Chair: Prof. dr.ir. B.C.J. Zoeteman

To the State Secretary of Housing,
Spatial Planning and the Environment
Mr P.L.B.A. van Geel
P.O. Box 30945
2500 GX The Hague
The Netherlands

Your reference	Your letter dated	Reference	Date:
		CGM/031126-01	26 November 2003

Subject:
Monitoring report: Coexistence in agriculture

Dear Mr Van Geel,

Following the recent debates about coexistence in agriculture, COGEM has compiled a monitoring report on this issue. It is our pleasure to present you with a copy of this report.

Summary:
COGEM points out that the issue of coexistence is not an environmental safety problem but an economic and societal problem. The consumer's and producer's freedom of choice as well as the right of different forms of agriculture to exist, are key issues within this problem. The debate about coexistence should not be restricted to the cultivation of genetically modified crops versus non-genetically modified crops but should be extended to the entire supply chain (seed producers, growers, processing industry, distributors, etc) and, in particular, to the possibilities for separating supply chains. The consumer's freedom of choice is directly dependent on the potential markets and viability of the different types of cultivation.
Coexistence is only possible if the parties involved agree upon effective rules, such as threshold values and isolation distances. COGEM notes that the isolation distances between genetically modified and non-genetically modified seeds proposed by the EU, lack a clear scientific basis. Therefore COGEM recommends a gradual development of these isolation distances, based on further research. When threshold values for permitted mixing with genetically modified organisms are established, the effects on later phases in the chain must also be considered. Furthermore the threshold values should be realistic, in other words feasible for the grower, enforceable for the government and acceptable for consumers. Measures imposed must do justice to the size of the problem. Training and certification are important instruments for realising the separation of supply chains.

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A copy of the complete monitoring report is enclosed.

Yours sincerely,

Prof. B.C.J. Zoeteman
Chair COGEM

This monitoring report is also addressed to the Minister of Agriculture, Nature and Food Quality, Dr C.P. Veerman, and a copy has been sent to him.

cc. Minister of Economic Affairs, Mr L.J. Brinkhorst

Coexistence in agriculture

CGM/031126-01

Contents

Summary

COGEM points out that the issue of coexistence is not an environmental safety problem. Coexistence is an economic and ethical-societal problem which involves the consumer's freedom of choice as well as the right of organic, conventional and GM agriculture to exist. Therefore, the debate about coexistence should not be restricted to the cultivation of genetically modified crops (GM crops) but should be extended to the entire chain and to the possibilities for separating chains. Only then can the freedom of choice and the right of different forms of agriculture to exist be guaranteed.

The public and political debate about coexistence concerns the possibility of GM crops being cultivated harmoniously alongside conventional and organic crops (2). Due to mixing and outcrossing, the cultivation of GM crops could lead to the contamination of conventional or organic crops and the products arising from these, including seed.

In the public debate, some of the parties involved refer to coexistence as an environmental safety problem. COGEM points out that environmental safety and food safety are sufficiently protected under the current legislation. The cultivation of GM crops in Europe is only permitted if a risk assessment has taken place as laid down in EU Directive 2001/18. Further, the legislation for the introduction of GMOs into the environment is based on the precautionary principle. The rules for food safety are laid down in EU regulation 2002/178.

The cultivation of GM crops can result in considerable economic damage for non-GM growers, if the mixing of products occurs. This can seriously limit the potential markets of farmers who wish to cultivate GMO-free crops. The consumer's freedom of choice can be limited if the cultivation of conventional, organic or GM crops becomes impossible.
COGEM anticipates that coexistence will only be possible if effective rules that relate to the field situation are agreed between the various parties involved. To guarantee the coexistence of the different types of agriculture, agreements about threshold values for the permitted mixing with GMOs for crops, product processing and seeds are necessary. This will also prevent reciprocal notices of liability.

COGEM points out that the discussion on coexistence focuses on the cultivation of crops and the management measures associated with this and pays little attention to separation in the production chain. However, policy with respect to coexistence should involve the entire chain from seed to the labelled product for the consumer.

Due to unintended mixing in the chain, the specified threshold value of 0.9% for unintended mixing may no longer be attainable in later stages of the same chain, with the result that GMO-free products or semi-products are no longer present. Consequently, the consumer's freedom of choice will be limited and the potential markets of non-GMO (conventional and organic) farming threatened. The threshold value for the end product should be the starting point for determining threshold values for the different stages in the chain. Furthermore, the threshold values should be realistic, in other words feasible for the grower, enforceable for the government and acceptable for consumers. These threshold values must be set in accordance with the characteristics of the crop, the method of cultivation and the means of consumption. The retention of consumer confidence and the competitive position of the parties involved in the chain, as well as the possibility of detection, should be considered when determining the threshold values.

Within the framework of the coexistence issue, COGEM points out that insufficient insight and knowledge appear to be available at present to draw up crop-specific criteria for threshold values, chain separation and isolation distances (distance between conventional and GM cultivation to the outcrossing). Further scientific research and experience with chain separation are necessary for this. COGEM calls for large-scale research with GM maize to gain experience in chain separation and a step-by-step and case-by-case approach to the formulation of further standards.

In the autumn of 2004, COGEM will report on the technical and scientific aspects of coexistence, based on its own research and recently published reports concerning this material. On COGEM's behalf a survey into the possibility of GM-free chains is currently underway. This is examining the bottlenecks as well as the possible solutions, the efficacy of these solutions and the questions and expectations of all parties involved, including the consumers. In addition to this, COGEM has commissioned research into the vitality of pollen and isolation distances, and into mathematical models for predicting the degree of outcrossing. Also of importance are a recently published report from the *Danish Institute of Agricultural Studies* on coexistence (1) and the results concerning outcrossing between GM and non-GM maize and between GM and non-GM rape from the British *Crops and Farm Scale Evaluations*, which will be completed in 2004.

COGEM is of the opinion that the personal responsibility of parties involved in the chain is important and calls for the certification of GMO cultivation and the training of growers, contract workers and others involved in handling GM crops as a necessary means of preventing unintended mixing.

With this monitoring report, COGEM wants to make a contribution to the debate about the coexistence of genetically-modified crops with conventional and organic

crops. In this discussion, COGEM has the role of an independent scientific and advisory and monitoring body that clarifies the various aspects of the issue for the purpose of political decision-making. COGEM does not issue any political or policy recommendations concerning the ethical-societal aspects.

1. Introduction

The coexistence of GM crops with conventional and biological crops is a subject high on the agenda of European and national policymakers as well as the parties directly involved (producers, consumers, citizens) and scientists. The public and political debate about coexistence concerns the possibility of GM crops being cultivated harmoniously alongside conventional and organic crops. Due to mixing and outcrossing, the cultivation of GM crops could lead to the contamination of other non-GM (conventional or organic) crops and the products arising from these, including the seed. The opinions of discussion partners such as farmers, NGOs and industry differ with respect to the assessment of this possible consequence and the role they think that the government should fulfil in order to prevent this.

At present GM crops are not cultivated on a commercial basis in the Netherlands and only a few small-scale field experiments are being carried out. COGEM does not expect this situation to change in the near future, in view of the current developments in applications for licences to introduce GM crops into the environment. In the rest of Europe only a few GM crops are grown on a small scale, although in Spain genetically-modified maize is grown on a commercial basis. However, in other parts of the world GM crops are grown on a large scale, especially soya, cotton, maize and rape.

European directives have recently been published for the development of national strategies and the best-practice procedures for safeguarding the coexistence of genetically-modified crops with conventional and organic farming (2). European policy has also been formulated for other aspects. Regulations have recently been published for the presence of GMOs in foodstuffs and animal feeds (3,4) and an amendment of the European directive is being prepared with respect to the presence of GMOs in seeds. The EU has also published a working document on the compulsory labelling of seeds, in which different percentages of permitted mixing apply per crop (5).

One of the basic premises of the European directive is that no form of agriculture may be excluded in the EU. The consumer’s and producer’s right to choose means that the maintenance of choices is important and that nobody may be forced into making a given choice. It was also noted that there is a great diversity in agriculture in Europe, which is determined by economic, cultural and natural factors. The member states have therefore been given a considerable degree of freedom for the development and implementation of measures concerning coexistence.

Member states are developing their own scenarios to make tangible national policies. On 1 July 2003, the Dutch Ministry of Agriculture, Nature Management and Food Safety organised a meeting of stakeholders, in which it presented its vision for the

coexistence of genetically modified crops with conventional and organic crops. On 2 October 2003, the Minister of Agriculture, Nature Management and Food Safety submitted his viewpoint to the Dutch Lower House in the form of a letter (6). In this letter the Minister calls upon the interested parties to work together in finding practical solutions and to agree upon measures for the cultivation of GM crops alongside conventional and organic crops.

On 11 July 2003, COGEM sent a letter with action points to the Minister of Agriculture, Nature Management and Food Safety. This contained a summary of the elements which COGEM considers to be important in the discussion about coexistence and an announcement of a forthcoming, more detailed monitoring report about this issue. This is the more detailed report. During the course of 2004, COGEM will also report on the technical and scientific aspects of coexistence.

2. Preconditions

A number of preconditions are important in the debate about coexistence. First of all these are the aforementioned EU directives, in which threshold values for unintended, unavoidable mixing with GMOs are laid down, from seed to product (2, 3, 4, 5).
In addition to the specific guidelines, a white paper has been published about European governance that provides procedural frameworks within which the European countries can formulate their own policy (7). The following apply as general procedural principles for good government policy: openness, participation, accountability, efficiency, efficacy, coherency, proportionality and subsidiarity. Therefore in line with these principles, it is important that in the public discussion about coexistence and the related decision-making process, various opinions are considered, information is obtained and openness about the basis on which government decisions are made is promoted.
In the Dutch context, the ministerial memorandum *Responsible and careful testing* indicates which specific points for consideration are regarded as relevant, within the applicable European frameworks, for the assessment of GMO introductions in the environment (and that is what coexistence involves). These are: freedom, welfare, health and safety, and sustainability (8).

These general principles have been further elaborated into preconditions which provide guidance with respect to coexistence. Freedom is interpreted to mean freedom of choice: the freedom of consumers to decide whether or not to buy genetically-modified products and to be continued to be safeguarded from issues they do not desire as well as the freedom of farmers to grow what they want, what they consider to be economically advantageous etc. The values of welfare, health, safety and sustainability are safeguarded by monitoring environmental safety and food safety.

3. Coexistence: analysis of the issue

Coexistence means the possibility of GM cultivation harmoniously existing alongside conventional and organic farming (2). For the COGEM a key aspect of this is that all possible forms of agriculture must be able to exist alongside each other without mutual exclusion. The public and political discussion about coexistence concentrates on the fact that due to mixing and outcrossing, the cultivation of GM crops can lead to the contamination of other, conventional or organic, non-GM crops and their products including seeds for sowing. This in turn leads to limitations in the consumer's freedom of choice, the loss of potential markets for non-GMO growers and economic damage for the growers involved and the processing industry.

Some of the parties involved also consider coexistence be an environmental safety problem (9). COGEM points out that both the environmental safety and food safety of GM crops are safeguarded by current legislation. The cultivation of GM crops in Europe is only permitted if a risk assessment has taken place as laid down in Directive 2001/18. Possible unforeseen and irreversible consequences are also included in this risk analysis. The present legislation provides safeguards in the form of impartial risk analysis and is based on the precautionary principle.
Safety is a frequently recurring issue in the debate. Therefore, COGEM recommends that this question is not ignored in government publications about the safety measures chosen and that information about existing authorisation requirements and monitoring measures is provided.

In COGEM's opinion, the issues related to coexistence are primarily an economic and societal problem in which the entire production chain must be considered. The consumer’s freedom of choice and the possibilities for different forms of agriculture to exist are central themes in analysing the issue of coexistence and investigating the implications of the related policy. The discussion must not be reduced to the contrasting arguments of gene technology (and industry) on the one hand and organic farmers on the other. All forms of agriculture (organic, conventional and GMO) should be involved in this.

Table 1: *Phases in the production chain and moments at which the mixing between GM and non-GM material can occur (this is not an exhaustive summary but a global overview).*

Phase in the chain	***Occurrence of mixing***
Seed and propagating material	Outcrossing Storage of prior crop Seed etc. entering agricultural machinery, prior to and during the cultivation Mixing due to harvesting machines that were not thoroughly cleaned Transport Mixing during the cleaning of the seed (machines) Incorrect labelling of seed and propagating material
Cultivation	Outcrossing Storage of prior crop Seeds and propagating material entering agricultural machinery prior to and during the cultivation Mixing due to harvesting machines that were not thoroughly cleaned
Transport and storage	Mixing due to material left in lorries, holds of ships etc. Mixing in silos etc. (mixing due to material left behind, mixing with other batches)
Processing industry (food industry, feed industry etc.)	Machines or production lines that were not thoroughly cleaned Mixing of batches during processing Mixing of semi-finished products
Intermediate and wholesale trade, auction	Mixing during storage: silos etc. Mixing of batches Sale of mixed batches Incorrect labelling
Retail trade	Incorrect labelling

In order to realise the consumer's freedom of choice and the right of different forms of agriculture to exist, the entire chain and not just the cultivation of the crop should be considered. Unintended large-scale mixing of GMO and non-GMO (organic or conventional) products in the chain, is a serious threat to both the consumer's freedom of choice and the potential markets of the non-GMO grower. Therefore COGEM argues that the separation of chains should be at the forefront of discussions about coexistence. If the issue is only discussed at the level of cultivation with a focus on outcrossing, other factors that can result in mixing are left out of the picture. The policy should not be solely directed towards the separation of crops but also to the separate delivery of seeds and materials and the separate transport and processing of products.

4. Rules: management measures and agreements

COGEM is of the opinion that coexistence is only possible if the different parties involved (seed producers, growers, distributors, processing industry, hauliers, retailers, consumers and consumer organisations, and the government) agree upon clear rules and criteria. Depending on their nature, these agreements can be at a local, regional, national, European and even global in level. It should be noted that the policy must do justice to the size and severity of the issue in the Netherlands. In practice this will often result in crop-specific measures. During the assessment of the various policy options it is also important that the following aspects are considered, feasibility, costs, administrative burden, enforceability, verifiability, sensitivity to fraud, damage (including damage to the reputation), liability, retention of consumer confidence and competitive position, and societal consequences. Further COGEM notes that with respect to the freedom of choice, the EU has chosen the previously mentioned threshold values for unintended, unavoidable mixing in the product. With this it should be noted that these threshold values are marketing standards. COGEM points out that the extent to which this standard is supported by consumers and growers of conventional non-GM products is unclear. It is likely that consumers and producers of organic products will have their doubts about this standard.

The establishment of threshold values for the unintended, unavoidable mixing of GMOs with conventional non-GMO products needs to have as broad a basis of support as possible. COGEM believes that these threshold values must be realistic. That means that parties seeking the absence of GMOs in products need to recognise that 0.00% is not a feasible threshold. Even if there were a Dutch ban on GMO cultivation, the complete absence of GMOs is impossible, bearing in mind that the introduction of GMOs elsewhere is already at an advanced stage. In COGEM's opinion the threshold values could vary at present between 0.1% and 0.9%, depending on the characteristics of the crop and the method of cultivation (on large or small plots). Recognised independent organisations should have to provide a basis for the threshold values by means of scientific research, so that the support for these values can be increased. This research should also reveal whether lower values are possible and/or desirable.

Detection must of course be possible if the threshold values are to be credible. Consumer confidence and the producer’s reputation will soon be damaged if the accuracy cannot be demonstrated.

COGEM points out that in establishing threshold values for the separate steps in the chain, greater consideration will need to be given to effects which can become manifest at later phases in the chain. The EU's recently proposed limit between GMO and GMO-free seed, which is important for the grower's freedom of choice, varies

from crop to crop and is between 0.3% and 0.7% (4). COGEM points out that the scientific basis for these choices is unclear. More specifically, with these threshold values for seeds the question arises as to whether the final harvest of the non-GMO grower will indeed remain under the threshold value of 0.9% for unintended mixing, in view of the possible occurrence of outcrossing in the field. Little data is available concerning the possible increase of mixing later in the chain, during the storage and processing of agricultural products. Consequently it is not clear whether the final product can still satisfy the threshold values set. COGEM also points out that when the percentages are determined, consideration must be given to the nature of the crops and how they are consumed (seed and leaf crops; seed crops for which the seed is the purpose or a negligible side effect).

At present the three most important crops from the perspective of GMO cultivation are: maize, potato and rape. COGEM recommends that in the Netherlands, large-scale experience in the separation of each phase of the chain should be gained with one of these crops. If this research is started soon and proceeds apace then it can be concluded before the large-scale cultivation of GM crops takes place in the Netherlands.

Maize is the experimental crop of choice because it is one of the most studied crops. In addition to this, almost all marketing authorisation requests for cultivation in Europe concern genetically-modified maize and this maize is already cultivated commercially in Spain. This means that permission to cultivate genetically-modified maize on a commercial basis in the Netherlands has already been granted. Maize cannot outcross with its wild relatives in the Netherlands because there are no wild relatives (10). Furthermore, there is no chance of maize establishing in the Netherlands (10). Finally, crop-specific measures can be developed based on the experiences with maize.

Over the course of time subsequent applications for the cultivation of other crops as well as appropriate measures can be established. That means that measures will be formulated in a step-by-step and a case-by-case approach that can be supported by both concrete experience and scientific research.

Further COGEM points out that data from experience in separating chains, for example that between maize for human consumption (sweet corn) and maize for processing (cornstarch) or between fodder wheat and milling wheat are important. COGEM calls for a further inventory and analysis of such data.

With respect to legislation it is extremely important that the personal responsibility of parties involved in the chain is clearly stated. This can be linked to the current legislation in this area. In COGEM's opinion, training about how to deal with GMO crops so as to avoid mixing and the certification of cultivation are a necessary part of

this. Training and certification should not solely be for growers but should also apply to other parties involved such as contract workers etc. For example, for rape it has been demonstrated that 3.9 kilo of seed can remain in the combine harvester used during the harvesting (11). If as a result of insufficient knowledge and training the machine is not properly cleaned, considerable contamination of plots and batches of rape can occur.

In autumn 2004, COGEM will report on the technical and scientific aspects of coexistence, based on its own its own research and recently published reports concerning this matter. On COGEM's behalf a survey into the possibility of GM-free chains is currently underway. This is examining the bottlenecks as well as the possible technical, agricultural, logistical and legal solutions and the efficacy of these are being assessed. The questions and expectations of stakeholders and the consumer are also being itemised. Further, within the framework of the outcrossing issue, COGEM has commissioned research into the vitality of pollen and isolation distances, and on mathematical models to predict the degree of outcrossing. Also of importance are a recently published report from the *Danish Institute of Agricultural Studies* on coexistence (1) and the results concerning outcrossing between GM and non-GM maize and between GM and non-GM rape from the British *Crops and Farm Scale Evaluations*, which will be completed in 2004.

5. The public debate

A number of normative principles have been formulated with respect to coexistence as given in section 2 (page 5). These are shared by all parties involved. However, there appears to be a mishmash of different questions in the discussion about coexistence. There is no common, unequivocal view concerning the essence of the conflict. This also means that at present no consensus has been reached concerning the prioritisation of the relevant values and interests. Therefore in COGEM's view, the issue should not be too quickly reduced to a single question, but attention should be paid to an open articulation and itemisation of disputed and conflicting interests and values (12). For example, the marketing standard with a threshold value of 0.9% will not yet convince all consumers of organic products.

In this respect, it should be noted that to organic farmers and some NGOs coexistence is not only a possible problem of safety and freedom of choice but also a threat to their integrity. The term integrity is very much an historic and culturally-determined ethical notion. An appeal to integrity is a referral to one’s own, often exalted standards, which are frequently related to the identity or philosophy of certain groups, in which values such as integrity, naturalness, honesty etc are high on the agenda. For example, in the case of farming this could be the philosophical vision on the relationship between humans and nature and how humans treat nature (13). Accordingly, the mixing of GMO crops with other crops has much wider implications than those considered in assessing the environmental safety. In this context, mixing has a moral status and is seen as contaminating, infectious and polluting. It damages the integrity.

At the same time, the responsible policy bodies state that the present legislation provides sufficient safeguards with respect to safety issues as well as the growers' and consumer’s freedom of choice. Policy bodies therefore all too quickly view coexistence as an economic problem. However, it is not just governments that are interested in the economic aspect of the coexistence issue. Conventional farmers are frequently against mixing, not as a matter of principle but because they do not wish to suffer any economic damage due to consumers or producers no longer wishing to purchase their products as a consequence of contamination with GMOs above the established threshold values. Organic farmers do not wish to suffer damage as a consequence of coexistence either. If the distances between GM and organic crops are too small so that mixing of crops occurs then this could cause economic damage for the organic farmers should the usual buyers stop purchasing, even if the established threshold values have not been exceeded. The worsening of the individual grower's economic position is often cited in the objections to coexistence. This not only holds for the Dutch situation but also at a global level. Large companies could drive small

farmers out of the market, or force them to purchase seed instead of the farmers producing seed themselves.

Reducing the coexistence issue to an economic problem with keywords such as damage, responsibility and liability is in COGEM's view too limited. However, COGEM observes that these economic and legal questions play an important role in the discussion about coexistence. Liability will be a problem if the cause of mixing cannot be established. Damage, responsibility and liability will have to be explicitly considered in the formulation of policies concerning coexistence. COGEM points out that it will probably be difficult to define the terms concerned in such a way that a complete coverage can be developed within the existing legal frameworks. Therefore an exploration of the various policy options related to this is necessary.
Further, COGEM points out that the development of evidence-based threshold values for the policy and the associated scientific consensus can prevent a culture of liability and claims.

With respect to the aspect of the damaging of the integrity, COGEM wishes to point out that such normative views should not be dismissed as irrelevant. COGEM is of the opinion that these must be considered in the articulation and analysis of the issue prior to the formulation of policies on coexistence. Further, it can be expected that as soon as a judgement is issued about coexistence at a case level, arguments drawn from such visions will be presented, such as honesty or naturalness (12). In COGEM's view these should also be taken seriously when choices are made. The democratically taken decisions must be communicated to all parties involved in a transparent manner, so that the factors considered are clear to everyone.

6. Conclusions

COGEM points out that the issue of coexistence is not an environmental problem but an economic and societal problem.
COGEM argues that the consumer's and growers' freedom of choice and the possibilities of different types of agriculture to exist must be central themes in the debate and the policy measures that might be taken.
COGEM points out that the debate about coexistence must focus on the possibility of separating the entire production chain and not solely on the cultivation and the measures associated with this.
The certification of GMO cultivation and the satisfactory training for growers and other parties involved can be a valuable means of preventing the mixing of products.
COGEM calls for research into the possibilities of chain separation and recommends an exploration of the damage, responsibility and liability aspects.
COGEM recommends that in the government publications about the safety measures chosen with respect to coexistence, information about the existing authorisation requirements and monitoring measures is provided.
In the second half of 2004, COGEM will publish a monitoring report about the technical and scientific aspects of coexistence.

References

1. Danish Institute of Agricultural Sciences. Report from the Danish Working Group on the Co-existence of Genetically Modified Crops with Conventional and Organic Crops (2003). Plant Production 94.

2. De Commissie van de Europese Gemeenschappen (2003). Aanbeveling van de Commissie van 23 juli 2003 over richtsnoeren voor de ontwikkeling van nationale strategieën en beste werkwijzen ter waarborging van de coëxistentie van genetisch gemodificeerde gewassen met conventionele en biologische landbouw (kennisgeving geschied onder nummer C(2003) 2624. Publicatieblad Nr. L 189 van 29/07/2003 blz. 36-47.

3. Het Europees Parlement en de Raad van de Europese Unie (2003). Verordening (EG) nr. 1829/2003 van het Europees Parlement en de Raad van 22 september 2003 inzake genetisch gemodificeerde levensmiddelen en diervoeders, Publicatieblad Nr. L 268 van 18/10/2003 blz. 1-23.

4. Het Europees Parlement en de Raad van de Europese Unie (2003). Verordening (EG) nr. 1830/2003 van het Europees Parlement en de Raad van 22 september 2003 betreffende de traceerbaarheid en etikettering van genetisch gemodificeerde organismen en de traceerbaarheid van met genetisch gemodificeerde organismen geproduceerde levensmiddelen en diervoeders en tot wijziging van Richtlijn 2001/18/EG, Publicatieblad Nr. L 268 van 18/10/2003 blz. 24-28.

5. SANCO/1542/2003. De amendering van de EU richtlijnen 66/401/EEC, 66/402/EEC, 2002/54/EC, 2002/55/EC, 2002/56/EC en 2002/57/EC.

6. Minister van LNV, (2003). Brief van de minister van LNV van 2 oktober 2003 met de beleidslijn inzake de coëxistentie van gg-gewassen, conventionele- en biologische gewassen, LNV0300615.

7. Commissie van de Europese Gemeenschappen (2002). Europese governance. Een witboek. COM(2002) 0713, d.d. 11 december 2002.

8. Nederlandse Regering (2003). Nota Verantwoord en zorgvuldig toetsen, Tweede Kamer, vergaderjaar 2002-2003, 27 428, nr. 39.

9. Press release, Friends of the Earth Europe, Greenpeace, European Environmental Bureau (EEB), (2003). Co-existence of GMOs and non-GM agriculture: the European Commission dodges its responsibility. www.foeeurope.org/press/2003/GR_03_March_co-existence.htm.

10. Hin, C.J.A., (2001). Landbouwkundige risico's van uitkruising van GGO-gewassen. Centrum voor Landbouw en Milieu (CLM).

11. Norris, C., Sweet, J., (2002). Monitoring large scale releases of genetically modified crops. Report of DEFRA commission EPG 1/5/84.

12. COGEM, (2003). Naar een integraal ethisch-maatschappelijk toetsingskader voor moderne biotechnologie, CGM/030618-02.

13. Op deze kwestie wordt dieper ingegaan in het voor de COGEM vervaardigde rapport: Verhoog, H., (2002). GMO's in de Landbouw: Maatschappelijke en Ethische Aspecten.