



15 March 2024

Atamarie Dr. Freeth,

We would like you to make an Chief Executive reassessment regarding the Environmental Protection Agency's definition of a "Null Segregant" not being a GMO.

Our reasoning is –

The EPA defined a null segregant as a non-GMO (APP204173) as specified on the criteria of section 2A(1)(d) of the Act. We believe that this contravenes the Hazardous Substance and New Organisms Act 1996 (HSNO) intent and precaution in its duty of care to the environment.

The finding example the EPA uses regarding trait inheritance does not take into account inherited genes that might be recessive. This means that when a null segregant crosses with its non-GM counterpart there is the possibility that the GM trait would be expressed in ensuing progeny. This is the example of the brown eyed parents producing a blue eyed child. most likely due to ancestral genetics and the diversity of gene recombination. It does not mean that no other genes from the parents were not inherited. The EPA recognises that the GM trait in null segregants are inherited, example early flowering, from the genetic modification process. ¹

1. In 2009, Plant and Food applied for a field trial of onions, shallots, spring onions, leeks garlic a variety of GM alliums species (GMF06002). ERMA, now the EPA, in their Evaluation and Review report defined "null segregants" as a plant derived originally from a GM plants but shown not to contain the specific modification or trait, they may be used as control plants in the proposed field test. Under the Act, such plants are still classed as GM. (E&R report GMF06002, p. 155/221) ². The HSNO Act not the HSNO (methodology) has not changed its evaluation on risk, benefit interpretation on GMOs. So, clarification needs to be given to the public on the reason why the interpretation for "null segregants" has been redefined, without a change in legislation.
2. The terminology regarding the interpretation of a Genetically Modified Organism (GMO) in the Hazardous Substance and New Organisms Act 1996 (HSNO) that the EPA is legislated under states.
genetically modified organism means, unless expressly provided otherwise by regulations, any organism in which any of the genes or other genetic material—
 - (a) have been modified by in vitro techniques; or
 - (b) are inherited or otherwise **derived, through any number of replications, from** any genes or other genetic material which has been modified by in vitro techniques.
(HSNO Interpretation 2) ³

The HSNO Act does not make an exemption for a "null segregant". However, the interpretation clearly sets out a GMO definition. In this both "null segregants" are direct in-vitro manipulations. They are also derived from, through any number of replications a GMO.

¹ <https://www.epa.govt.nz/industry-areas/new-organisms/null-segregants/>

² <https://www.epa.govt.nz/assets/FileAPI/hsno-ar/GMF06002/032b3e9af0/GMF06002-GMF06002-EandR.pdf>

³ <https://www.legislation.govt.nz/act/public/1996/0030/latest/DLM381228.html>

3. MPI to make decisions regarding “null segregants”

MPI is charged under the Biosecurity Act to ensure that there are no border infringements. This is to protect the environment from any unwanted pests or organisms. They are also responsible for containment and eradication of any biosecurity threat. However, MPI has no scientific or technical expertise to assess and approve the possibility that “null segregants” are not GM. This is the duty of the EPA and all applications to release of such GMOs must be notified to the public. It is not correct to take and decide what parts of law should be considered.

To this end we believe that null segregants should be considered GMOs when applied for outdoor field, conditional trials or full release. This would trigger full and transparent public comment allowing due process under legislation to be fulfilled.

We thank you for this opportunity to put our concerns to you in the hope that we do not have to seek legal avenues to clarify the situation.

Nga mihi

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