



**Response by GM Freeze to the Defra Consultation on
Proposals for Managing the Coexistence of GM, Conventional and Organic Crops.
July 2006**

GM Freeze

GM Freeze is an alliance of 50 organisations *calling for a moratorium on GM foods, the growing of GM crops for any purpose and on patents on genetic resources in agriculture, food production and forestry until the need for and safety of GM technology has been established and alternative approaches have been fully evaluated.*

Our members include consumer groups, farming organisations, environmental groups, development agencies, religious groups, animal welfare groups and food companies.

This response is submitted on behalf of GM Freeze. It covers our response to Defra's Consultation on proposals for managing the coexistence of GM, conventional and organic crops issued in July 2006

Summary

GM Freeze believes that Defra's proposals for managing the coexistence of GM, conventional and organic crops is seriously flawed and unworkable and will result in widespread contamination of the food chain and environment.

GM Freeze believes that for many crops "coexistence" without GM contamination is impossible. This means that crops such as oilseed rape and maize should be banned.

Statutory coexistence rules and strict liability should apply to the whole food chain not just the farms.

The main areas of concern are the adoption of unacceptable threshold of 0.9% for the contamination of growing crops and proposals to minimise rather than avoid GM presence in growing crops.

GM Freeze rejects the Defra proposals because of:

Legally flawed decisions and assumptions:

- To adopt the 0.9 % GM labelling threshold for coexistence schemes
- To plan to "minimise" GM contamination instead of "avoiding"
- To misinterpret the meaning "adventitious presence" and "technically unavoidable" as meaning allowing routine GM contamination achieved by very short separation distances between GM and other crops.
- To make the decision not to establish GM crop registers.

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- To exclude home gardeners and allotment holders from those statutorily required to be informed if a GM crop is to be grown near their land.
- That the threshold for GM contamination in organic crops will be agreed at 0.9%
- That the EU threshold for GM Contamination of seeds will be agreed at 0.3-0.5%.
- To misinterpret the meaning of proportionality in applying coexistence measures

Poor and insufficient scientific data

- Separation distances based on research of GM pollen movement from a single field.
- No proper assessment of the role of insects in pollinating over longer distances.
- Lack of data on efficacy of volunteer controls and bolter removal in beet.
- Lack of data of the amount of seeds distributed by farm machinery and transport
- Lack of data on synchronized flowering of winter and spring Oilseed rape crops,

Flawed logic

- Failure to apply the Precautionary Principle correctly.
- Over reliance on the failed voluntary approach in farming.
- Failure to consider the impacts of modern farming practices
- Ignores the impact of GM pollen in honey
- Assumes a low uptake – up of GM crops in the first three years.
- Ignores the impact of GM experimental crops

Lack of Fairness and equity

- Excludes all companies down the food chain from the farm gate.
- Undermines organic producers and consumer confidence.
- Excludes any farmer outside the minimal separation distance.
- Excludes farmers who feed their own crops to their own animals.
- Excludes farmers who save their own seed
- Excludes beekeepers
- Exclude gardeners and allotment holders
- Ignores consumer's wishes for GM-free food.

A legal opinion on Defra's consultation document by Paul Lasok QC and Rebecca Haynes is appended and sets out the detailed arguments as to why Defra's proposals fail to comply with EU law.

GM Freeze also includes the following in it's submission on the Defra consultation document:

- Crop separation distances are inadequate.
- Notification of GM crop growing should be advertised at least 8 week as in advance.
- Coexistence rules should apply on-farm as well as between farms and along the food chain.
- Experimental crops should also be covered by coexistence laws and liability legislation.
- GM to GM coexistence should be included.
- Monitoring and enforcement should be independent of Defra and the biotechnology industry and funded by an industry levy.
- Farmer training for coexistence should be compulsory.

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- Organic production should be protected.
- Strict liability for any harm should lie with the GMO consent holders (ie the biotechnology companies) and be legally enforceable.
- Redress should apply to the whole food chain and include consequential losses such as loss of market or organic status.
- An independent regulator should be established to deal with GM compensation claims funded by an industry levy.
- Voluntary GMO free zones would be unworkable and legislation should be introduced to allow GMO free areas to be legally established for a ten year period.
- The Regulatory Impact Assessment ignores the negative costs of GMOs and is based on poor data.

1. Introduction

GM Freeze believes that for many GM crops the concept of coexistence without widespread and significant GM contamination of non-GM products will be impossible to achieve. Therefore, it is clear to us that certain GM crops which outcross readily, e.g. oilseed rape and maize, should never receive commercial approval. We also believe that coexistence measures and, consequently, strict liability on consent holders, should apply to the whole food chain and not just on the farm. This will be necessary to preserve the right to choose products free of GM presence and to ensure that the biotechnology industry behaves in a responsible way.

Our response to the consultation is in two sections. In the first section, we make general comments about the overall approach adopted by Defra to tackle the issues of GM crop coexistence and liability. The second section comments on the specific proposals made by Defra and responds to the questions raised in the text of the consultation.

2. General Comments on Defra's Consultation

GM Freeze is deeply disappointed at the overall approach taken by Defra to the management of the "coexistence" of GM, non-GM and organic crops. We believe the approach adopted is seriously flawed in terms of the law, science, logic, fairness and equity and the application of the precautionary principle which underpins all the EU's policies (and hence the UK's). If followed, we believe that it would lead to the erosion of consumer choice, serious disruption of the non-GM and organic market for food and feed and pose a threat to human health and the environment.

Defra's proposals will inevitably lead to widespread GM contamination which could prove hard to contain.

PART 1

3. Legally Flawed

3.1 Coexistence is an Economic Issue Only

Defra's consultation makes the same assumption as the EC recommendations on coexistence¹ that coexistence is solely an economic issue. The EU legislation to allow Member States to develop national strategies and laws on coexistence is Article 43(2) of Regulation 1829/2003² by introducing Article 26a into Directive 2001/18³. Recital 28 to the Regulation provides:

"(28) Operators should avoid the unintended presence of GMOs in other products. The Commission should gather information and develop on this basis guidelines on the coexistence of genetically modified, conventional and organic crops. Moreover, the Commission is invited to bring forward, as soon as possible, any further necessary proposal."

It is not at all clear how the EC and Defra concluded that coexistence measures had to be limited to economic harm. The Regulation requires that GM crops are monitored

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post market to ensure that no unexpected harm arises from their release into the environment and thus recognises the potential for harm arising which was not anticipated during the approval process's risk assessment. GM Freeze considers that the consultation paper is seriously flawed by limiting the scope of coexistence to just economic issues. More detailed legal arguments are set out in a legal opinion prepared by Paul Lasok QC and Rebecca Haynes (paragraph 24-42) for GM Freeze, The Soil Association and Friends of the Earth (attached as an annex). The opinion makes a clear conclusion in paragraph 28:

"The labelling thresholds are therefore legally irrelevant so far as the scope of coexistence measures is concerned. Further, it cannot be said that the only objective of coexistence measures, as envisaged in Article 26a, is the economic protection of non-GM producers, as the Consultation paper asserts". (see, for example, at paragraphs 22 to 25).

And again in Paragraph 51:

"We do not consider that the sole purpose of measures taken under Article 26a is to ensure economic choice for operators. It is significant that Article 26a was introduced into the Directive by Regulation No. 1829/2003, which is concerned with environmental and health aspects of GM. That implies that Article 26a was not intended to be limited in scope to the economic aspects of coexistence".

GM Freeze will be scrutinising the draft Statutory Instrument when it is published to ensure that this flaw is corrected.

3.2 The Aim of Coexistence Measures

Defra's consultation paper wrongly states *"The aim of coexistence measures is to minimise unwanted GM presence in non-GM crops so that these problems are avoided as far as possible"* (paragraph 23). From the previous section it can be seen that Recital 28 of Regulation 1829/2003 requires operators to *"avoid the unintended presence of GMOs in other products"*. Article 26 (a) of Directive 2001/18 states *"Member States may take appropriate measures to avoid the unintended presence of GMOs in other products"*. It is clear that the intention is that, if members States decide to take measures then they should aim to **avoid** any GM presence and not "minimise" it "as far as possible". The legal opinion in the annex sets out in detail why Defra's interpretation of the aim of coexistence measures is *"fundamentally flawed"* (paragraphs 24-42).

Defra's proposals will frequently result in a GM presence between zero and 0.9% in a harvested crop. This could quickly become a routine occurrence because of the intention is to only "minimise" the presence of GMOs. The separation distances plus other measures proposed support Defra's minimalist approach. Paragraph 42 of the legal opinion points out how this will make life difficult for the companies along the food chain seeking to avoid GM presence in their products:

"Moreover, we consider that such an approach has important consequences for operators seeking to benefit from the exemption to the labelling requirements, which is dependant on the meaning of the "adventitious or technically unavoidable" proviso in the relevant labelling provisions".

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GM Freeze will examine any forthcoming draft legislation for England issued by Defra to ensure that the fundamental flaws in the aims of coexistence measures are corrected.

3.3 Interpretation of adventitious presence

The opinion looks in detail at how Defra's consultation paper has incorrectly interpreted the meaning of "adventitious" when applied thresholds for coexistence schemes

Paragraphs 43-50 of the opinion (see Annex) powerfully set out the reasons why Defra's interpretation is flawed:

"It would seem to us to be strongly arguable that GM presence which is "built-in" or inherent by virtue of a generally applicable base-line norm or tolerance does not accord with the definition of adventitious presence". (Paragraph 45)

And

"Thus, in our view, the labelling exemption applies only to products with a GM content which is essentially accidental and non-inherent (though it may be technically avoidable) or to products with a GM content which is not accidental and is inherent but cannot technically be avoided. A co-existence regime which aims to establish a base-line threshold of 0.9% GM content across the board would, we consider, generally preclude any reliance in practice by operators on the exemption for "adventitious" presence below that threshold if an element of GM content became inherent in all products" (Paragraph 48).

And

"In conclusion, therefore, we are inclined to the view that a co-existence regime which aims to establish a base-line threshold of 0.9% GM content across the board would considerably reduce the scope, if not eliminate the possibility, of operators relying on the "adventitious" exception and would not absolve the operators from demonstrating "technically unavoidable" GM presence in order to benefit from the labelling exemption" (Paragraph 50).

In contrast the Food Standards Agency appears to have a correct understanding of the meaning of "adventitious presence":

"The GM Food and Feed Regulation (EC) No. 1829/2003 and the related national regulations The Genetically Modified Food (England) Regulations 2004 and The Genetically Modified Feed (England) Regulations 2004 lay down rules to cover all GM food and animal feed. If a food contains or consists of genetically modified organisms (GMOs), or contains ingredients produced from GMOs, this must be indicated on the label. Any intentional use of GM ingredients at any level must be labelled. This does not apply where the presence of an EU authorised GMO is less than 0.9% of the food or feed ingredients considered individually or of food consisting of a single ingredient, provided that the presence is adventitious or technically unavoidable. Operators will need to demonstrate to enforcement bodies that they have taken appropriate steps to avoid any GM presence"⁴.

In other words any detectable GM presence below 0.9% in food or feed has to be labelled if it cannot be shown that its presence is accidental. GM Freeze therefore challenges Defra's interpretation of adventitious ("Adventitious" is defined in the Oxford English Dictionary as: "Coming from without, accidental, causal." (see Annex Paragraph 45)).

We demand that the correct legal interpretation is applied when the Statutory Instrument to legislate on separation distances is put out for consultation. Defra has proposed separation distances that will mean that non-GM crops growing within them will be contaminated with GM as a matter of course. This presence cannot be described as adventitious or technically avoidable because it is planned in by virtue of the very short distances proposed.

3.4 Interpretation of Technically Unavoidable

Defra's consultation paper wrongly interprets the meaning of a "technically unavoidable" GM presence. Defra's view appears to be that measures to facilitate the avoidance of GM presence should not cause undue inconvenience to the biotechnology industry or GM growers. "Technically unavoidable" suggests that the intention was that appropriate technical means should be applied to **avoid** contamination below 0.9% GM. Defra's consultation paper assumes that only technical measures to keep contamination levels in the crop below 0.9% are required. GM Freeze believes this approach to be legally flawed (see Paragraphs 36-43 of Annex). We will check that the future draft regulation to ensure that this error has been corrected.

3.5 Interpretation on Proportionality

Our legal opinion (Paragraphs 36-43 Annex 1) sets out clear arguments why Defra's and the European Commission's view that coexistence measures have to be applied proportionately to allow the commercial cultivation of GMOs to proceed are not correct.

"In the present context, the legislative objective is avoiding, as opposed to minimising, the unintended presence of GM in other products. Proportionality will always be informed by what is technically possible in order to achieve the legislative objective; but there does not appear to be any evidential basis for an assertion that measures going beyond minimising contamination by reference to baseline norms founded upon the labelling provisions pose a disproportionate burden upon producers and operators having regard to the need to achieve the legislative objective". (Paragraph 39)

And

"we conclude that there is no legislative provision which requires a Member State to limit its coexistence measures to go no further than is necessary in order to ensure that GM content stays below the Community's labelling threshold" (Paragraph 43).

It is therefore clear that there is no legal reason why coexistence schemes cannot be designed to avoid GM presence in other products as long as the measures proposed are aimed at achieving that aim but go no further than is necessary. GM Freeze demands that any future legislation reflect the requirement to meet this aim in an appropriate way.

3.6 GM Site Public Registers

The establishment of GM site registers is a legal requirement for Member States under Directive 2001/18. Defra's consultation wrongly link coexistence legislation to EU legislation on traceability and labelling of GM products (paragraph 174) and conclude that there is no requirement to establish a public register under Regulation 1829/2003.

GM Freeze's legal advice makes it clear that this is incorrect (see Annex Paragraphs 58 – 61 for detailed arguments);

"There is no question but that this premise is wholly incorrect" (Paragraph 59).

GM Freeze considers that the primary reason for establishing a public GM site register is environmental protection. This view is reinforced by the fact that the requirement comes under Article 31(3)(b) in Directive 2001/18 (see Annex Paragraph 61). The clear and unequivocal reason for the need for registers is to allow for post market monitoring of GMOs to be carried out to ensure that no harm to the environment is arising from their cultivation. Any post-market impact of GMOs on the environment will occur regardless of the end use of the crops grown. Defra's attempt to distinguish between food and non food crops in respect of public registers (paragraph 174 and 175) is therefore not legally sound.

As GM site public registers are a legal requirement, GM Freeze expects to see adequate provision in the draft Statutory Instrument when it is published

3.7 The Exclusion of Gardeners and Allotment Holders

The consultation seeks to exclude gardeners and allotment holders from the requirement to be informed if GM crops are to be grown with the statutory separation distance of their land on the grounds that their crops are not placed on the market (paragraph 39 (v)). Our legal advice makes it clear that:

"this approach is fundamentally flawed" (see Annex Paragraphs 55-61)

The advice makes it clear that coexistence schemes do not only apply to crops where the products produced are intended for the market. Gardeners and allotment holders do place their products on the market as defined in Regulation 1829/2003 Article 2:

"The holding of food {...} for the purposes of sale, including offering for sale, or any other forms of transfer, whether free of charge or not, and the sale distribution and other forms of transfer themselves".

It is clear therefore that gardeners and allotment holders who distribute the produce to friends and family do place it on the market, indeed many gardeners sell their surplus crops. GM Freeze expects to see this error in the legal interpretation of "placing on the market" corrected in the draft statutory instrument when it is published so that **all** involved in growing crops will be informed if a GM crop is planned in their area.

In addition, GM Freeze believes that this right should be extended to beekeepers who may also wish to avoid a GM presence in their products.

3.8 The Organic GM Threshold

The consultation bases its proposals on the separation distance between GM and organic crops on the assumption that the threshold for GM in organic products will be 0.9%. No such agreement has been reached by member states as the consultation acknowledges at the foot of page 44. There is therefore no legal basis to proceed to set coexistence measures for organic crops at this time. GM Freeze considers that this matter can only be addressed and resolved by the EU and that this section of the consultation should be withdrawn until such time as this has happened

3.9 The GM Seed Threshold

The consultation is based on a “hypothetical scenario” (paragraph 51) that the EU will adopt GM threshold in non-GM seeds in the range 0.3% -0.5%. This is far from agreed between Member States and its resolution was a key demand at the EC conference on coexistence held in Vienna in April 2006. The scientific process by which the EU arrived at the proposed seed thresholds has been challenged by the British Statutory Nature Conservation Agencies⁵ for being based on consumer thresholds rather than that required to protect the environment. GM Freeze considers that as there are no legally agreed baselines for GM presence in seeds it is not possible to come to a meaningful conclusion on coexistence GM and non-GM crops and organic crops. It follows therefore that it will not be possible to frame legislation in the UK until this issue is resolved.

4. Scientifically Flawed

4.1 Modelling Cross pollination from Single Fields

The Defra consultation bases the suggested separation distances between GM and non-GM and organic crops on a modeling study using data obtained from the Farm Scale Evaluation by NIAB. The proposed distances assume that there will be only one GM crop per area to act as a source of contamination. It also assumes that pollen distribution will follow the classical leptokertic decline curve with very rapid decline close to the crop edge followed by a long tail where pollen densities are lower but still present at measurable levels. NIAB’s brief was to use 0.9% GM contamination as their based line which follows from the European Commission’s guidance of July 2003.

GM Freeze considers that the modeling approach adopted by NIAB is flawed in several ways:

Only data on cross pollination in the non-GM half of the FSE was used and hence longer pollination distances were not even studied. The BRIGHT project⁶ (which was co-sponsored by DEFRA) found that cross pollination rates of 1.8% (twice the Defra target) at 56 metres (the furthest point measured) from the GM crop (21 metres further than Defra’s proposed separation distance for oilseed rape of 35 metres).

The assumption that there is just one source of GM pollen ignores the potential for many oilseed rape fields in a geographical area producing pollen simultaneously. Defra sponsored research⁷ published in December 2002 on cross pollination in oilseed rape concluded that widespread commercial growing of GM oilseed rape will make

coexistence difficult and concluding “if transgenic oilseed rape is grown on a large scale in the UK, then gene flow will occur between fields, farms and across landscapes”. It also highlighted the lack of reliable data on cross pollination on a landscape scale:

“Gene flow at this level should be investigated on a landscape scale using larger numbers of transgenic pollen sources, and examining different genotypes (both of the transgenic plants and conventional varieties), the extent of pollen flow at further distances from sources, a range of environmental conditions, geographical location and patterns of cropping of GM and non-GM crops. It is only when these studies have been concluded under a range of UK conditions that farmers and seed producers will be able to accurately predict outcrossing levels and develop appropriate strategies for managing it”.

The NIAB modeling report used by DEFRA acknowledges its limitations:

*It is important to be aware that this report ONLY deals with adventitious presence of GM due to transfer of pollen from a single neighbouring field. It specifically does NOT take into account any GM material that may already be present on a given field due to the presence of GM volunteers, seed spilt from farm machinery, presence of GM within a seed lot or presence of wild relatives within a field.*⁸

In addition, it took no account of the role of insects, weather and topography in long distance crop pollination. GM Freeze is extremely disappointed that the future of the UK countryside and consumer choice is being based on such a weak data set. We request ministers to instigate a further review of evidence on cross pollination events including the experiences gained in North America with maize and canola with a review to reassessing the feasibility of coexistence for some crops and separation distances.

4.2 Control of Volunteers and Bolters

Defra’s consultation document (paragraph 58) states that “*the other measures that have been mentioned (controlling volunteers and beet bolters, cleaning farm machinery)are already normal farm practice*”. As volunteers and groundkeepers, bolters and seed transferred on farm equipment have the potential to be significant sources of GM contamination, we would have expected some data to support this assertion and yet none are presented. The data which are available suggest that Defra’s view of “*normal farm practice*” needs to be revised. One volunteer GM plant per square metre in a field of oilseed rape would produce contamination rates of between 0.6 and 1.5 per cent depending on variety⁹. Research on beet bolters and weed beet occurrence suggests that there is a long way to go before the level of control necessary to prevent gene flow is achieved. For instance research indicated that only two thirds of sugar beet farmers controlled bolters in the UK¹⁰. Weed beet is reported to be found in two thirds of fields and “infestations are getting worse” indicating a failure to control bolters¹¹. The EU’s Scientific Committee on Plants¹² stated that beet seed has “long persistence” suggesting very robust bolter controls would be essential to avoid long term GM contamination problems.

4.3 Human transfer of GM seeds

Defra’s consultation recognises (paragraph 49) that there is a risk that GM seeds could be transferred on farm machinery between GM and non-GM crops. The consultation paper claims “*farmers and machinery contractors could minimise the scope for*

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unwanted GM transfer by making sure that those parts of the combine that are readily accessible are cleaned reasonably free of any lodged seed". In table 1 of the consultation (paragraph 50) contamination rates from drilling and cultivation operations are said to be zero for oilseed rape, maize and sugar beet. Rates for contamination during harvesting, transport and storage are put at 0.1% or lower for all three crops. GM Freeze is not aware of any data on which such figures can be based and calls upon Defra to make them available for expert scrutiny before the coexistence proposals are progressed any further.

The limited information and data in the public domain suggest that gene transfer by machinery, and human traffic could be significant. For example, in evidence to a Science Review panel¹³, Jeremy Sweet (then of NIAB) reported *"We found 6 kilos of seed in that combine harvester. It then went into a field of barley and harvested the barley, and that barley flushed out the rape seed and it all dropped into the ground"*.

To put this into context, 6 kg of oilseed rape seeds contains approximately 1.2 million seeds (1000 seeds weigh 5g). The normal sowing rate for oilseed rape is 120 seeds per m² meaning that a combine could contain enough seed to sow one hectare of crop if the seed was deposited evenly over the first hectare harvested. At the other extreme, if 2 seeds per square metre were dropped, there would be considerable scope for widespread contamination of following non-GM oilseed rape crops. Two GM volunteer plants per square metre would give a contamination rate in a following non-GM rape crop of 1.66% - over eight times that estimated for contamination via volunteers (0.2%) in table 1 of the consultation.

Research in France indicated how GM beet seed could be transferred on feet and machinery. Beet transgenes were found in weed beet 1.5 km from the GM crop underlining the potential for seed moving between farms¹⁴

GM Freeze is very concerned that the figures present in Table 1 of the consultation should be based on actual field data and call upon the rates of GM contamination at various stages of growing crops to be reviewed along with thresholds with the aim of avoiding GM presence in growing crops.

4.4 Synchronous Flowering

Defra state (paragraph 43) *"winter oilseed rape has normally completed flowering well before spring rape begins, so there should be not be a significant coexistence issue between autumn and spring-sown crop"*. Defra provide no data from the field to support this assertion. GM Freeze believes that synchronous flowering of the two seasonal oilseed crops can occur (based on the personal observation of the Campaign Director). We are aware that this issue was raised in a meeting with Defra officials in 2003. The weather plays a role in this but there is also a tendency for plants on field margins or along "tram lines" in winter crops to be delayed in their flowering. In such circumstances the late flowering winter oilseed would be few in numbers and be open to wind and insect pollination from a spring sown GM crop. The reverse could be true if the winter crop was GM and the late flowers coincided with the early flush of flowers on a non-GM spring sown crop.

GM Freeze believes it would be sensible to treat winter and spring oilseed rape as one crop for coexistence purposes.

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5. Flawed Thinking

The Defra consultation is riddled with flawed logic some of which stem from the European Commission's guidance of 2003¹⁵.

5.1 Application of the Precautionary Approach

Defra's consultation paper fails to understand or implement the precautionary principle correctly. Under Defra's approach the commercial growing of GM crops in the UK would begin with the minimal separation distance between GM and non-GM crops and very limited requirement to inform landowners and managers whose crops and land may be at risk of contamination. Beekeepers are not required to be informed by farmers if a GM crop is to be grown near their hives. The impacts of gene transfer on the environment are not covered by the consultation. Rather than seeking to avoid cross pollination, Defra's approach is to minimise it (paragraph 23). The consultation proposes to review the effectiveness of their minimalist proposals 2-3 years after the commencement of commercial GM cultivation.

The EU's regulatory framework is based on the correct application of the precautionary principle including Directive 2001/18 and Regulation 1829/2003 under which any UK regulations on coexistence would be introduced. In the Agriculture Biotechnology and Environment Commission report on coexistence and liability¹⁶ published in 2003, the Commissioners recommended:

"If GM crops are commercialised, there should be an initial introductory period where there would be intensive monitoring and auditing of coexistence arrangements to determine whether and how far coexistence was actually being achieved".

This recommendation clearly envisaged that planting of the first GM crops should be deliberately limited to enable the effectiveness of coexistence measures to be evaluated and adapted as required. Indeed, this approach echoes the views in 1998 of the then Ministers, Jeff Rooker and Michael Meacher, to the House of Lords European Affairs Committee when they spoke of *"negotiating with industry for the managed development of the commercially grown GM crops"*¹⁷.

Defra's proposals will mean the majority of GM commercial growing sites remain secret as very few neighbours will be legally required to be informed of GM cultivations near because of short separation distances (paragraph 84) and the recommendation not to set up a public register (paragraph 181). This would seriously hamper monitoring and evaluation of coexistence measures by independent agencies.

GM Freeze believes that the Defra approach to coexistence does not follow a precautionary approach but is the antithesis of it by allowing GM contamination to proceed beyond the paltry separation distance unchecked. GM Freeze demands that the precautionary principle is correctly applied in future legislation so that GM commercial growing is only allowed to proceed if data show that cross pollination can be avoided.

5.2 The Voluntary Approach

Defra's consultation suggests that only two parts of their coexistence proposals be legally enforceable – the separation distances and the requirement to inform neighbours if their crops fall with the set distances. Everything else relies on a voluntary approach led by industry even liability for economic harm caused by GM crops and GM-free zones.

GM Freeze believes that this approach is flawed. DEFRA provide no evidence that industry led voluntary approaches in agriculture have been sustained over the many decades that would be required of a coexistence and liability scheme. In fact, the record of voluntary initiatives in agriculture in lieu of the statutory approach is very poor.

The Voluntary Initiative (VI) on pesticides (aimed at reducing the impact of pesticides on the environment) has yet to show any tangible environmental improvements over a sustained period. Within the VI the main measure of progress is farmer participation rate. It remains to be seen if and how these translate into improvements in water quality, air quality and biodiversity. As with all voluntary approaches it is not what people say they will do that matters but what actions they take or fail to take.

Past voluntary approaches in farming have failed to produce the desired outcomes and have been replaced by a statutory approach, for example the NFU's straw burning code of practice in the 1980s, the Pesticide Safety Precaution Scheme in the 1980s and the Voluntary Code of Pesticide Use in the 1970s.

GM Freeze believes that the statutory approach for coexistence and liability of GM crop cultivation is required if there is any hope of preventing GM contamination.

5.3 Modern Farming Practices

Defra's consultation paper assumes that *"in nearly every case farmers will know who their immediate neighbours are who might be growing a commercial crop of oilseed rape or maize"*. Farming practices, in terms of who is responsible for the management of a particular crop in a particular field in a particular year, is changing rapidly in the following ways:

- Farm units are no longer within one boundary fence and may be in separate blocks several miles apart.
- Absentee land owners.
- Short term renting of arable land by the season.
- Increasing use of contractors for all field operations.
- Increase in shared machinery and plant often crossing farm boundaries either on an ad hoc basis or through machinery rings.

Given these changes which are very unlikely to change in the foreseeable future, finding out who is managing a piece of land in any one year will get more complicated. With the increasing complexity of the "chain of command" for crop operations the likelihood of mistakes (eg forgetting that neighbours need to be informed of GM crop planting) GM Freezes believes that a public register of GM commercial growing sites is essential if landowners are to have any hope of preventing contamination of their crops. The same applies to beekeepers.

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5.4 Adventitious presence

We have already previously highlighted that Defra's interpretation of adventitious is, in our opinion, legally flawed. There is another example where it Defra and the EC have not used it strictly accurately.

5.4.1 "Adventitious" presence of GM pollen in honey

The consultation reports that the EU says that the presence of GM pollen in honey will always be adventitious and unavoidable (paragraph 106). This interpretation ignores the fact that beehives are often placed near oilseed rape fields to enhance pollination rates in the crop at the request of farmers. In this case, the presence of oilseed rape pollen in the resulting honey is predictable and inevitable. Bees will travel significant distances to large sources of pollen, such as oilseed rape, making the presence of pollen highly predictable if the field is in range of the hives. The precise composition of the pollen contact in honey is not predictable but at certain times of the year, when oilseed rape is in flower, the presence of its pollen in honey cannot truly be described as adventitious.

This reinforces our view that beekeepers should be on the list of parties who should be informed if a GM crops is to be planted in the district. The British Beekeepers Association recommended members to move their hives 6 miles from the nearest GM site during the Farm Scale Evaluations.

5.5 Extent of GM Crop Growing in the First Three Years

The consultation speculates that take-up of GM crops in the early years of commercial growing will be slow. This may well be the case if seed is in limited supply. However, this does not rule out the possibility that certain areas have a much higher concentration of GM fields than others. This was certainly the case in the Farm Scale Evaluations when some areas had a lot of trials, eg South Dorset, and others had none, eg Devon and Cornwall. Therefore, GM Freeze believes that coexistence laws need to be able to deal with a high density of planting of GM crops from the outset.

5.6 Experimental Crops and Contamination

Defra's consultation ignores the possibility that GM contamination could arise from cross pollination with an experimental GM crop grown on a test site. GM Freeze demands that coexistence laws should also apply to experimental releases of GMOs. An additional requirement in a Part B (experimental) consent would be that a reliable test should be available and the necessary reference materials required to carry out Polymerase Chain Reaction analysis should be made available to all UK accredited laboratories.

5.7 On-farm risks of contamination

The consultation proposes that a farmer growing a GM and non-GM crop on the same holding should not be subject to coexistence rules (footnote to paragraph 39 page 13)). GM Freeze considers that this proposal is seriously flawed. If a farmer decides to operate with no regard to coexistence measures on his own holding, GM contamination is more likely to take place by:

- Cross pollination.
- Seed transfer by machinery and in storage.
- GM volunteer contamination of non-GM crops over many years.
- Contamination of feral plants and wild relatives.

Such a policy could lead to long-term GM contamination, including, for instance, gene stacking of several GM trait in the same plant. The contamination could eventually spread off-farm and affect neighbours. By not avoiding GM contamination in a non-GM crop the policy would also undermine consumer choice.

GM Freeze believes that laws applying to coexistence should apply to all GM wherever and by whom they are grown and therefore rejects Defra's proposal.

5.8 GM to GM Coexistence

Defra's consultation fails to make any comment on the coexistence of two (or more) GM crops with different traits. In these circumstances GM genes can stack up in the offspring arising from cross pollination events. In Canada, this phenomenon has already been found to occur and oilseed rape volunteers with three tolerance genes for three different herbicides have been found¹⁸. Similar developments in the England could result new and difficult to control weeds developing. If other GM traits were included such as disease resistance engineered into oilseed and stacked, the resulting plant could be fitter and have a greater capacity to invade semi natural habitats as well as arable habitats.

GM Freeze considers that GM to GM coexistence has to be part of any legislative framework and that measures to avoid contamination should be as rigorous.

6. Unfair

"Unfair" can be used to describe many of Defra's proposals in the consultation document. Defra appear to want every one else to change to enable GM crops to be grown. In a fair society, the new comer should accommodate the existing practices not vice versa. GM Freeze is concerned that the coexistence proposals owe more to a political dogma that asserts that all new technology has to be adopted regardless of consequences.

6.1 Ignores the current market conditions

Defra's selection of 0.9% as the baseline for coexistence measures is grossly unfair. It ignores all the farmers and growers who currently supply the huge non-GM market across the world. This market includes the EU, Japan, the Middle East, Russia and other Eastern European countries and even markets in the USA and Australasia. This market operates to a threshold of 0.1% and would be seriously disrupted by any presence of GM above this threshold. It is important that Defra do not deliberately or erroneously confuse the market threshold with the labelling threshold set down in EU Regulation 1830/2003¹⁹. Coexistence regulations should be designed to avoid any detectable GM presence in growing crops to protect the non-GM market from contamination and maintain consumer choice.

Defra also compound these problems by not sending the consultation document to any supermarkets, food manufacturers, smaller retailers, wholesalers and animal fed producers – all of whom stand to be affected by the proposals in terms of the GM labelling exemption below 0.9%.

6.2 Unfair to the organic market

Equally important is the fast expanding organic market which also operate at the 0.1% threshold (accepted to be a reliable limit of detection for PCR analysis) Organic certification bodies have been operating a no GMO policy since GM crops first appeared on the market. Many customers have been drawn to purchase organic food because of a desire to avoid GM ingredients. The market for organic produce continues to expand every year backed by Defra's own policies and finances. By supporting EC moves to adopt a 0.9% threshold for organic produce, Defra will be undermine the market which will be unfair to organic produces who are striving to avoid any GM presence and to their customers. Coexistence regulation must seek to protect the interests of both by aiming to avoid any detectable GM presence at 0.1%.

Defra should protect the interests of organic consumers by rejecting the adoption of the 0.9% threshold and supporting the lowest possible threshold

6.3 Unfair to Farmers

The right to save seed from one harvest to sow the next year's crop dates back millennia. It is therefore unfair, undemocratic and quite extraordinary, that Defra should seek to prevent farmers from saving seeds for more than one season – ie the farmer should not save seed from a crop which is itself grown from saved seed (footnote at the foot of page 34 of the consultation). In suggesting such a policy, Defra is ignoring the reasons behind the practice of seed saving as well as right which go back thousands of years. For some farmers maintaining seed varieties over many generations is important because they are well adapted to local climate and soils. This also has an important part to play in maintaining agricultural biodiversity especially as the choice of varieties offered by the major seed companies diminishes and no local varieties are on offer. Cost saving is probably the most important reason for saving seeds. JNCC have pointed out the problems which could arise from GM oilseed rape volunteers arising from contaminated seed lots from an environmental perspective²⁰. Therefore, Defra's proposals could have the impacts of reducing biodiversity; harming the environment, reducing choice and making arable farming less profitable.

GM Freeze believes that farm saved seed should be treated in exactly the same way as the production of certified commercial seed production when it comes to coexistence measures. In the case of oilseed rape the GM contamination threshold should be not detectable at 0.1%.

The effect of the Defra proposals will be that any farmer producing for the non-GM (non-detectable) market who experiences any GM contamination (despite doing everything to avoid it) due to long distance pollination by insects or air movements beyond the statutory separation distances will be that they will left high and dry and be unable to claim compensation.

The exclusion of farmers who feed their own fodder crops to their own livestock on farm (paragraph 39) from the list of landowners to be informed of GM crops growing nearby is also very unfair. Such farmers may well be producing milk or meat for the non-GM market and their buyers could require that no GM be detected in any feed. GM contamination could lead to loss of sales or contracts and the farmer would have no clear means of redress.

Defra's proposals that only direct losses (paragraph 148) should be covered by redress schemes is outrageous and unacceptable. GM contamination is not a transient matter and can increase in magnitude as GM genes are multiplied. Recent research has shown that oilseed rapeseed can remain dormant for at least 15 years²¹ and therefore seed dropped by just one GM crop could contaminate following non-GM crops for many years. An average of 1.5 dormant seed germinating per square metre would be sufficient to take the non-GM crop (sown at around 120 seeds per square metre) over the 0.9% labelling threshold. Beet seed is also extremely persistent²² in the soils and GM bolting beet could infest land for many years.

Other long term problems associated with GM contamination of crops or soils are

- Loss of organic status.
- Loss of long-term non-GM contracts.
- Reduction in land value and difficulty selling land.
- Loss of reputation for quality crops which is especially important for local markets.

GM Freeze rejects the proposal that redress be limited to compensation for a single contaminated crop. It should be extended to cover all harm arising from GM contamination.

6.4 Unfair on Beekeepers and Honey Buyers

Defra's proposes that beekeepers will not be informed of a GM crop near their hives despite the real risk of bees collecting GM pollen at great distances. This is grossly unfair on both beekeepers and people who buy honey. Honey is viewed as a pure and wholesome product by those who eat it. Moslems regard honey as a holy drink and it is also used as a medicine (pers. comm. Islamic Medical Association). The presence of GM pollen could be extremely damaging to beekeepers and deny consumers the right to a product free of GM. Defra's own website²³ highlights the agricultural importance of honey bees in improving pollination rates which it values at between £120 and £200 million per year on top of the £10-30 million in honey sales. Defra's proposals could jeopardise this contribution because contamination with GM pollen could undermine UK honey sales.

6.5 Unfair on Gardeners

The Defra proposals exclude gardeners and allotment holders from the list of landowners to be legally consulted before a GM crop is sown. This is very unfair on 500,000 people who grow their own vegetables at home or on allotments. Many rural parishes have allotment abutting arable land and many rural gardens can also be within a few metres of the edge of farm crops. At present maize to sweet corn would be main

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risk of GM cross pollination. However, in the future crops such as brassicas, beans and peas could be GM. Many people see home products of vegetables as a way of ensuring control over the inputs into their food. Many give surplus produce away or sell it at the doorstep or WI Market (both within the EC's definition of placing on the market).

GM Freeze demands that gardeners and allotment holders should be treated as any other landowner when it comes to coexistence measures otherwise we could end up in the perverse position of a person who is seeking to provide their family with the best quality food they can grow being less well protected than some who shop only at the supermarket.

6.6 Unfair on Retailers and Manufacturers

The DEFRA proposals leave retailers, manufacturers, and wholesalers in a difficult position regarding the labelling and traceability of GM ingredients by designing coexistence to allow crops to be contaminated up to 0.9% in the field. Establishing that a GM presence is adventitious or technically unavoidable in a product on sale to the public would therefore become much more problematic. GM Freeze believes that it would be more helpful to the food and feed industry to adopt a threshold of not detectable at 0.1% for coexistence and for seed purity. Thus a detectable GM presence up to 0.9% could be described as adventitious providing other measures to avoid contamination had been taken.

6.7 Unfair on Consumers

The effect of Defra's coexistence proposals will be to undermine the right to choose food and feed with no detectable GM presence. Some companies may choose to maintain that choice by source ingredients such as vegetable oil from overseas if oilseed rape oil was at risk of contamination. This may well involve overseas production methods which are dubious from an environmental and ethical perspective placing the consumer in a difficult position. The right approach is for coexistence laws to avoid GM contamination.

PART 2

7. Specific Comments on the More Detailed Proposals and Questions

7.1 Use of Barriers (paragraphs 44-46)

Air movements around barriers depend very much on the height and density. Turbulence down wind of the barrier can occur which could have the effect of lifting pollen above the crop canopy and hence making it more likely to be blown longer distances. It will take a good deal more research to come up with a barrier design that

blocks wind-blown pollen movement. Insects may also be diverted around barriers. GM Freeze believes that the introduction of barriers in the coexistence calculation made by farmers should not be considered and the only way to prevent GM contamination is by very substantial separation distances or by banning particular GM crops.

7.2 Volunteer Control and Seed Transfer by Machinery, Stores and Transport (paragraphs 47-49 and 56)

GM Freeze believes that volunteers, seed spillage and admixture of GM and non- GM crops are significant factors in building up GM contamination as the experiences on the Canadian canola farmers demonstrate²⁴. We therefore reject Defra's proposals that control of volunteers/ bolters and machinery/equipment cleaning should be covered by an industry voluntary code of practice and the assertion that such measures are "*generally desirable but not essential*". We demand that all coexistence measure come under statutory controls. We also believe that this statutory provision should extend off-farm transport and storage to ensure that seed spillages are cleaned up and all containers cleaned between loads. Ultimately the legal responsibility for ensuring that coexistence measures are carried out must lie with the landowner or crop owner.

7.3 Crop Separation Distances

The crop separation distances proposed by Defra are unacceptable. As we have made clear above we do not accept the science that under pins the selection of distances or the adoption of the 0.9% threshold for coexistence for legal, environmental protection and market reasons. Defra's consultation document concedes that pollination can occur of very long distances but asserts this happens "infrequently" (paragraph 43) without any supporting evidence.

In March 2006 published a summary of the proposals on coexistence by Member States so far available²⁵. This illustrates the huge differences in the interpretation of data on pollination and the application of the precautionary principal by different Member States. The UK proposals are at least precautionary end of the spectrum. Below we set out what has been proposed by the more precautionary Member States, Defra, SCIMAC and the National Pollen Research Unit for conventional and organic crops (not seeds).

	Defra separation distances	Largest separation distances so far proposed by a member state	Separation distances proposed by National Pollen Research Unit	SCIMAC distance FSE
Oilseed rape conventional	35	4000^a	5000	50 (100)^d
Oilseed rape organic	35	6000^a	5000	200
Maize grain conventional	110	800^b	3000	200^e
Maize fodder conventional	80	800^b	3000	80
Maize grain organic	110	800^b	3000	200
Maize fodder organic	80	800^b	3000	200
Beet conventional	No distance specified	2000^b	1000	6

Beet organic	No distance specified	2000^b	1000	600
Potatoes conventional	No distance specified	50^c	500	n/a
Potatoes organic	No distance specified	50^c	500	n/a

Distances in metres a- Latvia b- Luxemburg c- Poland d – longer distance for varietal association varieties e- for sweet corn

All the distances proposed in this table are based on field data, experimental data and experience of growing seed and other crops. One reason for the huge differences is that some suggested separation distances aim for no detectable GM presence at 0.1% (eg National Pollen Research Unit) in the non-GM crop. However, what the table does illustrate is how differently the risk of cross pollination is viewed. GM Freeze believes that the only fair and workable threshold is not detectable at 0.1%. We therefore recommend that Defra work with scientists and farmers across the world to ensure that there is a comprehensive database of cross pollination event before agreeing any statutory distances to achieve a 0.1% threshold. These distances will, necessarily, be much longer than those proposed in the consultation which we reject.

For simplicity separation distances should be the same regardless of field size.

7.4 Seed Thresholds

Maintaining the right to choose between GM and non-GM and organic and protecting the environment demands that the GM presence in seeds be kept as close to zero as possible. GM Freeze rejects the last EC proposal to adopt a GM threshold in seeds between 0.3% and 0.5%. We question why the Defra consultation has proceeded using these threshold when they are so controversial in the EU and may well change before a final agreement is reached. Should the final agreement mean seed thresholds are lower or higher than 0.3-0.5% then many of DEFRA's proposals will have to be re-thought.

GM Freeze recommends that the UK support a seed threshold as close to zero as possible.

7.5 Local discretion on Separation distances

In order to protect the interests of the other farmers in the area, the environment and consumers, GM Freeze does not support the idea (paragraph 87) of allowing neighbours to negotiate their own separation arrangements. In the interests of consumers and the environment, statutory separation distances should aim to achieve no detectable GM presence in the non-GM crop.

7.6 Notification and Liaison

GM Freeze supports a statutory approach to notification and responding within a set time. However, we believe that Defra's proposals (paragraphs 90-99) based on a high coexistence threshold and short separation distances should be rejected as they are not in the best interests of farmer, consumers or the environment. GM Freeze would recommend a system closely aligned to the planning system in which public notices

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announcing the intention to plant GM crops should be erected on public roads, parish notice boards and published in local papers. This would allow affected parties to respond to the GM farmer and a regulator who would be empowered to issue a license to grow if all objections had been met in full by the GM farmer

The notification dates for spring and autumn sown crops must allow non GM farmers to respond well in advance of planting so that the local regulator has time to make a decision on issuing a planting license that takes all views into account.

Even within DEFRA's very limited proposals for notification the dates of March 1 and August 1 for notifying neighbours of the intention to grow GM crops are too short. GM Freeze recommends that they should be moved back one month to allow reasonable time for representations to be made and responded to.

GM Freeze agrees with the proposal in Paragraph 99 of the consultation document that GM planting should not be permitted if neighbouring farmers cannot be identified and informed of the intention to plant a GM crop.

7.7 Monitoring and Enforcement

The consultation paper states that *"DEFRA will monitor the effectiveness of the coexistence regime (both statutory and non-statutory elements)"* and *"via Defra farm inspections"* (paragraph 100 final bullet points). Later it states *"Monitoring and enforcement activity will provide evidence on how well farmers have applied the rules"* (paragraph 105).

GM Freeze is very concerned that it is proposed that Defra be responsible for monitoring and enforcement of GM crop coexistence. They would have a vested interest in finding evidence to support the success of the coexistence regime they designed.

We therefore suggest that an independent enforcement agency be set up which could take on responsibility for monitoring and enforcement of GM crop cultivation, pesticide and chemical use and compliance with agri-environment measures. We would expect a full consultation on how this agency would be established and what level of monitoring they would be required to carry out. The obvious home for such an agency would be as a branch of the Environment Agency. In this way there would be a clear separation of GM policy and monitoring/enforcement activities.

7.8 Training Requirement

The growing of GM crops would bring a new dimension to farm management that of avoiding gene flow to other crops and wild relatives of the crop. In this context volunteer and bolter control will need to be addressed with more rigor than at present in order to prevent gene escape and maintain consumer choice. For instance, it will be important that farmers are able to recognise common arable weed relatives of oilseed rape in order to check that herbicide tolerance genes have moved from the crop into wild relatives.

Potentially, machinery, transport and equipment cleaning will have to be done to a very high standard to prevent farm to farm or on-farm GM seed transfers.

Therefore, GM Freeze does not accept Defra's analysis (paragraphs 104-105) that statutory GM crop training is unnecessary. We believe that no farmer should be allowed to be licensed to grow a crop until they have passed through a training programme.

7.9 Organic production

The amount allocated to the Organic Farming Scheme and its predecessor the Organic Aid Scheme, which were designed to support the expansion of organic farming, was £49.8 million in the last five years²⁶. The Government has instigated an Organic Action Plan²⁷ which seeks to increase the share of UK grown organic produce for food that can be produced in this country to 70%. Organic production is therefore seen by Defra as something to be encouraged and clearly there is still much room for further expansion.

GM Freeze believes that the EC proposals to adopt a 0.9% GM threshold should be rejected by the UK because they undermine the significant efforts to expand organic production which have been made in recent years and would undermine consumer confidence in organic foods.

Coexistence schemes must protect organic farmers and growers from GM contamination detectable at 0.1% and above (as analytical techniques improve the threshold should be reviewed). Thus separation distances and other coexistence procedures need set to avoid cross pollination and contamination of organic crops. The absence of a GM presence in seed used by organic farmer is also an essential requirement to achieve this.

The Defra consultation erroneously links the proposed GM threshold for organic produce with the measures needed to achieve coexistence. GM Freeze believes that this approach is flawed and expects to see major revisions when the draft regulations are finally published.

7.10 Problems with Margins of Error, Limits of Detection and PCR Analysis

The Defra consultation rightly points out that PCR (Polymerase Chain Reaction) has an in-built error and therefore all results are plus or minus a certain amount. This is used to justify Defra's decision not to support a lower GM threshold for organic below 0.9%. Such errors of measurement and analysis are inherent in all scientific measuring equipment. The same argument would apply if the threshold selected was 5%. By following Defra's logic to through you could argue that pesticide residues above just above the Maximum Residue Limit could not be used to bring a prosecution. This is why, in similar circumstances, several samples are taken to make sure the first result can be verified. Major retailers and food producers have informed GM Freeze that they are comfortable operating at 0.1% threshold and both the Food Standards Agency and

Central Science Laboratory confirm that this is a reliable limit of detection.

In the event of a dispute about what level of GM contamination had occurred, the parties involved would need to have several samples to confirm that the threshold had been breached. Clearly if the contamination was 2.8% it may require fewer samples to confirm the threshold had been breached than if the detected level was 1.0%. The courts will play an important role in deciding whether a GM presence in food or feed should be labelled and what level of evidence would be required to establish whether the

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presence was above or below 0.9% and the presence “adventitious or technically unavoidable” if it is below the labelling threshold. As we pointed out earlier, Defra’s minimalist coexistence proposals make this much more difficult

To enable the market to function and effective monitoring of GM presence to take place, GM Freeze believes that a condition of granting a marketing consent or experimental consent should be for a reliable test to the limit of detection plus the necessary reference materials have been developed. Such a test should be available to all accredited laboratories. In addition, a condition for experimental consent holders should be to develop a quantitative test for all experimental GM traits it uses for any crop to be grown in the UK which should be made available for all certified laboratories.

8. Liability and Economic Redress

GM Freeze is extremely disappointed with the approach to economic redress and liability proposed in the Defra consultation. Like the proposals on coexistence, they appear to be to be drafted to facilitate the smooth introduction of GM crops into the UK rather than a genuine attempt to ensure a fair system for compensating for GM contamination.

GM contamination can harm businesses in the short and long term. It can also harm the environment possibly in ways in which the original GMO risk assessment on which the consent for commercial growing was based could not have anticipated.

Therefore, a liability regime for GM crops should have several functions:

- To encourage regulations to be followed to the letter.
- To discourage cavalier behavior and sloppiness by GM growers.
- To be fair to injured parties and existing markets regardless of their proximity to GM crops.
- To protect the environment and human health from unauthorised GMOs being grown experimentally.
- To make those responsible for GM contamination strictly liable for any harm their products may cause.
- To maintain the rights for farmers and consumer to choose non-GM products
- To ensure the polluter pays.

Defra’s proposals have several weaknesses which will mean that it will fail to perform all the above functions satisfactorily.

- By limiting the amount of redress to just one contaminated crop GM farmers may be more tempted to bend the rules.
- Many potential victims of contamination are excluded and without any rights to automatic redress including most non- GM farmers, farmer who save seeds, gardeners and allotment holders and beekeepers.
- Long term economic and environmental harm caused by unwanted GM volunteers is ignored.
- Redress will end at the farm gate despite the possibility that contamination could arise during transport or storage off-farm eg a major oilseed rapeseed spillage on a road side or seed lots could be mixed accidentally.

8.1 Who Should be Liable?

GM Freeze believes that the clearest and simplest way to compensate farmers for GM contamination is to make the holders of the commercial marketing consent or the experimental consent for the GMO strictly liable. This would mean that any farmer who, through no fault of their own, was put at an economic disadvantage by GM contamination would have access to rapid redress. There would be no argument about who was responsible for paying. This would be consistent with the polluter pays principle.

How the biotechnology companies choose to fund redress would be up to them. As the Defra consultation sets out this could be a number of ways but the important thing is that injured parties receive their compensation quickly and this should not be limited to the one contaminated crop but also include long term economic harm.

If biotechnology companies choose to include liability for harm in contracts issued with the sale of GM seeds then farmers will have to consider this before purchasing the seed and whilst they are growing the GM crop. As paragraph 171 of the consultation points out farmers will not be able to insure against actions for compensation in the short to medium term at least. Thus if a biotechnology company successfully pursued a farmer for failing to prevent GM contamination by breaking statutory rules the farmer may still have to pay. In addition farmers who breach coexistence laws would face court action and additional penalties.

Where two GMOs from separate companies are involved in contaminating a crop both should be strictly liable

8.2 Level of Compensation

GM Freeze believes that compensation should extend beyond the immediate crop which has been contaminated to include consequential harm down the supply chain eg loss of market or organic status, and to include beekeepers. The full amount of loss plus costs for analysis and legal advice should be chargeable to the biotechnology company who releases the contaminating GM trait.

8.3 Offgene

GM Freeze supports the proposal in the consultation for a body to administer the system of claims and assess that claims providing it is entirely independent of Defra and the biotechnology companies. "Offgene" should be funded by a levy on the biotechnology industry. The function of "Offgene" would be to make speedy payments to farmer whose crops have been contaminated after assessing and verifying the claim for compensation. Farmers would have the option to claim for further losses after the initial claim was assessed and paid. "Offgene" would be independent of Defra and the biotechnology industry but funded by a levy on the industry. The size of "Offgene" would depend on the amount of GM cropping being carried out but would need to be adequate enough to maintain the required level of service

9. A Public Register of GM Crops

Earlier we pointed out that we believe that Defra's view that GM Crop Public Registers should not be established is legally flawed. GM Freeze believes that registers should include notices of intention to plant GM crops which give the crop to be grown including the trait, a 6 figure map reference for the field where the crop will be grown and contact details of who to make representations to regarding the crop.

GM registers are needed:

- To enable coexistence schemes to operate fairly.
- To enable environmental monitoring to take place.
- To provide information for future landowners and tenants.

10. Voluntary GM-Free Zones

GM Freeze strongly supports the right to democratically establish a GM-free zone. However, we have serious reservations about the voluntary approach put forward in the Defra consultation.

Once again Defra assumes that 0.9% will be the base line for establishing GM free zones. This approach is flawed because the demands of the GMO-Free Europe campaign²⁸ are for "*GM-free food and a GM-free local environment*". So a voluntary scheme based on an in-built contamination threshold of 0.9% GM is hardly likely to find favour with those farmers who might be interested.

There are also legal and practical reasons why a voluntary approach to GM free zone would not work:

- What happens if only one farmer in a voluntary zone refuses to join and the scheme?
- What happens if there is an existing GM farmer with the proposed area?
- How would changes in ownership with the new farmer insisting on growing GM crops be dealt with?
- How would land owned by someone outside the zone who wanted to grow GM crops be dealt with?
- How would a spillage of GM seed within the zone by a third party be dealt with?
- How would it fit with contract farming?
- Would a GM-free zone agreement apply to animal feed as well as crop growing?

Therefore, GM Freeze considers the proposal to allow voluntary GM-free zones to be unworkable, legally complicated, expensive and impractical. Instead, we urge Defra to support an amendment to the EC GMO legislation which would allow areas, regions or Member States to establish GMO free areas provided that democratic decision making process had been carried out. Strict coexistence rules along borders of each area would have to be introduced. GMO free areas would need to apply for at least ten years to allow farmers to adapt and maximize the potential markets for their product.

GM-Free areas would be particularly valuable for the production of seeds without any GM presence. The little practical experience in the UK of running a seed growing zone established to ensure a high degree of seed purity come from the North Essex Seed Zone. This scheme is underpinned with statutory provision for settling any disputes (Section 33 of the Plant Varieties and Seeds Act 1964) – supporting the view that a statutory framework would be required for the establishment of GM-free areas.

11. The Regulatory Impact Assessment

Defra's Regulatory Impacts Assessment (RIA) is based on the same set of assumptions and assertions as the coexistence proposals. Therefore, it should come as no surprise that GM Freeze rejects the majority of the Assessment's findings as they are based on the wrong premises.

11.1 A Tax on Innovation

Defra argue (RIA paragraph 9) that coexistence is a "tax on innovation" because it might hamper the introduction of GM crops into the UK. This thinking underpins the rest of the proposals and goes a long way to explaining why Defra's proposals fail to address the majority issues which concern people about coexistence. In other countries GMOs have proved to be a major disruption to markets because of the breakdown of coexistence along the supply chain for instance in the case of canola seed production in Canada since 2000 and the contamination incidents involving Starlink maize in 2000, Bt10 maize in 2005 and LL601 rice in 2006 in the USA.

11.3 Benefits

11.3.1 Economic

Defra's RIA assumes that only benefits will arise from the cultivation of GM crops. This is based on the assertions that GM crops might

- Reduce production costs.
- Trade at a premium price.

Looking at the experience of growing GM crops around the world it is hard to see what evidence DEFRA base their assertions upon. At present the only GM crops likely to be grown in the UK are herbicide tolerant varieties. Insect resistant crops are unlikely to be grown here because at present there are no pests at which the Bt traits could be targeted. Disease resistance in any crops is a long way from commercialization. Even the current BASF experimental application for late blight resistant potatoes would compete against many non-GM varieties in a market that is avoiding GM ingredients. Blight is one of 600 pests and diseases which potatoes are afflicted by and the disease itself is constantly mutating and evolving so GM potatoes will not necessarily turn out to be a "magic bullet" for growers.

Experience of growing GM herbicide tolerant crops around the world suggest a bright star in terms of reduced weed control costs but then rising costs²⁹ and resistance problems arise in the medium term³⁰.

Defra state (Paragraph 51 RIA) *“in the absence of effective coexistence measures it is likely that there would need to be widespread routine testing for GM presence in crops materials expected”* and *“A reliable coexistence regimes should obviate the need for extensive GM testing”*. What is more the cost of a quantified GM test using PCR is put at £200 per sample.

GM Freeze believes Defra analysis is seriously misguided. First we do not share the view that their proposals for coexistence will be effective for the many reasons outlined earlier in our submission. Problems will arise all along the food chain if Defra’s proposals become law. Indeed, we believe that they will prove very ineffective and lead to a great deal of market uncertainty, eg the problems 0.9% coexistence threshold for coexistence will create in deciding whether a GM presence is adventitious or not for the purposes of labelling. GM Freeze believes Defra’s proposals will increase the costs for food businesses.

The best way to maintain choice and protect health and the environment is to set the threshold for coexistence as low as possible (ie not detectable at 0.1%). This along with realistic separation distances and other measures plus tough enforcement action, would mean cheaper PCR testing for just presence or absence could be used to monitor the effectiveness of coexistence measures. Such analysis costs between £125 and £145 per sample at present.

11.3.2 Environmental

Defra’s claims that GM crops may offer *“reduced use of pesticides or herbicides”* and *“may contribute to the objective of sustainable food and farming”* are not backed by any data. The UK derived data from the Farm Scale Evaluations showed that herbicide tolerant oilseed rape and beet further damaged farmland biodiversity compared with to conventional crop³¹. Earlier in our submission we illustrated some of environmental problems arising from gene transfer between crops and crops and wild relatives. Research in the UK has shown that GM oilseed rape can cross with the arable weeds charlock³² and wild turnip³³ raising the possibility of new types of herbicide tolerant weeds developing over a period.

Defra’s claims may not therefore prove to be correct and much more research is required before the likely outcome of releasing GM herbicide tolerant crops is fully understood which suggest to us that a highly precautionary approach is fully justified.

11.3.3 Social

Defra says that *“consumers value choice”*. A recent poll³⁴ for GM Freeze and Friends of the Earth confirmed Defra’s opinion by finding that 87% of respondents wanted to see animal products produced using GM feed fully labelled as such. Furthermore around half of respondents wanted GM ingredients removed from animal feed altogether. GM Freeze considers that the proposals set out in Defra’s consultation will hinder rather than help consumers choose non-GM products. By allowing a routine GM presence in the growing crops they will create confusion over the 0.9% GMO labelling exemption by adding to the difficulty of deciding if the GM presence is adventitious or is technically unavoidable.

The quality and reputation of organic products will also suffer if the EC proposals to adopt a 0.9% GM threshold for organic products are agreed in the EU and if very lax (Defra style) coexistence measures are introduced.

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Defra also fail to assess the impact of contaminated seed on farmers and the environment. The 2000 incident, when Advanta Seeds UK's spring oilseed rape seed was found to be contaminated with GM oilseed to around an average of 1%, is an excellent example of what might happen in the future. Advanta were forced to pay compensation to UK farmers³⁵ which GM Freeze estimates to be around £1.8 million (based on figures given to the Agriculture Select Committee by company representatives). It is curious that Defra's RIA choose to ignore negative impacts such as this when compiling the RIA.

11.4 Compliance Costs

Defra's compliance cost cover just two aspects in terms of monetary value – notification and separation distances. Other costs such as volunteer control, bolter control and cleaning equipment are not covered as they are considered by Defra to be part of good farm practice already and therefore not cost any extra in terms of coexistence. The field evidence on beet bolter control (see earlier) suggests Defra need to think again.

The costs assume that cross pollination incidents and other problems with GM crops will be minimal and that very few cases of contamination will be reduced. GM Freeze does not believe that the data Defra has used are robust enough to produce such a comprehensive assessment. The lack of data on landscape scale pollination events (see earlier) is just one example of where their analysis falls down.

ANNEX**IN THE MATTER OF DEFRA'S CONSULTATION
ON PROPOSALS FOR MANAGING THE COEXISTENCE OF GM,
CONVENTIONAL AND ORGANIC CROPS**

OPINION

INTRODUCTION

1. We are asked to advise Friends of the Earth, GM Freeze and the Soil Association on the current DEFRA Consultation on proposals for managing the coexistence of genetically modified ("GM"), conventional and organic crops commenced in July 2006 ("the Consultation"). We have previously advised on related issues arising from Directive 2001/18/EC (on the deliberate release into the environment of genetically modified organisms), Regulation (EC) No 1829/2003 (on genetically modified food and feed) and Regulation (EC) No 1830/2003 (concerning the traceability of food and feed products produced from genetically modified organisms) and will refer to that advice in the course of this Opinion. We are now asked to advise on whether or not the approach and assumptions of the Consultation are generally consistent with EC law and, specifically, in relation to the following:

- (i) Whether Article 22 of Directive 2001/18 changes the conclusions of our earlier advice;
- (ii) Whether the establishment of a 0.9% coexistence threshold for GM in non- GM crops is compatible with European law;
- (iii) Whether the exclusion of certain types of growing or farming activities *i.e.* private gardeners and allotment holders, farmers producing their own fodder and farmers who save seed for re-sowing for their next crop ("farm saved seed"), from the scope of the proposed measures is compatible with European law?
- (iv) Whether the position stated in the Consultation that Regulation 1829/2003 does not require the keeping of a public register of GM crop locations is compatible with Community law.

2. For the reasons set out below, the answer to each of those specific questions is “no”.

3. The essential premise of the Consultation is that:

“...if authorised GM crops are grown here in due course this may result in non-GM crops having a small GM presence (e.g. through cross-pollination or the dispersal of GM seed). To facilitate choice between conventional, organic and GM crops, ‘coexistence’ measures will be needed to minimise unwanted mixing of GM and non-GM material. From a regulatory standpoint, the key benchmark for distinguishing GM and non-GM produce is the 0.9% threshold for adventitious GM presence adopted by the EU (products with a presence above this level must be labelled and sold as ‘GM’). In this paper Defra is seeking comments on a proposed coexistence regime for England that would aim to minimise any unwanted GM presence in non-GM crops so that it is below 0.9%.”

4. The Consultation further considers, *inter alia*, excluding from the scope of the co-existence measures crops that are not intended to be placed on the market, e.g. crops grown for private consumption.

5. We have considered the Consultation and have concluded, in summary, that:

- (i) It is based on a flawed approach to the link between co-existence measures and the GM labelling thresholds provided for in EC legislation and to the labelling thresholds *per se*.
- (ii) It would also appear to be suggesting that co-existence measures should relate to labelling thresholds as a baseline norm (which, for the reasons we have set out is a misinterpretation of the relevant legislation).
- (iii) Further, it appears to gloss over the requirement that, in order to benefit from the labelling exemption, GM content must be “adventitious or technically unavoidable”, irrespective of the threshold and wholly fails to grapple with the meaning of that term. We have concluded that a co-existence regime which aims to establish a base-line threshold of 0.9% GM content across the board would generally preclude any reliance in practice by operators on the labelling exemption for “adventitious” presence below that threshold if an element of GM content became inherent in all products. Furthermore, reliance by the operator on any

base-line threshold resulting from co-existence measures would not in our view be sufficient to discharge the burden placed upon him to demonstrate that the presence was “technically unavoidable”.

- (iv) Its position that there is no requirement in law for a public register is fundamentally flawed and ignores the provisions of Directive 2001/18.
6. Before discussing our conclusions, we consider it helpful to rehearse the legislative background applicable to the regulation of GM products.

LEGISLATIVE BACKGROUND

7. Directive 2001/18 (which is a legislative instrument binding only on Member States and providing a legislative framework according to which certain results are required to be achieved) has the objective, in accordance with the precautionary principle, of approximating the laws, regulations and administrative provisions of the Member States for the purpose of protecting human health and the environment when:

- carrying out the deliberate release into the environment of genetically modified organisms for any purposes other than placing on the market within the Community, and
- placing on the market genetically modified organisms as or in products within the Community¹.

8. There is a general obligation upon Member States to ensure that all appropriate measures are taken to avoid adverse effects on human health and the environment which might arise from the deliberate release or the placing on the market of GMOs. GMOs may not be deliberately released or placed on the market unless that is in conformity with the Directive².
9. A clear objective of the Directive is the protection of the environment and human health. That objective is also enshrined in the EC Treaty in Articles 6 and 152.
10. The Directive establishes a system of authorisation for the release of GMOs with different but parallel provisions applying respectively to GMO release where such release is for some purpose other than marketing and to GMO release where GMOs

¹ Article 1

² Article 4

are to be marketed as or contained in products. In either case, a release may take place only with and subject to the conditions of an authorisation from the competent authority of a Member State. An authorisation has effect throughout the Community.

11. It follows therefore that Community law does not permit of any tolerance in relation to GMO content where the relevant GMO release has not been authorised. The only circumstance in which unauthorised GMO content is tolerated is by virtue of transitional measures whereby authorisation is not required for adventitious or technically unavoidable trace elements of GMO to a threshold of 0.5%, where an application for authorisation in relation to that GMO has reached a certain stage in the process of consideration and certain stringent conditions have been met³.

LABELLING

12. The Directive also provides for the continued monitoring of GMO products for their potential effects on human health or the environment. To that end, the Directive seeks to ensure traceability of GMOs at all stages of the placing onto the market of products in which they are contained. With that in mind, Article 21 therefore provides for labelling and packaging of GMO products and provides:

“1. Member States shall take all necessary measures to ensure that at all stages of the placing on the market, the labelling and packaging of GMOs placed on the market as or in products comply with the relevant requirements specified in the written consent referred to in Articles 15(3), 17(5) and (8), 18(2) and 19(3).

2. For products where adventitious or technically unavoidable traces of authorised GMOs cannot be excluded, a minimum threshold may be established below which these products shall not have to be labelled according to the provision in paragraph 1. The threshold levels shall be established according to the product concerned, under the procedure laid down in Article 30(2).

3. For products intended for direct processing, paragraph 1 shall not apply to traces of authorised GMOs in a proportion no higher than 0,9 % or lower thresholds established under the provisions of Article 30(2), provided that these traces are adventitious or technically unavoidable.”

13. Article 21 therefore imposes an obligation to label authorised GMOs and product with authorised GM content. It recognises however that there may be situations in

³ Article 12a (inserted by Regulation 1829/2003)

which adventitious and technically unavoidable traces of authorised GMO cannot be excluded. In such circumstances, and only in such circumstances, there is an exception to the general obligation to label GM products where the technically unavoidable or adventitious content is lower than a specified threshold. In relation to products intended for direct processing, that threshold has been set at 0.9%. That threshold derives from Regulation 1830/2003.

14. Regulations 1829/2003 and 1830/2003 apply a special regime to food and feed containing, consisting of or produced from GMOs. Regulations differ from Directives in that they are binding in their entirety, are directly applicable in Member States and bind individuals and companies as well as Member States. Regulation 1829/2003 establishes rules for the authorisation, supervision and labelling of GM food and feed which are applicable to such food and feed irrespective of whether they contain products which have previously received an authorisation pursuant to Directive 2001/18. The objectives of the Regulation are found in its Recitals, *inter alia*, as follows:

*“(1) The free movement of safe and wholesome food and feed is an essential aspect of the internal market and contributes significantly to the health and well-being of citizens, and to their social and economic interests.
 (2) A high level of protection of human life and health should be ensured in the pursuit of Community policies.
 (3) In order to protect human and animal health, food and feed consisting of, containing or produced from genetically modified organisms (hereinafter referred to as genetically modified food and feed) should undergo a safety assessment through a Community procedure before being placed on the market within the Community.”*

15. With regard to labelling, the recitals to the Regulation provide:

*“(17) In accordance with Article 153 of the Treaty, the Community is to contribute to promoting the right of consumers to information. In addition to other types of information to the public provided for in this Regulation, the labelling of products enables the consumer to make an informed choice and facilitates fairness of transactions between seller and purchaser.
 (18) Article 2 of Directive 2000/13/EC of the European Parliament and of the Council of 20 March 2000 on the approximation of the laws of the Member States relating to the labelling, presentation and advertising of foodstuffs provides that labelling must not mislead the purchaser as to the characteristics of the foodstuff and among other things, in particular, as to its nature, identity, properties, composition, method of production and manufacturing.”*

(20) *Harmonised labelling requirements should be laid down for genetically modified feed to provide final users, in particular livestock farmers, with accurate information on the composition and properties of feed, thereby enabling the user to make an informed choice.*

(21) *The labelling should include objective information to the effect that a food or feed consists of, contains or is produced from GMOs. Clear labelling, **irrespective of the detectability of DNA or protein resulting from the genetic modification in the final product**, meets the demands expressed in numerous surveys by a large majority of consumers, facilitates informed choice and precludes potential misleading of consumers as regards methods of manufacture or production.*

(22) *In addition, the labelling should give information about any characteristic or property which renders a food or feed different from its conventional counterpart with respect to composition, nutritional value or nutritional effects, intended use of the food or feed and health implications for certain sections of the population, as well as any characteristic or property which gives rise to ethical or religious concerns.*

(23) *Regulation (EC) No 1830/2003 of the European Parliament and of the Council of 22 September 2003 concerning the traceability and labelling of genetically modified organisms and traceability of food and feed products produced from genetically modified organisms and amending Directive 2001/18/EC(16) ensures that relevant information concerning any genetic modification is available at each stage of the placing on the market of GMOs and food and feed produced therefrom and should thereby facilitate accurate labelling.*

(24) ***Despite the fact that some operators avoid using genetically modified food and feed, such material may be present in minute traces in conventional food and feed as a result of adventitious or technically unavoidable presence during seed production, cultivation, harvest, transport or processing. In such cases, this food or feed should not be subject to the labelling requirements of this Regulation. In order to achieve this objective, a threshold should be established for the adventitious or technically unavoidable presence of genetically modified material in foods or feed, both when the marketing of such material is authorised in the Community and when this presence is tolerated by virtue of this Regulation.***

(25) *It is appropriate to provide that, when the combined level of adventitious or technically unavoidable presence of genetically modified materials in a food or feed or in one of its components is higher than the set threshold, such presence should be indicated in accordance with this Regulation and that detailed provisions should be adopted for its implementation. The possibility of establishing lower thresholds, in particular for foods and feed containing or consisting of GMOs or in order to take into account advances in science and technology, should be provided for.*

(26) *It is indispensable that operators strive to avoid any accidental presence of genetically modified material not authorised under Community legislation in food or feed. However, in order to ensure the practicability and feasibility of this Regulation, a specific threshold, with the possibility of establishing lower levels in particular for GMOs sold directly to the final consumer, should be established as a transitional measure for minute traces in food or feed of this genetically modified material, where the presence of such material is adventitious or technically unavoidable and provided that all specific conditions set in this Regulation are met. Directive 2001/18/EC should be amended accordingly. The application of this*

measure should be reviewed in the context of the general review of the implementation of this Regulation.

(27) In order to establish that the presence of this material is adventitious or technically unavoidable, operators must be in a position to demonstrate to the competent authorities that they have taken appropriate steps to avoid the presence of the genetically modified food or feed” (emphasis added)..

16. The Regulation itself makes, *inter alia*, the following provision for the labelling of GM food in Article 12:

“1. This Section shall apply to foods which are to be delivered as such to the final consumer or mass caterers in the Community and which:

- (a) contain or consist of GMOs; or
- (b) are produced from or contain ingredients produced from GMOs.

2. This Section shall not apply to foods containing material which contains, consists of or is produced from GMOs in a proportion no higher than 0,9 per cent of the food ingredients considered individually or food consisting of a single ingredient, provided that this presence is adventitious or technically unavoidable.

3. In order to establish that the presence of this material is adventitious or technically unavoidable, operators must be in a position to supply evidence to satisfy the competent authorities that they have taken appropriate steps to avoid the presence of such material.

4. Appropriate lower thresholds may be established in accordance with the procedure referred to in Article 35(2) in particular in respect of foods containing or consisting of GMOs or in order to take into account advances in science and technology.”

17. Parallel provisions apply in relation to GM feed.

18. Again, therefore, the precondition for the exclusion from the general obligation to label products with GM content is that the content is adventitious or technically unavoidable. The burden of proving that GM content is “adventitious or technically unavoidable” lies firmly with operators, who are defined in the Regulation as “the natural or legal person responsible for ensuring that the requirements of this Regulation are met within the food businesses or feed businesses under its control”.

19. For the sake of completeness, it should be noted that the provisions referred to above are concerned with identifying the circumstances in which something must be

labelled as a GM product. If, for example, a product has an adventitious GM content of less than 0.9%, that means that it is excluded from the obligation to be labelled as containing GMO. It does not follow that a positive representation can be made about the product (whether in the form of a label or some other statement about it) that it is GMO-free. Hence, the labelling requirements are not intended to lay down the borderline between GMO products and non-GMO products.

CO-EXISTENCE

20. Article 43(2) of Regulation 1829/2003 amends the Directive by inserting Article 26a.

It provides:

“Measures to avoid the unintended presence of GMOs

1. Member States may take appropriate measures to *avoid* the unintended presence of GMOs in other products.

2. The Commission shall gather and coordinate information based on studies at Community and national level, observe the developments regarding coexistence in the Member States and, on the basis of the information and observations, develop guidelines on the coexistence of genetically modified, conventional and organic crops” (emphasis added).

21. It is this provision which forms the basis of the UK government’s Consultation on co-existence, which appears to be firmly rooted in the Commission’s policy in that regard, as recorded in its Recommendation of 23 July 2003 “on guidelines for the development of national strategies and best practices to ensure the coexistence of genetically modified crops with conventional and organic farming”.

GENERAL CONCLUSIONS REGARDING THE CONSULTATION

22. Just as we considered in our previous advice that the Commission Recommendation had no basis in Community legislation and was wrong in law, we are of the view that certain assumptions and premises of DEFRA’s Consultation are also flawed and inconsistent with Community law.

23. The central premise of the Consultation is that coexistence measures are designed merely to minimise unwanted GM transfer and that such measures are to be defined by reference to the thresholds applicable to GM labelling requirements. Further, the Consultation is strongly reliant on the premise that coexistence measures are

concerned only with “economic choice” and not with safety and environmental concerns. As we have already advised, that is a flawed approach to the Community legislation for a number of reasons.

COEXISTENCE AND BASELINE NORMS

24. The origin of Article 26a lies in Regulation No. 1829/2003. Recital 28 to the Regulation provides:

“(28) Operators should avoid the unintended presence of GMOs in other products. The Commission should gather information and develop on this basis guidelines on the coexistence of genetically modified, conventional and organic crops. Moreover, the Commission is invited to bring forward, as soon as possible, any further necessary proposal.”

25. This, in our view, is distinct from the subject matter of recitals 24 to 27. Those recitals refer to the adventitious or technically unavoidable presence of GMOs in food or feed in a number of different situations. Recital 26, for example, refers to the accidental presence of unauthorised GMOs in food or feed. Recitals 24-25 appear to refer to the presence of authorised GMOs.

26. Recital 28 departs from the phraseology of recitals 24-27 by referring simply to the “unintended” presence of GMOs in “other products”. It is obviously correct to point out that the word “adventitious” in the earlier recitals overlaps in meaning with the word “unintended”, although the word “technically unavoidable” does not necessarily do so. It is also correct to point out that the phrase “other products” could be construed as referring to “products other than GMOs” or “products other than food or feed”.

27. However, taking things in context, we consider that, whereas recitals 24-27 are concerned with tackling the situation that arises when there is an adventitious or technically unavoidable presence of GMOs in food or feed, recital 28 and, accordingly, Article 26a are concerned with securing coexistence, that is, the prevention of (unintentional) “contamination” of products other than GM products. Recital 28 and Article 26a therefore concern a situation that logically precedes the situation considered by recitals 24-27.

28. The labelling thresholds are therefore legally irrelevant so far as the scope of coexistence measures is concerned. Further, it cannot be said that the only objective of coexistence measures, as envisaged in Article 26a, is the economic protection of non-GM producers, as the Consultation paper asserts (see, for example, at paragraphs 22 to 25).
29. In relation to the first point made in the preceding paragraph, we are of the clear view that appropriate measures to avoid GM presence in non-GM products, taken pursuant to Article 26a, are not as a matter of law constrained by, reliant on, or necessarily allied to the labelling thresholds. There is nothing in the wording of the Directive or Regulation 1829/2003 to support such a limitation. Moreover, there is no canon of construction or legislative rationale dictating or leading to such an interpretation. Indeed it is strongly arguable that the structure of the legislation would indicate that a limitation on the scope of “appropriate” coexistence measures by reference to labelling thresholds would be illogical.
30. To begin with, Article 26a refers clearly and simply to measures to “avoid the unintended presence of GMOs”. As a matter of ordinary language and commonsense, measures that permitted a certain level of GM content would not “avoid the unintended presence of GMOs”.
31. From the policy perspective, coexistence means the ability of farmers to make a practical choice between conventional, organic and GM crop production. Measures that permitted a certain level of GM content could not be said to be directed at enabling farmers to make such a choice.
32. Further, as stated above, there are two relevant conditions for the exclusion from the general obligation to label products with GM content: (i) the content must be adventitious or technically unavoidable; and (ii) it must be below the threshold. Coexistence measures that established a regime that aimed to do no more than limit GM content in products not intended to be GM to a 0.9% threshold would therefore be meaningless, so far as the labelling requirements are concerned, unless the

operator was also able to satisfy the additional requirement for the labelling exemption, namely, that the GM presence was adventitious or technically unavoidable.

33. Finally, if one aim of co-existence measures is to provide economic protection for non-GM operators, whilst accepting the legitimacy of authorised GM production, the placing upon the scope of such measures of the limitation of achieving a baseline norm of 0.9% (rather than achieving lower levels of, or the avoidance altogether of, contamination) arguably renders it more difficult in practice for non-GM operators to ensure that they benefit from the labelling exemption.
34. By contrast, a regime that sets out to prevent cross-contamination, as far as is technically possible, renders it easier for non-GM producers to comply with all elements of the labelling exemption. Limiting such a regime by reference to a baseline tolerance could also preclude the ability of non-GM operators to establish a GM-free labelling regime akin to the organic labelling regime, to which we return below.
35. As indicated above, it seems to us that the concept of coexistence measures is crucially relevant: they are directed towards preventing the avoidable contamination of non-GM produce and not to merely minimising such contamination to (arbitrarily fixed) tolerance levels.
36. The Consultation also appears to indicate (see for example at paragraphs 28 and 36) that the construction of Article 26a is to be tempered by reference to the principle of proportionality and appears to suggest that, since it is unrealistic for producers to strive to avoid GM presence completely, the only appropriate response is to apply a baseline norm of 0.9%. In the same vein, the Commission has referred to Article 22 of the Directive as imposing – or at least implying - a similar constraint upon the extent of coexistence measures (Article 22 provides: “Without prejudice to Article 23, Member States may not prohibit, restrict or impede the placing on the market of GMOs, as or in products, which comply with the requirements of this Directive”).

37. We do not consider that either of those contentions has any bearing on the proper construction of the Community legislation. Nor do they provide justification for reliance on baseline norms founded upon the labelling requirements.
38. As regards the principle of proportionality, what is proportionate in the circumstances is a matter of fact and technical assessment and must have regard to the legislative aim. The analogy often used to illustrate the principle of proportionality is the wielding of a sledge hammer to crack a walnut. The objective is to crack open the walnut. By using a sledge hammer, the objective will be achieved. However, recourse to the sledge hammer involves the exercise of more force and energy than is necessary to achieve the objective. The objective could be achieved by using lesser force and energy (recourse to a nutcracker). Thus, proportionality is concerned with ensuring that, of the different means *capable of achieving the legislative objective*, the one that is least burdensome (or, putting it another way, most efficient) is adopted.
39. In the present context, the legislative objective is avoiding, as opposed to minimising, the unintended presence of GM in other products. Proportionality will always be informed by what is technically possible in order to achieve the legislative objective; but there does not appear to be any evidential basis for an assertion that measures going beyond minimising contamination by reference to baseline norms founded upon the labelling provisions pose a disproportionate burden upon producers and operators having regard to the need to achieve the legislative objective. On the contrary, the problem posed by opting for a baseline norm is that it does not achieve the legislative objective at all. Reverting to the sledge hammer and walnut example, opting for a baseline norm on the ground of proportionality is like saying “we need to crack open this walnut; this rubber play-knife is lighter than this nutcracker and requires less force and energy; accordingly, proportionality requires use to apply the rubber knife to the walnut and throw the nutcracker away, even though this means that we will not be able to crack open the walnut”. It hardly needs stating that that is not a correct understanding of the principle of proportionality: that principle does not provide an excuse for failing to achieve the legislative objective.

40. Another problem about using a baseline norm derived from the labelling requirements is that it would seem to take the domestic measures outside the scope of Article 26a. Properly understood, a system based on the labelling requirements would amount to nothing more than a system designed to ensure that producers would not be obliged to label their products as containing GMOs (although we are sceptical as to the effectiveness of such a system). We do not think that coexistence can simply be assimilated to being relieved of the obligation to label one's products as containing GMOs. It is rather more than that (whence the fact that Article 26a uses the verb "avoid", not "minimise").
41. Similarly, we do not consider that Article 22 of the Directive can be employed to distort the clear intention of Article 26a. Article 22 is directed toward ensuring that GMOs that benefit from a consent can be marketed without further restriction on the part of Member States, save where new safety and environmental concerns arise. Co-existence measures are directed towards avoiding cross contamination to preserve the integrity of non-GM production, whilst accepting the legitimacy of GM production. Article 22 can have any relevance to coexistence measures only if, as a matter of fact, measures which aim to avoid cross contamination have the effect of preventing or unduly restricting the marketing of GM. There is simply no basis at all for the assertion that any particular measure designed to avoid cross contamination produces that result or, more importantly, that the only means of ensuring compliance with Article 22 is the establishment of a baseline norm for GM content.
42. In summary, therefore, we conclude that there is no legislative provision which requires a Member State to limit its coexistence measures to go no further than is necessary in order to ensure that GM content stays below the Community's labelling threshold. Nor is there any compelling practical or other reason to construe the scope of "appropriate measures" as containing or implying such a limitation. We consider therefore that the approach of the Consultation in promoting co-existence measures which seek to achieve a base-line norm by reference to the labelling requirements as fundamentally flawed. Moreover, we consider that such an approach has important consequences for operators seeking to benefit from the exemption to the labelling

requirements, which is dependant on the meaning of the “adventitious or technically unavoidable” proviso in the relevant labelling provisions.

43. The evidential requirements contained, *inter alia*, in Article 12 of Regulation 1829/2003 already assume that such accidental or technically unavoidable presence is unintended since operators must show the steps taken to avoid such presence. As a matter of ordinary language and legislative interpretation, therefore, the terms “adventitious or technically unavoidable” clearly go beyond mere unintentional presence.
44. The terms “adventitious” and “technically unavoidable” are not defined in the relevant legislation. They are clearly separate concepts, either of which may be satisfied in order to exercise the labelling exemption.
45. “Adventitious” is defined in the Oxford English Dictionary as:

“Coming from without, accidental, causal.”

Our examination of other language versions of the term do not suggest that that is an unreliable guide to the meaning of the word. It seems to us that adventitious in this context means accidental and arising from outside the process, or non-inherent. Some support for that proposition, if needed, is derived from Commission Regulation (EEC) No 1470/68 on the drawing and reduction of samples and the determination of the oil content, impurities and moisture in oil seeds. Article 2.3 provides:

“Special care is necessary to ensure that all sampling apparatus is clean, dry and free from foreign odours. Sampling should be carried out in such a manner as to protect the samples of oilseeds, the sampling apparatus and the containers in which the samples are placed from *adventitious contamination such as rain, dust*, etc.”

46. It would seem to us to be strongly arguable that GM presence which is “built-in” or inherent by virtue of a generally applicable base-line norm or tolerance does not accord with the definition of adventitious presence.
47. As regards GM presence that is “technically unavoidable”, we consider that term to introduce an absolute requirement (since it is not tempered by any reference to “reasonable” or any further qualification) that the GM presence is a result of the objective impossibility of avoiding GM content by technical methods. In our view,

“technically unavoidable” presence would also exclude presence arising systemically where GM content could in fact technically be avoided. It is not a subjective test confined to the circumstances of each case. What is in fact objectively technically unavoidable on the basis of available techniques is a matter for scientific assessment.

48. Thus, in our view, the labelling exemption applies only to products with a GM content which is essentially accidental and non-inherent (though it may be technically avoidable) or to products with a GM content which is not accidental and is inherent but cannot technically be avoided. A co-existence regime which aims to establish a base-line threshold of 0.9% GM content across the board would, we consider, generally preclude any reliance in practice by operators on the exemption for “adventitious” presence below that threshold if an element of GM content became inherent in all products.

49. It would seem to us that whether or not the labelling exemption could apply at all in such circumstances depends on whether, as a matter of fact, the GM presence is objectively technically avoidable. Reliance by the operator on any base-line threshold resulting from co-existence measures would not in our view be sufficient to discharge the burden placed upon him to demonstrate that the presence was “technically unavoidable”.

50. In conclusion, therefore, we are inclined to the view that a co-existence regime which aims to establish a base-line threshold of 0.9% GM content across the board would considerably reduce the scope, if not eliminate the possibility, of operators relying on the “adventitious” exception and would not absolve the operators from demonstrating “technically unavoidable” GM presence in order to benefit from the labelling exemption.

CO-EXISTENCE AND ECONOMIC CHOICE

51. We do not consider that the sole purpose of measures taken under Article 26a is to ensure economic choice for operators. It is significant that Article 26a was introduced into the Directive by Regulation No. 1829/2003, which is concerned with

environmental and health aspects of GM. That implies that Article 26a was not intended to be limited in scope to the economic aspects of coexistence.

52. Further, in our view, the Member States are required by virtue of Articles 1 and 4 of the Directive and Articles 6 and 152 of the EC Treaty to take into account the aims of protection of human health and the environment in implementation of Community law (Articles 1 and 4 of the Directive specifically require that the precautionary principle informs implementation of the Directive's provisions).
53. We do not consider the argument that all concerns relating to human health and the environment are satisfied during the authorisation stage, such that they play no part in the context of appropriate measures under Article 26a, to be a tenable one. Although there is an environmental risk assessment undertaken during the process of authorisation, the Directive and Regulations themselves recognise a continuing need to protect health and the environment. To that end, the Directive provides for continuing monitoring requirements⁴ and a safeguard clause to suspend and withdraw GM products⁵. The principal aim of the labelling requirements, apart from being to inform consumer choice, is to enable the proper monitoring of GM and to take appropriate safeguard measures. That is confirmed by the Recitals to Regulation 1830/2003:

“(3) Traceability requirements for GMOs should facilitate both the withdrawal of products where unforeseen adverse effects on human health, animal health or the environment, including ecosystems, are established, and the targeting of monitoring to examine potential effects on, in particular, the environment. Traceability should also facilitate the implementation of risk management measures in accordance with the precautionary principle.

(4) Traceability requirements for food and feed produced from GMOs should be established to facilitate accurate labelling of such products, in accordance with the requirements of Regulation (EC) No 1829/2003 of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed, so as to ensure that accurate information is available to operators and consumers to enable them to exercise their freedom of choice in an effective manner as well as to enable control and verification of labelling claims. Requirements for food and feed produced from GMOs should be similar in order to avoid discontinuity of information in cases of change in end use.”

54. The protection of human health and the environment is therefore, of necessity, a continuing aim of the Community legislation and, therefore, an aim of Article 26a, and is not discharged entirely by the authorisation process. The question arises whether Article 26a measures which have the aim of permitting a base-line norm of a 0.9% tolerance across the board would be consistent with that aim, and the precautionary principle. We think not.

EXCLUSION OF NON-COMMERCIAL PRODUCTION

55. The Consultation seeks to exclude from the scope of coexistence measures crops that are not intended to be placed on the market, such as allotment crops intended for private consumption on the basis that they are not subject to the labelling requirements.

56. Again, in our view, this approach is fundamentally flawed. For the reasons we have set out above, we do not consider that the labelling requirements have any legal relevance to co-existence measures. Co-existence measures are designed to avoid the unintended presence of GM “in other products”. Article 26a of the Directive is not confined to products intended to be marketed. Even if it were however, it would not absolve Member States of the responsibility of seeking to avoid cross contamination of commercial crops via non-commercial crops. We do not therefore consider it permissible to exclude non-commercial crops from the scope of coexistence measures on the basis that they are not subject to the labelling requirements.

57. Furthermore the legislative reach of Directive 2001/18 and Regulation 1829/2003 is not confined to commercially exploited products. Both the Directive and the Regulation regulate the placing on the market of GMOs and include in the definition of “placing on the market” the making available of products to third parties free of charge.

A PUBLIC REGISTER

58. The Consultation discusses the pros and cons of establishing and maintaining a public register of GM sites on the basis that DEFRA has discretion in the matter. The

Consultation states expressly that Regulation 1829/2003 does not require any such register.

59. There is no question but that this premise is wholly incorrect. Article 31(3) of Directive 2001/18 which falls under Part D of the Directive provides:

“Without prejudice to paragraph 2 and point A.7 of Annex IV,
 (a) Member States shall establish public registers in which the location of the release of the GMOs under Part B is recorded.

(b) Member States shall also establish registers for recording the location of GMOs grown under Part C, *inter alia* so that the possible effects of such GMOs on the environment may be monitored in accordance with the provisions of Articles 19(3)(f) and 20(1). Without prejudice to such provisions in Articles 19 and 20, the said locations shall

- be notified to the competent authorities and

- be made known to the public

in the manner deemed appropriate by the competent authorities and in accordance with national provisions.

60. Articles 7 and 19 of Regulation 1829/2003 deal with authorisations under that Regulation. Articles 7(8) and 19(8) provide:

References made in parts A and D of Directive 2001/18/EC to GMOs authorised under part C of that Directive shall be considered as applying equally to GMOs authorised under this Regulation.

61. We consider that the reference in Article 31(3) of the Directive to GMOs “grown” under Part C necessarily refers to GMOs authorised under Part C. Articles 7(8) and 19(8) of the Regulation therefore apply the provisions of Part D of the Directive (which includes Article 31) to GM food and feed authorised under the Regulation. It is beyond serious argument therefore that there is a requirement for a public register of all GM crop locations. Since the purpose of the register is to enable monitoring of

the effects of GMOs on the environment, it is clear that any obligation to be register must arise as soon as the crop is planted in that location.

KPE LASOK QC
REBECCA HAYNES
13th October 2006

REFERENCES

- ¹ Commission Recommendation 2003/556/EC on guidelines for the development of national coexistence strategies.
- ² REGULATION (EC) No 1829/2003 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 22 September 2003 on genetically modified food and feed
- ³ DIRECTIVE 2001/18/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC
- ⁴ Letter to GM Freeze from the Food Standards Agency, 2nd November 2005
- ⁵ British Statutory Nature Conservation Agencies 2002, Response to Defra Consultation 02/03-165 Commission proposals on the thresholds for the adventitious presence of approved GMOs in seeds.
- ⁶ http://www.hgca.com/document.aspx?fn=load&media_id=1460&publicationId=1805 page 181.
- ⁷ <http://www.defra.gov.uk/environment/gm/research/epg-1-5-84.htm>
- ⁸ http://www.defra.gov.uk/science/project_data/DocumentLibrary/CB02039/CB02039_3775_FRP.doc
- ⁹ <http://www.defra.gov.uk/environment/gm/research/epg-1-5-84.htm>
- ¹⁰ Longden PC, 1993. Weed beet: a review, *Aspects of Applied Biology* 35: 185-194.
- ¹¹ Farmers Weekly, 2004. Battle to beat weed beet. *Farmers Weekly* February 13-19 2004 page 54
- ¹² Scientific Committee on Plants SCP/GMO-SEED-CONT/002-Final 13th March 2001 Opinion of the Scientific Committee on plants concerning the adventitious presence of GM seeds in conventional seeds.
- ¹³ The British Association GM crops: gene flow and fitness in natural and agricultural systems
GM Science Review - Open Meeting Monday 17 March 2003 Institute of Grassland and Environmental Research (IGER), Aberystwyth
- ¹⁴ Arnaud J, Viard F, Delescluse M, Cuguen J, 2003. Evidence for gene flow via seed dispersal from crop to wild relatives in *Beta vulgaris* (Chenopodiaceae): consequences for the release of genetically modified crop species with weedy lineages. *Journal of the Royal Society Proceedings B* 270: 1565-1571.
- ¹⁵ Op cit reference 1.
- ¹⁶ http://www.aebc.gov.uk/aebc/reports/coexistence_liability.shtml
- ¹⁷ Evidence presented by Michael Meacher and Jeff Rooker to the House of Lords Select Committee on European Communities. 31 October 1998
- ¹⁸ *English Nature*, 2001. Research Report No 443 Gene stacking in herbicide tolerant oilseed rape: lessons from the North American experience
- ¹⁹ REGULATION (EC) No 1830/2003 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 22 September 2003 concerning the traceability and labelling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms and amending Directive 2001/18/EC
- ²⁰ British Statutory Nature Conservation Agencies 2002, Response to Defra Consultation 02/03-165 Commission proposals on the thresholds for the adventitious presence of approved GMOs in seeds.
- ²¹ Lutman PJW et al , 2005. Persistence of seeds from crops of conventional and herbicide tolerant oilseed rape (*Brassica napus*). *Proc.R.Soc B (2005)* 272, 1909-1915 22nd September 2005.
- ²² Scientific Committee on Plants SCP/GMO-SEED-CONT/002-Final 13th March 2001 Opinion of the Scientific Committee on plants concerning the adventitious presence of GM seeds in conventional seeds.
- ²³ <http://www.defra.gov.uk/hort/Bees/index.htm>
- ²⁴ *English Nature*, 2001. Research Report No 443 Gene stacking in herbicide tolerant oilseed rape: lessons from the North American experience
- ²⁵ Annex to the Communication from the Commission to the Council and the European Parliament Report on the implementation of the national measures on coexistence of genetically modified crops with conventional and organic farming (COM (2006) 104).
- ²⁶ Parliamentary Answer Ben Bradshaw House of Commons Hansard 22 May 2006 : Column 1289W
- ²⁷ <http://www.defra.gov.uk/farm/organic/policy/actionplan/index.htm>

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²⁸ <http://www.gmofree-europe.org/documents/petition%20text/Petition%20GMO%20free%20zones.doc>

²⁹ Benbrook C 2004 Genetically Engineered Crops and Pesticide Use in the United States: The First Nine Years BioTech InfoNet Technical Paper Number 7 October 2004.

³⁰ Hartzler, B. (2003). Are Roundup Ready Weeds In Your Future II?, Department of Agronomy, Iowa State University see <http://www.gmsciencedebate.org.uk/topics/forum/0051.htm>

³¹ <http://www.defra.gov.uk/environment/gm/fse/results/ssc-advice-03.htm> and <http://www.defra.gov.uk/environment/gm/fse/results/ssc-advice-05.htm>

³² DEFRA (2005). Monitoring movement of herbicide resistant genes from farm scale evaluation field sites to populations of wild crop relatives. <http://www.defra.gov.uk/environment/gm/research/epg-1-5-151.htm>

³³ Wilkinson MJ et al (2003). *Hybridisation between Brassica napus and B rapa on a national scale in the United Kingdom*. Science **302**: 401-3

³⁴ NOP GFK Omnibus interviewed 1000 UK adults aged 16+ over the dates 9th-11th June 2006. Results were weighted in order to be nationally representative.

³⁵ Evidence to the House of Commons Agriculture Committee by Dr D Buckridge and M Ruthven Advanta Seeds UK 18th July 2000 see <http://www.publications.parliament.uk/pa/cm199900/cmselect/cmagric/812/0071804.htm>