

REPORT: Genetically engineered Soya in Ukraine, out of control

Agent Green
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AGRICULTURE IN UKRAINE

Agriculture is the most important sector of the Ukrainian economy. Generally, Ukraine has been known as the “bread basket of Europe”. There are 41,5 million hectares of agricultural land covering a total of 70% of the country. Of 41,5 million, 32 million is suitable for grain and vegetable farming. Ukrainian soil, known as “chernozem”, represents 30% of world reserves¹.

By generating 12% of GDP, agriculture is Ukraine's largest export industry.² In 2017, for instance, trade with agricultural products and food reached over 17,9 billion dollars.³ According to the Ministry of Agrarian Policy and Food of the country, in the first two months of 2018, Ukrainian agricultural exports increased by 102.1 million dollars, compared with the same period in 2017.

The traditional agricultural export leaders are crops. Sunflower is on the first position, followed by maize, wheat and soy.⁴ The top five importing countries in 2017 were Turkey (\$ 282.398.000), Iran (\$ 167,820,000), Egypt (\$ 151,657,000), Netherlands (\$ 79,243,000) and Italy (\$ 63,330,000).⁵

SOYBEAN - FARMING AND TRADE

Soybean is the 4th largest crop in Ukraine, both for export and on internal market, due to demand, high prices and Ukrainian geographical position. Soybean market is very dynamic, with significant yearly production fluctuation. Exports of soy (beans or crushed) remain high at all times, with almost a billion euros worth in 2017. Nederland, Italy, Greece, Poland, Denmark, Germany and Spain are the largest EU importers from Ukraine, while Turkey, Iran and Egypt are the largest outside the EU.

List of importing markets for a product exported by Ukraine

Sources: ITC calculations based on [UN COMTRADE](#) statistics.

Unit: Euro thousand

Importers	Exported value in 2013	Exported value in 2014	Exported value in 2015	Exported value in 2016	Exported value in 2017
World	558,850	528,958	725,636	890,465	937,903

1 <https://ukraineinvest.com/sectors/agribusiness/>

2 <https://www.export.gov/article?id=Ukraine-Agricultural-Machinery>

3 <https://en.interfax.com.ua/news/economic/480236.html>

4 <http://minagro.gov.ua/node/25810>

5 https://www.trademap.org/Country_SelProductCountry_TS.aspx?nvpm=1|804|||1201||4|1|1|2|2|1|2|1|1

Turkey	65,828	149,680	344,243	245,357	249,976
Iran, Islamic Republic of	0	38,793	141,203	133,316	148,553
Egypt	90,974	72,782	33,702	269,689	134,246
Netherlands	6,847	1,570	2,743	53	70,145
Italy	139,317	59,906	20,758	17,232	56,059
Belarus	1,240	1,247	3,458	30,528	51,112
Lebanon	2,603	7,434	29,303	36,714	37,839
Greece	39,139	46,215	28,150	44,022	35,633
Poland	16,787	7,382	17,706	17,313	34,783
Israel	1,916	11,205	27,426	18,969	25,665
Denmark	0	0	0	9,450	20,336
Germany	15,266	14,278	1,429	5,027	14,225
Spain	38,562	25,402	21,210	22,529	13,620
Portugal	1,977	2,800	0	0	9,873
Hungary	9,285	16,362	4,517	3,735	7,861
Belgium	0	271	0	0	5,555
United Arab Emirates	0	0	12	0	5,399
China	44	0	459	3,280	5,206
Lithuania	3,142	10,778	3,591	1,235	3,817
Georgia	917	2,369	4,496	5,217	2,186
Tunisia	0	1,191	7,124	6,529	2,155
Austria	1,882	2,206	959	524	1,844
Switzerland	291	503	0	298	666
Korea, Democratic People's Republic of	144	415	444	500	528
United Kingdom	0	463	1,024	324	164
Turkmenistan	542	583	201	712	140
Moldova, Republic of	2,438	184	1,878	43	127
Angola	0	0	0	0	59
Serbia	481	376	0	0	35
Romania	8,517	9,912	10,745	5,483	33
Azerbaijan	1,979	2,310	3,893	795	29
Czech Republic	1,142	144	141	0	17
Japan	802	710	144	33	11
Slovakia	26	480	10	14	6
Kazakhstan	1,159	797	33	7	3
Uzbekistan	2,561	980	411	0	0
Afghanistan	0	0	67	0	0
Bulgaria	1,823	7	5	0	0
Myanmar	233	0	0	0	0
Sri Lanka	0	0	430	0	0
Croatia	0	8	0	0	0

Estonia	0	159	0	186	0
France	0	0	0	0	0
Indonesia	1,924	630	0	0	0
Kuwait	0	6	0	84	0
Kyrgyzstan	0	0	0	5	0
Latvia	0	0	0	682	0
Libya, State of	0	0	0	1,575	0
Luxembourg	0	7,039	0	0	0
Malaysia	2,040	2,719	405	0	0
Morocco	0	0	0	3,752	0
Nepal	2,676	428	125	0	0
Panama	18	0	0	0	0
Russian Federation	59,264	9,159	0	0	0
Saudi Arabia	0	10,421	0	0	0
India	660	0	346	145	0
Viet Nam	11,053	65	0	0	0
Slovenia	0	16	0	0	0
South Africa	0	14	0	0	0
Syrian Arab Republic	20,202	8,180	12,843	5,107	0
Thailand	3,148	380	0	0	0

Over the last ten years, the State Register of Plant Varieties Suitable for Dissemination has a registered number of soybean varieties that doubled. In 2017, 1,99 million hectares were harvested with soy in Ukraine, while in 2018, the area is expected to be of 1,7 million hectares.⁶

The total value of soybeans exported by Ukraine in 2017 is \$1,1 billion (~1 billion euros), a share of 1,8% of the global market, the 1st position in Europe and the 7th position in the world.⁷

GE SOYBEAN LEGAL FRAMEWORK

The import and cultivation of genetically modified seeds is not properly regulated in Ukraine and the country has no mean for control and monitoring.

Main authorities Ukraine are Ministry of Agrarian Policy and Food of Ukraine, Ministry of Ecology and Natural Resources of Ukraine and State Service of Ukraine for Food Safety and Consumer Protection.

Despite many institutions being involved, the Ukrainian legislation is poor when it comes to monitoring the GM soya harvesting. According to Ukrainian laws, each farmer who is interested in harvesting GM crops must declare this to the authorities and test the crop for 3 to 5 years. If they fail to do this, authorities don't know and the GE soy-beans reach the market as if they were non-GE. Only when traders and buyers specifically ask for non-GE soy beans, there is a form of control from the state.⁸

⁶ <https://www.kleffmann.com/en/information-center/information-center/soy-in-ukraine>

⁷ <http://www.worldstopexports.com/soya-beans-exports-country/>

⁸ Agent Green interview with Oksana Prosolenco – Danube Soy Ukraine

The import and cultivation of transgenic seeds is not permitted in the Ukraine, but it is not prohibited and is not controlled. There are only few laboratories that could provide seed analysis for GMO in the Ukraine. It is possible that GMO seeds are imported as forage by experienced parties or international companies. As a result, these seeds became popular among farmers due to high profitability of GMO-soybean cultivation and easy growing (one glyphosate treatment during vegetation)⁹.

Due to a presumed higher profitability, easy growing and lack of awareness of the negative impact of GM soy and associate herbicides on human health¹⁰ and environment, Ukrainian farmers prefer to harvest GE soybeans. They are neither informed about the socio-economic effects of GMOs¹¹, nor about who really benefits from GM crops¹².

FIELD TESTING OF GM SOY

An official national registry or data regarding how much GM soya is being cultivated in Ukraine does not exist. There is no legal commercial production of GE products in the Ukraine. However, testing of corn and soy implies there is GE production. Reports indicate that some food products in Ukraine occasionally test positive for GE presence. This indicating that there may be some sources of GE seed present in the country or brought in from abroad. Industry rumors in Ukraine suggest that of the products destined for export, that 60-70 percent of soybeans and about 5-10 percent of corn grown tested GE-positive¹³.

In order to get a better impression of how much GM soy is really being cultivated, Agent Green has conducted a field testing in 6 key soy production regions of Ukraine that provided in year 2017 over 52% of overall harvested soybeans.

The regions where testing was performed are: Poltava – 219.700 ha, Khmelnytskyi – 191.100 ha, Kyiv – 170.800 ha, Kirovograd – 158.000 ha, Zhytomyr – 151.000 ha and Vinnytsya – 144.8000 ha.

During July 2018, the investigation team has been collecting samples of soy crops from 60 various fields from 6 key soy growing regions. All fields were very large. The investigators have collected leaves from each field by taking a diagonal in order to cover as many as possible rows of the plantation. The preliminary analysis was performed on the spot or nearby, immediately after collecting using commercially available qualitative ELISA test strips on samples of soybean leaves to detect the presence of GM Soy. 29 out of 60 samples were tested positive for GM soy. 12 positive samples (2 from each region) were taken in a cool box to the Austrian federal laboratory – Umweltbundesamt, where PCR analysis were undergone. The laboratory results confirmed the preliminary results, confirming that 48% of the soybean cultivated in the tested areas of Ukraine is genetically modified with a top of 80% in Kirovohrad and a minimum of 30% in Poltava.

⁹ Kleffmann Group Report: „Soy in Ukraine”
<https://www.kleffmann.com/en/information-center/information-center/soy-in-ukraine>

¹⁰ GM Soy: Sustainable? Responsible?
http://www.gmwatch.org/files/GMsoy_SustainableResponsible_Sept2010_Summary.pdf

¹¹ FoEE Report “The socio-economic effects of GMOs”:
http://www.foeeurope.org/sites/default/files/publications/foee_socio_economic_effects_gmos_0311.pdf

¹² FoEE Report “Who benefits from GM crops?”
http://www.foeeurope.org/sites/default/files/publications/foee_who_benefits_from_gm_crops_0211.pdf

¹³ Ukraine GAIN Report – UP1619 – Biotechnology Annual Report 2016:
https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Agricultural%20Biotechnology%20Annual_Kiev_Ukraine_10-11-2016.pdf



The screening performed by the laboratory indicates the presence of Monsanto's MON 40-3-2 GM soy in all tested regions and in one sample in the region of Vinnitsa Monsanto's CTP2-EPSPS (MON89788) GM soy was identified in a small amount (<5%).

The quantitative analysis showed that the amount of MON40-3-2 spy specific sequences are in the range from 83,97% to 100%. This indicates without any doubt that in Ukraine takes place deliberate cultivation of GM soy rather than accidental contamination of the fields.

These findings are crucial, as there was no prior investigation on the level of the GE Soya in Ukraine. This is the first actual study and it illustrates how ambiguous and grey is the whole area of GE Soya.

CONCLUSIONS AND RECCOMENDATIONS

The field testing conducted by Agent Green during summer of 2018 seem to be the first large scale testing in Ukraine followed by PCR analysis. The results indicating that 48% of the tested soy is GM represents a strong signal for the Ukrainian Government that cultivation of this crop is out of control. Creating legal framework to regulate deliberate release of GMOs for testing or commercial purposes should be an essential priority of the competent authorities for environment and agriculture. All food and feed containing more than 0,9% GMOs should be labeled as such. Considering that Ukraine has active negotiations with the European Union (where GM soy and other GM crops are not authorized for cultivation) it is strongly recommended that cultivation of GM soy will be prohibited starting 2019 planting season. Farmers cultivation non-GM soy varieties should receive appropriate compensation in order to save jobs and keep Ukraine a top soy producer.