

Mutagenic chain reaction cannot be sufficiently controlled

EFSA is disguising real risks of gene drive organisms

16 November 2020 / The European Food Safety Authority (EFSA) has published the results of its public consultation on the risks of so-called gene drive organisms. Testbiotech accuses the authority of disguising the real dimension of the risks.

Gene drives are designed to spread artificial genetic constructs throughout populations of wild species much faster than would be expected naturally. Currently, gene drives are being developed with the aid of tools such as the CRISPR/Cas gene scissors. There are plans, e.g. to apply gene drives in insects (flies and mosquitoes) or rodents (rats or mice). The aim is to replace or eradicate natural populations. Once started the process cannot be controlled effectively or reliably. The damage to humans, the environment and nature could be severe.

To be successful, the genetic construct typically has to be inherited by dozens of generations. This means that the process of genetic engineering repeats itself in a kind of mutagenic chain reaction; happening in the environment and outside of the laboratories, without any effective control mechanisms being available. The genetically engineered mosquitoes and their offspring are exposed to an unlimited number of genetic factors and environmental impacts during this process. Therefore, the release of gene drive organisms can after several generations deviate massively from what was originally expected.

The risks include a higher risk of disease transmission and severe disruption to ecosystems. There is no sufficiently reliable method to predict the biological effects in the offspring of the genetically engineered organisms, and no efficient spatio-temporal control. There are moreover some fundamental problems in carrying out risk assessment of the organisms that EFSA has not acknowledged.

EFSA refers to publications to describe these problems but fails to present the relevant findings correctly. Rather, EFSA compares gene drives to other methods, such as releases of sterile insects, which are not related to the mechanisms of a mutagenic chain reaction. Such comparisons are misleading and may cause the real risks to be underestimated.

Testbiotech demands the introduction of well-defined cut-off criteria which allow the rejection of applications for releases of gene drive organisms that cannot be sufficiently controlled in space and time. This demand is backed by several scientific publications.

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Further information: [EFSA opinion](#) [2]

[A scientific publication in which Testbiotech was involved on risk assessment of gene drives](#) [3]

[Additional podcast](#) [4]

[A scientific publication in which Testbiotech was involved on risk resulting from offspring of genetically engineered organisms](#) [5]

[Results of research project GeneTip, with involvement of Testbiotech](#) [6]

[A Testbiotech video clip on risks of gene drive mosquitoes](#) [7]

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