



GREENPEACE



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Oppose authorisation of three genetically modified (GM) maize for cultivation

On 8 July 2016 EU Member States will discuss whether or not to approve genetically modified (GM) maize 1507 and Bt11 for cultivation, as well as the re-authorisation of GM maize Mon810.

The cultivation of GM crops is highly controversial in Europe – to date, only one GM crop, transgenic maize Mon810, has a valid authorisation for cultivation in the EU. On 11 February 2014, 19 member states rejected the Commission's proposal to authorise the cultivation of transgenic maize 1507.

In autumn 2015, 17 national and 4 regional governments agreed to ban the cultivation of various genetically engineered maize varieties in their territories. This means that, if authorised, Mon810, 1507 and Bt11 could be grown in 9 countries and 2 regions.

Allowing cultivation in some countries increases the risk of contamination within the internal market for foods, feeds and seeds and increases the costs of internal checks to prevent them from growing in countries that banned these specific GM crops.

Allowing cultivation would also undermine the urgent need to improve the risk assessment for genetically engineered crops. There are substantial gaps in the risk assessment and risk management for the transgenic maize events under consideration, including:

1. Lack of empirical investigations to assess impacts on non-target species such as European butterflies, especially in the case of maize 1507.ⁱ
2. Lack of research into gene expression levels under stress conditions such as climate change.ⁱⁱ
3. Lack of assessment of accumulated and combined effects that can emerge from combined cultivation or consumption of the three events. For example, a higher concentration of Bt toxins in food and feed as a result of combined consumption might enhance likelihood of immune reactions to the Bt toxins.ⁱⁱⁱ
4. Lack of assessment of interactions with other stressors such as glyphosate that are known to enhance toxicity of Bt toxins.^{iv}
5. Lack of assessment of changes in agricultural practices for Bt11 and 1507. Both maize varieties tolerate spraying with glufosinate which has not been assessed.

6. Gaps in risk management plans to limit potential harm to non-target species. Harm to non-target organisms of the Bt toxin produced by GM maize 1507 could be “substantial”, according to EFSA modelling.^v Complex risk management plans are needed to limit such harm. Such plans have not been developed and would require considerable effort to ensure adherence by farmers.
7. There is evidence that maize pollen travels airborne much further than so far assumed; this raises fundamental questions about the environmental impacts and contamination of conventional and organic maize production.^{vi}

In addition, a new risk has emerged that has not been considered so far. As the European Commission admitted in June, there is an outbreak of teosinte plants in Spain.^{vii} Teosinte is a wild relative of maize and native to Mexico. Crossings between teosinte and maize can enable transgenes from genetically engineered maize to spread and persist in the environment. In 1998, when the cultivation of Mon810 was first allowed in the EU, the precondition was that there were no wild relatives to which the transgenes could spread. However, this circumstance changed in 2009 when teosinte was found to be growing in Spanish maize fields. Since then, no effective measures could be identified to prevent teosinte from spreading further, including into neighbouring Portugal and France. The Commission said it was mandating EFSA to check whether this changes its opinions on Mon810 or other GM maize for cultivation.^{viii}

There is no public demand for genetically engineered crops and their cultivation has significantly dropped in recent years, now limited to a diminishing number of regions in the EU. Aside from the health, environmental and socio-economic problems and risks the transgenic maize poses, it is essential that European agriculture is protected as a whole and efforts are focused on increasing the viability and sustainability of farming in the EU.

We therefore urge you to reject the authorisation of the three genetically engineered maize events using the scientific, political and legal justifications at your disposal.

Yours sincerely,

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ⁱ Hilbeck A. & Otto M. (2015) Specificity and combinatorial effects of *Bacillus thuringiensis* Cry toxins in the context of GMO environmental risk assessment, *Frontiers in Environmental Science*, 3(71) doi: 10.3389/fenvs.2015.00071

ⁱⁱ Trtikova, M., Wikmark, O.G., Zemp, N., Widmer, A., Hilbeck, A. (2015) Transgene expression and Bt protein content in transgenic Bt maize (MON810) under optimal and stressful environmental conditions, *PLOS ONE* 10(4): e0123011. doi: 10.1371

ⁱⁱⁱ Rubio-Infante N. & Moreno-Fierros L. (2015) An overview of the safety and biological effects of *Bacillus thuringiensis* Cry toxins in mammals, *Journal of Applied Toxicology*, doi: 10.1002/jat.3252

^{iv} Bøhn T., Rover C.M., Semenchuk P.R. (2016) *Daphnia magna* negatively affected by chronic exposure to purified Cry-toxins, *Food and Chemical Toxicology* 91: 130-140.

^v Perry, J.N., Devos, Y, Arpaia, S. 2012. Estimating the effects of Cry1F Bt-maize pollen on non-target Lepidoptera using a mathematical model of exposure, *Journal of Applied Ecology* 49: 29–37

^{vi} Hofmann, F., Otto, M., Wosniok, W. 2014. Maize pollen deposition in relation to distance from the nearest pollen source under common cultivation - results of 10 years of monitoring (2001 to 2010), *Environmental Sciences Europe* 26:24 doi: 10.1186/s12302-014-0024-3; Lang, A., Oehen, B., Ross, J.H., Bieri, K., Steinbrich, A. 2015 Potential exposure of butterflies in protected habitats by Bt maize cultivation: A case study in Switzerland, *Biological Conservation* 192 : 369–377.

^{vii} http://redandaluzadesemillas.org/IMG/pdf/160607_respuesta_ce_x_carta_conjunta_teosinte.pdf

^{viii} Ibid.