

UK company withdraws its application for release of genetically engineered flies in Spain

International Magazine Nature warns against insects with gene drive
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After protests by a broad coalition of NGOs against plans to release genetically engineered olive flies in Spain, the UK company Oxitec now has withdrawn its application. As reported by Spanish media, Oxitec was informed by regional authorities that the experiments will not be allowed. After 2013, this is the second time that the company has failed to get approval for its application in Spain. Once released, the genetically engineered flies might spread throughout the Mediterranean region and all the locations where native populations of olive flies occur. A broad coalition of mostly representative organisations from Mediterranean countries are demanding that any release of these flies should be banned completely.

“We would like to congratulate the farmers and environmentalists in Spain on this important and successful outcome. Nevertheless, we have to assume that this will not remain the last attempt at releasing such organisms. The next generation of genetically engineered organisms is already in the laboratories”, Christoph Then says for Testbiotech. “Looking at scientific publications it is easy to believe there will soon be a surge in the release of organisms that cannot be controlled.”

Just this week the risks of uncontrolled releases of organisms inheriting so-called gene drives have been highlighted in an editorial in the international magazine, Nature. Gene drive created by using synthetic gene technology can not only change the structure of the genome, but also the pattern of heredity. These organisms – for example insects – can be used to spread artificial DNA more rapidly into native populations. They have recently been produced for the first time, mostly away from public notice.

Usually, a genetic change in one organism takes a long time to spread through a population. That is because a mutation carried on one of a pair of chromosomes is inherited by only half the offspring. But with a gene drive nearly all the offspring are supposed to inherit the changed genetic condition. This application of synthetic gene technology is based on use of CRISPR, a so-called DNA-scissor (nuclease) that enables a change in the structure of DNA on one chromosome to copy itself to its partner chromosome in every generation. This means that the newly introduced DNA will speed through a population exponentially faster than normal.

Currently, there is no internationally binding regulation that could be used to enforce a global restriction or ban on the release of such organisms. A problem also addressed in the 6 August edition of Nature: “What is new is the advent of CRISPR. This adds extra dimension to the debate, because it makes gene drives much easier and could dramatically accelerate the timeline for a potential release — accidental or intentional. Researchers and funding agencies should take note, and efforts to understand the ecological consequences of a gene drive should be made an urgent priority. Regulators and the wider world need to keep pace with the rapid development of CRISPR technology, and there is little time to waste.”

Testbiotech is demanding strict national and international regulation to prohibit the release of any genetically engineered organisms that can escape spatio-temporal control. In 2013, Testbiotech reported cases of transgenes spreading without control in the environment and into native populations. An international call was published that was signed by many civil society organisations. Currently, the issue is being discussed in online forums and working groups within the framework of the Convention on Biological Diversity (CBD).

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Further information: [Spanish media report about Oxitec withdrawal](#) [2]
[Previous news about plans to release genetically engineered olive flies in Spain](#) [3]
[The editorial in "Nature"](#) [4]
[The online discussion at the Convention of Biological Diversity](#) [5]
[The publication of Testbiotech about transgene escape](#) [6]
[The international call "Stop the spread of transgenes"](#) [7]

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