

Written evidence submitted by the Soil Association (GTB14)

Genetic Technology (Precision Breeding) Bill

Written evidence submitted to the House of Commons Public Bill Committee

Summary points

- **The definition and assessment for establishing which plants or animals fit this new category of organisms must be urgently strengthened**
- **The heart of this Bill must include a test to ensure any intended and unintended outcomes, plant and animal, do not exacerbate the challenges of our time and are designed to fit with a more sustainable and humane farming system.**
- **The Bill must mandate food labelling and a fit for purpose supply chain traceability and coexistence regime to protect the interests of those that includes the organic sector.**

1. Introduction

1.1 The Soil Association is a membership charity, formed in 1946 by a group of farmers, scientists, doctors and nutritionists who were determined to pioneer a world where we can live in health and in harmony with nature. Our vision is good food for all, produced with care for the natural world. Today, the Soil Association is both campaigning and scaling up the solutions, collaborating with organic and non-organic producers and with food procurers from schools to hospitals to restaurant chains to innovate and implement practical solutions. Our work with schools and nurseries to give children a happier, healthier relationship with food is commissioned widely by public health teams around the country.

1.2 Through our trading subsidiary, Soil Association Certification, we work with over 6,000 businesses including organic farmers and growers, foresters, caterers, food processors and manufacturers across more than 50 countries, and certify over 14 million hectares of forest globally.

2. The definition of ‘precision bred organisms’ – which forms the heart of this Bill – is unscientific and unfit for purpose

2.1. The term ‘precision bred’ is entirely invented by this Bill. It is not a familiar term in scientific discourse. The definition for what this means is vague and unscientific. It appears to be a framing with a basis more strongly related to what might be saleable to the public, than science or evidence. In this we refer to 2C: “*every feature of its genome could have resulted from— (i) traditional processes, whether or not in conjunction with selection techniques, or (ii) natural transformation.*”

2.2. Firstly, there remains debate around how unknown risks from the process itself should be treated. For an understanding of these, we would urge the committee to consider the evidence from Liz O’Neil at GM Freeze, who goes into this in further detail, including how the intended change is not always the same as the actual outcome.

2.3. Secondly, there is in fact broad agreement that known risks from the outcome of the change, both intended and unintended, vary substantially – and that it is simplistic to assume that changes theoretically possible through traditional breeding, are not of concern. For example, increased risk of disease transfer to humans is theoretically possible with both gene editing or traditional breeding. So are, as we have seen, traits which enable unsustainable or low welfare

farming systems. Of course, gene editing is likely to make such changes more likely. The broad consensus is therefore that regulation should seek to capture and address the known outcomes of gene editing, which this bill fails to do, and which we discuss further in point 2.

- 2.4.** Finally, the definition is far too vague. Based on the Government's hopes for what this Bill will achieve, the definition clearly does not refer only to changes which are already present in traditional breeds but changes which *theoretically could be possible* with traditional breeding. However, without more detail, this question is like asking how long a piece of string is.
- 2.5.** Beyond GM have pulled together some responses from scientific institutes in the consultation last year, that support this view. The [Institute of Food Science & Technology \(IFST\)](#), called it "overly simplistic"; the [Microbiology Society](#) said it was "purely philosophical", [Nuffield Council on Bioethics](#) said "not convinced that this is either the most proper or most popular framing", the [Roslin Institute](#) found it "exceptionally challenging", [Royal Society](#) called it "problematic" and made reference to issues around how rare this phenomenon actually is. The [Royal Society of Biology](#) said it provided "no clear criteria" – which has still fail to emerge in this bill – and further noted that "no clarity can be achieved using this principle" and "we would not recommend using it as the basis for regulation". We note that such views are being followed up in the oral evidence sessions.
- 2.6.** This ambiguity doesn't just leave open legal challenges and scientific disputes, it will probably result in public outrage. It seems likely that the public assume this refers to organisms which could clearly be produced through traditional crossbreeding just several times faster. Whereas it may instead be interpreted to mean changes that are only 'just perhaps possible' in theory, and 'after millions of years of evolutionary time' – in which time, of course, whole new species can arise.
- 2.7.** **We therefore call for the Bill to be amended to establish a definition that is grounded in a thorough scientific assessment of risk based on a wider range of data. This must include specifying a limited timescale and number of generations over which any comparison with nature or traditional breeding techniques is considered.**

3. Identified risks have not been addressed in terms of how this technology will be used

- 3.1.** The Bill mandates only very limited assessments of the impact of plants or animals deemed to be "precision bred" – leaving substantial gaps. This is no surprise, given the impact assessment underpinning this Bill has been deemed 'not fit for purpose'. Most potential negative impacts have been ignored. There was no detailed assessment of the competition, innovation, consumer and environmental impacts. Much of the evidence drawn on is from interested parties or does not replicate real world conditions.
- 3.2.** These are just some of our concerns, and are shared in the [Regulatory Policy Committee's Opinion](#) on the inadequate Impact Assessment for this bill. They are also many of the concerns around why 86% of respondents to the consultation last year were against deregulation as proposed. For the sake of brevity, we have focussed on one particular concern here, relating to commercial drivers and societal interests.

Commercial drivers will steer this technology away from sustainable and ethical pathways:

- 3.3.** Of particular concern to us is the way this technology is being hailed as a silver bullet, whilst entirely ignoring commercial drivers at play. We share the Government's stated aspirations to

reduce pesticide use, combat disease and meet the challenges of the climate emergency. But commercial drivers, described in BOX A, make deregulating GE a very risky gamble in this regard.

BOX A: Commercial drivers in that are likely to steer the use of this technology away from public interests

PLANTS

- Plant breeding has become increasingly privatised, and interests are not always aligned with societal need. For example, at the broad level there has been an erosion in genetic and varietal diversity of plants and animals globally.
- The [global seed monopoly](#): with 4 companies owning more than 60% of global seed, there is very little market competition.
- UK recommended plant variety lists are still heavily skewed towards high input farming systems
- Complex seed regulations remain a barrier to small-scale seed producers and diverse varieties
- Current & past commercial developments have been overwhelmingly about herbicide-resistance, which is widely known to increase use of herbicides long-term.

ANIMALS

- Selective breeding has for many years bred for fast growth, large litters and high yields, and caused great suffering in animals.
- The Bill is being positioned to exacerbate these trends. DEFRA have said GE animals will ‘bolster food production’ and ‘drive economic growth’. In livestock, there are very few ways to do this without accelerating the above trends.
- Disease resistance could be beneficial for diseases that do not arise from the way in which animals are farmed. But not where it is used to enable keeping animals in intensive, stressful conditions. These conditions are often responsible for higher likelihoods of emergence, transmission and amplification of pathogens.
- An example is a focus on engineering resistance in pigs to Porcine Reproductive Respiratory Syndrome (PRRS) as a substitute for addressing the stressful and overcrowded conditions that are acknowledged to give rise to the disease in the first place.

Intellectual property rights relating to gene editing can complicate things further

3.4. Gene editing technologies have many layers of complex patents, which raise multiple important questions that have not been addressed. This includes

- Patents around the different editing tools (with court battles continuing on parent CRISPR tools)
- Patents around plant and animal genome sequences
- Patented plants and animals

3.5. In plants for example, most have plant variety rights attached, which allow ‘open access’ to other breeders. The [NFU has previously warned](#) that plant patents prevent this, hindering innovation and threatening food security. Whether a gene edited plant could be patented or not, appears to be complex, and clearly the whole issue needs a thorough analysis.

Our recommendations on how to address these issues:

3.6. We call for the Government to put at the heart of any new law a test to ensure any intended and unintended outcomes – plant and animal – do not exacerbate the challenges of our time and are designed to fit with a more sustainable and humane farming system.

- 3.7.** Norway's Gene Technology Act, for example, appears to create a regulatory responsibility for ensuring that any genetically engineered traits represent a "benefit to the community" and enables "sustainable development".
- 3.8.** A way to achieve this in the Bill is if the advisory bodies are mandated clearly to assess these wider risks of how these technologies will shape our farming systems, food, environment, and society. Again, there is broad support from academic bodies for this, including the Royal Society.
- 3.9. We therefore call for amendments to mandate that the relevant advisory bodies also consider potential adverse effects relating to plant breeding, to restrict commercial developments that run counter to the public interest.**
- 3.10.** We support the amendments¹ proposed by Compassion in World Farming relating to how this could be addressed in terms of animal welfare.
- 3.11.** Furthermore, the Bill should mandate that the relevant advisory bodies consult via public dialogue to underpin the framing of the 'public interest test'
- 3.12.** We also call for an analysis of the role of intellectual property rights in relation to gene editing, and the risks to innovation and society stemming from this. This must therefore include the involvement of civil society and not just industry, in light of the public interest and the commercial drivers. The Bill should ensure that the results of this analysis will shape the regulatory governance of these 'precision bred' organisms.
- 3.13.** Lastly, the Government should publish an independent analysis of what other policy changes, outside of the remit of this Bill, are needed to ensure a course correction in plant and animal breeding towards alignment with policy goals to safeguard the climate, nature, health and animal welfare. We would be keen to provide evidence and solutions towards this, such as the outputs from our forthcoming plant breeding conference to be held jointly with CHAPS.

4. The Bill must clearly mandate food full supply chain traceability and coexistence with organic

- 4.1.** This is too important, and therefore risky, to leave to secondary legislation. We need a high degree of traceability from farm to fork, and for many reasons.
- 4.2.** There is the need to be able to trace any unintended issues that emerge later. For example, 'old GM' techniques are used in the process of gene editing, including the use of bacterial genes for antibiotic resistance as a marker in the research process, which may mistakenly be left in (there is case precedence for this in the US in terms of gene edited cattle).
- 4.3.** There is critically the need to provide a means for citizens to choose whether or not they want to purchase products involving these technologies. Particularly, given the unaddressed concerns above.
- 4.4.** There is also a further reason. Many food and farming businesses across the UK, such as those which are organic, will be negatively affected by inadequate measures to prevent these plants and animals, and their derivatives, from entering their farms or products. This includes not only

¹ To Clause 12 page 8 line 28 and 30, and Clause 12 page 9 line 20, and Clause 25 page 16 line 19 – see Compassion in World Farming's written evidence for more.

those products for sale here, but those that are moved around the UK, such as across the Irish Sea, and further, such as into the European Union. The failure take account of these impacts is a significant factor behind the [Regulatory Policy Committee's Opinion](#) that the Impact Assessment for this bill is NOT FIT FOR PURPOSE (red-rated).

Supply chain traceability is necessary for the organic sector and international trade and easily doable without being a barrier to the intent of this Bill

4.5. The UK organic sector is worth around £3 billion and rising. The organic umbrella organisation, IFOAM Organics International and Europe, has specified that gene editing is against global organic principles. This is not only due to a precautionary approach to genome manipulation, but also for social, ethical and financial concerns as covered above. As there is no sign these risks will be fully addressed any time soon, this position will not change. Thus, the organic sector will not accept the “precision bred” organisms resulting from this Bill, regardless of legal changes to GM definitions.

4.6. Therefore, to achieve coexistence with the organic sector, full supply chain traceability is required from farm to fork. This is easily doable without being a barrier to the intent of this Bill to enable more of these technologies. There are already systems in place e.g. for GM imports. We are also at a time where there is much industry excitement around supply chain ‘big data’ to create labels that allow citizens to know everything about the food they buy, from the method of production to the environmental and carbon footprint. Any concerns that such traceability is a barrier to innovation in gene editing, is unfounded.

4.7. Without this full traceability it will be hard to uphold organic sector principles through the ability to exclude these products, and therefore, there is a high risk of a major undermining of consumer trust and a major upheaval of a market worth £3 billion.

4.8. It will also create significant trade barriers that have not been assessed. For example, the European Union may decide to prevent UK organic exports into Europe. This of course means further issues in terms of Northern Ireland. The organic sector is keen to explore this issue with the Government more fully.

4.9. In addition, the impact on trade may be far greater than for just organic products if the EU or other third countries continue to take a different approach to the regulation of gene edited products.

4.10. **The Bill should mandate that full supply chain traceability is an obligation and ensure that the organic sector and others, who should so wish to, are able to exclude these organisms from their supply chains.**

4.11. **We call for coexistence measures to be mandated, to reduce the risk of contamination, for example by cross-pollination.**

4.12. **We call for food labels for gene edited organisms and support the recommendations on this presented by others such as GM Freeze.**