

# PARLIAMENTARY DEBATES

HOUSE OF COMMONS  
OFFICIAL REPORT  
GENERAL COMMITTEES

Public Bill Committee

## GENETIC TECHNOLOGY (PRECISION BREEDING) BILL

*Fifth Sitting*

*Tuesday 5 July 2022*

*(Morning)*

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CLAUSES 1 TO 5 agreed to.  
Adjourned till this day at Two o'clock.

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**not later than**

**Saturday 9 July 2022**

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**The Committee consisted of the following Members:**

*Chairs:* HANNAH BARDELL, † PHILIP DAVIES, ESTHER McVEY, GRAHAM STRINGER

† Bowie, Andrew (*West Aberdeenshire and Kincardine*) (Con)  
 † Brock, Deidre (*Edinburgh North and Leith*) (SNP)  
 † Churchill, Jo (*Parliamentary Under-Secretary of State for Environment, Food and Rural Affairs*)  
 † Clarke-Smith, Brendan (*Bassetlaw*) (Con)  
 † Duguid, David (*Banff and Buchan*) (Con)  
 † Fletcher, Katherine (*South Ribble*) (Con)  
 † Glendon, Mary (*North Tyneside*) (Lab)  
 † Green, Kate (*Stretford and Urmston*) (Lab)  
 † Howell, John (*Henley*) (Con)

† Jenkinson, Mark (*Workington*) (Con)  
 † Johnson, Gareth (*Dartford*) (Con)  
 † Jones, Fay (*Brecon and Radnorshire*) (Con)  
 Jones, Ruth (*Newport West*) (Lab)  
 Lewis, Clive (*Norwich South*) (Lab)  
 † McCarthy, Kerry (*Bristol East*) (Lab)  
 † Shelbrooke, Alec (*Elmet and Rothwell*) (Con)  
 † Zeichner, Daniel (*Cambridge*) (Lab)

Huw Yardley, Abi Samuels, *Committee Clerks*

† **attended the Committee**

# Public Bill Committee

Tuesday 5 July 2022

[PHILIP DAVIES *in the Chair*]

## Genetic Technology (Precision Breeding) Bill

9.25 am

**The Chair:** We are now sitting in public and the proceedings are being broadcast. Before we begin, I have a few preliminary announcements: Hansard colleagues would be grateful if Members could email their speaking notes to [hansardnotes@parliament.uk](mailto:hansardnotes@parliament.uk); please switch electronic devices to silent; and tea and coffee are not allowed during sittings. As the eagle-eyed among you will have spotted, as a Yorkshireman, I consider the heat to be oppressive, so people can remove their jackets, if they so wish.

We now begin line-by-line consideration of the Bill. The selection list for today's sitting is available in the room. This shows how the selected amendments have been grouped together for debate. Amendments grouped together are generally on the same or a similar issue. Please note that decisions on amendments do not take place in the order they are debated, but in the order they appear on the amendment paper. The selection and grouping list shows the order of debates. Decisions on each amendment are taken when we come to the clause to which the amendment relates. A Member who has put their name to the leading amendment in a group is called first. Other Members are then free to catch my eye to speak on all or any of the amendments within that group.

At the end of a debate on a group of amendments, I shall call the Member who moved the leading amendment again to sum up. Before they sit down, they will need to indicate if they wish to withdraw the amendment or to seek a decision. If any Member wishes to press any other amendment in a group to a vote, they need to let me know.

### Clause 1

#### PRECISION BRED ORGANISM

**Daniel Zeichner** (Cambridge) (Lab): I beg to move amendment 29, clause 1, page 1, line 4, leave out "or a precision bred animal".

*This amendment removes animals from the scope of the Bill.*

**The Chair:** With this it will be convenient to discuss the following:

Amendment 30, clause 1, page 2, line 18, leave out paragraph (b).

*This amendment is consequential on amendment 29.*

Amendment 28, title, line 2, leave out from "plants" to "animals" in line 3 and insert

“, and the marketing of food and feed produced from such plants”.

*This amends the long title to remove animals from the scope of the Bill.*

**Daniel Zeichner:** Good morning to you, Mr Davies, and to everybody. I think this will be an interesting and, I hope, fruitful discussion. It is a fascinating subject, and it is a pleasure to serve with you in the Chair, Mr Davies.

At the outset, let me start by repeating Labour's mantra on this Bill. We are pro science, pro innovation and we want Britain's scientists to succeed and to be at the very forefront of development. We want the investment, but we argue that investment comes from regulatory certainty and clarity. We are concerned that the Government have sadly failed to provide that. As a consequence, the risk is that, far from getting ahead, the UK gets caught in a paralysis, as investors look to see what others are doing and put developments on hold. This legislation really matters.

I hope that the Government will weigh carefully the superficially attractive benefits of moving quickly in search of what they claim to be a Brexit opportunity against the longer-term benefit of getting it right. The genetically edited tortoise versus the selectively bred hare, or vice versa one could perhaps say.

We are particularly concerned about the place of animals in the Bill, so we are starting with what could be described as a veritable blockbuster group of amendments, which would frankly remove animals from the scope of the Bill. We think that that is appropriate for several reasons. We recognise that the Government may not agree with us on this, and in the unlikely possibility of their winning the votes, we have tabled many further amendments to later clauses that we think will strengthen the framework of the genetic editing of animals, which will be discussed later. We have done this, because as I said on Second Reading, we think that the Government have got it the wrong way round on animals.

All the secondary legislation that has preceded the Bill was really about plants, not animals. Likewise in much of the discussion ahead of the Bill, much of the Government's language again focused on plants. The consultation that was held by the Department for Environment, Food and Rural Affairs referenced animals, but I would say in passing that at the time that did not seem to be the main focus of attention. It was a surprise to many in the House, as well as to concerned outside stakeholder and advocacy groups, that the Government chose to include animals in the Bill as they have.

When we look at the Bill, there is some evidence of the lack of really concrete provisions in the vague and non-committal timeframes offered by the Government, and the admission that much of the preparation necessary for a regulatory framework for animals has not yet been done. A document that I hope Members have had the opportunity to read is the impact assessment. If we want to know what the Government are really thinking, it is not in the Bill, but in the impact assessment, and I will reference it many times.

A good example of the point that I am making is on page 41 of the impact assessment, right at the top, in paragraph 109:

“Despite the potential benefits accrued by applying changes to the GMO regulations in animals, there is currently high risk of considerable consumer backlash in altering their regulations.”

The Government are well aware of the risks, and we are as well.

The Bill is in effect a framework Bill, with little detail on actual intentions and provisions laid out in law. It delegates a broad set of sweeping powers to Ministers not only to bring in a lot of secondary legislation, but to amend primary legislation with a Henry VIII clause hidden further on, which we will debate later.

The impact assessment lays out some further detail on the powers in the Bill. Again, it explicitly states on the secondary power contained in it that

“an understanding of the impacts of these provisions is not fully developed”—

so, not fully developed—

“A full understanding of the impacts will be developed ahead of any of the provisions being tabled, with impact assessments for each developed for scrutiny.”

That is on page 38, in paragraph 97. In the Government’s own impact assessment of the Bill, they are admitting that a huge amount of work still needs to be done.

The Government also know, as we well know from the many discussions we have had in this very room on secondary legislation, that it is slightly disingenuous of them to suggest that we will have further discussion because, with secondary legislation, we know full well that there is no ability to amend and, frankly, fairly limited opportunity to scrutinise. Given that the issues are big, complicated and of public interest, I do not think that that is good enough.

Those who have looked at our procedures and at the way we operate in this House have said before that, if the Government intend to do that kind of thing, they could have drafted statutory instruments in advance, for example, but none of that has happened. The Bill is in essence a framework Bill, and as others have argued elsewhere, that is not the right way to do legislation. That is important not just in principle, but because the Bill is a significant piece of legislation. It could—will—have wide-ranging impacts on our food system, on the health and welfare of animals in this country and, as I have argued before, on the investment climate.

As has been raised numerous times, both on Second Reading and by many of the witnesses in the evidence sessions—those excellent sessions we had—the public have real concerns about the technology, in particular about its application to animals. Again going back to the impact assessment, paragraph 9 on page 11 states:

“Historically, ethical concerns have dominated the GM space, preventing proper consideration of scientific evidence.”

In itself, that is an interesting sentence, although not one I would recommend: to suggest that ethical concerns should not be considered in the broader debate is not a good starting point. It is a clumsy observation.

**Kerry McCarthy** (Bristol East) (Lab): I share my hon. Friend’s concern about that point. We heard from several witnesses that we should be talking about animal welfare not in this Bill, but in connection with other legislation, such as the Animal Welfare Act 2006 or the farm animal welfare codes. That is almost, “Put that to one side; this is just about the science.” Does he share my concern that we are not looking at the Bill in the round and considering those ethical issues?

**Daniel Zeichner:** As ever, my hon. Friend speaks good sense. She is absolutely right. There is huge interest and I think understanding among the public of the potential benefits and of the potential risks. That is why we should have a proper discussion and debate in the round. We will keep coming back to that today and on further days, as we try to discern the Government’s thinking from the Bill. We have to work quite hard to understand the wider framework within which this sits, and the overall impact it will have. We will keep coming back to that, so I very much agree with her.

To go back to the impact assessment, at paragraph 122, again there is recognition that public acceptance remains uncertain, with the document referring to

“public scepticism and non-acceptance of GE products, including those that qualify as PBOs”—

precision bred organisms.

The Government are also clear—as are we—about the potential benefits and the need to weigh them proportionately with the risks. We would argue that to do so, and to ensure public confidence, the Government need to be absolutely transparent and explicit about the changes they are seeking to make. As I have indicated, however, that is not really going on at the moment. It seems that we are being asked to vote for a blank cheque that would give the Government the power to set up any regulatory framework that they desire, without proper discussion about the merits of one particular framework over another.

That was made clear in evidence, particularly that of Professor Gideon Henderson, the chief scientific adviser at DEFRA, who said:

“The passage of this Bill has pointed to those problems in animal welfare and made them clearer, and made it necessary to deal with them quite explicitly before we can enact legislation about precision breeding for animals.”—[*Official Report, Genetic Technology (Precision Breeding) Public Bill Committee*, 28 June 2022; c. 18, Q26.]

I quite agree. He also said that the process of considering the evidence on animal welfare

“will have to take place before secondary legislation can be enacted. The process for that is laid out in the Bill, and the timescale will be something like two to three years where scientific input will feed in.”—[*Official Report, Genetic Technology (Precision Breeding) Public Bill Committee*, 28 June 2022; c. 17, Q24.]

We know that the Government’s thinking is that that would take some years—possibly two to three; possibly longer—but no such process or timescale is laid out in the Bill. If more time is needed to get the provisions right, why not focus on doing that rather than asking us, essentially, to allow them to pass and to ask questions only afterwards? I do not think that is how we get good legislation, and even more worryingly, that is not how we maintain public confidence. This is quite a big decision, as these matters are a big part of the Bill, but we have reluctantly come to the conclusion that animals should be excluded for now, until DEFRA and the Government have carried out the very large piece of work that they clearly and self-evidently need to do—as they admit—before they are ready to come back to the House with concrete proposals.

Amendment 29 would remove “or a precision bred animal” from the definition of “precision bred organism” in subsection 1(1). That term will itself be subject to further discussion in a few minutes, but I think that the effect of the amendment is clear.

Amendment 30 would remove paragraph 1(7)(b) and is consequential on amendment 29. Should the amendments be successful, there would need to be many further consequential amendments later in the Bill, but rather than putting the Clerks to the task of considerable further drafting work, we thought it might be sensible to test the water first. Consequently, we will not press amendments 29 and 30 to a vote, but we will test the view of the Committee with amendment 28, which can be found the end of the amendment paper and would amend the Bill’s title to remove references to animals.

**Deidre Brock** (Edinburgh North and Leith) (SNP): This is, of course, English legislation. As I said on Second Reading, the regulation of genetically modified foods is a devolved matter. The Scottish Government have been clear that they are opposed to GM food while they sensibly await confirmation of the EU's position on gene editing.

The potential impact of the Bill on Scotland, through the United Kingdom Internal Market Act 2020, must be recognised and commented on. Indeed, as we have heard from the Opposition, the Regulatory Policy Committee and others, there are concerns about a variety of trade, transparency and marketing issues that were not addressed in the impact statement. The Scottish Government have been clear that we intend to stay aligned with EU regulations as far as is possible and practicable.

**Andrew Bowie** (West Aberdeenshire and Kincardine) (Con): I have been listening closely to what the hon. Lady has said. At the very beginning of her speech, she said that the Scottish Government were against genetic modification or genetic editing, but in her next sentence she said, "but we are waiting to see what the EU is going to do." Which is it? Are they against genetic editing or are they waiting to see what the EU does before they change the law in Scotland?

**Deidre Brock:** It is quite simple. We are currently opposed to GM food, but obviously we do not want to erect further barriers to our largest market, so we are waiting to see the position after the review.

The amendments and new clauses that I have tabled and which we will discuss later on seek to amend the 2020 Act to ensure that the Scottish Parliament's authority to legislate in the marketing of precision bred organisms is respected, and seek to prevent the operative parts of the Bill from coming into force until a common framework agreement on precision breeding has been agreed between the UK Government and the Scottish and Welsh Governments. I would be grateful if the Minister, when she rises to speak, could give an explanation of why that common framework procedure was not followed before the Bill was introduced.

If the UK Government press ahead without taking such steps, we are concerned about the impact on exports due to what is currently a much higher bar for approval in the EU. We heard criticisms in the evidence sessions that the category of precision bred organisms is not recognised anywhere else in the world, and is not based on scientific criteria, which could present problems for trade in those goods. If the EU retains its current opposition to gene editing, there are, for example, concerns about the export of Scottish salmon to Europe, and to France in particular. It has been suggested that products might be considered on a product-by-product basis, but we have heard little detail and there are real questions about cost and workability.

On the need for alignment with the EU, I have tabled new clause 10, which would ensure that, if gene editing does get the green light, we ensure strong labelling and traceability. Otherwise, how do we prove to European importers, while the EU has its current approach, that the product has not been contaminated? I know that is a loaded word, but it expresses the views of a considerable number of people who are concerned about GM foods.

**Alec Shelbrooke** (Elmet and Rothwell) (Con): I am listening very carefully to what the hon. Lady is saying. Is she saying that we should not bring the regulations into force until the EU has brought its regulations into place?

**Deidre Brock:** Yes, I am. I thought I was fairly clear on that, and I think the Scottish Government's position is very clear. I refer the hon. Member to the letter that the Scottish Government wrote to the UK Government on the issue recently.

My new clause would ensure clear and visible labelling—

**The Chair:** Order. I gently say to the hon. Lady that we are discussing the amendments before us—amendment 29, 30 and 28. I do not want her to use this debate as an opportunity to give us a taster of her future speeches. She will have plenty opportunity to make her case on her amendments. Could she make sure her remarks relate to amendments 29, 30 and 28?

**Deidre Brock:** Thank you for your guidance, Mr Davies. If the Opposition were to choose to press amendment 29 to a vote, I would support it. From the moment the Bill was published, the Scottish Government raised the issue as a direct threat to Scottish interests. The EU is not considering animals as part of its review, so the potential for the UK Government to align with our largest trading partner and its eventual position is even further reduced by this measure. I look forward very much to the Minister's comments on those points and to the points I raise in the future.

**The Parliamentary Under-Secretary of State for Environment, Food and Rural Affairs (Jo Churchill):** It is a pleasure to serve under your chairmanship, Mr Davies. I thank the hon. Member for Cambridge for his opening statement, which highlighted that Labour is supportive of science and innovation, and of making sure that as a country we optimise those things in which we really do excel.

I acknowledge the support that the Bill has received from the research community, industry and a broad base of stakeholders. We heard in the evidence sessions how important and exciting this area is, and about the potential benefits for the food system and the environment. None the less, at the outset, I would like to state that I appreciate the concerns raised. I hope that the debates that follow and the way in which we proceed reassure the hon. Member and others. We intend to move slowly and steadily and to follow the science.

As explained on Second Reading, the Government believe that legislation has not kept pace with developments. The existing provision is some 30 years old, and our understanding of the safety and benefits of technology such as gene editing has advanced significantly. We have already taken that first step in regulatory reform with the statutory instrument that came into force in April. It has already enabled exciting research in the hon. Gentleman's and my part of the world, East Anglia, into high vitamin D tomatoes, which could bring health benefits to many, although I appreciate the hon. Gentleman's observation that even in that case we need to think carefully.

9.45 am

In the current context of our food security and climate change, I do not believe that we can afford to lose the opportunity to harness benefits, while reassuring ourselves that it is those very benefits that we are harnessing as we move forward. I think I heard that kernel of that thought in the hon. Gentleman's opening speech. I agree that we must be transparent so that we help everybody to have the confidence to move forward.

On the amendments, I understand that some are concerned about the inclusion of animals in the Bill. They rightly want to protect animal welfare, and I can say without fear of contradiction that that view is shared across the House. We want to utilise precision breeding to improve the health and welfare of animals. It is vital that animals are covered by the Bill because the science is clear as to the benefits. As we heard from Dr Lewis, we have the opportunity to harness groundbreaking research on animals taking place across our leading institutions, particularly in some of our devolved nations. The fact that some want to shackle that research is quite a worry.

In the evidence sessions, we heard of projects using precision breeding to develop resistance to bird flu in chickens, which has an application to intensive and extensive agriculture. The same is true of work on porcine reproductive and respiratory syndrome resistance in pigs. Dr Lewis's example came from the heart, having seen the devastation that that disease wrought on his own family pig farm. Work is also progressing on resistance to sea lice in farmed salmon. All that work could bring significant health and welfare benefits to our animal populations, and economic benefits to those who farm those fish and work in the livestock industries. That will help to assist development across the country. To create and enable the regulatory environment to translate that research into practical transformational benefits is a key objective of the Bill. This is an enabling Bill, representing the first tentative steps. It is not the end of the journey.

As I have said, we heard from Dr Lewis of Genus in our evidence sessions. PRRS is a truly devastating disease, taking hold of pig populations both in the intensive and extensive rearing systems across the UK, and indeed across the world. It causes high mortality, suffering and acute antibiotic use at a time when we are trying to address challenges such as antimicrobial resistance, and it costs about £1.75 billion across the European Union and the UK alone. I ask Members to consider why we would not want the Bill to allow technology to acquire the ability to alleviate the effects of disease on the health and welfare of pigs and other animals.

**Deidre Brock:** I appreciate the Minister's enthusiasm and her ambitions for everything that the Bill might be able to achieve, but given that Europe is not looking at gene editing for animals as a part of its review—certainly not at the moment—how will that further affect our trade in animals with Europe, particularly if no labels or traceability are attached to these animals?

**Jo Churchill:** I believe that the hon. Lady has tabled amendments on that subject, and we will come on to discuss them. In my view, this is part of our responsibility, alongside that of the scientists, who are at the forefront of what they do. I would gently temper the hon. Lady's

description: this is not unbounded enthusiasm; it is pragmatism. It is about a deep belief in our science and our ability to do good; that is different from enthusiasm. We are building in transparency, and we need to utilise those skills. On my visits to these great institutes around the country, I have met scientists and researchers from across the world, not only Europe. Although I take the hon. Lady's point about gravity economics, what we do has a broader benefit to people across the world. There are clear benefits.

We need to safeguard welfare, and that is why we have laid down in the Bill a framework for the regulatory system. It is imperative that we get this right. That is why it is important that we work with expert groups, industry and non-governmental organisations on enabling the right regulations to ensure that the system is effective, safe and workable.

All animals are protected by comprehensive and robust legislation, including the Animal Welfare Act 2006, which makes it an offence to cause any captive animal unnecessary suffering and to not provide for their welfare needs. The Bill's system to protect animal health and welfare will work with those regulations. The Animal Welfare Act is supplemented by detailed regulations on farmed animal welfare. The Welfare of Farmed Animals (England) Regulations 2007 include specific requirements to protect animals that are bred or kept. The regulations prohibit breeding procedures that cause or are likely to cause suffering or injury. They state:

"Animals may only be kept for farming purposes if it can reasonably be expected, on the basis of their genotype or phenotype, that they can be kept without any detrimental effect on their health or welfare."

In addition, animals used in scientific research projects, which would be the first stage of developing a breeding line using precision breeding for animals, are protected by the Animals (Scientific Procedures) Act 1986—ASPA—which was referred to in the evidence we took from the Royal Society for the Prevention of Cruelty to Animals, which was glad to see that that is the case. This legislation ensures that animals are only ever used in science where the potential harm to animals is limited, there are no alternatives, and where the number of animals is the minimum needed to achieve a scientific benefits, and that includes a harm-benefit analysis.

The measures we are introducing support the regulations by requiring an animal welfare declaration and independent scrutiny by an expert group before an animal can be marketed. We are ensuring that the health and welfare of the animal and its offspring will not be adversely affected by any trait resulting from precision breeding.

If we want to drive innovation and investment in this area while continuing to be at the forefront of animal welfare, we need to move forward and show how the best regulatory systems can work. The Bill provides a clear signal that the UK is the best place to conduct the research and bring products to market. I therefore urge the hon. Member for Cambridge to withdraw his amendment.

**Daniel Zeichner:** I thank the Minister for her constructive tone. I suspect that the arguments we will pursue over the next few days are already becoming clear. There is considerable agreement. No one disputes that it would be wonderful to be able to tackle bird flu or PRRS. Of course, if we can find a solution, it would be hugely

[Daniel Zeichner]

beneficial not just in a financial sense but in terms of welfare as well. The question is how best to achieve that, and I suspect that that is going to be the key part of the debate.

I shall start by admitting my first procedural failure of the day. Contrary to my original suggestion, I am advised by the Clerks that we cannot yet vote on amendment 28 because it does not relate to this clause. Therefore, with your permission, Mr Davies, I would like to reverse my original suggestion and ask that we vote on amendment 29 but not on amendments 28 and 30. Despite spending many hours sitting on Bill Committees, some of us are still learning some of the procedures. I understand that amendment 28 relates to the long title of the Bill.

To go back to the broader issue, some of the points made by our SNP colleague, the hon. Member for Edinburgh North and Leith, will come back in our discussions, I am afraid, because where we sit in relation to other jurisdictions and approaches is a complicated question. There is no two ways about that, and I will say more about it in a few moments' time.

The cost issue raised by the Minister—the £1.75 billion—was interesting. There are potentially huge benefits here, so it is odd, looking at the impact assessment, to see the relatively modest sums that the existing system puts in place. I wonder whether there is a slight mismatch in seeing the current set-up as such a brake on development; it seems to me that there may be other issues as well, although I might be missing something. We are trying to achieve the right regulatory framework to allow investment to take place; the question is whether this the right way to do it. At the moment, I persist in thinking that the measures before us on protection for animals are not sufficiently developed.

Something I have noticed in other Bill Committees I have been involved in is that we home in on the legislation before us and it is quite hard for Members to understand fully the wider landscape in which that legislation sits. It might be assumed that Members are all-knowing and fully understand the entire set-up, but to me, it sometimes feels more like looking at a lump of marble and trying to discern the sculpture within. We need to be pretty imaginative to see exactly where the Bill fits and what consequences it will have.

I am reassured on some of the points about the wider framework for animal protection, but it is also fair to say that there has been a lot of legislation recently. For this, the Government deserve some credit: it is changing the landscape, but it is not entirely clear how it will all fit together. That gives further weight to our view that, on balance, it would be better not to bring the provisions in this part of the Bill into force until further work has been done.

*Question put, That the amendment be made.*

*The Committee divided: Ayes 5, Noes 10.*

#### Division No. 1]

#### AYES

Brock, Deidre	McCarthy, Kerry
Glendon, Mary	
Green, Kate	Zeichner, Daniel

#### NOES

Bowie, Andrew	Howell, John
Churchill, Jo	Jenkinson, Mark
Clarke-Smith, Brendan	Johnson, Gareth
Duguid, David	Jones, Fay
Fletcher, Katherine	Shelbrooke, rh Alec

*Question accordingly negated.*

**Daniel Zeichner:** I beg to move amendment 1, clause 1, page 1, line 14, at end insert—

“(2A) But for the purposes of this Act an organism is not ‘precision bred’ if any feature of its genome results from any technique or process which involves transgenesis.”

**The Chair:** With this it will be convenient to discuss amendment 2, clause 1, page 2, line 34, at end insert—

“; but such changes may not provide for the definition of ‘modern biotechnology’ to include any technique which involves introducing exogenous genetic material.”

*This amendment would prevent any technique which involves introducing exogenous genetic material from being included in any future change to the definition of “modern biotechnology” for the purposes of the Bill.*

**Daniel Zeichner:** We now come to the heart of the Bill—I was about to say, the “meat of the Bill”, but whatever the genetically edited alternative to the meat of the Bill would be. This is the discussion of the definitions, which is tricky stuff.

Throughout the passage of the Bill, in the private meetings that the Minister kindly arranged for herself and the Opposition Front Benchers through to Second Reading, it has been fairly clear that the stated intention of the Bill is to deregulate the law on gene editing, or precision bred organisms, as they are considered to be—organisms that could have been created through traditional breeding processes, in contrast to genetically modified organisms, which could not. I suspect that we will have quite a discussion on that point. The distinction originally came from the 2018 European Court judgment, which many at the time considered problematic because it seemed a legalistic judgment rather than one that reflected an understanding of the changes and developments in technologies over the last 30 years.

10 am

We have been told repeatedly that gene editing—unlike genetic modification—means that material is not transferred from one species to another. The distinction is between organisms to which DNA from a different organism—or transgenes—has been introduced, and organisms that have simply had their DNA altered but had no external material introduced. The Minister herself told me that that was the difference between genetic modification and genetic editing, and she was certainly nodding on Second Reading as Conservative Back Benchers made similar distinctions. Indeed, the hon. Member for South Ribble, who sits on the Committee, said:

“If the Bill contained a way of opening up the transgenic debate, be that in plants or animals, it would not enjoy my support.”—[*Official Report*, 15 June 2022; Vol. 716, c. 383.]

Page 5 of the consultation organised by DEFRA in January 2021 states quite simply:

“This proposal does not apply to organisms which introduce genetic material from other species.”



I get that distinction, which I think most of us can understand, between the editing of a single organism and the modification of an organism by introducing exogenous material from a different organism. The problem is that that distinction is not in the Bill; nowhere is it stated that precision breeding technologies are technologies that edit a single organism. Indeed, clause 1(7) mentions

“somatic hybridisation or cell fusion of plant cells of organisms which are capable of exchanging genetic material”.

To me and to others, that sounds as though it opens the door to transgenic exchange.

The only distinction made in the Bill is between processes that could have occurred naturally or through traditional breeding techniques and those that could not. That is where things start to get difficult. As the Labour party, scientific societies and stakeholder groups have said a number of times, that is a weak definition, which could feasibly include just about anything—that is what Professor Henderson admitted. *[Interruption.]* The hon. Member for South Ribble looks sceptical.

**Katherine Fletcher** (South Ribble) (Con): I am not looking sceptical. You are describing nature. You are describing the fact that bits of genetic material will get swapped around in a series of different vehicles, especially in plants such as plasmids. What you are asking us to do is—

**The Chair:** Order. The hon. Lady has been here long enough now. I am not proposing anything; the hon. Gentleman is.

**Katherine Fletcher:** I apologise for the inappropriate language, Mr Davies; I am just getting a bit over-excited. The hon. Gentleman is asking us to include a legalistic definition of nature. I have scrutinised the Bill quite carefully, and I believe that it has sufficient protections to replicate the best parts of nature. That is why I was looking the way I was.

**Daniel Zeichner:** I am grateful for the intervention—enthusiasm is welcome. The hon. Lady gets to the nub of the point: it is very difficult to describe in law—which is what we as legislators are trying to do—the complexities of the natural world. I suspect that we will probably go around in circles on this, but my point is that the reliance on the notion of something occurring naturally would make the law difficult to interpret—that is key. That is why it is hard for legislators to pin those things down, and I have some sympathy with who have had to capture them in drafting the Bill.

As I am sure the Committee will remember, I pressed Professor Henderson on that point. He said:

“The Bill is designed not to allow exogenous material”.

That is not explicitly coded in the Bill, however. He also said that this is

“something of a grey area.”—*[Official Report, Genetic Technology (Precision Breeding) Public Bill Committee, 28 June 2022; c. 15, Q18.]*

He was absolutely right about that. He said that transgenesis can occur naturally, and he drew a distinction between intentional and unintentional transfer, which, again, I can understand.

I appreciate that, as the hon. Member for South Ribble implied, the distinction is complicated and messy, but it is important. Unfortunately, although that is the distinction that the Government have presented in the Bill, not only does it not appear in the Bill, but it is contradictory. As we read it, it seems that transgenesis is possible under the Bill, so long as it could have occurred naturally or through traditional breeding processes. I appreciate that it is difficult, but I ask the Minister to explain today how her earlier remarks, and the remarks made by others—that gene editing does not involve introducing DNA from one organism into another—are reflected in the Bill. I do not think they are.

The other related point is the general looseness of the definitions in the Bill. I am sure we all recall the striking evidence from Dr Edenborough QC, a distinguished lawyer, who may well end up advising on how disputes in this area might be resolved. That is an important point: we are setting the law, but others will then interpret it. If it is not clear, we will see trouble ahead.

As Dr Edenborough explained in the evidence session, “‘could have resulted from’ is staggeringly imprecise. Is that ‘likely’? Is that ‘very possible’? What level of probability is it?”—*Official Report, Genetic Technology (Precision Breeding) Public Bill Committee, 30 June 2022; c. 125, Q199.]*

In essence, he raised that many things that would be permissible under the Bill and qualify as precision bred organisms would be unclear. The Government need to clarify what they intend here. Without clarity, there is a real risk of challenge. That goes back to my opening point, and I think it will be a thread running through our debates. With the lack of clarity comes uncertainty, and with uncertainty comes a risk to investment, which is exactly opposite to what the Bill is designed to achieve.

That is why we have tabled the amendments—to try to bring the Bill in line with the distinctions the Government have themselves drawn between genetic editing and genetic modification. The amendments would tighten up the Bill, provide clarity of purpose and bring the Bill in line with the Government’s stated aims.

Amendment 1 explicitly rules out transgenesis by adding a new subsection to clause 1, while amendment 2 amends the definition in the subsection (8) definition of “modern biotechnology” to exclude the introduction of “exogenous genetic material”. Both amendments would bring the Bill into line with the stated objectives of the Government. We will seek a division on amendment 1, although I am happy to withdraw amendment 2. We hope the Government can support us on amendment 1.

**Jo Churchill:** Amendment 1 would exclude from the definition of a precision bred organism any organism that has contained transgenic material during any step of its development. I thank the hon. Member for the amendment, but do not feel that it follows the best scientific advice and evidence and would undermine the purpose of the Bill.

It is important that we follow scientific advice and regulate based on the nature of genetic changes made to organisms, rather than on techniques used to develop them. The scientific advice is clear: if an organism contains genetic changes that could have occurred naturally or by traditional breeding methods, that does not present a greater risk than a traditionally bred counterpart, irrespective of the techniques used to develop it.

[Jo Churchill]

No precision bred organism will contain transgenes. Some of its ancestors may have contained them, but those transgenes must have been removed for the organism to be classified as precision bred. That is laid out in the Bill.

The transgenic intermediate stages are important, as they enable the precise changes to be made to the DNA of organisms. The transgenes themselves are then subsequently removed. For example, CRISPR-Cas9 DNA would need to be taken out of precision bred animals and plants.

During the evidence sessions, we heard from Professor Nigel Halford of Rothamsted Research. He is using that approach to develop low-acrylamide wheat—a wheat that can provide public health benefits, as well as broader benefits.

**Kate Green** (Stretford and Urmston) (Lab): I apologise to the Committee for displaying my ignorance, but I am interested in the Minister's comments about the potential ancestry of genes' genetic material, which would then have been removed by the end of process. Does that happen in nature?

**Jo Churchill:** It has to go through the regulatory framework to be defined as precision bred, to ensure that any of those precise changes are changes that could have occurred in nature, because we are describing what would happen in nature.

**Katherine Fletcher:** In nature there will be random deletions continually within the genome, so the idea of sections of DNA being taken out or added in is part of the process.

**Jo Churchill:** I thank my hon. Friend.

**Kate Green:** Is the Minister therefore saying that it is not possible to determine whether the way in which genetic material may have moved in and out will replicate what could have happened in nature, but only that the outcome will replicate what could have happened in nature?

**Jo Churchill:** Yes.

**Kate Green:** I think that worries some people.

**Jo Churchill:** During the evidence sessions, we heard from Professor Halford and Professor John Napier, who is developing camelina crops that are high in healthy oils. In both examples that they cited, transgenic DNA introduced during the gene editing process was removed. Under the amendment, both of those examples would fall outside the scope of the Bill, and the plants would be classed as genetically modified organisms, but they are not, because they do not contain any transgenes that are actually part of the process. The hon. Member for Cambridge referred to the fact that we can have these little bits of DNA left over in ourselves from viruses and so forth.

We must make sure that we understand what we are looking at. We heard very clearly from Professors Halford and Napier that the techniques are more targeted and therefore very precise, known changes can be made.

Therefore we know what we are looking at, and this is stepwise procedure. Some of the narrative infers that the Bill will be passed, and then, tomorrow, the changes will happen. It is not like that; we are talking about the development of science and ensuring that the regulatory framework that we have been working under from 30 years ago, which has been recognised virtually across the world as inadequate, is changed, so that we can keep up with the science.

If we accepted the amendment, it would make the Bill irrelevant. Countries elsewhere with proportionate regulations would be able to exploit the huge potential of the technology as it develops, whereas we would remain impeded by the current legislation. I urge hon. Member for Cambridge to withdraw the amendment relating to the definition of precision bred organisms, although I think he said that he intended to push it to a vote.

**Daniel Zeichner** *indicated assent.*

**Jo Churchill:** Yes.

The hon. Gentleman has said that he will not push amendment 2 to a vote. The amendment focuses on the definition of modern biotechnology. The techniques to which he refers were the subject of the European Court of Justice case in 2018, to which he also referred. That finding set us on today's path. The Court ruled that all organisms produced by the techniques should be regulated as genetically modified organisms, irrespective of whether the end product could have occurred naturally or by traditional breeding.

As we heard from Sam Brooke of the British Society of Plant Breeders in the first evidence session, that ruling resulted in many companies halting their research on gene editing and other precision breeding techniques. Subsequently, the EU has recognised that that finding is not in line with current scientific knowledge or development, and has committed to reviewing its own legislation. That is why I am keen that we share our knowledge with it to help us all move forward.

Under the Bill as currently drafted, organisms produced by the techniques should only be classed as GMOs if the genetic changes they contain could not have occurred naturally, or been produced by traditional breeding methods. That does not mean that we consider that the exogenous DNA must be excluded from the process of producing such organisms altogether, as stated. The key point is that we should focus on the nature of the genetic changes in organisms, which are actually released or marketed, as per the scientific advice from the Advisory Committee on Releases to the Environment. The broad guidance it produces is very clear. It means that, in order to produce a precision bred organism, developers have to remove exogenous DNA, such as the CRISPR-Cas9 gene used in gene editing, from the organisms. In effect, they are removing the tool they used to make the changes, leaving behind the new trait.

In order to carve out precision bred organisms from the legislation controlling the use of GMOs with the Bill, we have defined the techniques used to produce them as "modern biotechnology". We are then separating organisms produced by modern biotechnology into GMOs and precision bred organisms in order to ensure that the two regulatory systems dovetail. That term must remain aligned to the GMO legislation, which means continuing

to include techniques that introduce exogenous DNA. I am therefore grateful to the hon. Gentleman for withdrawing amendment 2.

10.15 am

**Daniel Zeichner:** I hope everyone is still with us, because this is not simple. Part of the problem is that we are learning more all the time. We are trying to set out a regulatory framework and structure that will stand a reasonable test of time. The Minister is slightly unfair with her dramatic language of how we are shackled. Different Administrations across the world take different approaches, of which there is a whole range therefore, which suggests that the choice is not a simple binary one between doing this or that. The reason people do things differently is that people are more or less cautious. Part of the debate—the question—is where we want to be on that spectrum, and where we think we will be best placed to attract investment and to give people confidence and certainty about the approach we are taking.

I am still worried, because two almost-parallel things seem to be going on. On the one hand, there is an appreciation that the newer technologies absolutely involve transgenesis, even though the Government and others have been pretty clear in reassuring people that that is not what is going on. On the other hand, the fall-back is then, “Well, that could have occurred naturally,” which is absolutely right, as has been explained to me—nature does that anyway. However, for the legislation proposed in the Bill, does that mean we should not be explicit about reassuring people that transgenesis is excluded? By stating that as we have proposed in the amendment, people get that absolute confidence.

**Kate Green:** I have listened to the Minister and to the scientific explanation of the hon. Member for South Ribble—which was much appreciated. Does my hon. Friend agree that that transparency should extend, from the public perspective, not just to the end product, as it were, but to what will have happened at every stage of the process?

**Daniel Zeichner:** I rather agree. The problem is that although we are spending time and effort to understand this, that does not always get translated into the wider world. We have seen before how this issue cannot necessarily always be explained as carefully as it might be to the wider world, which is why it is so important that we do not leave uncertainty or doubt in the Bill. That is why this stronger amendment would give us that clarity to reassure people, because that is what they want to hear—people are concerned. We will therefore press the amendment to a vote, because it would give clarity.

*Question put, That the amendment be made.*

*The Committee divided: Ayes 4, Noes 10.*

#### Division No. 2]

#### AYES

Glendon, Mary  
Green, Kate

McCarthy, Kerry  
Zeichner, Daniel

#### NOES

Bowie, Andrew  
Churchill, Jo

Clarke-Smith, Brendan  
Duguid, David

Fletcher, Katherine  
Howell, John  
Jenkinson, Mark

Johnson, Gareth  
Jones, Fay  
Shelbrooke, rh Alec

*Question accordingly negated.*

*Question proposed, That the clause stand part of the Bill.*

**Daniel Zeichner:** I apologise to Members for detaining them, but I want to speak to the clause because it is a key part of the Bill. We are at this point establishing a new category of a precision bred organism. My worry is that it is not a clear category, not least because only a few months ago another new category was introduced—the higher qualifying plant. The Genetically Modified Organisms (Deliberate Release) (Amendment) (England) Regulations 2022 were discussed in this very Committee room—I remember the Minister and I discussing them—and have come into force, which was an initial step before this Bill was introduced. At the time, I highlighted the warnings from various learned societies that that was not a category that they recognised, and I am afraid the precision bred organism occupies a similarly ill-defined space.

In the Bill, reference is made to other previous SIs, but not to the most recent one. I notice that the SI from 2002 is referenced in subsection 3, where “modern biotechnologies” are defined, but I cannot see any reference to this year’s SI, so perhaps the Minister will tell us what is happening with that. Paragraph 3.2.2.1 of the impact statement makes it clear that the intention is to revoke the SI and reintroduce the provisions in the Bill, but it certainly is not clear to me where in the Bill that is being done, so I hope the Minister will elucidate. Perhaps it is hidden in the secondary legislation provisions, in which case it is quite opaque, which is part of our general concern about the Bill.

The danger is that we could be in a position where we unintentionally have two pieces of law governing this area and laying out two different definitions at the same time—the qualifying higher plant and the precision bred organism. I want to make this point because it is important, given some of the contributions that have already been made. There is a further problem as the European Union has a different term for what looks like an attempt to define much the same thing—an NGT, or a product of new genetic techniques. I do not want to rile Government Members by suggesting that that might be a better name for what we are doing, but it probably captures more accurately what we have discussed so far, because these are indeed new genetic techniques, and will probably go on being new genetic techniques.

Does that matter? I think it might, and that is the problem. It goes back to the points made earlier by the hon. Member for Edinburgh North and Leith. The movement of goods and materials across borders is vexed at the best of times, and pretty fraught at the moment. The trade implications are explored in section 6 of the impact assessment, which makes interesting reading with some quite bold assertions. I will refer to them because, although the view of the Government is that this probably will not be a problem, they do to their credit go into what could occur as a consequence of it becoming a problem. It is pretty alarming. Should there be a dispute, the impact assessment states:

[Daniel Zeichner]

“This would have a relatively significant impact on UK producers...UK crop-related food exporters are heavily dependent on EU consumers’ demand. Approximately 55% of all crop-related food exports from the UK are to the EU...And so, it would be difficult to replace EU demand. Therefore, there is a possibility for a portion of the £8.56 billion worth of crop related exports to the EU to decrease, potentially outweighing the scale of direct benefits to business. Nonetheless”—

This is very reassuring—

“this represents only 2.5% of our annual total value of exported goods and 5.4% of our annual value of exported goods to the EU. And so, even if UK crop-related food exports are maximally impacted, the overall impact on the UK balance of trade is minimal.”

Well, I do not think it will come as a great reassurance to those involved in the sector if that is part of the potential risk.

There are big risks here. Not only do we have that issue, but there is also the wider issue of the Cartagena protocol, which governs the movement of these organisms across borders. I suspect that by introducing the precision bred organism, we are introducing a new category, which again leaves us open to challenge. In all these cases, the argument will always be, “Is it in anybody else’s interest to challenge?” What we know from all these trade negotiations is that if there is any possibility of someone picking a fight, they can always use something like this to pursue it.

In conclusion, we are stepping into some tricky territory. We generally hope that other countries will come with us in similar ways and that any differences can be resolved without recourse to challenge, but we should be aware of those risks and proceed with care. Investors will ask themselves a simple question: is there a risk here, and if so, does the potential benefit outweigh the potential disadvantage? It has been suggested—indeed we heard it in the evidence from the Agricultural Industries Confederation—that there is a concern that people will look at the legislation and think, “This is not very certain or clear. We will wait and see what others do first.” Far from speeding things up, we could end up delaying them. The Government need to show that these questions have been addressed and answered. This is a small clause, but it has occupied quite a lot of time and is hugely significant to how we go forward.

**Jo Churchill:** The approach we have taken to regulating genetically modified organisms has not kept pace with scientific progress. The hon. Gentleman referenced the UN’s Cartagena protocol on biosafety, in which “modern biotechnology” is a term used. Its definition of modern biotechnology aligns with techniques such as those listed in sub-paragraphs 5(1)(a) and 5(1)(b) of the Genetically Modified Organisms (Deliberate Release) Regulations 2002. We are using the same list of techniques in this clause—see subsection (3)—to ensure that the new regime fits neatly alongside the one that regulates GMOs without leaving gaps or overlaps, which I think is the right course of action to ensure that nothing slips through the cracks, and without bringing any organisms that are not currently regulated as GMOs into the new regime regulating PBOs.

Some 30 years ago, modern biotech was used to transfer DNA between very different organisms. It can now be used to introduce changes that could have occurred naturally and through the use of traditional

processes. As we have heard, that makes it much more targeted. The legislation controlling organisms produced by modern biotechnology needs to reflect these developments and our increased knowledge. Most notably, the science is telling us that we should not regulate precision bred organisms differently from their traditionally bred counterparts.

Clause 1 describes precision bred organisms, which we are carving out from legislation on the release and marketing of genetically modified organisms. The definitions have been drafted using the latest scientific advice, and they are designed to ensure that this regulatory system can work. We are taking a critical step towards proportionate, science-led regulation of genetic technologies. As highlighted by Sam Brooke in the evidence sessions, the Bill will encourage greater research, innovation and investment in precision bred technologies. In doing so, it will lead to environmental, health and economic benefits for the UK.

It is vital that we add precision breeding to our toolbox to help us address some of the challenges we know we are facing, not only as a country but globally. The hon. Member for Cambridge referred to the SI. This will be revoked when we introduce secondary legislation after the Bill passes. I commend the clause to the Committee.

*Question put and agreed to.*

*Clause 1 accordingly ordered to stand part of the Bill.*

## Clause 2

### MEANING OF “PLANT” AND “ANIMAL”.

*Question proposed,* That the clause stand part of the Bill.

10.30 am

**Jo Churchill:** Clause 2 defines “plant” and “animal” for the purposes of the Bill. The definitions in subsections (1) and (2) cover multicellular plants and animals; they do not cover micro-organisms. The clause expressly excludes humans from the scope of the Bill. Under current legislation, humans and human embryos cannot be classed as genetically modified organisms, and nor will they be classed as precision bred organisms under the Bill. Subsections (3) to (5) establish the developmental stage at which a plant or animal falls into the scope of the Bill, by defining what is meant by an organism.

**Daniel Zeichner:** I am sure that everyone will be relieved to know that this is going to be a quicker debate than that on the previous clause. The clause appears to be quite straightforward, defining the terms “plant” and “animal”. I have one question. Subsections (3) and (4) mention gametes. Subsection (3)(a) states that references to plants and animals

“include an embryo and all subsequent developmental stages of an organism”.

For plants, references include

“a seed or a vegetative propagule”

but

“do not include a gamete.”

Could the Minister explain why gametes are not included in the definitions and what purpose their mention in the clause serves?

**Jo Churchill:** Please bear with me as I go through my copious notes. Will the hon. Gentleman repeat what part of the clause he was referring to?

**Daniel Zeichner:** Subsections (3) and (4). What is the purpose of those subsections, because it is not entirely clear to me?

**Jo Churchill:** The gamete contains only half of the genetic code required to reproduce a whole organism. A whole functioning plant or animal cannot be generated from a gamete and is therefore not considered an organism for the purposes of the Bill. I hope that answers the hon. Gentleman's question.

**Daniel Zeichner:** It is certainly an answer to the question—I am not sure it is an answer I fully appreciate and understand, but I will go away and look at it further. I am grateful to her for that answer.

**Jo Churchill:** I am very grateful for the question. As he and I both know, I have learned an awful lot about all these particular things going over all the details. If there is anything further, I would be happy to answer.

*Question put and agreed to.*

*Clause 2 accordingly ordered to stand part of the Bill.*

### Clause 3

#### RESTRICTIONS ON RELEASE OF PRECISION BRED ORGANISM IN ENGLAND

**Daniel Zeichner:** I beg to move amendment 32, in clause 3, page 3, line 35, at end insert—

- “(c) the organism has been developed for or in connection with one or more of the following purposes—
- (i) producing food in a way that protects or enhances a healthy, resilient and biodiverse natural environment;
  - (ii) growing and managing plants or animals in a way that mitigates or adapts to climate change;
  - (iii) producing food in a way that prevents, reduces or protects from environmental hazards;
  - (iv) protecting or improving the health or welfare of animals;
  - (v) conserving native animals or genetic resources relating to any such animal;
  - (vi) protecting or improving the health of plants;
  - (vii) reducing the use of pesticides and artificial fertiliser;
  - (viii) conserving plants grown or used in carrying on an agricultural, horticultural or forestry activity, their wild relatives or genetic resources relating to any such plant;
  - (ix) protecting or improving the quality of soil;
  - (x) supporting or improving human health and well-being;
  - (xi) supporting or improving the sustainable use of resources.”.

*This amendment would require that a precision bred organism has been developed to provide a public benefit, if it is to be released into the environment.*

**The Chair:** With this it will be convenient to discuss the following:

Clause stand part.

Amendment 10, in clause 4, page 4, line 24, leave out “negative” and insert “affirmative”.

Clause 4 stand part.

**Daniel Zeichner:** Amendments 32 and 10 concern the requirements for releasing a precision bred organism. I go back to my mantra—we are pro-science and pro-innovation. We want to find ways to maintain and improve the efficiency, security and safety of our food system, while addressing the environmental and health damage that the modern food system has sometimes created.

In our view, the UK has the opportunity to create a world-leading regulatory framework that others would follow and that provides a clear public good. We recognise that the laws need to be updated to match current scientific understanding, as we talked about earlier. We want our scientists to succeed, and we want them to use their skills for good here in the UK.

To get the legislation right, the Government must balance several risks and benefits. Without consumer and business confidence, we fear we will not see that innovation happening here in the UK and we will not see the subsequent improvements to environmental sustainability and better food security that we all seek.

We want the UK to prioritise innovations that provide public benefit and prosperity. There are so many good examples happening across the country, including in my constituency of Cambridge. The Minister has already referred to the many examples presented to us in the evidence sessions last week. I pay tribute to the passion, expertise and dedication that all those people bring to their work.

I was particularly struck by the evidence given by Bill Angus, in which he noted the motivations behind the work he does as a wheat breeder and as vice-chair of the International Maize and Wheat Improvement Centre in Mexico, and the passions that drive it. Likewise, Professor Giles Oldroyd gave compelling evidence on the work being done at the University of Cambridge, focusing on improving the sustainability of farming systems and, in particular, removing the need for inorganic fertilizers. Those are clearly areas where gene editing could bring significant benefits for environmental sustainability and in reducing food insecurity across the world. Those should be the innovations that are championed.

However—there is always a “however”—we also heard evidence that while gene editing could be used for good, it could be used for ends that to many of us do not seem so desirable. I found the evidence from Peter Stevenson of Compassion in World Farming very persuasive. Here I am thinking of some of the harmful impacts that, sadly, traditional breeding methods have wrought on different animal species, whether that is farm animals that have been bred to produce high yields, which shortens their lifespan, or companion animals such as dogs, which have been bred to have bodies so small that they can barely sustain their internal organs. There is a risk that the Bill could be used to breed animals in a way that meant they would suffer more or be made to tolerate harsher conditions.

There is widespread agreement across the House that we are proud of the animal welfare and environmental standards that we have in the UK, but we know that not all countries around the world share that ethos or those aims, and that they might have different intentions for these new technologies. The question we pose in our amendments is, how can we ensure that the technology is used for good here in the UK, and who decides what that good might be?

[Daniel Zeichner]

The Bill includes some animal welfare tests, which we welcome—we shall discuss them in more detail later—but that is about it. There is a question in my mind: is development of further herbicide-resistant crops allowing more herbicide to be used, not less, what we really want to see? I do not think so. Are there tests in the Bill to stop that? That is where, again, I worry. I am not convinced, although I am happy for the Minister to point those tests out.

Our amendments propose something more explicit. Amendment 32 would create a public benefit test before precision bred organisms could be authorised and released. An organism would have to have been developed for any of the purposes described in the amendment, and I am sure all members of the Committee agree that that is an excellent list. Sharp-eyed Members might think that they have seen the list before. Labour Members are keen recyclers, and Government Members will be delighted to know that those worthy goals have been lifted from the Agriculture Act 2020. The added benefit is that that makes it all much easier for Conservative Members to support all this. What is not to like in the proposal?

The amendment would ensure that we got the most out of the Bill. As Professor Sarah Hartley of the University of Exeter said in evidence:

“The Bill enables science to develop in this area, but it does not enable us to direct the science and technology towards doing any good. That would require a different form of governance.”—[*Official Report, Genetic Technology (Precision Breeding) Bill Public Bill Committee*, 30 June 2022; c. 123-24, Q193.]

That is the key point, but there is nothing in the Bill to ensure that that will happen. Members might remember the exchange I had with the scientist who is developing the tomato with added vitamin D. I love the enthusiasm of scientists, which is fantastic, but they are great optimists in many ways, and they assume that everyone is, like them, developing positive stuff that will be good for the world. I hate to enlighten them about the fact that there are people out there who do not take exactly the same view.

When making legislation, we have to ensure that, as well as welcoming those who are undoubtedly trying to do good, we guard against those who are not. Amendment 32 would strengthen the Bill, harness the good that can be created through such technologies, and properly encode the Government’s stated aims for the Bill in the text itself.

Amendment 10 concerns the notification requirements for the release of a precision bred organism. The secondary powers in clause 4 are important, as they will specify the information that a notifier is required to disclose before releasing a precision bred organism. That is important not just to ensure that concerned members of the public remain informed, but also for what is termed “co-existence”—the ability of organic growers to maintain the integrity of their product.

We heard evidence from representatives of the organic sector. They made it clear that they cater to a group of people who do not want to see genetically modified or edited organisms in their food. Whatever our wider view of the Bill, I think we can all agree that those people have a right to that choice. With thorough information in release notices, organic farmers can make informed decisions about their crops or animals, take

the necessary measures, and track their supply chain. That is an important set of issues, and given the clause’s importance, we believe that any powers created through it should be properly discussed and given proper scrutiny by this House rather than being waved through.

I fear that we will make a number of similar points as we discuss whether legislation should be decided via the negative or the affirmative procedure. It would have been helpful and desirable for the Committee to have had details on the powers, rather than being asked to give the Government a blank cheque to do what they think is best. In the absence of any detail, I think that we should be able to debate and scrutinise the secondary legislation when it is laid before the House. That is what amendment 10 would secure.

Although we will not necessarily press both amendments to a vote, I think amendment 10 is sufficiently significant for us to divide the Committee, but let us see what the Minister says.

**Kerry McCarthy:** In speaking to amendment 32, my hon. Friend the Member for Cambridge quoted oral evidence. I had a bit of a Twitter conversation with David Rose, professor of sustainable agricultural systems at Cranfield University. He was due to give evidence but could not because of ill health. Professor Rose said that the Government have not considered how the Bill will lead to more sustainable agriculture, and that, although gene editing does have potential, it could, if used badly, make agriculture less sustainable.

Professor Rose posed a number of questions. What is gene editing for? That goes to the very heart of what the Committee is trying to nail. Who benefits? Will it reduce chemical use? Will it facilitate further monoculture? Will it intensify animal protection? The fact that those questions and concerns exist mean that gene editing could be used for good or for bad, so it would be helpful to have a public interest test in the Bill.

The Agriculture Act 2020 contains very clear tests on public money for public good, and establishes quite a clear idea of what is regarded as a public good in food and farming—certainly in how people farm their land, although not so much on the animal side of things. There is concern, however, that the Government are rowing back a little on that agenda as they start to consider how to distribute subsidies to farmers.

As we look at the more technical side of things, it would be good to reiterate that the Government do see that there is a need to promote the public good with regard to this legislation. Sue Pritchard, chief executive of the Food, Farming and Countryside Commission—with whom I am sure the Minister is familiar—agreed with Professor Rose, saying that his comments were “consistent” with the Food, Farming and Countryside Commission consultation response; she also agreed that DEFRA must anticipate good and bad consequences. That is our concern: while we have heard lots about the potential, it is just not clear that the safeguards are there against potential misuse of the legislation.

10.45 am

Finally, Joanna Lewis, the policy and strategy director at the Soil Association, said to the Committee that

“It is really important to emphasise the very legitimate public concerns about the fact that breeding as a whole—plant and animal breeding—has been on an unhelpful trajectory that is not

up to the challenge of the Government's goals on sustainable farming transition.”—[*Official Report, Genetic Technology (Precision Breeding) Public Bill Committee*, 28 June 2022; c. 56, Q92.]

I think that what she meant by that is that, on the one hand, the Government are talking about trying to promote a more sustainable approach, about the public goods in the Agriculture Act, about the relationship between farming and nature and about animal welfare, all of which are good. At the same time, though, when we look at what is actually happening in our food and farming system, there is a move towards more intensification and more industrialisation, which is not a good thing. There are real concerns about the impact on animals as we move towards an American or Australian-type system, where animals are kept in conditions that we frankly would not want to see here. I do not want to get into the whole debate about the imports of those products again.

**Fay Jones** (Brecon and Radnorshire) (Con): Can the hon. Lady provide the Committee with more evidence for her assertion that we are moving to an American or Australian system of farming? None of my farmers want to deviate from any of their world-class standards, so I am curious about where she gets that idea from.

**Kerry McCarthy**: We have seen planning applications, for example, for huge pig farms where there have been lots of concerns about the impact on the local environment. One of the problems is that although those planning applications can be rejected on the grounds of the environmental impact—slurry leaking into the soil and the water supply, for example—they cannot be objected to on animal welfare grounds. There are quite a lot of examples of that happening. I have also been to chicken farms with high numbers of chickens kept in close confinement and a high turnover, as it takes 28 days to bring a chicken up to market weight. My concern is that if gene editing allows us to accelerate that process even further, the sheer number of animals involved could lead to welfare concerns.

There were also some very good arguments that gene editing could reduce the need for antibiotics. It would allow us to deal with disease at source, so we would not have to worry so much about disease spreading. Obviously, reducing antibiotics use would be very good, given the impact it can have on human health if it leaks into our food supply chain. At the same time, though, if we are less worried about disease spreading among animals because we have managed to breed out that concern, that could open the door in some sense to putting an awful lot more animals in close contact and, perhaps, not being as worried about husbandry.

I think it is very good that, for the most part, British farmers do not want to go down that American route. We had that argument over the Agriculture Act and the Trade Act 2021—about protecting standards and trying to support British farmers who do not want to do that. That is a very good thing. However, given the possibility that British farmers will have to compete with imports that are produced to lower standards, there may be some who do want to go down that route. We see that with some food producers because they want to be able to produce more cheaply.

As my hon. Friend the Member for Cambridge said, scientists want to do the right thing and use gene editing for the right purposes. By and large, farmers in this country also want to do the right thing and farm to

good, sustainable standards. However, if market forces are against them, there will always be the temptation to take advantage of being able to put animals in close contact; there will always be some people who choose to do that. I do not see the harm in trying to have safeguards in the Bill to prevent that. That is not to say that everyone will try if the safeguards are not there.

**David Duguid** (Banff and Buchan) (Con): Further to the question of my hon. Friend the Member for Brecon and Radnorshire, I am struggling to see where the evidence is that, through the passage of the Bill, our animal welfare standards, which are covered by other legislation, would somehow be cancelled out.

**Kerry McCarthy**: When we discuss clauses 11 to 13, I might raise some examples of where I am concerned about animal welfare standards. I do not think the farm animal welfare codes are particularly effective. There was concern about seven years ago that the Government wanted to put them on a self-regulatory footing. I need to check what happened with that, because there was public outcry about self-regulation on that front. The Government did a complete U-turn, but I am not sure whether they have tried to do it by stealth in the time since. I have a mental note to check what has happened to that since I played a leading role in trying to stop it being moved to that footing.

There have been undercover exposés filmed at certain farms about the way some animals are treated. I like to think I have a very good relationship with the National Farmers Union and Minette Batters. The vast majority of farmers want to do the right thing, but looking at some of the red tractor farms that are meant to be higher welfare and seeing what is being uncovered as a result of people going and filming, we cannot be complacent. The red tractor mark is meant to be a badge that consumers can trust to mean higher welfare, but there are many examples where they do not seem to have met those standards. That is proof that something is going wrong in the system.

**Deidre Brock**: I draw attention to clause 17, which is about the importation of precision bred organisms into England in this case, although the United Kingdom Internal Market Act 2020 means that it can affect the situation in Scotland, too. I am not clear what kind of monitoring there would be of the gene editing procedures that are taking place in the countries that will be importing those organisms into the UK.

**Kerry McCarthy**: That is a fair point. Hopefully we will come to that when we get to clause 17.

To conclude, Joanna Lewis at the Soil Association talked about this “unhelpful trajectory”, and how that is in conflict with the Government's goals on the sustainable farming transition. She says:

“We therefore need to ensure that we are not accelerating that trend through carte blanche deregulation.”—[*Official Report, Genetic Technology (Precision Breeding) Bill Public Bill Committee*, 28 June 2022; c. 56, Q92.]

I agree. She goes on to say that there is an opportunity to put good governance at the heart of the Bill, and to get that public interest test in there, which I support.

**Jo Churchill**: Amendment 32, as I understand it, would embed public interest into the Bill. We are very much aligned with the intentions behind the amendment,

[Jo Churchill]

and are already undertaking a range of work across Government that delivers public good. Some of those have been mentioned. We want precision breeding technologies to deliver real benefits. They are a vital part of toolkit to deliver benefits for our food system and the environment. The hon. Member for Bristol East said—rather, implied—that our farmers were not doing the right thing.

**Kerry McCarthy** *indicated dissent.*

**Jo Churchill:** Well, if they are doing the right thing and our researchers are, too, there is no need for that reassurance in the Bill. Throughout the Bill there is the PBO assessment via ACRE on both plants and animals; the animal welfare declaration and the animal advisory body; the PVS varieties listing for plants and seeds; the FSA and the food and feed marketing authorisation to check before food comes to market. There are checks and balances throughout the Bill. We are keen to see those things in the Bill that can deliver good—disease resistance, pest resistance and drought resistance.

**Fay Jones:** Does the Minister agree that this legislation is simply a tool to help the industry to carry on the good work that it has already been doing? We have talked about antibiotic use in agriculture. Since 2014, through the responsible use of medicines in agriculture, antibiotic usage has reduced by 50%. We are the fifth lowest user of antibiotics across the European Union. Does she agree that this legislation simply helps the industry carry on that good work?

**Jo Churchill:** I agree very strongly that we should allow our farmers and fishermen to optimise research, with the appropriate checks and balances, to ensure they can bring to market produce that is trusted by the consumer and safe. That is exactly what our system has been set up to deliver. It is really important that they can use cutting-edge science to help them deliver those benefits. I believe we are on the same trajectory; we are just having a worthwhile discussion about whether things should be on the face of the Bill or should be embedded in our systems.

**Daniel Zeichner:** Will the Minister comment on the point I made about the development of herbicide-resistant varieties? We know there has been an issue with glyphosate and so on. That is not necessarily something that we would all welcome. Is there anything in the Bill that would allow the Government to express a view on whether that is beneficial?

**Jo Churchill:** If the hon. Gentleman will allow me to carry on speaking, I may well get to his point. The research is there to drive forward the ability to grow sustainably. He referred to the altruistic way in which Bill Angus approaches his work. We also heard from Professor Cathie Martin. She had that enthusiasm, but I am sure that many Members heard her contention that if she could get more of the population eating more fruit and vegetables, she would feel that she had really driven things forward and used these technologies to deliver a public good.

Although I understand the intention behind the proposal, I do not think it is necessary because it applies to release into the environment. That is principally covered in field trials, which are crucial to building our understanding of how genetic changes impact organisms under field conditions. They are an integral part of pure research, as well as breeding programmes.

Once again, I come back to the fact that we are at the start of this journey. We already know that the UK is delivering positive research. Professor Martin from the John Innes Centre spoke about the vitamin D tomatoes that her group is developing. We also heard about her commitment to strive towards improving the food we eat for the benefit of our health. It is important that such research proposals, which are often supplemented by money from the public purse, both in Scotland and in England and Wales, go through these assessments. We did not hear from just one person; we heard from many conducting the research. We should be proud of the research and the regulatory framework, which I believe is in place through ACRE, the varieties listing and the animal welfare declaration, for products brought to market—we will discuss that when we come to the provisions in part 3.

We do not think it is necessary to place restrictions on research using these technologies. We have no evidence to suggest that developers are doing anything that would fall outside the purpose of the Bill. The checks and balances, and the fact that ultimately it can be withdrawn if there is a concern over the technology—that is later in the Bill—give us what we need. We are striving to deliver public good.

As can be seen in the Agriculture Act 2020 and the Environment Act 2021, and in the sustainable farming incentive and environmental land management schemes, we are committed to developing a more sustainable and resilient food system, to ensuring and even enhancing animal health and welfare, and to protecting the environment. Recently, we announced the food strategy, which sets out a plan to make sure that we have a food system fit for the future, with sustainability from farm to fork and from catch to plate. We want to seize the opportunities and ensure everyone has access to nutritious and healthy food.

11 am

We are also committed to funding innovation. We have put over £130 million into joint funding with UK Research and Innovation for food systems research and innovation, £100 million into the UK seafood fund, and £270 million into farming innovation. We have invested £11 million to support new research to drive improvements in understanding the relationship between food and health. In total, that is over half a billion pounds, which should show the level of the Government's commitment. Through the net zero strategy and the national adaptation programme, the Government have as a top priority mitigating and adapting to the impacts of climate change. Our commitment to the environment is demonstrated through the 25-year environment plan. The Bill can help with all of that. We see precision breeding as an enabling tool to help us to achieve objectives across these critical areas. Public good is very much embedded in what we are already doing and aligned with the interests of our researchers in the UK, and the checks and balances are there to ensure it.



I will end by restating the principle of the Bill, which is to regulate these technologies more proportionately to their risk. Placing additional regulatory requirements goes against that principle, and against the science and evidence. I ask the hon. Member to withdraw the amendment.

**Daniel Zeichner:** We have had an interesting and wide-ranging exchange, which touched on a series of the broader principles behind the Bill.

To respond to the interventions from Government Back Benchers, my concern is that when we look at the power relationships in the food system, we see that farmers and producers are not always in the strongest position. Quite often, they are under pressure, and they will be under particular pressure given the price issues that they face at the moment. Frankly, the people who are looking to invest in these new technologies, particularly the big players, will look for proper returns. That is perfectly proper; it is exactly what we would expect them to do. From the point of view of the individual producers, whether of crops or animals, people further up the chain may, in essence, be saying, “We’ve now got this tool and we want you to use it.” It is pretty clear that a lot of farmers pretty much have to do what they are instructed to do by people further up the chain. Consequently, the question whether something is in the “public good” or not becomes a very difficult one for people who may well want to do the right thing.

It also goes back to my question, which I am afraid the Minister did not address, about herbicide-resistant traits. That has been an issue previously, and we know that not all the developers of these technologies are looking to achieve the wider public good. Sometimes, all they are seeking to achieve is market domination and a significant return for themselves. That is not surprising, because that is what some of them are in business to do. What are we as legislators to do to protect wider society and our producers from that kind of pressure? I am not saying that will necessarily happen immediately, but the danger will be that if there is not any protection against that kind of thing, it can happen.

That is why I genuinely do not understand why the Government would not want this amendment to the clause, because everything the Minister said, which I think all of us would agree with in terms of the potential benefits and the good things that people are trying to do, would all be captured within a public benefit test like the one we propose, and only the things that we would not want to see would be discouraged by it. There is nothing to fear. Perhaps we should have spent more time on this during the evidence sessions, but my understanding is that other jurisdictions have introduced some kind of public benefit test for exactly the reasons I am outlining.

The issue goes right back—and I think we will keep going back to it—to where we started: what kind of regulatory framework we are setting up. At this point, I have to say that I think there is an ideological divide between the Government and Labour. Essentially, this is a highly deregulatory Bill—essentially it is saying, “Leave it to the market”. The market will do what the market will do: pursue the best possible return. Whether that always delivers the right societal return in environmental benefits and so on is a moot point. I think there is a genuine difference of opinion between us. The Opposition

are clear that we would include such a public benefit test, because we are not convinced that the proposed framework will always work for the public good.

I will not waste the Committee’s time by having endless, pointless votes. I will withdraw amendment 32, but the Opposition would like a vote on amendment 10, because we think that it is significant. I beg to ask leave to withdraw the amendment.

*Amendment, by leave, withdrawn.*

*Clause 3 ordered to stand part of the Bill.*

#### Clause 4

##### RELEASE OF PRECISION BRED ORGANISM: NOTIFICATION REQUIREMENTS

*Amendment proposed:* 10, in Clause 4, page 4, line 24, leave out “negative” and insert “affirmative”.—[*Daniel Zeichner.*]

*Question put,* That the amendment be made.

*The Committee divided:* Ayes 4, Noes 10.

#### Division No. 3]

#### AYES

Glendon, Mary	McCarthy, Kerry
Green, Kate	Zeichner, Daniel

#### NOES

Bowie, Andrew	Howell, John
Churchill, Jo	Jenkinson, Mark
Clarke-Smith, Brendan	Johnson, Gareth
Duguid, David	Jones, Fay
Fletcher, Katherine	Shelbrooke, rh Alec

*Question accordingly negated.*

*Clause 4 ordered to stand part of the Bill.*

#### Clause 5

##### RESTRICTIONS ON MARKETING OF PRECISION BRED ORGANISM IN ENGLAND

*Question proposed,* That the clause stand part of the Bill.

**Jo Churchill:** We have moved on at some speed. The clause builds on clause 3 and sets out the requirements for notifying the Secretary of State before a precision bred organism is released into the environment for purposes other than marketing, in particular for field trials.

Under the clause, the Secretary of State has powers to make regulations, establishing the form and content of notices that must be submitted before a trial can take place and the information that must accompany them. That will enable us to tailor what information we ask for, which may be placed on a public register, to ensure that the requirements remain relevant and appropriate.

The clause also allows for regulations to be made establishing who can be specified in a release notice and for a minimum time period to be set between the submission of that notice and when a trial can take place. Regulations made under the clause are subject to the negative procedure. The clause will enable us to develop and expand the proportionate pre-trial notification regime that we introduced earlier this year in respect of plants to all precision bred plants and animals.

**Daniel Zeichner:** Clause 5 concerns restrictions on marketing precision bred organisms in England. I do not have a lot to say about it, other than to explore with the Minister how it will be determined that a precision bred organism is indeed that; this goes back to the earlier, earlier debate.

My understanding is that the determination will be based on the definition, agreed by the Committee, as something edited using modern biotechnology in a way that could have occurred naturally or through traditional breeding processes. Can the Minister say more about how it will be determined that the organism could have been produced in that kind of way? What kind of evidence will be sought and how will the whole process work? It is not entirely clear to me from the Bill as written.

**Jo Churchill:** I refer the hon. Gentleman to the ACRE process and the guidance from the penultimate evidence giver, Nigel Moore. The ACRE guidance lays out how it will be determined, which is part 1 of the PBO assessment. I refer the hon. Gentleman to the guidance notes because they lay out very specifically and clearly how that will be determined.

**Daniel Zeichner:** I suppose my concern is that this seems to be a very closed world in which a group of eminent and expert people are involved in making judgments. There is no external input. Given that all those people basically work in the same institutes, is it not a rather closed system?

**Jo Churchill:** I believe nomination to ACRE works to the Nolan principles. Yes, those people are eminent, but they are also held in high esteem and regard and have to

work to those Nolan principles when acting in the capacity of their position on that committee. It is difficult to unpick who the hon. Gentleman would see as the most qualified, if it is not those who are elected by their peers and go through an appropriate system. They must have the expertise because it is important that those who are determining know what they are doing; otherwise, with the greatest of respect to the hon. Gentleman, he and I would be a lot less enabled.

**Daniel Zeichner:** I return to a point I made when we discussed the statutory instrument. I am in no way trying to question the integrity of those who sit on those committees. However, when we look at their declaration of interests, almost all—perhaps inevitably—are linked to some of the major industries in the field.

I ask the question again. Does the Minister genuinely believe that the system and set-up will fill the public with confidence or will they look at it and worry?

**Jo Churchill:** I think most people will see it as proportionate and want to have those who are expert in the field making judgments. It is they who will say whether the technology is a PBO and can move forward. The hon. Gentleman's argument slightly falls down because the issue applies to just about every overarching body, in that they have, by definition, some knowledge of the issue on which they are deciding.

*Question put and agreed to.*

*Clause 5 accordingly ordered to stand part of the Bill.*

*Ordered,* That further consideration be now adjourned.—(Gareth Johnson.)

11.14 am

*Adjourned till this day at Two o'clock.*