



## REPORT

# Bt maize farming has enabled additional production of 1.89 million tons of maize between 1998 and 2018 in Spain and Portugal

- *To achieve this amount of production with conventional maize, an additional agricultural area of 15,240 hectares would have been necessary.*
- *To attain the level of production reached using conventional seeds, an additional 1.042 million m<sup>3</sup> of irrigation water would have been required.*
- *The increase in the incomes of Spanish and Portuguese farmers during this 21-year period amounted to €285.4 million.*
- *Farmers' income increased on average by €173 per hectare.*

Madrid, 12 June 2019. Farmers in Spain and Portugal have been growing Bt maize on an ongoing basis since 1998. **During this 21-year period they have backed this biotechnological variety that defends maize farming from attacks by boring beetles**, which is an endemic plague present in certain areas of the Iberian Peninsula that causes great losses in production. To analyse the economic and environmental contributions of Bt maize farming in Spain and Portugal between 1998 and 2018, the *GM Crops & Food* magazine has published the report, **'Twenty-one years of using insect resistant (GM) maize in Spain and Portugal: farm-level economic and environmental contributions'** by the agrarian economist, Graham Brookes.

Since 1998, **Bt maize farming has enabled Spanish and Portuguese farmers to obtain additional production of 1.89 million tons**, using fewer resources and helping to reduce the pressure on some that are scarce, such as water. To achieve these levels of production with conventional maize, it would have been necessary to cultivate an additional agricultural area of 15,240 hectares in the two countries. **Over the course of these 21 years, the equivalent saving in land resulting from additional production amounted to 188,890 hectares.** Indirectly, Bt maize has also contributed towards water usage savings thanks to greater yields and its increased production. **To achieve the production reached using conventional seeds, an additional 1.042 million m<sup>3</sup> of irrigation water would have been required.**

The total area farmed with Bt maize in these two countries between 1998 and 2018 was 1.65 million hectares. **During this time frame, an increase in incomes of €285.4 million was registered.** For every extra euro spent on purchasing this seed with regard to the cost of a

conventional seed, farmers obtained €4.95 in additional income. **These profits have mainly come about due to improved yields, which increased 11.5%.** The increase in production and a reduction in costs resulted in an average increase in farmers' income of €173 per hectare, driving the rural economies of both countries.

## SPAIN

Every year, between 120,000 and 150,000 hectares in Spain are attacked by boring beetles, which equates to between 30% and 35% of the total maize sown. The Autonomous Communities that suffer the largest attacks by this plague are Aragon and Catalonia. **In 2018, a total of 115,246 hectares were sown with Bt maize in Spain, which was 35% of the total maize planted in the country.** Before the Bt maize could be harvested, between one and two insecticide treatments were applied to the affected maize crops, which totalled an area of between 60,000 and 100,000 hectares. **Bt maize farming allows for a saving in the use of active ingredients, with an average reduction in Spanish farmers' annual expenditure of €19 per hectare.**

Over the course of this 21-year time period, **Bt maize farming has allowed optimisation of insecticide usage, reducing their use in Spain by 678,000 kg,** meaning 37% less active ingredients were applied compared to the active ingredients that would have been used in conventional maize farming. This has resulted in a 21% reduction in the environmental impact associated with the use of insecticides in maize farming. **Bt maize has also facilitated a reduction in fuel usage, therefore reducing greenhouse gas emissions and saving scarce resources, such as water.**

Furthermore, **Bt maize farming has prevented 1.58 million kg of carbon dioxide from being released into the atmosphere.** This is the equivalent of removing 980 vehicles from circulation for one year. This saving is the result of a reduction in fuel usage amounting to 593,000 litres. The decreased use of active ingredients has also led to water usage savings. During this period of time 705,000 hectares were not treated with insecticides, which equates to water usage savings of between 141,000 and 705,000 m<sup>3</sup>.

## FULL REPORT:

['Twenty-one years of using insect resistant \(GM\) maize in Spain and Portugal: farm-level economic and environmental contributions'](#)

## **ABOUT THE ANTAMA FOUNDATION**

The Antama Foundation enjoys the support of notable international research and development companies working on technologies for agriculture and supporting genetic improvements as a tool farmers can use to increase their productivity, with more efficient and more sustainable use of natural resources for the benefit of consumers.

The Antama Foundation's mission is to promote new technologies applied to agricultural products, food and the environment. The Foundation is committed to communication based exclusively on scientific evidence that aims to bring new tools to the media, politicians, legislators and public administrations, farmers, consumers, researchers, educators and any person interested in the development of new technologies.

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