

GREENPEACE

Genetically engineered soybean cultivation in Romania: Out of control

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2 Executive Summary

On 1st January 2007, Romania expects to join the European Union. However conflicts of approach over genetically engineered (GE), also called genetically modified (GM) crops may overshadow smooth accession.

Romania is the “El Dorado” for GM crops and the GE industry in Europe. It is the only country in Europe allowing commercial growing of GE Soya, the Roundup Ready (RR) GE Soya produced by the U.S. companies, Monsanto and Pioneer. The Romanian legislation on GMOs is very weak and far away from implementing all existing EU-standards. The responsible authorities have no means to implement the existing laws, as there are no inspectors to make controls, and not a single certified laboratory to do scientific analysis.

Romania has the largest area of land cultivated with GE crops in Europe. 136,380 hectares of Soya was planted in 2005, out of which only 85,000 ha is officially registered to be GE Soya. However, according to farmers’ associations and even the ex-country manager of Monsanto in Romania and Limagrain, in reality the GE Soya is up to 90% of the total surface cultivated with soya varieties - and nobody in Romania has control of the situation. In August 2005, Greenpeace did research on the illegal planting of GE Soya in Romania and the results proved that Romania is being invaded by GMOs without any control. With scientific PCR analysis done at Umweltbundesamt¹, Vienna, Austria, as accredited laboratory to analyze GMOs according to the international standards it was proven that indeed unrecorded cultivation and contamination with GE soya is happening all over Romania. There are registers with declarations from farmers growing GE Soya at county level and centralized at the Ministry of Agriculture, but nobody is controlling them. The findings of unrecorded fields of GE Soya follow previous Greenpeace discoveries of illegal growing of GE insect resistant potatoes at the Research and Development Centre for Potatoes in Tîrgu-Secuiesc². Illegal experiments with GE plum trees have also been found at the Research Station for Trees in Bistrita³. In both cases, the Ministry of the Environment had given no authorisation.

Interviews with local farmers showed that they were willing to sell farm-saved GE Soya seed and that a black market in undeclared growing has developed. For example, one farmer had not declared any of the 500 ha of GE Soya he was actually growing.

In an interview with Greenpeace, Dragos Dima, former country manager for Monsanto Romania and Limagrain said: “The acreage of GE soybeans it is probably about 100,000 or 110,000 hectares – out of which only 30,000 to 35,000 are planted with certified seeds. The rest is planted with uncertified seeds, which means that the farmer is saving and replanting seeds the next season. This will lead to a lack of traceability, a lack of information, and the possibility that the products processed out of soybeans cannot be labelled.”⁴

Other leading Romanian farmers interviewed agreed that GE Soya cultivation is much more extensive than the Government knows about. Mr. Ion Toncea, President of the National

¹ <http://www.umweltbundesamt.at/>

² Greenpeace press release, available at http://www.greenpeace.ro/campaigns/story/story_95.html, 08.09.2005

³ Greenpeace press release, available at http://www.greenpeace.ro/campaigns/story/story_100.html, 26.09.2005

⁴ Interview with Mr. Dima Dragos, ex country manager for Monsanto Romania and Limagrain, 29.07.2005

Federation for Organic Farming in Romania (FNAE) states that “the area cultivated with GE Soya is around 70 % of the total area cultivated with Soya.”⁵

Mr Bogdan Soare, a former farmer from “AGRO Industrialia” Movila in Ialomita County, which was cultivating GE Soya on about 800 ha in 2004, said “after six years from the introduction of the RR Soya for commercial growing in Romania, this crop has replaced almost 100% organic or conventional seeds, as the farmers keep the GE seeds to be planted the next year and to sell it as uncertified seed. The legislation lacks in implementation, so the farmers are in habit to keep and sell GE uncertified seeds”.⁶

Greenpeace’s investigations reveal that two key factors have led to the situation where GE crops are dangerously out of control in Romania:

- **A weak and poorly enforced regulatory system** – there is not a single laboratory certified to international standards in Romania to make the scientific tests for GE crops.
- **Promotion of GE for Romanian agriculture by the National Government, USA and biotech corporations** – all of whom have promoted conditions for GE crops, which favour weak safety regulations but strong controls on farmers to restrict seed saving.

The negative consequences that are likely to arise from the continued use of GE crops in Romania include:

- Contamination of organic and non-GE crops leading to economic losses for these farmers if they cannot sell their products. Organic standards do not allow GE crops or products to be used.
- Problems for neighbouring countries if illegal GE varieties reach them via Romania. Serbia and Hungary have both said that Romania is contaminating their GE-free crops as a result of smuggling.
- Loss of markets for farmers if GE crops cannot be sold because of the market rejection in the rest of Europe.
- Increased costs and control by agro-biotech companies through systems to restrict seed saving and tie together chemical and seed sales.
- Damage to the environment through harmful effects on the sensitive Romanian flora of the broad-spectrum weed killers used with many GE crops. The potential for eco-tourism and the livelihoods of increasing numbers of organic farmers may be harmed.

Another serious problem identified relates to Romania’s accession to the EU and the conditions that will have to be fulfilled in relation to traceability, labelling and marketing approval.

- Monsanto’s Roundup Ready GE Soya is not approved for growing in the EU
- The absence of control measures, include testing and labelling systems, means that Romania may be unable to harmonize with the EU because of this, and its agricultural exports may be banned from EU markets altogether
- Romania’s GE crops and food may also be excluded from the domestic market due to EU harmonization requirements for identity and labelling. The absence of controls will mean Romania is simply not trusted as a supply source.

⁵ Interview with Mr Ion Toneca, President of National Federation for Organic Farming, 17.03.2005

⁶ Interview with Mr. Bogdan Soare, AGRO Industrialia Movila, 30.03.2005

Greenpeace believes that for the long term run, the best alternative for Romanian agriculture would be organic farming, which is less damaging to the environment and presents market opportunities for Romanian farmers.

If Romania intends to stay in the race for EU accession in 2007, Greenpeace believes it has to meet the demands of the EU market by taking the following steps:

1. Planting of Roundup Ready Soya must be stopped immediately, to stop uncontrolled dispersal into the environment and food chain.
2. A labelling system that requires traceability of all seeds or commodities that are GMOs or contain their derivatives must be put in place in 2006.
3. The Government must provide support for organic farming, by stimulating demand for organic food through education, public procurement policies and by providing economic incentives.

3 GE Soya and Romanian agriculture

3.1 Structure of Romanian agriculture

Agriculture is the most important industry for Romania's economy, employing 42.8% of the population. In contrast to many other countries in Europe, the number of people employed in agriculture has increased since 1989 because of the voluntary return of urban workers of rural origin to agriculture. Over 60 percent of Romania's land area of 23.8 million ha is devoted to agriculture. Of the agricultural area, one third is permanent pasture and some 63 percent is arable, more than half of which is planted with cereals, mainly maize and wheat. The main crops are soft wheat, spring barley, oats, maize, oilseed rape, sunflower, soybean, field peas, field beans, potato and sugar beet⁷. Around a tenth of the arable area is devoted to oilseeds, with soybeans being grown on about 120,000 ha or 1.3 percent of the arable land. The private sector farms 86 percent of the arable land in Romania and contributes 80 percent of agricultural production. The overwhelming majority (86 percent) of the 2.8 million private Romanian farmers own less than five hectares of land with the average size of a privately owned farm being 2.2 ha. A trend is emerging for the more dynamic, individual private farmers to enlarge their farm size by forming associations, buying or leasing land.⁸

3.2 Soybean farming

Romania is the only country in Europe where GE soybeans are grown on a commercial scale. According to Ministry of Agriculture figures, soybeans were planted on about 136,380 ha in 2005 and are expected to yield around 300,000 tonnes. In 2003-2004, almost 30,000 tonnes of soybeans were exported to Turkey, Greece, Italy, Spain and Hungary. Imports of soybeans totalled 48,000 tonnes, the main supplier being Brazil, followed by the Republic of Moldova, Turkey, Ukraine, Hungary and Canada.

Exports are likely to continue to grow (with 10,500 tonnes being shipped to Turkey and Italy in the first three months of 2005), as prices make soybeans competitive in the European markets, because of the lower transportation costs compared to those from North or South America.⁹

⁷ European Commission's Agriculture website, available at http://europa.eu.int/comm/agriculture/index_en.htm

⁸ Heidhues, Franz & Davis, Junior R & Schrieder, Gertrud, 1998. "Agricultural Transformation and Implications for Designing Rural Financial Policies in Romania," European Review of Agricultural Economics, Oxford University Press for European Association of Agricultural Economists, vol. 25(3), pages 351-72. <http://ideas.repec.org/a/oup/erevae/v25y1998i3p351-72.html>

⁹ Cristina Cionga, Romania Oilseeds and Products Annual 2005, USDA Foreign Agricultural Service

3.3 GE soybean growing

Romania grows GE crops on a larger scale than any other European country and was ranked 11th largest GE crop growing country worldwide in 2004.¹⁰ This GE crop is made up of Monsanto's GE Roundup Ready soybeans that have been genetically engineered so as they are tolerant to the herbicide, Roundup (glyphosate), which is also made by Monsanto. Farmers can spray their fields of GE soybeans with Roundup, killing the weeds but not the soybeans.

Monsanto's GE soybeans have been grown commercially in Romania since 1999, before any regulations were in place. They quickly came to occupy a large percentage of the soybeans being grown, rising from around 20% (about 15,000ha) of the soybean crop in 1999 to 50% by 2000, with some estimates being even higher¹¹. By the end of 2004, a total of 14 different varieties of GE Roundup Ready soybeans were approved for commercial growing in the national seed catalogue.¹²

In 2004, according to data from the Ministry of Agriculture, Forestry and Rural Development, the area of GE soybeans reported under law 462/2003, was 58,100 ha of the 123,000 ha cultivated with Soya¹³. In 2005, imports of GE soybean seeds from the United States more than doubled to 840,700 tonnes, compared to 2004 when 407,400 tonnes entered Romania¹⁴. The area being officially cultivated with Roundup Ready varieties in 2005 will have risen to 85,000 ha¹⁵ from a total of 136,380 ha¹⁶ cultivated with Soya varieties. However, as this report reveals, official figures seriously underestimate the amount of GE soybean being grown as a result of black market sales of GE seed. The total area of GE Soya grown in 2005 is likely to form 90% of the total area growing Soya.

3.4 The Legal Framework for GE crops

In 2005, Monsanto's and Pioneer's GE herbicide tolerant soybeans were approved for commercial growing in Romania, while Pioneer GE maize was under field testing and several varieties of Bt potatoes were in the greenhouse of University of Timisoara. A GE Bt potato had been approved but was a failure in commercial cultivation in Romania in 1999 when it was grown on less than 1,000 ha.¹⁷ It has since been withdrawn from the seed varieties register.

Regulations governing GE crops were first introduced in 2000 (Ordinance 49/2000 on obtaining, testing, utilization, and commercialization of GMOs), after the GE soya was first grown commercially. A Biosafety Commission was established, composed of academics and officials to evaluate and license experimental and commercial releases of GE organisms.

¹⁰ James, C (2005) ISAAA Briefs 32-2004: Preview: Global Status of Commercialized Biotech/GM Crops: 2004, available at <http://www.isaaa.org/>

¹¹ Kruszewska, I (2003) Romania: The Dumping Ground for Genetically Engineered Crops - A Threat to Romania's Agriculture, Biodiversity and EU Accession. ANPED, Ecosens & Bioterra. Available at www.anped.org

¹² Official breed catalogue from Romania for 2004

¹³ The evolution of the surfaces cultivated with soya in Romania in period 1988-2004 (including GE varieties), Ministry of Agriculture webpage, available at <http://www.mapam.ro/images/Imagine4.gif>

¹⁴ Letter from Mrs. Sulfiņa Barbu, Minister of Environment to Greenpeace, 31.05.2005

¹⁵ Romania controls the own GE soybeans production, Ministry of Agriculture Press release, available at http://www.mapam.ro/pages/view_presa.php?id=1123&lang=2, 10.10.2005

¹⁶ Situation of the agricultural plantantion, Ministry of Agriculture Press release, available at http://www.mapam.ro/pages/view_presa.php?id=976&lang=2, 13.06.2005

¹⁷ Global Status of Commercialized Transgenic Crops: 1999, by C. James, available at <http://www.isaaa.org/kc/Publications/pdfs/isaaabriefs/Briefs%2017.pdf>

However, to bring Romania into line with EU rules, Ordinance 49/2000 was replaced with Law 214 in April 2002, effective from May 2002. This new law now provides the main framework for GE product approval in Romania. It is intended to be consistent with the EU's Deliberate Release Directive (2001/18) and is administered by the Ministry of Environment and Water Management. A new Biosafety Commission composed of scientists has been established to advise the Ministry on applications and only GE crops with approvals can be placed on the national seed register.

Two other pieces of legislation relevant to labelling and traceability are Decision 106/February 2002 on labelling food derived from GMOs or containing genetically modified additives or derived from GMOs; and the Minister of Agriculture, Forests, Waters and Environment Order 462/2003, effective from July 2003, with provisions aimed at tracing GE products and which requires farmers to register when they grow GE crops. Romanian law will enforce the complete EU 1830/2003 Regulation on labelling and traceability by the end of 2006¹⁸.

Under Order 462/2003, the Ministry of Agriculture keeps records of the area of GE crops grown each year, collecting data from sales of seed.¹⁹ Farmers have to record what they have planted with the local County Agriculture Department before June 15th of every year. However, this figure neglects those farmers who use farm-saved seed without reporting it.

4 Greenpeace findings on GE Soya cultivation and contamination

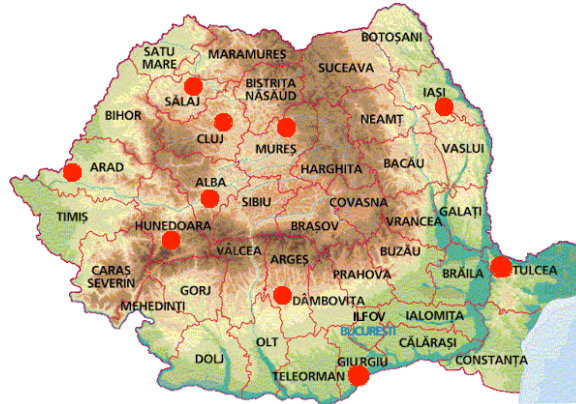
In order to detect whether unrecorded growing of RR Soya was taking place, Greenpeace investigated fields of soybean in several counties of Romania. These sites were chosen because they were listed in the 2004, but not in the 2005, registry of declarations of farmers growing GE Soya sent to the Agricultural County Departments and centralized at the Ministry of Agriculture according to Government ordinance 462/2003. The preliminary analysis was performed using commercially available qualitative ELISA test strips on samples of soybean leaves to detect the presence of RR Soya. Ten of the positive samples were then sent for PCR analysis at Umweltbundesamt laboratory in Vienna, Austria. Samples (of approximately four handfuls of leaves) were labelled and kept in a cool box at 4 °C before transport to the laboratory.

All ten samples sent for confirmation by PCR analysis were positive for the RR genes and came from ten different counties spread across Romania (see Figure 1), illustrating that farmers are illegally cultivating RR Soya all over the country. In addition to the ten samples sent for PCR, qualitative ELISA strip tests on Soya leaf samples at many other locations identified many cases of unrecorded plantings of RR Soya. These were largely located in the same counties as those confirmed by PCR.

Figure 1: Map of Romania showing counties where unrecorded fields with GE RR soybean were detected by PCR.

¹⁸ Letter from Mrs. Minister Sulfina BARBU to Greenpeace, 31.05.2005

¹⁹ Kruszewska, I (2003) op cit



As part of the investigation, Greenpeace also conducted interviews with local farmers and discovered the following:

- Each of the farmers with unreported GE Soya fields, and many others interviewed in several other counties of Romania, were willing to sell Greenpeace investigators GE soybean seeds on the black market at a lower price than certified seeds from Monsanto’s seed distributors.
- On one farm in Arges County, where GE Soya was detected and confirmed by PCR, the farmer said he believed that he was growing 140 ha with conventional Soya as he had he declared to the Arges County Direction for Agriculture. This raises the possibility that seed distributors have been selling contaminated seed although this has not been confirmed.

These findings indicate that the growing of GE Soya in Romania is out of control, with an active black market of GE seeds and no reliable record of where GE Soya is being grown. Although the competent authorities claim that the growing of GE crops is strictly controlled, Greenpeace’s findings confirm the investigations first undertaken by journalists from the “Jurnalul National” newspaper in 2004. The investigators, using hidden tape recorders, played the role of illegal buyers of GE Soya seeds, possibly “purchasing” thousands of tonnes of GE Soya²⁰. There has been no official reaction to these revelations.

5 Weak systems of monitoring and control

The Greenpeace findings of unrecorded fields with GE Soya, the illegal experiments of GE insect resistant potatoes and GE plum trees are further proof that the regulatory system in Romania is not functioning reliably.

Effective monitoring, labelling and traceability require good records and clear systems of control. Monitoring is essential to detect any adverse or unintended effects of GE crops. Labelling is important for consumer choice, but is also important because with traceability it provides a mechanism to remove products from the food chain quickly, should problems be detected.

Under EU rules (Regulation 1829/2003), derivatives of GE crops have to be labelled, even if there is no foreign DNA or protein in the final product. This demands very stringent and reliable record keeping being in place. It also requires laboratory-testing facilities to be able to check traded commodities and food/feed for the presence of GMOs. However, there is no certified laboratory appointed to test for GMOs in Romania.

²⁰Health violation – Romania inseminated with “mutant” embryo“, Eugen Ciufu, Gabriel Burlacu, Jurnalul National, available at http://www.jurnalul.ro/articol_20771/atentat_la_sanatate___romania__insamantata_cu_germeni__mutanti_.html, 26.10.2004

Monitoring of GMOs in Romania is also hampered because the Government Ordinance no.49 / 2000 did not require post-approval monitoring, so there are unlikely to be records of the fate of the GE crops before that time. The poor controls on field trials, the tradition among farmers to save seed (even maize hybrids), plus the chaos at ISTIS²¹ (*Institute of Variety Testing and Registration*) contributes to a picture of chaos and confusion and a lack of a reliable system of monitoring and traceability.

Although GMOs are released into the public domain - the environment and food chain- the public in Romania is not informed about these releases or about the food they are eating. There are no governmental procedures for informing the public about releases of GMOs, even though Romania is a party to the Åarhus Convention. The EU Food and Feed Regulations (1829/2003) and the Deliberate Release Directive (2001/18) require information to be available to the public and for there to be an opportunity for the public to comment on GE applications.

Asked about presence of food containing GMOs in Romania, Mr. Robert Hart, representative of the responsible authority for labelling GMOs, the National Authority for Consumer Protection said, “We don’t deal with these food additives, but the Ministry of Health does.”²² Authorities are passing responsibility for the growing of GMOs from one department to another. It also further proves a lack of knowledge on the growing of GMOs in Romania. Government action is needed to take control of the growing, safety assessment, labelling and traceability of GMOs. Clear lines of responsibility must be established and record keeping enforced.

6 Pushing GE crops in Romania

GE crops have been heavily promoted in Romania by the industry, Government and the USA. For example, the Ministry of Agriculture’s Advisor on GMOs, Mr. Constantin Sin has said that. “With an agricultural potential of more than 9 million ha, Romania is very interested in growing GE herbicides and insect resistant crops”.²³ He also anticipates that “The GMO Farmers Association is on the way to be set up”.²⁴

Mr Valeriu Tabara, deputy from the Democratic Party in the Deputy Chamber and ex-Minister of Agriculture made a political statement on GMOs on the 10th May 2005 saying: “I’m demanding that all competent authorities in Romania on GMOs are faster in analyzing and authorising new varieties of GMOs [...] The representatives from the central authority on GMOs, should no longer block projects with high economic and scientific importance in this field.”²⁵

In promoting GE crops in Romania, the Government is supporting the interests of the biotechnology industry and the USA, who have expressed their support for a pro-GE approach in Romania. Monsanto, the company behind GE Soya in Romania, is a U.S. based corporation. “Agriculture in Romania is a field in which the USA is interested to invest”, said the American

²¹ Ministry of Agriculture, Food and Forestry, Raport privind activitatea de prevenire a coruptiei si de actiune impotriva coruptiei desfasurata de MAPP, in perioada 1.01.2002-31.07.2002; 15.04.2002

²² Business Magazine, no.28/2005, 26.07.2005

²³ Mr. Constantin SIN, chief of Research and Biotechnology Department in Ministry of Agriculture, Forestry and Rural Development, “Legislation implementation and monitoring systems for GMOs, options for Romania” Conference, 30.03. 2005.

²⁴ Constantin SIN, chief of Research and Biotechnology Department in Ministry of Agriculture, Forestry and Rural Development, “Public Participation on Biosafety Issues” Seminar organized by Ministry of Environment and Water Management, Bucharest, 16.06.2005

²⁵ Valeriu Tabara, Political Statement, Deputy Chamber Meeting, 10.05.2005

Congressman, Bob Goodlatte during his visit to Romania in February 2005. Meeting with agricultural companies and the new Minister of Agriculture, the U.S. congressmen emphasised that the USA hoped they would continue to grow GE crops after the EU accession²⁶.

Francis Norval of the U.S. Mission to the EU has said; “The Romanian legislation on GMOs should not inhibit Romanian farmers’ use of this technology. Romania should speed up the process of approving GMOs and allowing Romania to enter the EU with a compatible legislation. It would be a competitive disadvantage if EU farmers reject biotech. The scientist and the student must be encouraged to embrace biotechnology”²⁷.

Dima Dragos explained how Monsanto pushed the country and farmers into this technology with little regard for the interests of Romania itself:

“I left a company that introduced GE crops in Romania due to the fact that I expressed my concerns regarding the timing (end of 1998) of GE introduction technology in Romania. I neither considered that Romania nor the company was ready and able to monitor and control the GE technology. Unfortunately, the top management did not listen to my concerns and today the situation shows a total lack of control over the GE technology. At the time when the technology was introduced in Romania there was no legislation and Romania adopted it, building the legal framework after its introduction – this created a gap between the part of control and the part of the commercial side of the technology.

“Monsanto’s selling strategy was very focused on the technical part of the technology – presenting it as an advantage for the farmers and the ease of using it. ...And I think that counted a lot, because in 1998 in Romania, marketing at the beginning was just an idea. The question was how to prevent seeds being saved. This was a main issue – how can a company protect the intellectual rights and the copyrights. And in the Romanian context, the only strategy was to buy back the yield and then to sell it to the processor or the crusher; and this was a way to convince the farmers to sell everything, not to keep something for himself.”²⁸

This pressure to adopt GE crops and the motivation behind it, acts against proper controls and monitoring systems and may prove to be a problem when EU accession takes place. The EU’s requirements for monitoring, labelling and traceability may not be achievable because of the lax systems that are currently in place. Monsanto’s GE Soya is not approved in the EU. Adoption of GE farming may also damage Romanian farming and the environment. These negative side effects, ignored by the proponents of GE crops are considered below.

7 Negative effects on Romanian agriculture from GE crops

7.2 Contamination of organic and conventional crops

GE crops threaten organic farming due to the potential of co-mingling of seed and grain and the costs for keeping GE and non-GE separate from field to plate (from the growing of Soya to the processed products). EU rules do not allow GE methods and products to be used in organic farming, so uncontrolled cultivation of GE crops threatens this agricultural sector. In Romania,

²⁶ Americans wants us to grow more GMOs, Libertatea, No. 4598 available at <http://www.libertatea.ro/index.php?section=articole&screen=arhiva&sid=104866>, 25.02.2005

²⁷ Mr. Francis Norval Jr., Counsellor Minister for Agriculture (USDA-FAS), Seminar on Cartagena Protocol organized by Ministry of Environment and Water Management, Bucharest, 30.03.2005.

²⁸ Interview with Mr. Dima Dragos, ex country manager for Monsanto Romania and Limagrain, 29.07.2005

organic agriculture has the capacity to increase. Mr Ion Toncea, the President of the National Federation for Organic Farming in Romania, told Greenpeace that, "The organic agriculture potential is up to 15 % from Romania's total agricultural land". He also stated he is very worried about the uncontrolled spread of GMOs. "The lack of control on GMOs is a serious threat to our organic agriculture and has undermined our trust in the unique EU market. A proper improvement and enforcement of the legislation is a must if we want to have an open market in the EU with our tasty and healthy products."²⁹

However, the future of organic farming is already under threat from GE crops. According to Mr Bogdan Soare, a former farmer from "AGRO Industrială" Movila in Ialomita County, which was cultivating GE Soya on about 800 ha, the national wide area of GE Soya is very close to 100% from the total surface cultivated with Soya varieties. "After six years from the introduction of the RR Soya for commercial growing in Romania, this crop has replaced almost 100% organic or conventional seeds, as the farmers keep the GE seeds to be planted the next year and to sell it as uncertified seed. The legislation lacks in implementation, so the farmers are in the habit to keep and sell GE uncertified seeds", says Mr. Soare.³⁰

Mrs Lucia Eremia of Inedit Food SRL, one food producer in Romania, that is actually able to ensure traceability and labelling from farm to plate, says that, "Lately it has become very difficult to find farmers available to grow GE-free Soya for us. The current situation is not favourable for the company, as we intend to stay GE-free and produce organic".³¹

7.3 Contamination problems for neighbours countries

Because controls on GE are weak in Romania, it is possible that GE seed could be taken across borders into neighbouring countries. According to press reports, Serbia and Hungary have accused Romania of contaminating their GE-free crops as a result of grain smuggling across the border.³²

Hungary's Seed Alliance, fears that GE maize is already in use across Hungary's eastern border with Romania. "We have information that GE maize seeds might have been already imported through cross-border trade, but there is no way to monitor the amount," said Janos Turi, Alliance president.³³

Romania is cited³⁴ as the source of GE contamination of soybeans grown in Vojvodina, Serbia - a centre of seed breeding - with the RR gene owned by Monsanto. The Federal Institute for Plant and Animal Genetic Resources in Serbia freely admits that it cannot control illegal trans-boundary movements of GMOs, such as the smuggling of GE soybeans from Romania and elsewhere, or the dissemination of GMOs from the U.S. aid programme destined for Kosovo. "Despite the phytosanitary inspectors on the borders, it is impossible for us to control smuggling from Romania or Bosnia, or the illegal dissemination of GMOs from Kosovo, which is receiving a lot of U.S. aid," said Ivana Dulic -Markovic Director of Federal Institute of Plant and Animal Genetic Resources in Serbia.³⁵

²⁹ Interview with Mr Ion Toncea, President of National Federation for Organic Farming, 17.03.2005

³⁰ Interview with Mr. Bogdan Soare, AGRO Industrială Movila, 30.03.2005

³¹ Interview with Mrs. Lucia Eremia, Inedit Food SRL, 28.07.2005

³² EU races to thwart influx of GM food from east. The Guardian. February 14, 2004

³³ Sandor Peto, Reuters News Service, available at

<http://www.planetark.com/dailynewsstory.cfm/newsid/29804/story.htm>, 03.03.2005

³⁴ Serbia: GMO is politics, Osservatorio sui Balcani, available at

<http://www.osservatoriolbalcani.org/article/articleview/3011/1/49/>, 23.04.2004

³⁵ Biosafety Policy and Practice in Yugoslavia, available at <http://www.anped.org/PDF/April%202002%20GMO%20Yugoslavia.PDF>

7.4 Loss of markets

Romania is the sole producer of GE soybeans in Europe but experts predict huge losses for the country after it joins the EU if it develops large-scale GE crops. "We'll surely get in trouble. There will be nothing to export if we have only GMOs on offer," said Ion Scurtelli of the ANCER grain wholesalers association³⁶.

This might not only be a problem for exports, but also for the internal market. After accession, GE food and feed in Romania will also have to be labelled if it contains ingredients which are more than 0.9% GE. Most large food producers in Europe want to avoid labelling because of negative consumer reactions to GE food. This standard is likely to be applied to the Romanian market, at least by companies, which are not only producing for Romanian market. The new EU member states, such as Poland and Slovakia, are gaining markets from supplying non-GE quality standards. Romanian farmers will not be able to access this market if they continue to use GE crops.

Even the lower value animal feed industry, is turning to a non-GE standard for some big suppliers. If the cultivation of unregistered GE Soya continues or contamination with uncertified seeds is discovered, the harvest will simply have to be destroyed.

7.5 Increased costs and control for farmers

The main reason for the uncontrolled situation in soy growing is the demand for royalties by Monsanto for the reuse of seeds. This combined with attempts to sell overpriced herbicides to those farmers, which are registered officially, means costs for growing RR Soya legally are too high for many farmers. To obtain registered GE seeds, farmers have to buy a pack of products from Monsanto containing the GE herbicide tolerant seeds and the RR herbicide (glyphosate). The whole pack costs around 135 Euros, and it "covers" 1 hectare. This is about 100 Euros more expensive than using farm saved seed and cheaper generic versions of glyphosate. Not surprisingly, farmers have discovered that generic herbicides based on glyphosate, but not made by Monsanto, have the same effects as Roundup but are much cheaper.

Therefore, in practice, farmers buy this pack once, and at harvest select some seeds for future sowings, and sell the rest. These seeds are not declared to the authorities so they are not present in the national certification system. On the black market, they are sold as seeds for consumption after processing, but they are actually bought for growing the GE crops surreptitiously.

So, farmers make their GE crops profitable only through illegal practices. If they register properly, this would mean an increase in production costs. Some farmers are returning to conventional Soya as a result. For example, Stef Ioan, who farms in Mureş, used to grow GE RR Soya but turned to conventional Soya again in 2005. Monsanto accused him of not paying royalties in 2004, and he almost had to destroy the harvest. Finally, Mr. Ştef was able to demonstrate that the plantations were legal, but he decided to cultivate conventional Soya the next year. So, he was much happier in 2005 because growing conventional Soya proved to be a better and a safer business. With the same input costs he says his yields are almost double, increasing from 1,700 kg/ha with GE Soya in 2004, to an estimated 2,800-3000 kg/ha from conventional Soya in 2005³⁷.

Elsewhere in the world, Monsanto has pursued its royalties on GE seed very actively. There are 100 court cases against nearly 200 farmers and small agricultural companies in the USA.

³⁶ "Romanians say GM Soya beats smelly salami?", Radu Marinas, Reuters News, 04.06.2004

³⁷ Interview with Mr. Stef Ioan, Farmer, 29.08.2005

According to the Centre for Food Safety, Monsanto has a team of 75 people in the USA to trace down each and every farmer, whom has signed the contract with Monsanto who is suspicious that some farmers are saving some seeds without paying³⁸.

As the experiences with RR Soya have shown, a GE approach means the whole food chain can become a monopoly - from delivery of agricultural inputs (seeds, fertilisers, chemicals, machinery etc.), via the growing of plants up to the harvest, and throughout processing. Producers may find themselves obliged to use specific agro-chemicals to grow specific GE seeds. They might also be crushed by trans-national corporations supplying increasingly expensive inputs and purchasing their agricultural outputs at ever-lower prices.

The situation of increased royalties and losing markets might become a major factor for ruining Romanian farmers' livelihoods in the very near future. This is despite the fact that the RR Soya production system had some economic advantages for the farmers using uncertified seeds.

8 Threatening EU accession

By joining the EU, Romania will have to comply with and implement EU Directives and Regulations. There is very limited flexibility in the accession process although derogations may be given in some limited circumstances for a certain period. The European Parliament Foreign Affairs Committee has criticised the Romanian Government's progress in anti-corruption, judicial independence, media freedom and child welfare. Despite the committee's call to reorient the accession strategy to give Romania more time to implement EU criteria, both the Government of Romania and the European Commission continue supporting the 2007 accession goal. Romania has pledged to implement concrete measures for reform within the current accession timeline.

The old Romanian Government did not consider that GMOs are an important issue and did not include any derogation in the accession talks in the previous years. Romania did not ask for transitional periods, proposed that the country 'grow GMOs enforcing the precautionary principle' and considered that biotechnology could be the solution for setting sustainable social-economic systems³⁹. The chapter was opened on March 2002 and closed December 2004 and therefore can be considered to be agreed.

In the meantime, the Romanian Minister of Agriculture, Mr Gheorghe Flutur stated; "the wish is to stop growing GMOs in 2007, as planting of this crop is not allowed in the EU ...however it's just not possible to do it overnight, and only through legislation". However, the situation for 2006 remains unclear concerning the massive unrecorded plantings of RR Soya. Furthermore no suggestions were made about how to deal with this problem.

The EU Commission's comprehensive monitoring report made in October 2005 for Romania asks for "stronger enforcement and control of GMO legislation and preparations for the Rapid Alert System for Food and Feed."⁴⁰ The ambiguity of the Romanian authorities could lead to postponed accession into the EU.

The challenges that Romania faces in relation to the EU accession and GE are as follows:

³⁸The Center For Food Safety (2005): Monsanto vs. US Farmers, available at <http://www.centerforfoodsafety.org/pubs/CFSMonsantovsFarmerReport1.13.05.pdf>

³⁹ **Position paper of Romanian Government, Chapter 22, Environmental Protection, 18.10.2001**

⁴⁰ Romania – 2005 Comprehensive Monitoring Report, European Commission, 25.10.2005

- GE RR soybean is being grown on a wide scale and this is not licensed for cultivation in the EU.
- Following accession, it will be illegal to sell food or animal feed products that contain more than 0.9% GE derived ingredients without labelling. Regulations on traceability and labelling will have to be in place and functional. This will require the establishment of an appropriate system, including an approved laboratory. The whole of the food production system will have to be informed about the requirements of GE labelling and systems put into place to implement them. Officials from other EU countries are also aware of fundamental problems. “There is no certified control body to support law on traceability, and if Romania wants to start tracing GMOs, it is imperative that well-trained inspectors form such a body”, said Helmut Gaugitsch, from the Environmental Federal Agency in Austria⁴¹.

The implications of these problems are great. If, due to the absence of control measures that include testing and labelling systems, Romania is unable to harmonise with the EU, its agricultural exports may be banned from EU markets. Romania’s GE crops and food may even be excluded from the domestic market due to EU harmonisation requirements, especially if these do not have regulatory approval and contamination with illegal crops cannot be excluded.

The ex-Monsanto and Limagrain Country Manager, Dima Dragos, said, “Such a huge area growing uncertified GE Soya is unacceptable due to the lack of monitoring and control systems”⁴² He warned that, “This situation can lead Romania to be placed in a bad position in other chapter negotiations, such as the environment and agriculture”. The situation today proves that he was right.

9 Environmental effects

Romania has a very varied and rich biodiversity spanning its grasslands, forests, and mountains with almost half the country being formed from natural and semi-natural ecosystems. Romania is home to 60% of Europe’s brown bears and 40% of its wolf population. The Danube Delta, lying predominantly in Romania, is Europe’s largest wetland. Species that once thrived in many parts of Europe either are now only found in Romania, or can be found in large or significant populations in the country.⁴³ GE crops could threaten this unique environment of Romania.

Growing GE crops brings with it a lot of environmental risks associated with the GE crop itself and the intensive systems of farming they are part of. The potential risks include⁴⁴:

- Disruption of natural ecosystems if the GE crop survives outside the agricultural ecosystem;
- The evolution of new ‘superweeds’ which are resistant to the same herbicides a GE crop is;
- Increased use of broad-spectrum herbicides, leading to loss of biodiversity.

The cultivation of Roundup-tolerant soybeans involves the use of broad-spectrum glyphosate-based herbicides such as Roundup. Glyphosate kills all plants indiscriminately, leaving just the

⁴¹ Helmut Gaugitsch, Seminar on Cartagena Protocol organized by Ministry of Environment and Water Management, Bucharest, 30.03.2005

⁴² Adriana Todoran, Business Magazine, 26.01.2005

⁴³ Romania’s Biodiversity, UNEP/GRID Arendal, available at <http://www.grida.no/enrin/biodiv/biodiv/national/romania/robiodiv.htm>

⁴⁴ Ecological Society of America. (2004) ESA Position Paper on GEOs; Snow, A.A. *et al. Genetically engineered organisms and the environment: current status and recommendations*. Available at www.esa.org/pao/esaPositions/Papers/geo_position.htm.

GE herbicide tolerant crops intact. The very fact that glyphosate is a broad-spectrum herbicide means that many harmless plant species are destroyed unnecessarily. This may lead to decreases in wild plant diversity with damaging consequences for insects, birds and mammals that are dependent on these plants. For example, the rapid and widespread adoption of GE herbicide-tolerant soy and maize may seriously decrease the populations of milkweed, a common agricultural weed in parts of the USA. This, in turn, may lead to a decline in monarch butterflies, as milkweed is the sole food source for the butterfly caterpillars⁴⁵. Thus the widespread use of this broad-spectrum herbicide in the commercial growing of GE RR crops may have adverse consequences for weed plant species and for biodiversity. Studies in the UK of GE oilseed rape and beet have shown that the use of such herbicide tolerant varieties with the broad-spectrum herbicide, to which they are tolerant, is likely to lead to a loss of farmland wildlife.⁴⁶

New problems with glyphosate are emerging. It has been reported that glyphosate usage in one year may encourage the growth of the fungus, fusarium, on wheat grown the following year⁴⁷. Fusarium produces toxins, which are damaging to human and animal health. Recently, new concerns regarding the toxicity of Roundup to amphibians and to humans were raised⁴⁸. The Danish Government imposed restrictions on the use of glyphosate in June 2003 because it was found that glyphosate was detected in groundwater, having leached from the soils⁴⁹. Hence, the widespread use of glyphosate is likely to have adverse consequences for biodiversity.

Countries that are growing GE crops are experiencing some of the environmental and agronomic problems already. In Argentina, there have been reports of the emergence of herbicide tolerant weeds, including horseweed (*Conyza canadensis*), associated with the widespread growing of GE soybeans, as in the USA. Problems with RR soybeans as volunteer weeds have also been reported. This is not due to gene transfer, but simply the selection pressure exerted by the herbicide. Resistance to Roundup has also been detected in another four weed species.⁵⁰ The use of more toxic herbicides and adverse effects on health and the environment are claimed to have occurred as a result.⁵¹

Problems with volunteer oilseed rape⁵² are arising in Canada. Volunteers that are tolerant to three herbicides (Liberty, Roundup and Clearfield) were first identified in Canada in 1998; only three years after two types of GE herbicide tolerant oilseed rape (Roundup Ready and Liberty Link) were first grown.⁵³ The emergence of such volunteer weeds in Canada is encouraging the use of

⁴⁵ B. Hartzler (1999) Monarch butterflies and herbicide resistant crops. Iowa State University, www.weeds.iastate.edu/weednews/monarchs.htm and "Monarch butterflies may be threatened in their North American range," *Environmental Review* 6(4):1-9, April 1999 and "Monarchs and Their Roots" *Science*, 283: 171.

⁴⁶ The Farm Scale Evaluations of spring-sown genetically modified crops. Papers of a Theme Issue. *Philosophical Transaction of the Royal Society (B)* 358: 1773-1913. 2003.

⁴⁷ Coghlan, A. (2003) Weedkiller may encourage blight. *New Scientist*, pg.6, 16.08.2003

⁴⁸ Relyea, R.A. (2005) [The lethal impacts of roundup and predatory stress on six species of North American tadpoles](#). *Archives of Environmental Contamination and Toxicology* 48: 351-357.

Relyea, R.A. (2005). [The lethal impact of roundup on aquatic and terrestrial amphibians](#). *Ecological Applications* 15: 1118-1124.

Richard, S., Moslemi, S., Sipahutar, H., [Benachour, N.](#) & [Serralini, G.E.](#) (2005) [Differential effects of glyphosate and roundup on human placental cells and aromatase](#). *Environmental Health Perspectives* 113: 716-720.

⁴⁹ Available at www.pesticidvarsling.dk, www.geus.dk, http://www.mim.dk/nyheder/presse/Dep/040603_glyphosat.htm

⁵⁰ Heap I, (2004) International Survey of Herbicide Resistant Weeds. <http://www.weedscience.org/in.asp>

⁵¹ Branford, S. (2004) Argentina's bitter harvest. *New Scientist*: pp. 40-43. 17 April 2004

⁵² Volunteer crops are crops which grow the following year without replanting

⁵³ Downey, R.K. (1999) Gene flow and rape – the Canadian experience. 1999 BCPC Symposium Proceedings No. 72: Gene flow and agriculture: relevance for transgenic crops. British Crop Protection Council: Farnham; Hall, L. *et al.*

other more toxic chemical weed killers, including 2,4D and paraquat (grammoxone), to control them,⁵⁴ and could harm wildlife on environmentally sensitive areas, including areas set aside for environmental protection.

Even when pre-market testing has taken place, unexpected and unpredictable effects of genetic engineering have been seen in very hot conditions in the USA where GE RR soybean stems were found to be more brittle and split more easily, thus allowing infection to enter.⁵⁵ Differences in phytoestrogen levels between GE and non-GE Soya have been found⁵⁶, which were not documented in the original food safety assessment. These phytoestrogens are believed to be of clinical importance. There is growing interest and use of soybean-based food products or extracts to increase dietary phytoestrogen intake. Whether or not there are further problems with the GE Soya is unknown.

Therefore, there are a range of potentially harmful direct and indirect effects that growing GE crops may have on the environment. Some of these are beginning to be seen in those countries that have adopted GE on a large scale and the shortcomings of experimental trials in predicting harm is becoming evident. For a country like Romania, the risks are not worth taking.

10 Opportunities from non-GE agriculture

GE agriculture could lead to the losses and problems outlined above but there are different, more profitable routes that Romanian agriculture could take. Organic agriculture could bring financial and environmental benefits if it is not threatened by contamination from GE crops. Organic agriculture is a growing industry in Romania.

In 2004, about 3050 organic farmers - members of FNAE (National Federation for Organic Farming), farmed 60,000 ha of the total of 73,800 ha under organic agriculture. This area is expected to grow to 100,000 ha in 2005 and 200,000 ha in 2007 if not compromised by GE crops. Ion Toncea, the President of FNAE optimistically believes "The reasons for the farmers to quit growing GMOs are, that the input costs (seeds and herbicide, other pesticides, and chemical fertilizers) are too high". He also says that 15% or almost 2 million ha could be farmed organically.

Under the recently established⁵⁷ 'Agri-Eco Centre for Research, Innovation and Technologic Transfer' (Centrul Agro-ecologic de Cercetare, Inovare și Transfer Tehnologic), Mr Toncea will take the initiative to the Ministry of Environment to set GMO Free Zones in all the regions across the country with poor biodiversity (grazing fields and haystacks). However, Mr Toncea admits that such an initiative will not be possible until the EU regulations for traceability, labelling and co-existence are not enforced.⁵⁸ He complains that the Romanian authorities do not

(2000) Pollen flow between herbicide-resistant *Brassica napus* is the cause of multiple-resistant *B.napus* volunteers. Weed Science 48: 688-694.

⁵⁴ Outcrossing Between Canola Varieties - A Volunteer Canola Control Issue.

<http://www.agric.gov.ab.ca/crops/canola/outcrossing.html>

⁵⁵ Coghlan, A. (1999) Splitting headache. Monsanto's modified soya beans are cracking up in the heat. New Scientist, 20 Nov. 1999, p. 25. and Gertz, Jr. J. M., Vencill, W. K., and Hill, N. S. (1999). Tolerance of transgenic soybean (*Glycine max*) to heat stress. In "The 1999 Brighton Conference--Weeds : proceedings of an international conference organised by the British Crop Protection Council held at the Brighton Centre, Brighton, UK, 15-18 November 1999" pp. 835-840, The Council, Farnham, Surrey, UK.

⁵⁶ Lappé, M.A., Bailey, E.B., Childress, C.C. & Setchell, K.D.R. (1998/1999), Alterations in Clinically Important Phytoestrogens in Genetically Modified, Herbicide-Tolerant Soybeans, Journal of Medicinal Food, 1:241-245.

⁵⁷ Biroul de Presă al Ministerului Agriculturii, Pădurilor și Dezvoltării Rurale, available at http://mapam.ro/pages/view_presa.php?id=854&lang=2, 24.03.2005

⁵⁸ Interview with Mr Ion Toncea, President of National Federation for Organic Farming, 17.03.2005

support organic agriculture as much as they support farmers that cultivate GMOs. Lack of support and tools for information could be the reason why farmers do not really know what organic agriculture means. The common term for “organic” in Romania is “ecologic”, and farmers that grow RR Soya believe that using glyphosate is ecological agriculture.

Conventionally grown non-GE Soya could also find a large market in the EU as it is in great demand there. Such non-GE Soya for animal feed is likely to attract a premium and, because transport costs are less, Romanian farmers could reap real benefits. Such an approach would require support and a proper structure to ensure GE-free status, but could lead to the establishment of an important opportunity.

11 Conclusions

The growing of GE soybeans is out of control in Romania. An active black market in GE soybean seeds exists across Romania and the area under cultivation may be 70-100% of all Soya being grown although official records say only 50%. Because it is expensive to buy GE soybean seeds from Monsanto’s licensed seed merchants, farmers save seeds from their first GE crop and use these in following years. These are then not declared to the authorities. Farmers also buy generic versions of glyphosate, rather than Monsanto’s Roundup as another way to cut costs. The Government has taken no action to address this issue.

There can also be no confidence that other GE crops are not being grown or that field trials are being conducted properly because the systems of monitoring and traceability are not in place. Romania does not even have an approved laboratory to detect the presence of GE. Therefore, it is not possible to detect or track GE crops.

The situation is likely to bring problems for Romanian farmers, the state, and the environment. Romanian farmers will risk losing markets because of the rejection of GE foods by consumers throughout the rest of Europe. Food and feed products may be rejected. Monsanto and other companies producing GE crops may pursue farmers using farm saved seed as they have done in other parts of the world - forcing them into costly court cases and requiring them to pay royalties and purchase herbicide from Monsanto alone.

Organic and non-GE conventional farmers face a threat from GE because contamination would lead to the loss of their markets. There is a growing market demand for organic and non-GE food. Romanian farmers may be excluded from this market because of the promotion of GE by the Romanian Government, the USA, and biotech companies.

The state and farmers will face additional problems in relation to Romania’s planned accession to the EU in January 2007. GE soybeans are not approved for growing in the EU and traceability and labelling regulations will require considerable investment if they are to be put in place. If they are not, Romania may find itself excluded from export markets and with difficulties in the selling of GE contaminated products locally because of labelling requirements.

By adopting organic farming instead of GE, Romania would face a much more prosperous future and the threats to its special ecosystems that GE agriculture brings would not be observed. Romanian politicians should put the interests of Romanian farmers and the environment first, not those of the biotech industry. Romania must invest in non-GE agriculture and make sure the system of traceability and labelling are in place to protect against contamination.

If Romania intends to stay in the race for EU accession in 2007, Greenpeace believes that it has to meet the demands of the EU market by taking the following steps:

1. Planting of Roundup Ready Soya must be stopped immediately, to stop uncontrolled dispersal into the environment and food chain.
2. A labelling system that requires traceability of all seeds or commodities that are GMOs or contain their derivatives must be put in place in 2006.
3. The Romanian Government must provide support for organic farming, by stimulating demand for organic food through education, public procurement policies and by providing economic incentives.