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Gypsophila May be the First GM Product to be Commercialized in Kenya

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Report Highlights:

Genetically modified (GM) Gypsophila cut flowers will likely surpass Bt. cotton and Bt. corn in the race to cultivation and commercialization in Kenya, if the National Biosafety Authority (NBA) approves application submitted for open field trials/environmental release. Given the non-controversial nature of the GM plant in terms of food and environmental safety, Gypsophila may be the first GM plant to be commercialized in Kenya.

Despite Kenya's enthusiasm to release the first ever GM-Gypsophila cut flower in the world, the import ban on GM products remains, and development on Bt. cotton and Bt. corn have stagnated at confined field trials stage.

Executive Summary:

On May 2, 2017, the Kenya Agricultural and Livestock Research Organization (KALRO) and Imaginature Ltd. (an Israeli company and patent owner of the gene) officially submitted to NBA an application to allow for open field trials/environmental release to pave way for commercialization of the GM-Gypsophila cut flower. Prior to this, KALRO and Imaginature Ltd. conducted and completed confined field trials in Naivasha, under the supervision of NBA and the Kenya Plant Health Inspectorate Service (KEPHIS) as per the Biosafety Act No. 2, 2009 and the relevant Biosafety regulations. The approval process will take 90-150 days from the date of application submission to NBA. However, NBA intends to advise the researchers to apply to Kenya Plant Health Inspectorate Service (KEPHIS) for “Breeders Rights Protection”. The process for GM-Gypsophila is expected to bypass that for both Bt. Cotton and Bt. Corn, as they were halted at the stage for open field trials. There has been some movement recently to move Bt. Cotton forward as part of the interest by the Government of Kenya to revive its textile industry, however unlike GM-Gypsophila, Bt. Cotton has both animal and human consumption matters to address.

Conventional Gypsophila flowers grown in Kenya (also called Baby’s breath) are predominantly white in color, and are solely used for ornamental purposes. Normally, the Gypsophila flowers are used as filler materials in flower arrangements and bouquets for in-door beautification.



The Gypsophila cut flower has been improved through genetic modification to allow for color change and stability using genetic elements from *Arapidopsis*, a model plant. The GM-Gypsophila changes color from white to a new range of colors from dark purple to red to light pink, depending on the genetic element added. Colored flowers fetch a price premium in the international market hence, the drive for color change in Gypsophila.



Commercialization of GM-Gypsophila will be an addition to Kenya’s assortment of cut flowers export

in the international market including the United States. GM- Gypsophila will position Kenya's cut flowers market with unique products. GM-Gypsophila has not been approved for commercial growing in any other country, making Kenya the first country authorizing the production of this variety, according to press reports.

If after safety assessments, socio-economic considerations, and public comments, NBA approves open field trials/environmental release and commercialization of GM Gypsophila, there is still the process of governing variety testing, and release for plant varieties shall apply as per the national policy, legislation, and guidelines for handling GM plants and crops in Kenya.