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New paper quantifies 15 years of economic and environmental benefits from using biotech/GM crops in Colombia¹

A new paper by Graham Brookes of PG Economics, published in the journal GM Crops and Food has found that since 2003, crop biotechnology has helped Colombian farmers grow more food, feed and fibre, using fewer resources. It has also reduced the environmental footprint associated with the production of cotton and maize.

Highlights in the peer reviewed² paper include:

- About 1 million hectares have been planted to cotton and maize containing GM traits in Colombia since 2003 and in 2018, the technology was used on the equivalent of 90% and 36% respectively of the total cotton and (commercial) maize crops.
- Use of this technology has enabled Colombian farmers to obtain higher yields from better pest and weed control (+30.2% from using stacked - herbicide tolerant and insect resistant cotton and +17.4% from using stacked maize).
- The extra production and reduced cost of pest and weed control have provided maize farmers with higher incomes equal to an average of US \$294/ha and an average return on investment equal to +US \$5.25 for each extra US \$1 spent on GM maize seed relative to conventional seed. For cotton farmers, the average increase in income has been + US \$358/ha, with an average return on investment equal to +US \$3.09 for each extra US \$1 spent on GM seed relative to conventional seed.
- Farm incomes have increased by a total of just over US \$300 million since 2003.
- The cotton and maize seed technology have reduced insecticide and herbicide spraying by 779,400 kg of active ingredient (-19%) and, as a result, decreased the environmental impact associated with herbicide and insecticide use on these crops (as measured by the indicator, the Environmental Impact Quotient (EIQ)) by 26%. The technology has also facilitated cuts in fuel use, resulting in a reduction in the release of greenhouse gas emissions from the GM cotton and maize cropping area and contributed to saving scarce land resources.

For additional information, contact Graham Brookes at Tel +44(0) 1432 851007.

www.pgeconomics.co.uk

¹ Paper available (with open access) in the peer review journal GM Crops and Food.
<https://www.tandfonline.com/doi/full/10.1080/21645698.2020.1715156>

² Peer reviewed means accepted for publication in a scientific journal after review by independent experts in the subject(s).