

GM Cassava fails in Africa

The Donald Danforth Plant Science Center (the "Danforth Center"), whose partners include Monsanto Corporation and the Missouri Botanical Garden, has been heavily involved in research on transgenic varieties of cassava for the past seven years. According to the Danforth Center's website, it has been pursuing a Disease-Resistant Cassava for Kenya Project, with funding from USAID, in order to develop and deliver transgenic, disease-resistant cassava planting materials to farmers in Kenya to increase their harvests and improve their food security.

However, on the 26 May 2006, the Danforth Center quietly announced that it had discovered that GM virus-resistant varieties of cassava, first developed seven years ago, had lost resistance to the African cassava mosaic virus (CMVD) and that expert consultants had been asked to review why and how the modified cassava had changed and to assess future plans. This failure underlies the reason why African governments, save for pro-GM South Africa, have adopted the precautionary principle and not allowed Africa to be turned into a laboratory for an unpredictable technology.

According to the Danforth Center press release, the group reviewed the data and concurred with the conclusions that resistance to the African CMVD was achieved in cassava line Y-85, "that the resistance was subsequently lost, and that methylation of the plant's DNA had taken place." This failure undermines the claim on the Danforth Center's website that "transgenic plants developed at the Danforth Center have demonstrated strong resistance to the disease in greenhouse trials over multiple years."

This turn of events also undermines plans by the Danforth Center's International Programs Office to push Kenya Agricultural Research Institute (KARI) to test transgenic cassava plants under natural field conditions. Clearly, the kind of promises held out by the Danforth Center on its website are no longer credible: "virus-resistance technology will initially be deployed in the East African region's most popular cultivar - Ebwanatareka - for adoption by the 22,000 Kenyan farming families.... the project will help 200,000 Kenyan cassava farmers and their families and increase cassava harvests by 50% on a sustainable basis." Similar benefits are promised to neighbouring Uganda and to millions of farmers throughout Africa.

This is not the first time that these kind of false promises have been held out to KARI, which previously ran field trials on a much hyped transgenic sweet potato - part of another USAID supported project. The sweet potato had been touted as high-yielding

and virus-resistant, but during three years of field trials KARI discovered the virus resistance was no better than for ordinary varieties and the yields were sometimes less. By contrast, a conventional breeding programme in Uganda successfully produced a high-yielding virus-resistant sweet potato more quickly and more cheaply, without any recourse to genetic engineering.

The Danforth Center is also involved in sequencing the cassava genome. In what seems to be a dramatic about turn from its previous commitment to address hunger and the nutritional needs of people in developing countries, Dr Claude Fauquet, of the Danforth Center revealed in a press release, that the "acquisition of the cassava genome sequence will ...provide a platform to explore the vast biodiversity within cassava wild species. Ultimately, these activities will position cassava as a valuable source of renewable bio-energy." According to the U.S Department of Energy Joint Genome Institute (DOE JGI), funder of the project, the DOE JGI chose to sequence cassava because it is an excellent energy source - "it is grown worldwide as a source of food for approximately 1 billion people, raising the possibility that it could be used globally to alleviate dependence on fossil fuels."

The cassava genome project is spearheaded by a consortium made up of the Danforth Center, the USDA, Washington University in St Louis, the University of Chicago, the Institute of Genomic Research, the Missouri Botanical Garden, the Broad Institute, Ohio State University, the International Centre for Tropical Agriculture, and the Smithsonian Institute.

NOTES

Danforth Center Cassava Viral Resistance Review Update

<http://www.danforthcenter.org/newsmedia/NewsDetail.asp?nid=121>; and Danforth Centre Cassava Update

<http://www.danforthcenter.org/newsmedia/NewsDetail.asp?nid=119>

<http://www.danforthcenter.org>

Monsanto's showcase project in Africa fails, New Scientist, Vol 181 No. 2433, 7 February 2004

Danforth Center Spearheads Effort to Sequence Cassava at National Research Center
<http://www.danforthcenter.org/newsmedia/NewsDetail.asp?nid=122> 18 July 2006.

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