cumulative global economic and environmental impacts of biotech crops from 1996 — the first year of biotech commercialization — through 2004.¹² The authors report that farmers who planted biotech crops used significantly less pesticides and realized significant economic gains compared to conventional systems. Consequently, farmers have been able to improve productivity and economic returns as they use more environmentally sustainable farming methods.

KEY FINDINGS FROM THE STUDY: After just nine years of commercialization, biotech crops had significant, positive impacts on the global environment. Biotech crops have resulted in 172 million kg (379 million pounds) less pesticide use since 1996, a 6 percent reduction.⁶ (See Table 2 for reductions in herbicide and insecticide application.)

Since 1996, biotech crops have resulted in pesticide use reduction of **379 million pounds.**



TABLE 1 » GLOBAL FARM INCOME BENEFITS FROM GROWING BIOTECH CROPS FROM 1996-2004

Biotech Trait	Increase in Farm Income in 2004 (Million US \$)	Increase in Farm Income, 1996-2004 (Million US \$)	Farm Income Benefit in 2004 as a Percentage of Total Value of Production of These Crops in Biotech Adopting Countries	Farm Income Benefit in 2004 as a Percentage of Total Value of Global Production of These Crops
HT soybeans	2,440 (4,141)	9,300 (17,351)	5.6 (9.5)	4.0 (6.7)
HT maize	152	579	0.6	Less than 0.5
HT cotton	145	750	1.4	0.53
HT canola	135	713	8.3	1.34
IP maize	415	1,932	1.4	0.8
IP cotton	1,472	5,726	10.5	5.3
Others	20	37	—	—
TOTAL	4,779 (6,480)	19,037 (27,088)	5.3 (7.2)	3.1 (4.2)

Source: Brookes and Barfoot, 2005

Note: HT = herbicide tolerant; IP = insect protected; Figures in parentheses include second crop benefits in Argentina; Others = virus-resistant papaya and squash, and rootworm-resistant maize

The environmental footprint of cotton, corn, soy, and canola has been reduced by 14 percent due to the planting of biotech crops. Environmental footprint was calculated using an environmental index quotient (EIQ) — an indicator introduced by academic scientists in 1992 and updated annually. It draws on key toxicity and environmental exposure data related to individual products and allows for comparison among individual pesticides. In this study, the authors use the EIQ indicator as a tool to make comparisons between conventional and biotech crop-production systems.

Biotech crops made a significant contribution to reducing greenhouse gas emissions from agricultural practices by more than 10 billion kg (22 billion pounds) of carbon dioxide in 2004 alone. Biotech crops have resulted in reduced pesticide use and reduced plowing.

This has reduced fuel usage and resulted in a reduction of more than one billion kilograms of carbon dioxide emission. Biotech crops have facilitated the use of reduced-tillage and no-tillage farming systems, resulting in more plant residue being stored or sequestered in the soil. This carbon sequestration saved the equivalent of more than nine billion kilograms of carbon dioxide emission.

In addition to environmental gains, farmers who planted biotech crops achieved substantial net economic benefits. In 2004, the report states that farm income increased by \$6.5 billion from the use of biotech crops, and the cumulative increase in farm income from biotech crops since 1996 exceeded \$27 billion from a combination of higher productivity and reduced costs. (See Table 1 for farm income benefits.)

The study looked at insect-protected crops — which it pointed out can save time, reduce the labor needed for applying insecticides, and decrease the energy use associated with aerial spraying. In addition, the use of insect-protected crops can positively affect farmer safety. Reduced pesticide handling means reduced potential exposure.⁶

Herbicide-tolerant crops were also examined and found to provide increased management flexibility because of their ease of use and improved weed control, contributing to lower harvesting costs and higher-quality harvest due to cleaner crops. The adoption of reduced-tillage and no-tillage farming practices has also increased because of the adoption of biotech herbicide-tolerant crops. Biotech herbicide tolerance technology has improved the growers' ability to control weeds, reducing the need for weed control by soil cultivation. These farming systems reduce the tractor fuel used for tillage, enhance soil quality, and help prevent soil erosion. Thus, more carbon remains in the soil, leading to lower greenhouse gas emissions.


The authors conclude that there have been significant economic and environmental effects of biotech crops from 1996 to 2004. Globally, there have been direct farm income benefits from the adoption of biotech soybean, cotton, maize, and canola since 1996. Brookes and Barfoot also affirm that the size of the farm has not been a factor affecting the adoption and use of the technology. In addition to the measurable effects on farm productivity, these biotech products will continue to benefit growers and consumers worldwide. ■

TABLE 2 > IMPACTS OF BIOTECH CROPS ON INSECTICIDE/HERBICIDE APPLICATION


Biotech Crop	Percentage Reduction in Active Ingredient Use in Countries Growing Biotech Crops
1997-2004	
HT maize	2.5%
HT cotton	14.5%
1996-2004	
HT soybeans	3.8%
HT canola	9.7%
IP maize	3.7%
IP cotton	14.7%

Source: Brookes and Barfoot, 2005

Note: HT = herbicide tolerant; IP = insect protected



A focus on environmental, economic,



Monsanto Company activities and the use of its products positively affect agricultural sustainability. These impacts can be placed into the following categories:

A Nebraska soybean farm after harvest.

A person is silhouetted against a vibrant sunset sky, standing in a field. In the foreground, there is a long, low structure that appears to be part of an irrigation system, possibly a pivot or center pivot system, with several support legs. The background shows a line of trees and a hazy horizon. The overall scene is bathed in the warm, orange and yellow light of the setting sun.

and societal impacts

16 Environmental Impacts

Environmental effects range from the eco-efficiency of manufacturing operations to the impact of products on agricultural sustainability in such areas as yield optimization, resource conservation, and soil fertility.

20 Economic Impacts

Biotech crops affect the profitability and well-being of both large-scale and smallholder farmers.

22 Societal Impacts

Monsanto people work to create safe and healthy work environments, and to improve the well-being of others through community involvement. Monsanto people also engage in ongoing public discussions related to agricultural biotechnology issues.

Eco-Efficiency Data 2004

The eco-efficiency reporting method used here was developed in cooperation with the World Business Council for Sustainable Development. The system permits year-to-year comparison of new data to baseline data from calendar year 1990. Product data (for example, energy use and material consumption) are recorded by total amounts and by environmental influence per unit of output. For purposes of comparison with prior years, a constant product mix based on Monsanto's technical-grade chemical production as of calendar year 2004 is used. That adjusts previous-year data so that changes in product mixes do not influence the comparability of the year-to-year eco-efficiency indicators. Ozone-depleting substances (ODS) are not graphed, because the total is too small to be statistically significant. ■

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		Energy (gigajoules) / Tech Products (metric tons)	
ENERGY CONSUMPTION (environmental influence in gigajoules / output in metric tons)	2004	17,600,000 / 420,000	42
	2003	16,600,000 / 349,000	48
	1990	15,000,000 / 173,000	87
		More Efficient	Less Efficient

		GHG (metric tons CO ₂ eq) / Tech Products (metric tons)	
DIRECT GREENHOUSE GAS EMISSIONS (environmental influence in metric tons / output in metric tons)	2004	1,290,000 / 420,000	3.1
	2003	1,256,000 / 349,000	3.6
	1990	819,000 / 173,000	4.7
		More Efficient	Less Efficient

Environmental impacts...

		GHG (metric tons CO ₂ eq) / Tech Products (metric tons)	
INDIRECT GREENHOUSE GAS EMISSIONS (environmental influence in metric tons / output in metric tons)	2004	574,000 / 420,000	1.37
	2003	566,000 / 349,000	1.62
	1990	419,000 / 173,000	2.42
		More Efficient	Less Efficient

		COD (metric tons O ₂ eq) / Tech Products (metric tons)	
CHEMICAL OXYGEN DEMAND (COD) (environmental influence in metric tons to surface water / output in metric tons)	2004	3,154 / 420,000	0.0075
	2003	3,088 / 349,000	0.0088
	1990	1,960 / 173,000	0.0113
		More Efficient	Less Efficient

WASTE OFFSITE

(environmental influence in metric tons / output in metric tons)

	Waste (metric tons) / Tech Products (metric tons)	
2004	10,700 / 420,000	0.025
2003	11,300 / 349,000	0.032
1990	14,800 / 173,000	0.086
	More Efficient	Less Efficient

WATER CONSUMPTION

(output in metric tons / environmental influence in cubic meters)

	Water (cubic meters) / Tech Products (metric tons)	
2004	15,900,000 / 420,000	38
2003	16,200,000 / 349,000	46
1990	13,300,000 / 173,000	77
	More Efficient	Less Efficient

EUTROPHICATION

(environmental influence in metric tons to surface water / output in metric tons)

	Phosphates (metric tons PO ₄ eq) / Tech Products (metric tons)	
2004	3,564 / 420,000	0.0085
2003	3,281 / 349,000	0.0094
1990	1,520 / 173,000	0.0088
	More Efficient	Less Efficient

ACIDIFICATION EMISSIONS

(environmental influence in metric tons / output in metric tons)

	Emissions (metric tons SO ₂ eq) / Tech Products (metric tons)	
2004	14,740 / 420,000	0.035
2003	14,190 / 349,000	0.041
1990	14,320 / 173,000	0.083
	More Efficient	Less Efficient

PHOTOCHEMICAL OXIDANT CREATION

(environmental influence in metric tons / output in metric tons)

	VOCs (metric tons) / Tech Products (metric tons)	
2004	116 / 420,000	0.00028
2003	116 / 349,000	0.00033
1990	108 / 173,000	0.00063
	More Efficient	Less Efficient

MATERIAL CONSUMPTION

(environmental influence in metric tons / output in metric tons)

	Materials (metric tons) / Tech Products (metric tons)	
2004	2,604,000 / 420,000	6.2
2003	2,304,000 / 349,000	6.6
1990	1,351,000 / 173,000	7.8
	More Efficient	Less Efficient

2004 Organizational Profile

TYPE OF BUSINESS »

Agricultural Solutions

NUMBER OF EMPLOYEES » 12,600*

*Does not include 2005 acquisitions

SCOPE OF DATA »

Monsanto major agricultural chemical production; P₄ production; world headquarters' research, development, and administration locations

2004 Value Profile

Amounts in the category labeled net sales and earnings before interest and taxes (EBIT) are based on fiscal year 2004, which ended on Aug. 31, 2004. The financial data include businesses not included in the eco-efficiency profile. The data exclude special items enumerated in the Monsanto 2004 financial annual report.

TECHNICAL PRODUCT OUTPUT »

420,000 metric tons

NET SALES » \$5.5 billion

EBIT » \$469 million

Global Environmental Impacts of Herbicide-Tolerant Crops

During the nine-year period 1996 through 2004, herbicide tolerance was the dominant biotech trait in terms of global acreage. In 2004, herbicide-tolerant soybean, maize, canola, and cotton crops occupied 72 percent of the 81.0 million hectares (200 million acres) of biotech crops grown worldwide.⁵ The consistent rise in global acreage is evidence of the benefits of herbicide-tolerant crops, including positive environmental impacts.⁶

Researchers from the University of Guelph in Ontario studied the effect of adoption of herbicide-tolerant canola varieties on

herbicide use.

Herbicide-tolerant canola was introduced in Canada in 1996. From 1995 to 2000, the amount of herbicide active ingredient applied per hectare of canola declined by 42.8 percent.¹³ More herbicide active ingredient was applied to conventional canola per hectare than to herbicide-tolerant canola. The authors concluded that herbicide-tolerant canola allows growers to use less herbicide.¹³

Another team found that since its introduction in 2000, *Roundup Ready* cotton has had positive environmental benefits in Australia. They reported that it facilitated the use of reduced tillage practices and allowed growers to reduce their residual herbicide applications.¹⁴



Canola

GLOBAL IMPACTS OF ROUNDUP READY CROPS

- » REDUCED NUMBER OF HERBICIDE APPLICATIONS
- » COMPATIBILITY WITH REDUCED-TILLAGE SYSTEMS
- » REDUCED LABOR AND PRODUCTION COSTS



Sugar Beet

TABLE 1 » POTENTIAL ENVIRONMENTAL IMPACTS OF HERBICIDE-TOLERANT SUGAR BEET PRODUCTION

ENVIRONMENTAL PARAMETER	PERCENTAGE REDUCTION
Fossil Fuel Consumption	> 50%
Global Warming Potential kg carbon dioxide (CO ₂) equivalents	> 20%
Ozone Depletion kg chlorofluorocarbon (CFC) equivalents	> 50%
Ecotoxicity kg chromium (Cr) equivalents in water	> 85%
Acidification kg sulphur dioxide (SO ₂) equivalents	> 7%
Nutrication of Soil and Water kg phosphate (PO ₄) equivalents	> 16%
Summer Smog kg nitrous oxide NO _x	> 12%
Toxic Particulate Matter particulate matter — particles of 10mm or less in size — (PM10)	> 13%
Carcinogenic Emissions Reduced kg polycyclic aromatic hydrocarbons — (PAH)	> 49%

Source: Bennett et al., 2004

The National Center for Food and Agricultural Policy (NCFAP) recently released an updated study on the effects of biotech crops planted in 2003 on United States agriculture. In this study, herbicide-tolerant crops were associated with the greatest cost savings and net returns, and the largest reductions in pesticide use. The greatest economic

benefits of herbicide-tolerant crops are seen in soybeans, which are associated with reduced weed management costs of \$1.2 billion. The four herbicide-tolerant crops planted in 2003 (soybeans, canola, cotton, and corn) contributed to reductions in total herbicide use of about 39 million pounds (active ingredient).¹¹

Biotech Crops and Fuel

IMPROVED ON-FARM ECONOMICS

As supplies of oil dwindle and fuel prices rise, growers increasingly turn to biotech crops to help them improve their on-farm economic situations. As seeds with unique properties, biotech crops are important enablers of systems that both reduce the need for fuel and help produce more fuel in the form of ethanol.

LESS FUEL NEEDED FOR TILLAGE AND IRRIGATION PUMPS Herbicide-resistant biotech crops, such as *Roundup Ready* varieties, help farmers replace several tillage operations and control weeds with broadcast applications of glyphosate herbicide.⁶ These reduced-tillage farming techniques have been shown to improve profits. The Extension Office at Iowa State University has determined that to disk-chisel plow a crop requires 1.3 gallons of diesel fuel an acre for each tillage pass.¹⁶ Monsanto estimates that farmers switching to conservation tillage can save an average of 3.5 gallons of fuel an acre. With the cost of diesel fuel at more than \$2 a gallon, \$7,000 could be saved on every 1,000 acres farmed.^{17,18}

A University of Reading study compared three conventional sugar beet production systems — two in the United Kingdom and one in Germany — to production systems proposed for herbicide-tolerant sugar beets in those areas. Preliminary results suggest that herbicide-tolerant sugar beet production in the European Union (EU) may have positive environmental effects compared to conventional systems. The authors noted that herbicide-tolerant sugar beets typically require fewer spray applications, less herbicide, and no mechanical weeding.¹⁵

Some key findings from the study are presented in Table 1.

Scientific results from diverse global areas on a variety of herbicide-tolerant crops continue to indicate that such crops can positively affect the environment. ■



Reduced tillage also leaves residue from the previous crop. That, in turn, reduces water evaporation, which results in as much as two additional inches of water available for growing plants in late summer. Less irrigation means that less fuel is needed to run irrigation pumps.

Varieties of biotech crops selected through genomics and field testing are also helping to overcome some traditional reduced-tillage hurdles faced by farmers. *Residue Proven* soybeans, corn, and sorghum provide higher yields and good performance in reduced-tillage situations where residue remains on the field, soils are cooler, and the likelihood of plant disease is higher.

MONSANTO CROPS CONTRIBUTE TO EMERGING ETHANOL INDUSTRY Varieties of Monsanto corn hybrids specifically selected for use in making ethanol are contributing to on-farm profits. These *Processor Preferred* High-Fermentable Corn varieties are enabling farmers to get premium prices for their grain by selling it to processing mills that prefer the high-fermentable corn. ■

Impacts of Biotechnology for Large and Small Farms

The positive socioeconomic, agronomic, and environmental impacts of growing biotech crops apply to both large- and small-scale farmers worldwide. Notably, from 1996 through 2004, although a substantial share of biotech crops (66 percent) was grown in industrial countries, the proportion of biotech crops grown in developing countries has increased consistently.

TABLE 1 » GLOBAL AREA OF BIOTECH CROPS

■ INDUSTRIAL COUNTRIES ■ DEVELOPING COUNTRIES

(in millions of hectares)

2003	70%	30%	67.7
2004	66%	34%	81.0

Source: James, C., 2004

According to a recent report from the International Service for the Acquisition of Agri-biotech Applications (ISAAA), in 2004, more than one-third of the global biotech crop area of 81.0 million hectares (200 million acres), about 27.6 million hectares, was in developing countries (Table 1).⁵

A study assessing the impacts of growing insect-protected genetically modified (GM) rice versus non-GM rice for smallholder farmers in China

Economic impacts...

Seed Production Reliability and Volume Growth in Romania



The Romanian seed production team has become a

significant part of the Monsanto seed sales organization. It has grown into a quality supplier of seeds. Over the past five years, the team increased seed production volume and reliability. At the same time, it kept production costs under control by influencing fieldworker training and grower and tiller selection in an environment of minimal capital expenditures. As a result, Monsanto seed production in Romania is expected to increase the Monsanto customer

corn production area from 2,000 hectares in 2005 to 7,800 in 2009.

The team also encouraged tillers to improve environmental, safety, and health practices by updating facilities; trained growers in current agricultural methods; provided financing for the purchase of field equipment; trained growers to use herbicides, insecticides, and irrigation safely and effectively; and introduced personal protective equipment for workers.

This project demonstrates the efficacy of the “acting as owners to achieve results” element of the Monsanto Pledge. The team took several initiatives that achieve ongoing results for Monsanto through greater output and quality. The team also shared agricultural practices with growers and seed

conditioners, providing benefits to both types of organizations. The project also shows respect through the team’s effort to protect the environment and to promote worker safety. ■



New equipment and worker training has improved production reliability and worker safety in Romania.

TABLE 2 » IMPACT OF BIOTECH IN THE UNITED STATES

YIELDS INCREASED	5.3 billion pounds
INCREASED NET RETURNS	\$1.9 billion
PESTICIDE REDUCTION	46 million pounds (active ingredient)

Source: Sankula and Blumenthal, 2004

concluded that for these growers, the insect-protected varieties yielded 6 percent to 9 percent more than the conventional varieties, with an 80 percent reduction in pesticide use.¹⁹

In the first peer-reviewed study to evaluate the impact of *Bacillus thuringiensis* (Bt) cotton grown commercially in India, researchers concluded that since its commercial release in 2002, Bt cotton use has had a significant positive yield and economic

impact for cotton growers in Maharashtra.²⁰ Their results are consistent with results from surveys conducted across all six states where *Bollgard* cotton has been planted.

In a recent update of a report released in 2002, the National Center for Food and Agricultural Policy (NCFAP) examined the impacts of biotech crops grown by U.S. farmers.²¹ In 2003, U.S. growers increased yields by 5.3 billion pounds, increased net returns by \$1.9 billion, and eliminated more than 46 million pounds of pesticide active ingredient by planting 106 million acres of biotech crops¹¹ (Table 2).

These studies demonstrate how biotechnology can significantly impact both large- and small-scale growers in diverse global areas. ■

Seed Quality as an Economic Factor

Growers purchase Monsanto seed products because they deliver value. Monsanto's quality management programs assure that growers receive high-quality seed, which results in expected field emergence, performance, and purity levels.

"Growers count on high-quality products from Monsanto that perform well and are reliable from the point of crop introduction, and then year after year," said Barry Martin, Monsanto Seed Manufacturing, Seed Technology lead. The company has established internal quality processes and metrics to continue to set high standards for the seed industry.

In addition to standard germination tests, Monsanto conducts vigor

tests to assure field performance in suboptimal conditions. Proprietary tests predict how well seeds will germinate in challenging conditions and during shipping and storage.

Another measure of seed quality is germplasm purity. For hybrid corn, visual purity exceeding 99 percent and genetic purity of 95 percent is generally expected. Monsanto's internal quality assurance standards generally exceed those of the industry. Monsanto also incorporates field management systems to control weed seed presence and eliminate seed mixtures. Monsanto has developed and implemented proprietary single nucleotide polymorphism technology to measure these attributes in seed products.

Monsanto must demonstrate a high level of performance for

each seed variety. Only seed products that meet or exceed its high quality standards are made available for sale. Monsanto is the only company with all of its global seed manufacturing locations — some 90 sites around the world — certified under the ISO 9001 registration system.

"Monsanto has recently implemented a Global Stewardship program to address other purity issues that result from selling a complex product offering, including biotech traits, with varying seed and feed approvals worldwide," said Glenn Austin, Monsanto Global Stewardship lead.

"Ultimately, the quality processes and communication about trait stewardship and marketability Monsanto uses give growers and the marketplace assurance about our products," said Austin. ■

Societal impacts...

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Monsanto's societal goals are to provide safe products that enhance the social and economic well-being of people around the world, and to create safe and healthy work environments for Monsanto people.

Monsanto is also committed to help employees in their individual volunteer efforts to improve the well-being of others, to support local communities where company facilities are located, and to maintain transparency and dialogue with the company's stakeholders.

In part, the company achieves these goals through the Monsanto Fund, community advisory panels, and volunteer efforts by Monsanto employees who, with the assistance of Monsanto resources, contribute their time and energy to help others.

THE MONSANTO FUND As the philanthropic organization established by Monsanto, the Fund provides help for people in locations where Monsanto operates. The Fund also supports individual employee efforts by providing matching gifts. The Fund strives to provide gifts in an equitable, transparent manner, emphasizing diversity and inclusion of all people. More information on the Fund can be found on page 46 of this report.

COMMUNITY ADVISORY PANELS

Monsanto began to establish community advisory panels (CAP) more than a decade ago. The purpose of the panels is to help communities get to know the people at company sites, and to help Monsanto people learn more about the issues, needs, and concerns of people living near their facilities.

CAP members are links between Monsanto and the general community. They provide input about their community to Monsanto, and share their insights about Monsanto operations with the community. CAPs reach out to people from diverse backgrounds, including schoolteachers, students, ministers, homemakers, and others.

Questions about operational safety, effects the plant may have on the health of people in the community, and environmental impacts are discussed during meetings. In addition to the extensive dialogue that all Monsanto sites conduct with the communities in which they are located, there are six Monsanto facilities around the world that have formal community advisory panels. Currently, Monsanto works with CAPs at facilities in Antwerp, Belgium; Augusta, Georgia; Camaçari, Brazil; Luling, Louisiana; Muscatine, Iowa; São José dos Campos, Brazil; and Zárate, Argentina.



VOLUNTEERING TO HELP OTHERS

An extensive volunteer program supported by Monsanto helps employees assist people in their communities. Some examples of employee activities in the United States that help others include:

- **Monsanto Riding Mavericks** More than 100 Monsanto employees and friends ride bicycles in a 150-mile annual event with a \$75,000 goal for multiple sclerosis research.
- **Annual Walk To Cure Diabetes** Monsanto employees and their families and friends walk every year to raise money for the Juvenile Diabetes Research Fund.
- **Block-Aid 2004** This annual event enlists hundreds of Monsanto volunteers to make home repairs, clean up streets and alleys, and landscape yards in a selected community.
- **United Way Giving** Together, Monsanto employees and retirees, Monsanto Company, and the Monsanto Fund gave \$2 million to the United Way 2005 campaign.
- **Women of Corporate Services** Monsanto Corporate Services women mentor middle-school girls from diverse backgrounds who might benefit from relationships with professional women.
- **Komen Race for the Cure** Each year, Monsanto volunteers support the Susan G. Komen Breast Cancer Foundation, a leader in the fight against breast cancer. ■



TOP » In South Africa, Monsanto employees raised funds, advertised, and helped collect and hang 40,000 items of clothing to create the longest clothesline in the world (32 km). The clothes were donated to organizations in the local communities.

BOTTOM » In Brazil, Monsanto communications analyst Christiane Bracco helps bring smiles to orphaned children in São Paulo by presenting them with gifts from Monsanto employees before a trip to the theatre.

Zárate Plant Community Relations Programs



Through dialogue with the community, the Monsanto plant in Zárate, Argentina, has integrated its social responsibility program into a centralized plan that is helping to improve the well-being of people in the community. The centralized plan divides the social responsibility programs undertaken by the plant into four categories: educational, environmental, industry, and community.

The complete program has benefited more than 6,300 students between 7 and 19 years old, 1,500 customers, 63 governmental and nongovernmental organizations, and 500 community representatives. The programs do not require large investments of money. That is critical to ensuring their sustainability and allowing the community eventually to become the owner of these programs.

The integral plan also has an incentive component for plant personnel. It focuses on education, safety, hygiene, and the environment. All employees support the program in different but equitable ways, such as acting as hosts for tour visits or donating time to community projects.

Community outreach in this project demonstrates the dialogue and respect elements of the Monsanto Pledge. Through the social responsibility programs the community attains many benefits. The project has created significant value for the communities of Zárate and Campaña, including better-educated children, greater awareness of safety, and greater environmental responsibility. It has created value for Monsanto by demonstrating that the company is a good neighbor and by helping to ensure the company's privilege to operate. The Zárate plant has built a solid relationship of open dialogue with community stakeholders through its social responsibility programs. ■



LEFT » Zárate laboratory shift technician Francisco Terrussi explains how to prevent accidents to third-grade children at a rural school near Zárate, Argentina.

RIGHT » Zárate invoice control assistant Susana Corvalan speaks with third- and fourth-grade children in Zárate, Argentina.

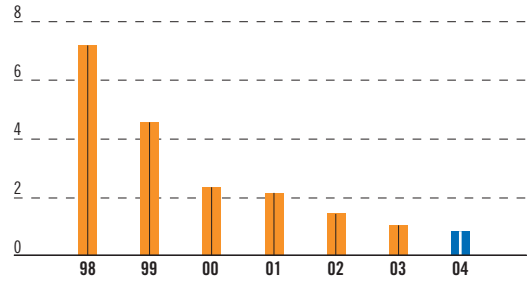
Protecting the Welfare of Seasonal Workers

Respect is one of the values of the Monsanto Pledge. Respect for Monsanto's workers extends to those people who work on a temporary or seasonal basis. Monsanto employs as many as 40,000 temporary workers at seed locations around the world. Temporary work often includes detasseling and, in many areas, harvesting and sorting corn after it is received into the plant. At a minimum, the company is committed to providing these temporary workers with a safe workplace, as it does for its full-time employees.

Agriculture has traditionally been one of the world's most dangerous occupations with, on average, 21 fatalities per 100,000 workers per year. Monsanto purchased a number of seed businesses in the mid-1990s and then undertook the task of bringing those sites up to Monsanto's high safety standards.

TABLE 1 » SEED EMPLOYEE ACCIDENT RATE

(number of employee accidents per 200,000 employee hours worked)



Source: Monsanto Company

An audit of the newly acquired seed sites showed high injury rates, inconsistent standards, and a history of fatalities. Monsanto's goal was to build an environmental, safety, and health model with line ownership for safety.

Seed sites represent a unique challenge because of the employee language differences and lower retention, environmental factors such as heat and humidity, and the demanding nature of the work. Each of these challenges was addressed. The seed sites undertook the goal of achieving the U.S. Occupational Safety and Health Administration's Voluntary Protection Program Star status or its equivalent for all 56 locations. Today 39 Monsanto seed manufacturing sites globally have earned this important designation. They are the only facilities in the seed industry with that achievement.



At many locations around the world, seasonal workers are provided with housing like this house in Uberaba, Minas Gerais, Brazil.

STATISTICS TELL THE STORY In 1998, the seed employees had an accident rate of 7.1 per 200,000 employee hours worked. By 2004, the number had come down to 0.8 per 200,000 hours. In addition, workers' compensation costs have been reduced dramatically.

Beyond worksite safety for its people, Monsanto helps to improve living conditions. It transports seasonal workers to fields in school buses in Argentina instead of cargo trucks, as is the common local practice. The company provides better housing and eating facilities, as well as safe drinking water, for workers in a number of countries.

As part of the safety requirements, Monsanto established a network of cellular phones so that field-workers can report medical or other emergencies. It initiated an orientation for new workers, and provided medical monitoring for workers — sometimes for the first time in their lives.

Monsanto is setting a higher bar for worker safety across the seed industry. Monsanto people are sharing their experience with other seed companies and the American Seed Trade Association. Moreover, Monsanto people are working with the local schools and fire departments to implement a farm safety program for children in a number of communities. ■



In addition to housing, seasonal workers at many locations are provided beds, furniture, food, cooking supplies, and household supplies.

Human Rights: Developing a Policy



BRIAN LOWRY

Vice President, Commercial Acceptance and Global Strategy

We believe that a human rights policy to guide our actions as a global corporate citizen is a logical next step for our Monsanto Pledge — to address the importance of showing and advancing respect for our people and those affected by our actions.

During the past year we have had a series of conversations with internal and external stakeholders. We spoke with human rights organizations, religious groups, other companies that have human rights policies, the Monsanto Biotech Advisory Council, and our board of directors' Public Policy and Corporate Responsibility Committee.

We conducted considerable research to understand the many human rights frameworks such as the United Nations Declaration of Human Rights, the United Nations Global Compact, and the International Labor Organization's Declaration on Fundamental Principles and Rights at Work. Our policy considers the input we received about the role of corporations in the protection and advancement of human rights.

At the time of printing, our draft policy was being vetted with a broad group of stakeholders — consistent with our commitment to dialogue and, perhaps more importantly, listening. This process should be completed by January 2006, and our policy will then be found in the Our Pledge section of the Monsanto Web site. Updates on implementation will appear in future Pledge Reports.

Over the years, our conduct has demonstrated our commitment to the protection and advancement of human rights. We believe the implementation of this policy will respect and further advance the rights of the people where we live and work. ■



World-Class Vehicle Safety Program

The Monsanto Vehicle Safety program to improve driving skills began in 2002. It is the first program of its kind to be implemented globally. Since it began, **more than 2,500 employees in North America and 1,500 employees abroad have been certified as behind-the-wheel trainers** and more than \$4 million has been devoted to their instruction.

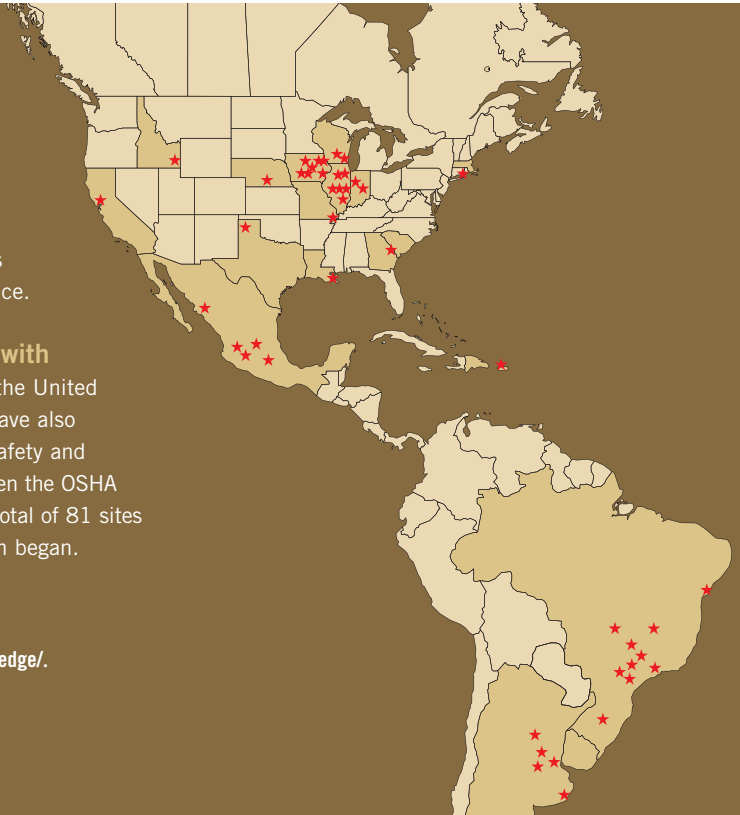
The program has a number of innovative elements, including a Teen Driver Training course for children of employees and tailored training for Monsanto's international employees, families, communities, and clients. The program has been extremely successful, as evidenced by a significant reduction of vehicular accidents. In fact, Monsanto employees completed the company's safest year on record in 2004. In 2003 and 2004, Monsanto was the industry leader, with the fewest number of accidents and incidents per million miles.

The Monsanto Vehicle Safety program was also honored with the prestigious Stevie International Business Award in 2005. The award is sponsored by a number of international business information outlets, including Factiva, a Dow Jones and Reuters company; Business TalkRadio; and "European Business" magazine, among others. It is given to honor contributions of companies and businesspeople worldwide. ■

Monsanto Star Sites

Monsanto has a program to certify its operational sites for safety performance. **These sites earn the Monsanto Star only by strict compliance with Monsanto safety standards.** In the United States, these high-performing sites have also been certified by the Occupational Safety and Health Administration (OSHA) and given the OSHA Voluntary Protection Program Star. A total of 81 sites have been certified since the program began. Twenty-one were added in 2004. ■

For the list of Star locations, visit www.monsanto.com/monsanto/layout/our_pledge/.



Safety at Monsanto Seed Processing Facilities

Agriculture is an inherently dangerous occupation. Knowing that, Monsanto set out in 1998 to create a safe workplace for its agricultural workers. Since then, Monsanto has reduced injury and illness at its seed sites by 85 percent. It is now a global leader in agricultural safety.

Part of the company's success is a strict program designed to protect contractors and guests at its small sites with the same high safety standards we use for direct Monsanto employees. In addition, a global safety program has been developed for seasonal and migrant workers. This program safeguards workers who are with the company only for a few months, and who often face distinct language and cultural challenges. (See additional information on page 24 of this report.) ■

Monsanto reduced the number
of incidents by **85** percent.

MONSANTO COMPANY-WIDE INJURY/ILLNESS RATE (TRR)

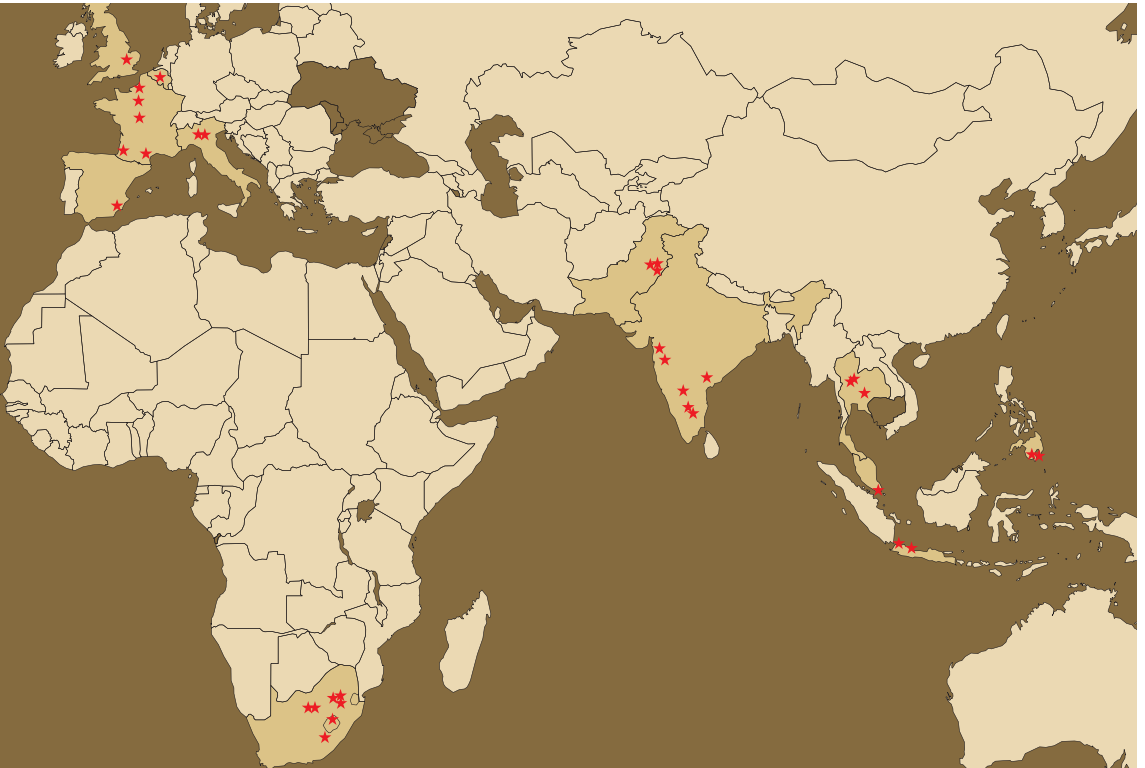
(number of occupational injuries and illnesses per 200,000 hours worked)

2004 Monsanto » 0.9
Industry » *

2003 Monsanto » 1.0
Industry » 5.0

2002 Monsanto » 1.2
Industry » 5.3

* 2003 is the most recent industry data



ISSUE DISCUSSION » Seed Supply

Over the years, some people have expressed concern about what they see as concentration of agricultural seeds in the hands of a small number of companies. Seeds are a large part of Monsanto's business portfolio, growing rapidly as the demand for quality seeds increases. The company's genomics and biotech trait capabilities allow it to offer farmers a wider range of tools to improve yields, to combat pests, and in the future, to increase nutrition and withstand stressful climatic conditions. Even so, Monsanto sells only a small percentage of the total seed sold in agriculture.

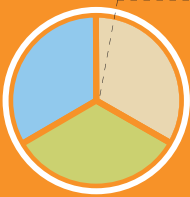
The commercial seed market accounts for only about 33 percent of the total volume of seeds used globally. Another 33 percent is farmer-saved seed; the remaining 33 percent comes from national or public institutions.²²

FARMERS HAVE A CHOICE Biotech seed accounts for about 16 percent of the commercial market. Therefore, by the most optimistic estimates, biotech seed is approximately 5 percent of the global market.⁵ As one of largest commercial seed companies, Monsanto offers for sale about 3 percent of the world's seeds.²³

Farmers have a choice about whether to buy Monsanto seed or a competitor's seed. Monsanto sells both biotech and nonbiotech seeds. We have competitors in both markets. Moreover, Monsanto actively licenses its biotech traits to a number of other seed companies, so in fact the farmer has thousands of seed choices. Global adoption rates of biotech crops have increased at double digits each year since introduction. Given the chance to grow biotech crops, many farmers choose to. They do so not because they lack alternatives, but because they recognize value. ■

TABLE 1 » TOTAL SEED USED IN AGRICULTURE

■ COMMERCIAL SEED MARKET	33.3%
■ FARMER-SAVED SEED	33.3%
■ NATIONAL/PUBLIC INSTITUTIONS	33.3%



Monsanto offers for sale about **3%** of the world's seeds.





ISSUE DISCUSSION » Genetic Use Restriction Technology

In 1999, some stakeholders expressed fears that a sterile-seed technology then under development by the U.S. government and a cotton seed company might lead to dependence for poor smallholder farmers. In response, Monsanto made a commitment not to commercialize sterile-seed technologies in food crops. It continues to stand by that commitment today, but Monsanto people constantly reevaluate this stance as technology develops.

Sterile-seed technologies represent only one type of a larger class of genetic use restriction technologies (GURTs). One technology under investigation would turn a trait on or off so that the plant expresses the trait only in the first generation. In subsequent generations, the genetic material would be inactive and would slowly disappear since it affords no selective advantage. This technology would give inventors an opportunity to protect some of their intellectual property rights in biotech traits.

The responsible approach is to investigate the range of available GURTs and the appropriate applications. To that end, **Monsanto is engaged in dialogue with experts and interested parties to learn what technology applications might be available and how they could be used to address biotech stewardship, maintenance of intellectual property rights, and protection of the needs and rights of farmers.** Monsanto does not rule out the potential development and use of one of these technologies in the future. The company will continue to study the risks and benefits of this technology on a case-by-case basis. ■

30 **ISSUE DISCUSSION » Coexistence**

What happens when a biotech cornfield, a conventional cornfield and an organic cornfield are planted side by side? Because agricultural systems are dynamic, any system that a grower chooses may have some impact on neighboring systems. Some people have voiced concerns about whether pollen from biotech crops might be picked up by nonbiotech varieties on neighboring fields and affect the marketability of those crops. Other people are concerned that the level of weed and pest control in neighboring organic fields might adversely affect growers employing conventional and biotechnology methods. The good news is that **practical experience clearly demonstrates that the coexistence of biotech, conventional, and organic systems is not only possible, but is peacefully occurring around the world** where farmers have a choice among different production methods. Mutual respect and

appropriate practical management practices by farmers have allowed successful coexistence of different agricultural production systems.

Several recently released reports examine coexistence experience and practices. One such study, by Graham Brookes of PG Economics, reported that in North America, where there are high rates of biotech adoption, biotech crops grown commercially have coexisted with conventional and organic crops without economic or commercial problems.³²

In the United States, where biotech adoption rates are high, the organic market has also flourished:

- Although they are small in total area planted, organic areas of soybeans and corn increased 270 percent and 187 percent, respectively, between 1995 and 2001. This was the period in which genetically modified crops were introduced and reached 68 percent and 26 percent shares of total plantings of soybeans and corn.
- Survey evidence among U.S. organic farmers showed that most of them (96 percent) have not incurred any direct additional costs or any losses because of GM crops grown near their crops. A few farmers (4 percent) reported some



In Spain, Monsanto sales representative Carlos Martin (right) speaks with longtime grower Juan Claveria at his farm.

A Grower's Perspective

JUAN ANTONIO CLAVERÍA MORANT

Bachelor of science degree in agronomy; farmer in the Spanish province of Huesca.

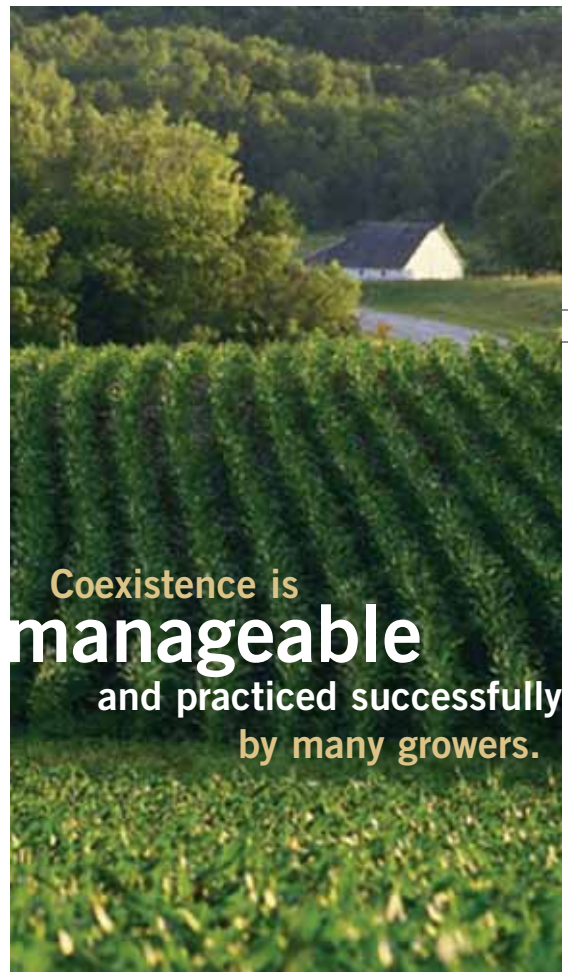
My family has been dedicated to food production for generations. My farm has 1,500 hectares of nonirrigated land, where we mainly grow winter cereals, as well as sunflowers and protein crops. We also have 550 hectares of irrigated land, where we grow 50 hectares of wheat, 200 hectares of alfalfa, and 300 hectares of corn. Corn perfectly fits this type of land; nonetheless, corn borer affects

losses/downgrading, but that was not due to loss of organic certification from the U.S. Department of Agriculture's organic regulations.

The health and safety of biotechnology products is not an issue: The food, feed, and environmental safety of the products must be demonstrated before the products enter the agricultural production system and supply chain. Today, coexistence is strictly a perceived issue.

Coexistence is manageable and practiced successfully by many growers. It allows growers to use the farming practice that best fits their goals, and it ultimately provides greater consumer choice in the marketplace. ■

Biotech crops are being grown successfully in coexistence with conventional and organic crops of the same or different species around the world.



our production very much in some years. In the past, we used to see all the corn plants on the ground, and we did not have any technical solution to cope with this problem. Insecticide treatments are costly, creating many inconveniences in our house, as we live on the farm close to the cultivation area. In the end, we were unable to solve the problem.

Since Bt [*Bacillus thuringiensis*] corn was first commercialized in Spain, eight years ago, we have grown it year after year, and this has represented peace of mind for all of us. Of all the problems that

a corn grower has (prices, drought, etc.), corn borer is one we can now forget about.

As a farmer, I have never had problems selling the Bt corn that I harvest in my farm. Most of the corn that all of us grow in Spain is used by the feed industry, which has never had any problems using our Bt corn.

We have neighbors who still cultivate traditional corn, and in all these years in which many of us have decided to grow Bt corn, we have never had problems of any type with them.

We all can choose the type of corn that better fits our needs or interests for our farms, without causing any difficulty in any sense to the other growers. The market has taken care of positioning each product in its right place.

Nowadays, I could not imagine growing corn that is not protected with the *YieldGard* trait. Bt corn has given me peace of mind, crop safety, and more time to share with my family. ■

Ethical Frameworks for Agricultural Biotechnology

Through dialogue with many people, Monsanto has learned to appreciate that agricultural biotechnology raises some moral and ethical issues that go beyond science. These issues include choice, democracy, globalization, who has the technology, and who will benefit from it. It is important for Monsanto to stay open to the many opinions voiced and to consider them in its plans. Over the past few years, a number of highly respected global organizations have considered the ethical implications of agricultural biotech products and weighed the benefits against any possible risks. Excerpts from the viewpoints of three of these organizations follow.



THE NUFFIELD COUNCIL ON BIOETHICS, UNITED KINGDOM

“In focusing on current and potential uses of GM crops we therefore consider only part, albeit an important one, of a large and complex picture.... [However], we are clear that in particular cases, GM crops can contribute to substantial progress in improving agriculture, in parallel to the (usually slow) changes at the socio-political level. GM crops have demonstrated the potential to reduce environmental degradation and to address specific health, ecological and agricultural problems which have proved less responsive to the standard tools of plant breeding and organic or conventional agricultural practices. Thus, we affirm the conclusion of our 1999 Report that there is an ethical obligation to explore these potential benefits responsibly, in order to contribute to the reduction of poverty, and to improve food security and profitable agriculture in developing countries.”^{24,25}



PONTIFICAL COUNCIL FOR JUSTICE AND PEACE, THE VATICAN

“The Christian vision of creation makes a positive judgment on the acceptability of human intervention in nature, which also includes other living beings, and at the same time makes a strong appeal for responsibility. In effect, nature is not a sacred or divine reality that man must leave alone. Rather it is a gift offered by the Creator to the human community entrusted to the intelligence and moral responsibility of men and women. For this reason, the human person does not commit an illicit act when, out of respect for the order, beauty and usefulness of individual living beings and their function in the ecosystem, he intervenes by modifying some of their characteristics or properties.

“Modern biotechnologies have powerful social, economic and political impact locally, nationally and internationally. They need to be evaluated according to the ethical criteria that must always guide human activities and relations in the social, economic and political spheres. Above all, the criteria of justice and solidarity must be taken into account.”^{26,27}



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

“It is found that agricultural biotechnology can help the poor by reducing reliance on toxic agricultural chemicals, lowering production costs for farmers, enhancing the nutritional content of foods and improving the control of plant and animal diseases. These gains can boost agricultural productivity and reduce food prices, but the benefits may not reach the poor. The report also presents an analysis of the socio-economic impacts of technological change in agriculture and surveys the current evidence regarding the safety of transgenic crops for human health and the environment. It recommends targeted investments in agricultural research, extension and regulatory capacity to ensure that the potential of agricultural biotechnology is brought to bear on the needs of the poor.”^{2,28} ■

What Others Are Saying



ANNIKA AHNBERG

Vice President, Save the Children, Sweden; former Swedish Minister of Agriculture; and Monsanto Biotech Advisory Council member

I'm deeply convinced that modern biotech is not the solution, but one of many solutions to problems in agriculture worldwide — in developing and developed countries alike. We urgently need to improve and increase food production, especially in areas where development doesn't come easily due to droughts, flooding, or other difficulties. And we need to solve environmental problems — for example, by reducing the use of chemicals. By using GMOs (genetically modified organisms), we can do this.

At the same time we face a situation where GMOs are looked upon with skepticism in some parts of the world, not because of the results of GMO production itself, but because of mistrust.

NEXT STEPS MONSANTO SHOULD TAKE Because it is a leading company in development of biotech, it is extremely important how Monsanto deals with this situation. In the long run, profitable business will be possible only if mistrust is replaced by trust. Success for Monsanto has to walk hand in hand with success for different stakeholders, and most important among those stakeholders — in my opinion — are the developing countries in the world. Through dialogue, by sharing knowledge and experiences, and by commitment to biotech development in a broader sense, Monsanto can be an extremely important actor. Together with the developing of the GMO traits themselves must come education for farmers, increased research, and improved research facilities in developing countries. Legislation and control mechanisms must be put in place.

Monsanto has an important role to play in that broader context, in offering assistance to put good systems in place. In the Biotech Advisory Council I have met a great commitment from the Monsanto people and an attitude of listening to, learning from, and respecting different opinions. I believe that this approach is an important part of Monsanto living its Pledge! ■



ROBERT PAARLBERG

Professor at Wellesley College and visiting professor at Harvard University; researcher, writer, and lecturer on international food and agricultural policy and trade, and Monsanto Biotech Advisory Council member


AN OUTSIDER LOOKS AT THE PLEDGE In my work as an academic researcher, before joining Monsanto's Biotech Advisory Committee (BAC) last year, I occasionally found myself speaking with Monsanto employees — in places such as Nairobi, São Paulo, Delhi, and Beijing — to learn what I could about local biotech regulatory policies. I was always surprised by the willingness of these busy people to speak with me, a stranger. This was even before the new Pledge in 2000 committed these employees to the value of "transparency" — ensuring "that information is available, accessible, and understandable."

Similarly, I had several opportunities, before joining the BAC, to participate in open meetings on biotechnology policy at which Monsanto scientists came under sharp attack from hostile and poorly informed critics. I was impressed by the tolerant, calm, and nonjudgmental manner used by these Monsanto scientists in responding to their critics. Once again, this was prior to 2000, before the values of "dialogue" and "respect" had been made explicit by the new Pledge.


SO DOES MONSANTO REALLY NEED THE PLEDGE? One area where application of the Pledge values is important today is intellectual property rights (IPR). When Monsanto goes to court in the United States over patent infringement, the company's actions are usually understood to be both within the law and respectful toward the majority of American farmers who play by the legal rules. But outside of the United States — in Canada, Europe, and in developing countries, legal systems and traditions differ.

Even weak IPR claims on living organisms can go against local tradition. It is especially important in these circumstances for Monsanto to remember the Pledge's values of respect and dialogue, as the company did in Brazil. Paying respect to partners and customers is good practice, and I suspect also good for business. ■

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Fulfilling the Pledge



Bollgard cotton allows growers in Maharashtra, India, and other places to reduce pesticide applications and labor costs.

The Monsanto Pledge Awards

The Pledge Awards honor Monsanto people who practice Pledge values as they do business. In 2004, more than 200 entries were received from teams around the world representing many company sectors.

Every Pledge Award entry demonstrates how Monsanto people live the Pledge and make a difference in their communities and at work.

Winners are selected by a distinguished panel of external judges from among finalists previously selected by internal judges according to two criteria: the environmental, economic, and societal benefits created by the entry; and how the Pledge values were used in the achievement of the goal.

Through these Pledge Awards, Monsanto salutes its people for delivering exceptional, values-based work. ■

Best of the Pledge...

36

PLEDGE AWARD WINNER »

Earning Malawi Government Support for Hybrid Corn



BACKGROUND

Significant increases in yield are

possible when farmers use hybrid seed. However, in many poor countries where farmers are accustomed to saving seed or purchasing open-pollinated varieties, acceptance of hybrid corn varieties has been slow. It is not always easy for governments and first-time hybrid farmers to see that even with the added cost of new seed they will still be far ahead at harvest because of increases in yield.

A Monsanto team in Malawi faced this exact situation as they encouraged the government to support planting hybrid corn seed.

“Of all inputs used in agriculture, none has the ability to affect productivity as much as seed,” said Enock Chikava, regional manager for Monsanto in East Africa, who is also chair of the Malawian Seed Trade organization and a board member of the Africa Seed Trade Association. “The use of hybrid seed will boost productivity of corn production in Malawi and this will begin a legacy of food self-sufficiency,” said Chikava.

The Monsanto team began a dialogue with the Malawian Ministry of Agriculture. In their discussions, the team pointed out the attributes of hybrid corn. The team explained how these attributes would benefit Malawian farmers and communities economically, and provide better nutrition for families.

“Because all production starts with seed, having farmers use hybrid seeds is the surest way of reducing malnutrition, starvation, and poverty in Malawi,” said Chikava. With better output and nutrition, the government could also import less food. That would increase the nation’s food security.

As a result, the government now embraces and supports the use of hybrid seeds. In 2004, 700 metric tons of Monsanto hybrid seed were distributed to local farmers through five nongovernmental organizations that previously distributed only open-pollinated varieties.

BENEFITS The project has created value for the Malawian government and for farmers, who now gain economic benefits from hybrid corn. Farmers had a better yield — more than 300 percent of their previous harvest. Monsanto benefited through the increased purchase of the company’s hybrids. In addition, the project creates a better understanding at the nation’s agricultural ministry of the benefits and safety of hybrid

and biotechnology traits. The performance of the hybrid seed helps people perceive Monsanto Malawi as a marketer of high-quality products that help farmers.

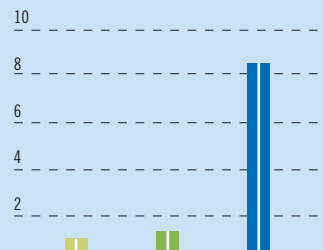
MONSANTO PLEDGE IN ACTION This project demonstrates the dialogue and transparency elements of the Monsanto Pledge. Through open and transparent dialogue, the team was able to introduce Monsanto technology into Malawi. ■

Bentry Nwema, coordinator for SG2000 in Lilongwe, Malawi, speaks with farmers, agricultural college students, and high school students about the benefits of conservation tillage.



TABLE 1 » YIELD COMPARISON OF CORN VARIETIES (metric tons per hectare)

FARMER- SAVED SEED	0.55
OPEN-POLLINATED VARIETY	0.88
HYBRID	8.0



Source: Sawtee, 2004

PLEDGE AWARD WINNER »

Vistive Low-Linolenic Soybeans Give Consumers Healthier Options



BACKGROUND Soybeans are the largest source of vegetable oil consumed in the human diet.

However, soybean oil is usually hydrogenated to increase its shelf life and flavor stability in foods. Hydrogenation also creates trans fatty acids, which are linked to heart disease because they raise LDL (bad) cholesterol while lowering HDL (good) cholesterol. Lowering the amount of linolenic acid in soybean oil reduces or eliminates the need for hydrogenation, which subsequently reduces the amount of trans fats in the diet.

The Monsanto Food Team, composed of people from Technology, Commercial Acceptance, U.S. Markets and several other functions, has enabled food manufacturers to use low-linolenic soybean oil. This involved the selection of germplasm with the low-linolenic trait, accelerated breeding technology to get the trait into high-yielding seed varieties, and supply chain collaboration with grain processors and food manufacturers. In 2005, because of these technical and commercial achievements, farmers planted and harvested the first commercial crop of *Vistive* low-linolenic soybean seeds.

BENEFITS Low-linolenic soy will provide health benefits to society and will also help the soy industry provide a healthier option to food companies. In fact, Monsanto has created benefits for the entire food supply chain, from seed producers to food consumers. With *Vistive* soybean seeds, farmers are able to get a premium for their crops at harvest, and food processors are able to use soybean oil in a wide variety of packaged food products. Most important, consumers will now be able to choose a great cardiovascular health option and avoid trans fats in their favorite foods and snacks.



Vistive soybeans have the potential to eliminate more than **1 billion pounds** of trans fats

Vistive soybean oil provides an innovative solution for a problem faced by the food industry: the reduction of trans fats in the products they sell while maintaining the necessary processing characteristics for the oil. Low-linolenic soybeans have the potential to eliminate more than 1 billion pounds of trans fats in the U.S. consumer diet, and more worldwide.²⁹ In addition, because of these benefits, *Vistive* will help turn around a decline in the use of soybean oil for food. That should result in a greater economic return for growers, processors, and Monsanto.

MONSANTO PLEDGE IN ACTION This project team worked to fulfill the Pledge promise to provide benefits. The project demonstrates significant technological innovation (through commitment of genes existing in the germplasm and the development of markers to track these genes). It provides significant benefits to customers throughout the industry, including farmers (through increased value of the grain), processors (by providing a solution for trans fats), and consumers (through increased health benefits).

“Reducing trans fats is a benefit every consumer will recognize,” said David Stark, Monsanto Food Partnership lead. “And through this effort, food companies are increasingly recognizing Monsanto’s commitment to helping them achieve their goals with consumers.” ■

Dialogue with religious leaders about biotechnology is leading to greater understanding of the benefits it can provide humanity and the environment.



PLEDGE AWARD WINNER » Dialogue with Religious Leaders Clarifies Biotechnology Ethics



BACKGROUND Regardless of differences on matters of faith, many policy leaders worldwide look to religious and cultural institutions for guidance on societal and environmental policy. Among other

things, many of these organizations have traditionally concerned themselves with assistance for the poor and the responsible use of natural resources. Thus, publications of religious organizations can significantly influence discussions on the cultural and ethical aspects of issues such as biotechnology.

Over the past few years, a Monsanto Italy team established good communications with a number of religious leaders and encouraged dialogue that considered the economic, societal, and environmental value of agricultural biotechnology.

“Many of these leaders were concerned about the possibility for patent issues and corporate control of genetic resources,” said Edoardo Ferri, commercial acceptance lead for Monsanto Italy. “We were able to allay these concerns by explaining the benefits that agricultural biotechnology brings to the entire chain, from farmers to consumers, and describing how the Monsanto Pledge guides our behaviors.”

The team’s efforts included participating in topic discussions with scientists, politicians, and other key stakeholders; participating in educational symposia; attending meetings to discuss the societal values of biotech; and participating in seminars examining issues related to agricultural biotechnology. Other participants included international scientists, politicians, farmers from developing countries, and other stakeholders.

BENEFITS From this discourse and other research, **religious leaders determined that when used appropriately, biotechnology is not inconsistent with ethical frameworks and can deliver significant benefits to millions of people around the world.**

This project has created value for Monsanto by contributing to a climate in which safe products are more likely to achieve timely regulatory approval and commercial use. The recognition by religious leaders corresponds with other opinions that biotechnology can provide important benefits (see article on page 32). These affirmations will help increase confidence in the value of agricultural biotechnology to elected officials, government agencies, nongovernmental organizations, and the marketplace.

MONSANTO PLEDGE IN ACTION The project demonstrates the dialogue, transparency, and respect elements of the Monsanto Pledge. Rather than merely delivering information, the team listened to and answered questions from the stakeholders, respecting their religious, cultural and ethical concerns. The religious leaders arrived at their own conclusion that biotechnology can deliver benefits.

“The Pledge clarifies many topics which are not always correctly understood by some of our stakeholders,” said Ferri. “It describes how we do business and our ability to tackle the relevant concerns of public opinion toward agricultural biotechnology.” ■

PLEDGE AWARD WINNER » A Community Forest Management Program for Sustainable Agriculture



BACKGROUND One of Indonesia's growing environmental concerns is encroachment by humans into forests and the resulting erosion

from loss of trees. Many small-scale Indonesian farmers are poor; they do not have access to good land, so they intrude on palm and teak plantations for survival. In the Grobogan regency of Java alone, villagers have destroyed about 20,000 hectares of the state-owned teak plantation, PT Perhutani.

A Monsanto marketing team for the central area of Java, Indonesia, has proposed a way to address this problem through agro-forestry.

"Teak trees don't begin forming a canopy until they are 4 to 5 years old," said Monsanto marketing executive Didi Junaedi. "By using conservation tillage, we can intercrop the forest land until the trees are that age, and both the farmers and the plantation benefit."

In this project, *Roundup* agricultural herbicides are used to facilitate the planting of Monsanto C7 hybrid corn between the rows of trees. The team organized a partnership among Monsanto, the teak plantation, individual farmers, a farmers' cooperative, and the local Indonesian government. The teak plantation provides the land, a local farmers' cooperative provides fertilizer, and a local dealer provides seed and herbicide. These suppliers extend credit for the crop inputs. Payment is due after the farmers harvest the corn. The team also trained the farmers in the use of herbicides and conservation tillage to protect the land and preserve the trees.

The program started in 2001 on 150 hectares with 75 farmers. Since then, the program has progressed. In 2003, 525 farmers participated on 1,400 hectares.



Didi Junaedi describes to government officers how dual cropping and conservation tillage will benefit the state-owned forest and help local farmers.

BENEFITS "By sharing conservation tillage practices with local farmers, we've helped reduce the stress on the local environment,"

said Junaedi. "Farmers, ag dealers, and the plantation have all benefited from this collaboration." By using hybrid seed and *Roundup* agricultural herbicides, the farmers have improved yields and reduced inputs. Each year of the program, farmers have learned how to improve their yields further, increasing from 5.6 metric tons a hectare in 2002 to 8.7 metric tons in 2003. The program has provided about \$470 (U.S.) a hectare of additional income for farmers.

In addition, because farmers tend the teak saplings along with their crops, the plantation benefits from the expectation that the trees will grow and not be destroyed or stolen. Agricultural dealers benefit through the additional sales of hybrid seed and herbicide.

Finally, the project helps preserve natural resources by reducing tillage and erosion. It thereby improves the socioeconomic situation of rural Indonesia, placing more income into the hands of the local villagers. Monsanto benefits through the increased use of its products and technology, and it takes satisfaction in finding an innovative solution for the community's dilemma.

MONSANTO PLEDGE IN ACTION The use of Monsanto expertise and products demonstrates the Pledge elements of sharing, benefits, and acting as owners to achieve results. ■

PLEDGE AWARD WINNER » Great Teamwork Results in Record Sales of *Bollgard* Cotton in India



BACKGROUND In 2004, a Monsanto team in India challenged itself to increase sales of *Bollgard* cotton significantly. To do so, the team

needed additional salespeople to increase market penetration in many parts of the country. With cross-functional sales assistance from manufacturing employees at Monsanto's chemistry plant in Silvassa, India, the combined sales team achieved record sales of *Bollgard* cotton in India during the 2004 season.

The strategy developed by the Monsanto India Commercial Team was to increase sales fivefold by penetrating five states: Maharashtra, Gujarat, Karnataka, Andhra Pradesh, and Madhya Pradesh. This area includes 2,000 villages and 100,000 farmers. To reach as many farmers as possible in the field, the team needed to augment its regular sales force. This was achieved by recruiting 20 percent of the agricultural chemical (ag-chem) employees at the Silvassa plant as temporary salespeople. The remain-

ing employees at Silvassa took on the jobs normally performed by their colleagues. The work was reorganized to ensure that it was shared equitably and that the plant continued to operate smoothly.

The new salespeople worked long hours. Many of them lived away from home in remote areas for more than two months. They went beyond their normal work to help the regular sales team reach farmers, hold meetings, and facilitate discussions. Most of the temporary sales representatives had no sales experience and were not from farming backgrounds. However, through intensive training sessions they quickly acquired technical knowledge about farming and *Bollgard* cotton. Throughout the process, the new salespeople developed good relationships with farmers and shared information about the benefits of *Bollgard* cotton with them.

BENEFITS Because of this increased sales force, more farmers were able to learn about the benefits of *Bollgard* cotton, and thus make informed choices when planting their crops. Farmers who chose *Bollgard* also potentially benefited from increased revenue, greater yield, less labor, and less exposure to insecticides.

MONSANTO PLEDGE IN ACTION As a result of these coordinated efforts, the sales team increased the sales of *Bollgard* cotton in India from 0.2 million acres to more than 1.3 million acres — delivering significant benefits for farmers, their families and communities, and for Monsanto. This project demonstrates the “acting as owners to achieve results” element of the Monsanto Pledge.

“The team at the Silvassa plant realized what we needed to do to accomplish our goals, and they found a way to temporarily release some people who could join the sales team,” said Shailesh Lanke, supply chain lead for Monsanto India. **Despite coming from nonsales and nonfarming backgrounds, the ag-chem employees assumed the responsibility of helping the sales team achieve record sales.** In addition, the project helped create a great place to work for many of the employees. “Helping the sales team was very exciting for many of the manufacturing employees,” said Lanke. “The opportunity to work with farmers from different areas enriched their work experience.” ■



Using the insect resistance built into *Bollgard* cotton, farmers in India have achieved significant gains in yield while using less insecticide.

PLEDGE AWARD WINNER » Dialogue with European Landowners



BACKGROUND In the late 1990s, the European Landowners' Organization (ELO) took a position that questioned the safety of biotechnology. It stated: "there should be further EU regulatory controls, taking into account the possible adverse effects of GM [genetically modified] crops... Whilst scientific opinion is split as to the costs and benefits of GMOs [genetically modified organisms], there is a body of opinion that potentially considers these organisms as hazardous."³⁰

In 2003, Monsanto sent out a European Commercial Acceptance team to begin an open dialogue with members of the ELO. They regularly updated the organization with current information on how biotech crops can play an important role in increasing the economic and environmental sustainability of agriculture. They also encouraged the leaders of the ELO to start an internal debate on this matter.

In February 2004, the ELO published a new position that is more supportive of biotech crops. The new document recognizes that "the situation has changed dramatically." It invites other European institutions to consider the "opportunity that agricultural biotechnology opens in terms of health, environment, research, and economic impact."³¹ The paper also contains an overview of the main benefits and implications of biotech crops. Additionally, the ELO shared its new position to those at the political and farming level.

BENEFITS This project brings the potential value of biotech crops closer to European farmers and consumers. Support from the ELO helps build a foundation of knowledgeable growers who can influence the acceptability of biotechnology in Europe. This support is essential for regulatory approvals of imported biotech products and, in the future, for approvals of new biotech crops that can be grown in Europe. (The European Union system approves products through a political voting system after the products have achieved the necessary positive scientific endorsements.) The project has also inspired a discussion within the ELO on the future of agriculture in a postindustrial age.

MONSANTO PLEDGE IN ACTION Before it could urge European growers to take these courageous stands, Monsanto had first to earn their trust. The team accomplished this by demonstrating several Pledge behaviors over time, especially dialogue, transparency, and respect.

The team initiated dialogue with the ELO, listening to their needs and concerns. The Monsanto team provided information transparently, so that the organization's members could have informed internal discussions on biotechnology. In addition, the team members "acted as owners to achieve results." **They took responsibility for initiating a respectful relationship with the landowners group, and then worked with it to find mutual understanding.** ■



PLEDGE AWARD WINNER »

Roundup Ready Soybeans: Protecting Intellectual Property in Brazil Through Teamwork



BACKGROUND In some countries, farmers commonly save seed for planting the following year. When the seed contains a patented trait,

such as the *Roundup Ready* trait, this traditional practice creates a dilemma for the seed company that developed the variety. In Brazil, Monsanto had no approval to sell seed containing the *Roundup Ready* trait and no system to charge growers for use of the trait. (Because the Brazilian government did not allow Monsanto to sell *Roundup Ready* seed; the *Roundup Ready* soybean crop in Brazil came from unlicensed seed brought into the country from Argentina.) An estimated 15 to 20 percent of the Brazilian soybean crop was grown from unlicensed *Roundup Ready* soybeans from saved seed.

A multicountry, multifunction team at Monsanto developed a system to collect technology fees when farmers sell their soybeans. **The new system, which employed a dependable “quick test” to determine whether the soybeans being delivered contained the *Roundup Ready* gene, was called “point of delivery” (POD).** It enabled Monsanto to be paid for much of the unlicensed use of *Roundup Ready* soybean seed planted in Brazil in 2003 and 2004.

Brazilian farmers who choose to save seed pay for Monsanto technology when they sell their crop.

The team was successful with the POD system because of a wide range of initiatives inside Brazil and with other countries. Team members worked hard to gain acceptance and support from farmers and traders. Monsanto made a commitment to ensure that everyone had an opportunity to share the value generated by its technology.

BENEFITS The POD system gave Brazilian farmers who save seed the option to pay for the Monsanto technology at the grain elevator. In fact, 99.7 percent of the farmers voluntarily agreed to pay under the POD system without the test. The new system ensured financial return on Monsanto technology, with a significant collection in technology fees. It gave Monsanto and others confidence that investment in traits for Brazil will receive fair payment if the products are attractive to growers. Additionally, it allowed Monsanto to win good will with commercial growers in other countries, who now see Brazilian growers paying for their use of Monsanto's technology as well.

MONSANTO PLEDGE IN ACTION This project demonstrates several elements of the Monsanto Pledge, including building trust through dialogue with stakeholders in Brazil to create the POD system and acting as owners to achieve results. Team members took personal responsibility for results and worked both independently and together to resolve a difficult problem facing the company. ■





Students learn about plant biotechnology, agriculture, and biodiversity at a sand prairie near the Muscatine plant.

Dialogue, transparency, respect...

Biotechnology Education in Muscatine, Iowa



A biotech steering team created by the employees at Monsanto's Muscatine, Iowa, chemistry plant

has successfully educated employees and community members about plant biotechnology. The Muscatine team's educational programs reach across generations. Elementary students are taken through interactive sessions on sharing the world's limited natural resources. Members also deliver a number of presentations to high school, college, and community groups.

Even though it is not part of their primary job responsibility, team members devote considerable time to researching and staying current on plant biotechnology topics. They then update other site employees and the community. During 2004, the team extended its influence through the creation of a corporatwide network to encourage dialogue and sharing of ideas at other Monsanto manufacturing sites.

The site's education and outreach efforts have led to more quality conversations about biotechnology among many community groups. By engaging with community members, the Muscatine team has created an opportunity to increase public understanding and

discussion of biotechnology. Thus, farmers, consumers, and community members can make better-informed decisions about the benefits of plant biotechnology. In addition, dialogue could ultimately lead to greater acceptance of biotechnology, potentially creating economic value for Monsanto.

Through their educational outreach efforts, the Muscatine team demonstrates the Monsanto Pledge values of dialogue, transparency, and respect. Their events, tours, and presentations share information transparently, enable dialogue with community members, and show the respect Monsanto has for community members. ■

Muscatine employees help students use new microscopes donated by Monsanto to conduct a DNA extraction experiment.



Tour Program Builds Understanding Among Stakeholders



Stakeholders outside of Monsanto often have only a limited understanding of the company's scientific

research and business, and of agricultural biotechnology in general. As a result, stakeholders may be unaware of the company's commitment to doing sound scientific research and to providing benefits safely. The Monsanto Tour Program is one way the company works to increase understanding and reduce uncertainty among stakeholders. The program demonstrates the company's commitment to share information transparently, and it promotes dialogue and interaction among academics, scientists, farmers, government officials, media, and Monsanto employees.

At the Chesterfield, Missouri, research facility, the program has been sharing information about Monsanto and the company's technology, especially biotechnology, for more than a decade. It has become an integral part of biotechnology education for Monsanto. More than 400 guests a month visit the site's greenhouses, growth chambers, and laboratories to learn about the research being conducted by Monsanto scientists. During these visits they can talk with the biotechnology educators who guide the tours and with other company employees.

Participants in the program span diverse geographic and business interests. Participants come from farming, education, food industry, government, journalism, and trade associations. On any given day, someone looking in to the Visitors' Center might see a Monsanto biotech educator talking with a regulator, a congressional aide, a group of international businesspeople, a business reporter, or a group of growers.



Biotech educators stay informed on the latest work of Monsanto researchers through regular training sessions.

The dedicated biotech educators who conduct the tours continuously update their knowledge of Monsanto's science and business strategy. They meet regularly with scientists and business team leaders to be sure they can accurately answer visitor questions and reflect Monsanto policies and direction. Video players are positioned at strategic points along the tour, to ensure that visitors always receive clear messages about complex processes, such as gene transformation.

Participants learn about the technical aspects of biotechnology during their visits. But the real goals of the program are to help visitors grasp the benefits and opportunities available because of biotechnology; to appreciate Monsanto's commitment to the technology in time, money, and employee investment; and to understand Monsanto's deep commitment to safety and stewardship of the technology.

Through this program and other efforts, Monsanto demonstrates its commitment to transparency and dialogue. The tour program is a warm, professional, and important tool. It gives those who already share Monsanto's vision a better understanding of the technology. And it presents Monsanto's vision to those who may be skeptical, providing them with information to make their own decisions on the value of the technology. ■

Biotech Advisory Council Shares Perspectives on Business

In operation for four years, Monsanto's Biotech Advisory Council has as its mission "to improve how Monsanto serves its employees, shareholders, customers, and society by engaging in intensive dialogue among council members, Monsanto management, and outside stakeholders on important issues related to company policies and the commercialization of agricultural products and technologies." ■

BIOTECH ADVISORY COUNCIL MEMBERS THROUGH MAY, 2005

- **ANNIKA AHNBERG** Vice-president, Save the Children; former Swedish minister of agriculture
- **JEROEN BORDEWIJK** Senior vice president for supply chain excellence, Unilever Foods Division
- **ELIA CASTILLO** National scientist, the Philippines; professor emeritus, University of the Philippines at Los Baños
- **ALEJANDRO DELFINO** Director of Sociedad Rural Argentina
- **TOM EWING** Former U.S. representative, Illinois; chair of the Monsanto Grower Council
- **CARLO LOVATELLI** Director, corporate affairs, Bunge Group
- **RICHARD MOTT** Vice president for international policy at the World Wildlife Fund
- **RUTH ONIANG'O** Founder, Rural Outreach Program, Nairobi; member of the Kenyan Parliament
- **ROBERT PAARLBERG** Professor of political science at Wellesley College; associate and visiting professor, Harvard University
- **IRWIN ROSENBERG** Director, Human Nutrition Research Center on Aging, Tufts University

Monsanto Grower Advisory Council



Made up of members from farm and commodity organizations, Monsanto's U.S. Grower Advisory Council strives "to provide strategic advice and guidance to Monsanto management on important business issues and on ways to help growers capture increased value from the crops they produce." ■

U.S. GROWER ADVISORY COUNCIL MEMBERS 2004-2005

- **STEVE BACCUS** President, Kansas Farm Bureau
- **JOHN BECHERER** Chief executive officer, United Soybean Board
- **CARL CASALE** Executive vice president, Monsanto, North America and Latin America North
- **STEVE CENSKY** Chief executive officer, American Soybean Association
- **DAREN COPPOCK** Chief executive officer, National Association of Wheat Growers
- **TOM EWING** Chair, Monsanto Grower Advisory Council
- **TERRY FRANCL** Senior economist, American Farm Bureau Federation
- **RON HECK** Chair, American Soybean Association
- **KEN HOBBIIE** President and chief executive officer, U.S. Grains Council
- **ANDREW G. JORDAN** Executive director, Cotton Foundation
- **KEITH KISLING** Chair, U.S. Wheat Associates
- **MARK PIETZ** Board chair, United Soybean Board
- **KERRY PREETE** Vice president, Monsanto, U.S. Crop Production
- **JOHN PUCHEU** Chair, American Cotton Producers
- **SHERMAN REESE** President, National Association of Wheat Growers
- **RICK TOLMAN** Chief executive officer, National Corn Growers Association
- **ALAN TRACY** President, U.S. Wheat Associates
- **DEE VAUGHAN** Chair, National Corn Growers Association
- **BILL WEAVER** Chair, Cotton Incorporated
- **PAUL WILLIAMS** Chair, U.S. Grains Council
- **J. BERRYE WORSHAM III** President and chief executive officer, Cotton Inc.
- **MOLLY CLINE** GAC executive director, Monsanto

Philanthropy and the Monsanto Fund

Doing good and helping to transform lives are the missions of the Monsanto Fund, the philanthropic arm of Monsanto Company. The Fund supports organizations and programs as varied as the places around the globe where Monsanto does business. Its goal is to improve the lives of people by bridging the gap between their needs and their resources.

The Fund provides support in four areas:

- Helping families learn more about sustainable agriculture and ways to improve nutrition, including research to reduce vitamin deficiency and research on reducing the impact of pests on subsistence crops
- Science education, with grants being given to communities near Monsanto facilities for programs that support greater science literacy
- Work that benefits the environment, including programs that promote environmental education and awareness, improve water quality, improve wildlife habitat, and encourage conservation
- Community efforts, including arts and cultural events, local school projects, human needs programs, and community services projects

This report describes a few of the projects the Fund has supported, but there are hundreds of other projects. Examples include:

- A program to transfer virus resistance to cassava, a staple crop in Africa and South America
- Microfinance projects in Mexico and Malawi
- Scholarships for children in Argentina, Brazil, and the United States.
- A program in South Africa to benefit disadvantaged people who are interested in agriculture and farming
- An agricultural project to improve nutritional well-being in northern India
- A program by the National Audubon Society to study the impact of agriculture on waterfowl activity

The Monsanto Fund's total contributions during 2002, 2003, and 2004 were \$29 million. The amount given to organizations outside the United States during that period was \$4.4 million. ■

Sharing and

MONSANTO FUND » Argentine Potato Farmers Benefit from Monsanto Fund Grant



A \$250,000 grant from the Monsanto Fund is helping farmers in the high Andean valleys of Argentina's Jujuy and Salta provinces. One of the

most important crops in that region is the potato.

But in recent years, viral infections have caused significant reductions in yield — up to 80 percent. Thus, many Andean farmers have been abandoning their land and moving to urban centers.

The Monsanto Fund grant was provided to the Argentine National Institute for Agricultural Technology (INTA — Instituto Nacional de Tecnología Agropecuaria) to help farmers improve potato farming methods and avoid losses caused by the virus. INTA provides modern agronomic training and seed production technology that helps the Andean farmers grow healthy, virus-free potato varieties from local germplasm.

The project's objectives include identifying 20 pest- and virus-free Andean potato varieties by the end of 2005, developing local capability to produce healthy plantlets and minitubers, creating a distribution system for minitubers to be used in seed production by local seed breeders, and disseminating information on the potato varieties to farmers and consumers.

INTA is also constructing three greenhouses, designing and implementing a seed distribution system, and providing training in potato seed-propagation techniques to students and staff at regional training centers. The project is receiving help from community leaders, who are ensuring that local germplasm is preserved. ■

RIGHT » Young families in Wao, Mindanao, receive vegetable plant seedlings to be planted at home through a nutritional effort supported by the Monsanto Fund.

benefits...

MONSANTO FUND » Fund Program Improves Nutrition in Mindanao



A program supported by a Monsanto Fund grant is helping improve the diets of thousands of

children in Wao and Saguiran, two communities in Mindanao, Philippines. People in these neighborhoods, especially children, suffer from micronutrient deficiencies that retard growth, increase illness, and slow cognitive and social development.

The Monsanto Fund is providing \$449,565 over three years to Helen Keller International (HKI), a nonprofit international development agency, to address the problem. HKI first focuses on local nongovernmental organization representatives and agents, giving them the information they need to help local families.

The representatives then teach local families how to grow nutritionally rich foods in their own gardens, how to acquire locally those they can't grow, and how to cook foods properly.

The program includes education in fruit production to ensure that people have year-round access to fresh fruit, and nutrition education to ensure that families understand the importance of different types of food. The group emphasizes that good selection and preparation of food is vital to a micronutrient-rich diet. The project is expected to reach about 4,800 people. ■



\$1.2 million tsunami relief pledge

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MONSANTO FUND » Monsanto Helps Tsunami, Hurricane Victims Rebuild Lives

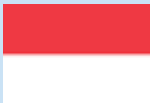
In December 2004, a tsunami in the Indian Ocean off the coast of Sumatra triggered a ring of destruction that affected people in dozens of countries. To assist with immediate relief to help people in the region rebuild their lives, Monsanto Company pledged \$1.2 million for tsunami relief efforts. The company designated \$1 million for on-the-ground efforts, \$100,000 for the Friends of the World Food Programme, and \$100,000 for a special employee matching gifts program.

Monsanto teams in India, Indonesia, Sri Lanka and Thailand identified on-the-ground projects that would efficiently provide immediate relief and help to restore agriculture and fishing livelihoods. By paying for the replacement of boats, motors and fishing gear, the team helped reestablish 240 fishing jobs in India. In Sri Lanka, the team donated to a community center for displaced villagers, providing communal services for 270 villagers. In Indonesia, the team worked with an Australian relief and reconstruction group to identify projects. In addition, the Monsanto team in Thailand worked with an organization to restore fishing and farming jobs, and to help local villagers regain self-sufficiency.

In August 2005, Hurricane Katrina devastated southern Louisiana, Mississippi, and Alabama. The Monsanto Fund pledged \$1 million to support relief efforts focused on providing people with basic necessities as they recover from the hurricane, and assisting them with long-term rebuilding. ■

ABOVE » Ranjana Smetacek (right) and Susan Joseph present one of 60 new boats and catamarans to fishers in Thoduvai village, Tamil Nadu, India.

A Low-Cost Manual Corn Planter Helps Small Stakeholders

 Most corn farmers in Indonesia, especially on Java, the main island, have farms only about a quarter hectare large. Because of the small size, it is difficult for growers to use standard mechanized cropping practices. Instead they use manual labor to plant seed. Some laborers dig holes with sticks, while others follow behind, dropping seeds in the holes and covering them up with soil. The process is time-consuming. It takes 15 people up to 10 hours to plant each hectare, and it results in uneven crop growth and less than optimal application of fertilizer and other inputs. The cost of planting is about \$6.67 (U.S.) a hectare for 10 hours of work.

A Monsanto team from Indonesia conceptualized and designed a low-cost, easily assembled, manual corn planter to help farmers cut the heavy labor involved in planting seeds.

The team fabricated a prototype of the planter and worked with local farmers to test its utility. They used feedback from the farmers to make necessary modifications.

The manual planter designed by the team reduces planting labor by half. The planter is simple, inexpensive, nonmechanized, and easy to fabricate at a basic workshop, such as those found in small towns across Indonesia. The planter is made of off-the-shelf components and involves minimal assembly. For instance, the rear wheels of the planter are made from recycled and slightly modified motorcycle wheels; the front wheel is sourced from commonly available wheelbarrows.

The planter has found quick acceptance. Several farmer groups have already shown an

interest in building the simple labor-saving device that halves the time needed to plant a field. It pays for itself within the first 30 hectares planted though savings in labor costs.

This project demonstrates three elements of the Monsanto Pledge: sharing, benefits, and acting as owners to achieve results. The team saw a need among Indonesian smallholder farmers and created a solution that improved agricultural productivity by sharing knowledge and expertise.

Farmers realize benefits in cost and labor savings, as the project improves their economic well-being by reducing the costs they pay laborers to plant the crops. It also provides social benefits for farmers, who spend less time planting crops and more time with their families. ■

Easily fabricated in a local workshop, the manual planter is an easy-to-use, time-saving device for smallholder farmers.



Monsanto's manual planter cuts planting labor in half

Workers at the Nextipac Plant Resume Their Education



The manager of the Monsanto seed facility in Nextipac, Mexico, has been instrumental in helping the people in the community of 500 families

improve their community and their lives. Noting that many of the people in Nextipac — including many who work at the Monsanto facility — had not completed primary or secondary education, site manager Victor Vega decided to make a difference. Working through the National Institute for Adult Education (INEA — Instituto Nacional de Education para los Adultos), he became qualified as an independent advisor. Using his evenings and other personal time, he then began offering classes to workers at the Monsanto facility. By October 2005, 22 students are expected to finish their primary education, and 18 are expected to complete their secondary education.

Having better-educated workers improves the productivity of the Monsanto workplace. Programs such as this one strengthen the bond between Monsanto and its people. This small plant consistently produces output at or above a neighboring larger plant, a demonstration of how education has increased the productivity of the workers. The workers and their families recognize the value of education and the opportunity to use that education to improve their families' quality of life.

This project demonstrates the “acting as owners to achieve results” element of the Monsanto Pledge. The site manager's efforts helped create a strong bond among Monsanto, its employees, and the Nextipac community. ■

Employees at the Monsanto site in Nextipac, Mexico, study to complete their primary and secondary education.



Act as owners...

IT Virtual Teams Deliver Solutions

When Monsanto became an independent company again in 2001, the company's Information Technology (IT) team chose a model for managing IT standards that balances enterprisewide and local needs through an inclusive approach using virtual teams. **These teams are responsible for assessing new technologies, setting technical standards, and implementing global solutions.** Guided by group expertise and diverse perspectives, team members are empowered to make decisions that represent their individual business units while still considering the needs of the whole company.

The virtual team approach creates value for Monsanto through savings in basic IT expenses, and it improves support of the global enterprise and local business units of the company. It also creates employee development value by exposing team members to new technologies and by fostering collaboration skills to reach conclusions. Among other accomplishments, in 2004 these virtual teams negotiated a new contract for database software at significant savings, fended off more than 28 million incoming spam messages a month, immunized Monsanto systems against virus outbreaks, improved security for network access, and implemented a backup tool on Monsanto personal computers that protects intellectual property in an automated way.

These examples and many others demonstrate a genuine commitment by team members to act as owners. They protected Monsanto's information assets through new information security technologies, and they improved Monsanto's bottom line through solid financial stewardship. ■

Create a great place to work...

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Monsanto Employees Make Company One of the Best Places to Work

Monsanto, its leaders, and employees make every effort to create a great work environment. Ultimately, it is the people of Monsanto who are responsible for the company's success. The Monsanto Pledge acknowledges the importance of a positive, empowering culture that allows employees to achieve their highest potential, embrace shared goals, and support each other along the way.

Monsanto's many recognition programs, such as the Monsanto Pledge Awards, the Queeny Award, and the Customer Challenge, demonstrate its appreciation of excellence among employees.

The company also provides competitive compensation for employees through attractive salaries and, depending on local government and social structures, benefits and annual incentive awards.

Monsanto also realizes that people are most productive and happy when they have time and latitude to enjoy life outside of the company with family and friends.

To encourage a good work-home balance, in many locations Monsanto offers flexible hours and job sharing, and a generous vacation policy. In some locations, Monsanto also offers on-site day care and/or fitness centers.

Details of benefits vary by country. For specific information on employee benefits, please contact the local Monsanto human resources office.

As a result of these recognition programs, work-life balance initiatives, exceptional benefits and compensation, and employee efforts, Monsanto has been recognized in several countries for its leadership in creating a great place to work:



In 2005, for the second year, Monsanto was selected as one of the 100 best companies to work for in the United States by "Fortune" magazine. In addition, Monsanto scored among the 10 best companies in retention, with a voluntary turnover of only 3.15 percent.



In Brazil, for the fifth consecutive year, Monsanto was selected by the Best Places to Work Institute as one of the 100 best companies to work for in 2004 and one of the best in all of Latin America. The ranking places Monsanto on a list of only 22 companies that have been ranked five times consecutively.



In India, Monsanto was selected as one of the top 25 places to work. The rankings were released in November 2004 by the Deccan Herald Avenues Excellence Awards.



Internationally, Monsanto received a Stevie Award for the second consecutive year. Monsanto won the 2005 award for Best Human Resources Organization, chiefly for its vehicle safety program. In 2004, the company was recognized as Best Multinational Company.



Readers of "The Scientist" magazine ranked Monsanto among the best places to work in the science industry. In addition, Monsanto was among the top 10 large companies (more than 5,000 employees) selected in the survey. ■

Excellence through Diversity — Monsanto People Networks

People networks are an important part of Monsanto's effort to create an inclusive work environment for the company's diverse work force. Networks support and encourage an awareness of the value of diversity, demonstrating that a work force with people from diverse backgrounds and thought helps to foster innovation, to stimulate creativity, and to encourage learning.

The networks help members practice inclusive teamwork as they support career development, networking, and recruitment. **The outcome is a work environment that places a high value on diversity and a high value on making the connections that help all employees feel included.**

Currently Monsanto has four people networks based at its headquarters site in St. Louis, MO, U.S.



MAC



MNW



AAIM

THE MONSANTO ASIAN CONNECTION (MAC)

Asian employees at Monsanto Company formed the MAC. The group's mission is to help its members address unique issues confronted by Asian Monsanto employees, to help reduce communication barriers, to provide tools for Asian employees, and to provide professional development for the network's members. MAC's goal is to make Monsanto a more attractive and culturally diverse place to work. By doing that, members of the group believe they will make Monsanto a place that will attract diverse new talents, raise employee productivities, and enhance employee retention.

MONSANTO SAINT LOUIS NETWORK FOR WOMEN (MNW)

Begun 10 years ago with just a few members, the MNW has grown to over 500 members. The organization's mission is to foster a culture that attracts, develops, and retains successful women. Its members work to understand and strengthen the unique contributions that women leaders make, to provide career and personal development education and opportunities, to link women with similar interests, to encourage mentoring, and to facilitate the exchange of ideas and best practices. The group works through seminars and workshops, networking events, and a Web site.

AFRICAN-AMERICANS IN MONSANTO (AAIM)

The AAIM network was launched in September 2002 with the objective of furthering the development of African-American employees at Monsanto as well as helping Monsanto achieve its corporate goals and objectives. AAIM supports programs geared toward professional development, networking, and the promotion of cultural awareness. The vision of the AAIM Network is to create and sustain a workplace environment in which African-Americans can reach their full potential. Partnering for success is at the core of the organization's philosophy — a philosophy that looks on diversity as the necessary broad base of a successful company.

MONSANTO HISPANIC NETWORK (MHN)

The MHN supports the professional development of its members and acts as a resource to promote awareness of Hispanics within the Monsanto workplace, to stimulate and develop the interests of Hispanics, and to function as a representative body on issues and developments that affect Hispanics at Monsanto. The organization's activities include a mentoring program, a scholarship program, a community outreach effort, work to support staffing, and work to help Monsanto reach its overall diversity goals. ■

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