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Definitions for gene technology and new breeding techniques

The Australian organic industry, now worth \$2.6 billion annually, is gravely concerned by the outcome of the FSANZ gene technology reviews, specifically, the proposal to deregulate new breeding techniques (NBTs). The exclusion of NBTs is inconsistent with the corresponding regulations of export markets. The acceptance of P1055 could lead to the significant loss of trade to these markets and be detrimental to the organic industry.

The continued regulation of genetically modified (GM) foods ensures that any gene changes made follow strict guidelines and requirements. FSANZ proposes to redefine certain regulated genetic modification techniques to new breeding techniques. New breeding techniques alter characteristics, proteins and structures of organisms and should be labelled with the mandatory '*genetically modified*' indication. Australian Organic Limited (AOL) acknowledges the potential for this technology, however with this comes the greater responsibility to ensure that these techniques are not being exploited.

AOL insists that the current framework of risk management for this technology will not be sufficient should the NBT definition be accepted as different to GM Food as suggested by the protocols of the P1055 proposal. It is grossly insufficient for FSANZ to advocate to merely "*routinely screen for and select against unintended changes*" if NBTs become unregulated. FSANZ's statement that the "*unintended changes arising from NBTs, including genome editing, are therefore unlikely to pose greater food risk*" is only true if FSANZ continues to regulate all instances where this technology is employed. The labelling of this technology should reflect the risk associated with their potential for genetic changes and capacity, rather than their advocated, potentially unregulated use within FSANZ. Should NBT's go unregulated, what is to prevent the misuse of this technology? Each novel NBT or GM food must continue to be subject to pre-market assessment and approval with the required GM labelling.

AOL position on P1055 proposal

1. AOL is strongly against the update of 'food produced using gene technology' and gene technology within the FSANZ Code where new breeding techniques are deregulated.
2. New breeding techniques have the potential to make genetic changes currently defined as transgenesis and must continue to be subject to pre-market assessment and approval with the required labelling.

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Australian export snapshot

The Australian organic industry was estimated to be worth over AUD \$2 billion in the domestic and export markets for 2020. Globally, the organic agriculture industry is valued at over \$220 billion, with Australia having the largest proportion of organic land representing close to half of the global area of 72.3 million hectares (FiBL & IFOAM REPORT Organics International 2021). Revenue in the Australian organic farming industry is expected to increase yearly at a rate of 14.6% over the next five years until 2025-26 to AUD \$3.9 billion (IBISWorld 2020). This variety of products and services are an example of the diversity of organics in Australia, highlighting the growing demand and movement across agriculture to pursue organic farming practices.

Legal and ethical concerns from a consumer perspective

Deregulation of gene technology methods creates a situation where producers and consumers are unable to verify that a product has been genetically modified. There is also the ethical concern where CRISPR and other NBTs can be and has been used on human embryos (Rothschild 2020). AOL does not think the current P1055 expresses the potential ramifications of deregulating this technology to consumers. Should this technology be required by certain individuals, AOL asks that it remains regulated and under the control and guidance of the Government to ensure the safety and continued free choice of consumers as to what they choose to eat.

Truth in labelling

As the organic industry continues to grow, the issue around truth in labelling is a concern for consumers of organic products across Australia. FSANZ's proposal to revise the definition not to include certain gene technology like NBTs complicates an action concerning false organic claims. If an organic consumer has a concern about a product claiming to be organic, they are able to pursue a claim through the Australia Competition and Consumer Commission (ACCC) under section 151 'False or misleading representations about goods and services' of the Australian Consumer Law. However, as pointed out in a speech by ACCC Deputy Chair Mick Keogh, the claims of organic operators against false claims of organic status can be difficult to prove:

"Allegations of false claims about organic status, for example are quite difficult to take action on, as even very detailed analytical testing may not provide conclusive proof"

For consumers, transparency along the whole food production chain is required so they can be reassured operators are complying with the truth in labelling laws in this country. Being able to identify GM ingredients and food will ensure transparency for consumers and help minimise the false and misleading representation of organic products.

Biological risk associated with new breeding techniques

Humans have manipulated genes since the dawn of civilisation. There is no denying the importance of selective breeding in the domestication of cereal crops and livestock in the evolution and continual development of humans. Genetic engineering is behind many modern life-saving vaccines. There is no denying the necessity of controlled gene editing to address complex human disease and save lives. However, this technology, with malicious or overly commercial





intent, can potentially cause harm within in the agricultural industry and human health should GM foods no longer be regulated.

The FSANZ proposal states, “*NBTs can make the same genetic changes as older GM techniques and can also be used to make the same genetic changes as conventional breeding or that occur naturally.*” If NBTs can make the same changes as GM techniques, why should they not also be regulated? This is especially worrying given FSANZ statements such as there is “*a distinction between NBTs and older GM techniques because NBTs can be used to make a wider variety of genetic changes.*” A wider variety of changes increases the risk associated with this technology. CRISPR technology can also result in frameshift mutations that have a high probability of disturbing protein structure and function (Rothschild 2020). Additionally, some NBTs may involve foreign DNA (e.g. genome editing, intragenesis, GM rootstock grafting), and could be classified under transgenesis (GM Food under this proposal). Intragenesis is also increasingly interpreted as the transfer of DNA fragments with the potential to create novel genes that could not arise in nature (Holme *et al* 2013). An increased risk from the potential genetic changes, altering to protein structure and function, in addition to the risk of foreign DNA within NBT foods directly contradicts statements within the P1055 proposal and cannot be ignored. The labelling of this technology should reflect the associated risk and capacity for potential for genetic changes rather than their advocated, potentially unregulated use within this proposal.

Producer concerns

The National Standard for Organic and Bio-Dynamic Produce (National Standard) is the overarching standard certified organic operators are held to when they are growing/producing their products in Australia. Throughout the National Standard, it is made clear that Genetically Modified Organisms (GMOs) are not compatible with the principles of organic and biodynamic agriculture. Section 1.3 of the National Standard goes into detail about genetically modified products and states these products “are not compatible with the principles of organic and biodynamic agriculture.” Under these terms it is not possible to have GMOs, NBTs or GM Food included in organic goods. Inclusion results in the removal of organic status for operators. For producers, the ability to prove goods meet the National Standard is paramount to being able to export those products overseas as certified organic. If goods fail to meet the requirements of the National Standard, they will be unable to export overseas.

The implications of the potential risks associated with this technology cannot be overstated. Especially when NBTs cannot be tested for in the same manner as older genetic modification. All gene technology should continue to require constant pre-market safety assessment, monitoring approval and continue to be labelled '*genetically modified*'. This is especially relevant for farmers where there are risks of cross pollination, co-mingling from neighbours that must be addressed. The genetic modification of crops does not reduce the potential negative effects of the unsustainable farming practices on the environment and climate. GM crops have not increased the efficiency of photosynthesis or produce more energy from the same amount of sunlight. GM crops are covered by patents which monopolise the seed market and can have negative economic consequences in the agricultural sector.

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Conclusion

AOL sees no scientific or legal reasoning to exempt any genomic techniques from future labelling, traceability and risk assessment. It is the opinion of AOL that GM foods should encapsulate all gene technology that does not arise from conventional breeding techniques. AOL fails to see how the risk associated with NBTs will be managed under this proposal. The market access to the majority of international markets valued at over \$2 billion for the organic industry is threatened by this proposal. The labelling of NBTs and GM foods should reflect the associated risk and capacity for potential for genetic changes rather than their advocated use within P1055. AOL maintains that this proposal should not be accepted, and that all gene technology continues to go through pre-market safety assessment, approval and labelling.

Regards,

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AOL background

Australian Organic Limited (AOL) is the peak industry body engaging with Government and Industry to protect the integrity of the Australian organic industry against fraudulent and misleading organic claims. With over thirty years' experience in the organic industry, AOL is driven by a clear strategic approach to the future of organics and has positioned itself as a leader in Australian Agriculture. AOL has a long history in marketing and educating Australian consumers while also providing industry development opportunities for operators across Australia.

As the peak industry body, AOL strives to protect and promote the interests of the industry and continues to engage and consult with Government and key stakeholders to understand and address our industry's needs and challenges. AOL welcomes the opportunity to contribute to this proposal process around definitions for gene technology and new breeding techniques and provide insight on the issues facing the organic industry around the increase of Genetically Modified Organisms in Australia's agricultural industry.

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