



## Flexible management better for coexistence of GM and non-GM crops

**Flexible measures**, such as pollen barriers, for regulating the cultivation of GM and non-GM crops in the same landscape are more likely to encourage the adoption of GM technology by farmers than rigid measures, such as isolation distances, according to a recent study.

**The EU has recommended guidelines<sup>1</sup>** for developing national strategies by all Member States for the coexistence of genetically modified (GM) and non-GM crops. These aim to give consumers a choice and farmers the option of growing conventional, organic or GM crops.

In this study, conducted under the EU SIGMEA project<sup>2</sup>, the researchers focused on spatial *ex ante* coexistence regulations (SEACERs). SEACERs are designed to help keep the adventitious presence of authorised GM material in non-GM crops below the legal labelling threshold of 0.9 per cent. They typically follow the newcomer principle: this protects non-GM crops from newcomers or GM crops of the same species. Any preventative coexistence measures should not be more restrictive than necessary to ensure that the mixing of GM material with non-GM crops remains below the threshold level. Two *ex-ante* measures include the requirement to have a minimum distance maintained between GM and non-GM fields or planting pollen barriers. Pollen barriers act as buffer (separation) zones to minimise cross-pollination. Pollen barriers are field margins planted with non-GM crops of the same species as the GM crops and can be planted around the fields growing either the GM or the non-GM crop. Alternatively the edges of non-GM fields can be harvested separately and sold as GM crops.

The dynamics of growing GM crops varies widely within and between different Member States of the EU. Farmers weigh up the benefits of planting GM crops with the costs of implementing coexistence measures. Some farmers choose to grow GM crops because they expect benefits, such as reduced production costs and increased productivity. Other farmers might choose to grow non-GM crops because consumers will pay premium prices for non GM-crops and food products. If the 0.9 per cent GM threshold level is exceeded in non-GM crops, they have to be labelled as 'containing GM material', and sold at the same price as GM crops. This could lose income for the farmer.

The researchers modelled different planting patterns and a variety of distance requirements between GM and non-GM fields of a theoretical crop and its GM counterpart in a real landscape in Central France.

The results suggest that wide distance requirements will significantly slow down early phases of the adoption of GM planting. If the costs of implementing SEACERs are too high, farmers will abandon growing GM crops and the conversion to non-GM crops could create a 'domino effect' and further restrict other farmers who wish to grow GM crops.

The researchers argue that by allowing farmers to agree to plant pollen barriers instead of maintaining rigid isolation distances between fields as with SEACERs would allow for more flexibility, as pollen barriers do not need to be as large as separation distances to achieve a similar reduction in cross-fertilisation

1. See: <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003H0556:EN:HTML>

2. SIGMEA (A toolkit for assessing the ecological and economic impacts of GM crops) was supported by the European Commission under the Sixth Framework Programme. See: [http://ec.europa.eu/research/fp6/ssp/sigmea\\_en.htm](http://ec.europa.eu/research/fp6/ssp/sigmea_en.htm)

**Source:** Demont, M., Dillen, K., Daems, W. *et al.* (2009). On the proportionality of EU spatial *ex ante* coexistence regulations. *Food Policy*. 34: 508-518.

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