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Poland

Biotechnology

Potential benefits to crops

2008

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Report Highlights:
Poland is one of six EU countries to have national bans on genetically modified organisms. In "GM-free" Poland, the sale, registration, and use of genetically modified seeds are illegal, though through a legislative glitch cultivation is still possible. A ban on biotech feed is set to begin in December 2012, but may be scrapped if the current pressure on the government from industry associations, scientists, and producers to allow GM feed continues. These restrictions have been determined to be inconsistent with EU regulations, and no convincing, science-based arguments have been made to justify them. There is strong demand among Polish farmers for biotechnology to address many of the problems facing its agriculture. Poland plans to update its cultivation law soon, but that law all but guarantees no planting will occur. It makes criminals of farmers because the draft requires that farmers' locations of GM plants will be publicly available on the internet.

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Current regulatory situation in Poland

Poland is one of six EU countries to have national bans on genetically modified organisms. In "GM-free" Poland, the sale, registration, and use of genetically modified seeds are illegal, though through a legislative glitch cultivation is still possible if the seeds are bought in another EU country. A ban on biotech feed is set to begin in December 2012, but may be scrapped if the current pressure on the government from industry associations, scientists, and producers to allow GM feed continues. These restrictions have been determined to be inconsistent with EU regulations, and no convincing, science-based arguments have been made to justify them. There is strong demand among Polish farmers for biotechnology to address many of the problems facing its agriculture. Poland plans to update its cultivation law soon, but that law all but guarantees no planting will occur. It makes criminals of farmers because the draft requires that farmers' locations of GM plants will be publicly available on the internet inviting activists to destroy their crops and they will face radical environmentalists' attacks.

2008 GAIN REPORTS on Biotechnology:
Government Framework Position
http://www.fas.usda.gov/gainfiles/200812/146306641.pdf
Biotech Feed Ban halted
http://www.fas.usda.gov/gainfiles/200811/146306617.pdf
New Draft Cultivation Law
http://www.fas.usda.gov/gainfiles/200808/146295592.pdf
Feed Ban Consequences for Pork and Poultry Production
http://www.fas.usda.gov/gainfiles/200806/146294929.pdf
Biotech Update, Feb. 2008
http://www.fas.usda.gov/gainfiles/200802/146293707.pdf

EU-27 Member States Consolidated Biotechnology Annual Report
http://www.fas.usda.gov/gainfiles/200811/146306614.pdf

Pests

Pest management is a growing challenge for Polish farmers. International trade has brought invasive pests from other regions to Poland where farmers are often ill-equipped to deal with them by the usual means. The European corn borer and the Western corn rootworm are the two most significant examples of this problem.

The European corn borer (Ostrinia nubilalis) costs Polish corn producers $400 million every year. This pest is prevalent only in the south, but its population is growing and threatening to expand northwards. Traditional pesticide application is not yielding satisfactory results, causing corn producers to desire genetically modified Bt-corn. The pest can reduce the yield by up to 5% in the first generation and 2.5% in the second. The use of Bt-corn could increase corn yields by 1-1.5 metric tons per hectare, according to the Opole Agricultural Counseling Center (Opolski Osrodek Doradztwa Rolniczego) in Losiów. Average corn yield in Poland is about 5.5 metric tons per hectare, rising to 8 metric tons per hectare in some regions. Exact amount of crop saved from pest damage due to Bt-corn use varies with the specific hybrid being used, the level of corn borer infestation and other environmental factors, but the careful use of an appropriate Bt-corn variety can control up to "60-95% of first generation (European corn borer) larvae and 40-80% of second generation larvae." The use of Bt-corn when corn borer infestation is above a certain threshold can also create monetary savings for farmers with reduced pesticide costs and increased yield compensating for higher seed prices.

Polish farmers in the south of the country are also having difficulty managing with Western corn rootworm (Diabrotica virgifera) infestations. The invasive species is relatively new to the region, having arrived from the United States to Europe in the early 1990's. The pest has been quarantined by the Polish government. Traditional pesticide application is failing, allowing the pest to cause 5-10% losses on average to corn yields. While most Bt-corn varieties in use do not affect corn rootworm populations, varieties have been developed specifically for this pest, such as MON 863, and have proven to be effective. Western corn rootworm threatens all corn production in Poland as it is a quarantine pest that requires burning to eradicate.

Pesticide application is difficult with corn later in the growing season and expensive equipment is required to spray the tall plants effectively. Bt-corn does not require any special equipment.

Drought and Other Environmental Factors

Modern irrigation is rare among Poland's farming sector which is populated heavily by low-capital small family farms. As a result, drought is a significant problem. Near Grudziadz, north of Warsaw, rainfall was at 10% of normal levels this year. In the worst affected areas, crop losses were as high as 35%. Spring grains this year were hurt by the dry weather, with losses of 50% in some areas. In 2005 and 2006, weeks of dryness followed by rain led to much of the corn being damaged by corn smut, a fungal disease that severely reduces the quality of the corn. Sometimes up to 100% of the crop was damaged by the corn smut. Water supply in general is becoming an increasing concern across Poland even with the sparse usage of modern irrigation.

Eventually drought resistant GM corn may be attractive to farmers. Some conventional varieties of drought-resistant crops are being tested. New plant varieties, although not genetically modified, have helped overcome environmental limitations in Poland in the past. Corn could not be grown in the country's cold climate two decades ago, but farmers can plant frost-resistant hybrids earlier in the season allowing the corn to mature earlier before drought sets in. This example of location-specific crop development yielding positive results bodes well for the application of biotechnology towards drought losses in Poland in the future.

The environmental movement continues to mislead consumers about biotechnology claiming it to be harmful to the environment. Pesticides kill farm more moths, butterflies, and birds that could be saved each year with biotechnology corn. Conventional, so called traditional crops, need more chemicals and pose great risks to farmers and can even show up in municipal water supplies. This fact should be studied in Poland and more widely explained.

Rising input costs

The steadily rising cost of agricultural inputs, especially fertilizer is becoming a greater concern for Polish farmers than seasonal issues such as drought. These higher prices are getting passed down from the producers to the millers and eventually to consumers. Coupled with this price increase is growth in the use of fertilizer, which was over 20% higher in 2005/06 than in 2004/05. Pesticide usage per hectare of land has doubled since 2000. Genetically modified varieties which require fewer inputs, such as Bt-crops, could reduce overall costs for farmers.

Drawbacks for Biotechnology in Poland

A large percentage of Polish farms are small family farms. These farms do not have significant funds to invest in improvements. According to the Plonsk Extension Office, these small farmers are often not interested in pursuing agriculture in the way that a large commercial farm is. They do not treat their farming like a business as much as they consider it a source of supplemental food and income. Taking this into account as well as the fact that most estimates for the profitability of genetically modified seed are calculated for large, professionally-managed commercial farms, biotechnology appears to be more suited for Poland's large-scale industrial farms.

Most Polish farmers prefer to save seed between seasons as opposed to buying certified seed on the market every year. The introduction of GM seeds would require farmers to change this behavior, as well as abide by the intellectual property restrictions that come with the new seeds. This could be a shock to some Polish farmers. This issue has been a source of contention in the United States and Canada where legal action has been taken against farmers over the intellectually property rights of seed produce.