Science snipes at Oxitec transgenic-mosquito trial

Oxitec released 3.3 milion sterile male transgenic *Aedes aegypti* mosquitoes in a field trial aimed at reducing wild mosquito populations to control dengue.

Early in November, at the annual meeting of the American Society of Tropical Medicine and Hygiene (ASTMH) in Atlanta, researchers from the British company Oxitec disclosed results from the world's first genetically modified (GM) mosquito field trials aimed at controlling the carrier for dengue fever. After the presentation at the meeting, *Science* (**330**, 1030–1031, 2010) published a news story claiming the trials had "strained ties" with Oxitec's collaborator, the Bill and Melinda Gates Foundation. Anthony James, the lead investigator on the Gates team, was also quoted as saying he would "never release GM mosquitoes the way Oxitec has now done in Grand Cayman." Although some concerns have been raised as to how information about the trial was disseminated, it seems that controversy over the environmental release of a GM organism has been overblown.

Oxitec's plans for transgenic mosquito trials have not been without controversy in the past. They have been criticized by environmental groups, such as Ottawa-based ETC Group and EcoNexus of Oxford, concerned about the risks of releasing an entirely new strain of organism into the environment. Activists warn that transgenic insect releases that reduce wild mosquito numbers might not only create an 'empty niche', which other potentially damaging insects might fill, but also affect organisms higher in the food chain that rely on mosquitoes as a dietary source.

The present spat, however, centers around disagreements over the rapid move to an open release of insects and in particular the way in which the existence of the trial was communicated to the community and public at large. Luke Alphey, CSO of Oxitec, concedes that researchers may have differing views on how to plan and execute such field tests; however, he says he hasn't received any complaints from the community nor has he been scolded by his Gates collaborator James, a professor at the University of California, Irvine. When contacted by *Nature Biotechnology*, James declined to comment, but a spokesperson for the Gates Foundation says of a different trial Oxitec is running in Mexico in collaboration with the Foundation that "we are happy with the way that is going."

For his part, Alphey says he was "surprised that *Science* chose to present the story the way they did." If there is a controversy around the way Oxitec prepared for the trials, he says, it has not officially been directed at his company.

Oxitec first commenced the Cayman trials in September 2009. Together with the islands' Mosquito Research and Control Unit (MRCU), the company liberated about 3.3 million sterile male transgenic *Aedes aegypti* mosquitoes into a region spanning about 16 hectares through 80 releases.

The OX513A mosquitoes used in the trial carry the LA513 transposon integrated into their genetic material via a *piggyBac* helper

Table 1 Progress in GM mosquito research

Species name/vector disease	Transposable element	Year transformed
Aedes aegypti/yellow fever	Mariner	1998
Aedes aegypti/yellow fever	Hermes	1998
Anopheles stephensi/Indo-Pakistani malaria	Minos	2000
Anopheles gambiae/African malaria	piggyBac	2001
Aedes aegypti/yellow fever	piggyBac	2001
Culex quinquefasciatus (Southern house mosquito)	Hermes	2001
Anopheles stephensi/Indo-Pakistani malaria	piggyBac	2002
Anopheles albimanus/New World malaria	piggyBac	2002
Aedes fluviatilis/Brazilian malaria	piggyBac	2006
Aedes albopictus (Asian tiger mosquito)	piggyBac	2010

Source: Morrison, N.I. *et al. Asia-Pac. J. Mol. Biol. Biotechnol.* (in the press).

IN brief

Temporary ban on clones

Food from cloned animals is under fire in Europe with the European Commission (EC) calling in October for a temporary commercial suspension. John Dalli, European commissioner for health and consumer policy, describes the proposal as "a realistic and feasible solution to respond to the present welfare concerns." A formal proposal for a five-year ban on the technology will be presented in the first half of 2011. Although sweeping, the proposed exclusion may not carry much weight in practice, because farmers mostly use cloning technology for their prized breeding stock, not to raise animals for food. EU breeders would be forbidden under the proposed ban to clone their best head of cattle in member states. Cloned embryos and semen of clones, however, could still be imported following a proposed traceability scheme. The offspring of clones, sired conventionally, would not be bound by these restrictions, EC spokesperson Frédéric Vincent points out, and consequently their meat and milk would not be banned. This decision avoids unleashing trade wars with the US but is likely to be opposed by the European Parliament. A public outcry followed a document release in August by the British Food Standards Agency that three bulls descending from embryos cloned in the US from an undisclosed company entered the food chain in the UK and Belgium. According to Vincent these occurrences are legal under current regulations, but probably uncommon. *Anna Meldolesi*

Filipinos back GM eggplant

Filipino farmers clamoring for the adoption of genetically modified (GM) eggplants in October passed a resolution to support multi-location field trials of the biotech crop. GM crop farmers and agriculture representatives from across the country endorsed a set of resolutions to support the advancement of biotech crops in the country including the pest-resistant eggplant. "When we consulted them, [farmers] asked, 'Are the seeds available already? Why is it taking so long?'" says Reynaldo Cabanao, president of the Asian Farmers Regional Network (ASFARNET). The GM eggplant was developed by the Agricultural Biotechnology Support Project II (ABSPII), a global public-private collaboration based at Cornell University in Ithaca, New York. It was engineered with the *Cry1Ac* gene from the bacterium *Bacillus thuringiensis* (*Bt*) to fend off the fruit and shoot borer, which can destroy up to 50% of the region's number-one food crop. Farmers who have witnessed the success of *Bt* corn are eager for *Bt* eggplant to be available, says Desiree Hautea, ABSPII coordinator for South East Asia, at the University of the Philippines, Los Baños. The GM eggplant is currently undergoing confined field tests adhering to biosafety regulations set by the Philippines Department of Agriculture, Bureau of Plant Industry. Multiple-site trials will follow, though commercialization plans remain undefined. *Nidhi Subbaraman*