

Will naturally GMO sweet potatoes change public perceptions of genetic engineering?

One of the world's most important staple crops, the sweet potato, is a naturally transgenic plant that was genetically modified thousands of years ago by a soil bacterium. This surprising discovery may influence the public view of GM crops.

Strains of bacteria from the genus *Agrobacterium* have a well-characterized and widely utilized capacity to introduce DNA into plant cells¹. The transferred DNA (T-DNA) is specified by short left and right border sequences, and is delivered from the bacterium into plant cells by a mechanism that evolved from bacterial conjugation². Essentially, the bacteria have sex with the plant. The bacteria-derived genes perturb plant hormonal balances causing tumour-like galls, and also modify plant metabolism to support bacterial growth, by forcing the plant to produce sugar–amino acid conjugates called opines that can only be used as nutrients by agrobacteria.

Previously, using less-refined methods, some evidence was found for *Agrobacterium*-derived sequences inherited in the germ lines of *Nicotiana glauca* and *Linaria vulgaris* species, so heritable genetic modification of plants without human intervention is not new^{3,4}. But these plants are not important food crops. Now, Kyndt *et al.*⁵ report in *Proceedings of the National Academy of Sciences USA* that during or prior to domestication, *Agrobacterium*-derived T-DNA became incorporated into the genome of one of the world's staple crops, the hexaploid sweetpotato (*Ipomoea batatas*).

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis. Read full, original post: [Domestication: Sweet! A naturally transgenic crop](#)