

Genetically contaminated seeds:

Austrian “Purity Requirement” successful for past three years

The Austrian Seed Law prohibits the sale of seeds contaminated above the detection limit with Genetically Modified Organisms (GMO). This “Purity Requirement” is unique in the 25 EU member states. The present fact sheet outlines the history of this regulation, explains the legal requirements and summarises the experience of the first three years: Hundreds of tests were conducted, but practically no contamination above the threshold was detected – clear evidence that a purity requirement modelled on the Austrian example is workable.

Seed scandal 2001

In May 2001 Greenpeace Austria published test results showing that maize seeds of the variety PR39D81 by Pioneer were contaminated by GMO not authorised for release in Austria. Gradually it emerged that almost 180 tons of GE contaminated seeds, affecting an area under cultivation of around 6,000 hectares, had been released into the environment.¹ About 2,000 hectares of it were eventually destroyed, the Austrian State paying € 2.67 million in compensation.^{i,ii}

Threshold discussion

All this time the seed and biotech corporation in question, Pioneer, had disobeyed a ruling to destroy the fields concerned, maintaining that GE contamination is unavoidable and calling for high tolerance thresholds as a solution. The Austrian Ministry of Agriculture followed this line of argumentation when, in October 2001, it submitted a draft regulation on genetically engineered seeds which proposed a tolerance level of 0.5% for contamination with GMO authorised for release. A tolerance level of 0.1% was proposed for organic seeds and for contamination with unauthorised GMO. This proposal was met by a storm of protest, as the tolerance level of 0,5% was seen as far too high.² An opinion poll commissioned by Greenpeace and carried out among farmers using conventional seeds showed that by far the majority rejected tolerance thresholds and asked for measures to avoid contamination instead.ⁱⁱⁱ Much importance was given to the view of the Presidential Conference of the Austrian Chambers of Agriculture (PRÄKO), the official body representing the interests of

¹ Apart from variety PR39D81, two more maize varieties by Pioneer, Ribera and Monalisa, were also affected. Contamination was proved above all with the GE maize variety MON810, but with BT11 and BT176 as well. At this moment BT11 was approved for import into the EU, but was not allowed to be cultivated here, MON810 and BT 176 may not be imported into Austria due to national bans. The level of contamination was below 0.1% in some samples and between 0.1% and 0.5% in others. Batches with a contamination of more than 0.5% were also found but finally removed from the market before sowing.

² The Austrian Seed Authority detected GE contamination in 16 out of 230 maize samples (7%) in 2001, only about half of which (a total of just 4%) were contaminated above 0,1%. This means that 96% of the tested batches did not exceed the 0.1%-level, even though the focus of the control tests was mainly on seeds imported from non-EU states where the danger of contamination is seen as specially high. (Source see reference i)

Austrian farmers, who requested that contamination not only in organic but also in conventional seeds should not exceed the detection limit.

Solution: Regulation on Seeds and GE

Eventually, the Regulation on Seeds and GE as well as an amendment of the “Methods for Seeds and Varieties” (see annex) came into effect on 1 January, 2002. These regulations state that every batch of seeds sold in Austria must be tested by the seed producer for contamination with GMO, applying specified sampling and testing methods.³ These regulations are applicable to both conventional and organic seeds without distinction, nor do they distinguish between contamination with authorised GMO and those not authorised for release. The applicants have to confirm that they have taken appropriate measures to avoid GE contamination.

The authorities take action if contamination exceeding 0.1% is detected in test samples. Sanctions include seizure of seed and fines of up to € 14,500, and up to € 21,800 in case of recurrence. The 0.1% threshold for taking action is due to statistical variation in the testing methods applied for initial testing: If the seed tests in the initial tests conducted by the seed company show no contamination, this means that 95% of further tests will show results of between 0% and 0.1%.⁴ The testing methods are based on concepts developed by the international organizations OECD, ISTA and EU.^{iv} The costs for initial testing and quality management including avoidance measures are met by the seed company, those for control testing are met by the authorities.

Experience confirms “Purity Requirement”

The Austrian Seed Authority carries out tests for contamination with GMO on four different levels:

- a) In the framework of the approval and certification of seeds, i.e. during the process of certification of seeds by the Austrian Seed Authority (mainly domestic seed production, but also seeds of foreign origin⁵).
- b) In the framework of control measures for traded seeds, which are primarily applied to seeds imported from EU states and third countries⁶.
- c) In the framework of seed production by taking random samples of basic seeds and carrying out tests of crops leaves in the multiplication fields plus control grows sown by the Seed Authority (breeding seeds, early stage seeds and basic seeds).
- d) In the framework of the authorisation of varieties (since the 2002/03 season).

³ Article 3 of the Regulation on Seeds and GE refers to the “Methods for Seeds and Varieties“ which were amended effectively the same day the Regulation came into effect. The “Methods for Seeds and Varieties“ stipulate the sampling and testing procedures to be followed. Just like the primary Regulation, the “Methods“ are legally binding (see also annex).

⁴ The threshold specified in the Regulation is therefore not 0.1, but -0- in the sense of not detectable applying the stipulated methods. The value 0.1 refers to the tolerance (LQL = Lower Quality Level) in follow-up and control tests and is consistent with the threshold value -0- in terms of methods and statistics.

⁵ Apart from Austrian seeds, maize seeds from Canada, Croatia, Hungary, France, Chile and the US, Slovakia and Romania were also tested in some instances. Soy Seeds originated from Austria, Canada and France, Rape seeds from Austria and France.

⁶ A large part of the tested maize batches was produced in France and the rest originated from Hungary, Slovenia, Germany, Turkey, the US, Chile, the Czech Republic and Slovakia. Soy seeds originated from Canada, Switzerland and France. Tested rape seed was produced in France, Germany, UK, Hungary, Slovenia, Rumania the Czech Republic.

Additionally, the company records of seed producers and seed retailers are audited.

For the seasons 2001/02^v and 2002/03^{vi} and 2003/04^{vii} detailed final results of the controls by the authorities are available now⁷.

Table 1 summarises the results of tests conducted in the framework of the certification process and control measures of traded seeds (seeds available at the Austrian market):

Plant Species	Certification		Controls of Seed Trading		Total	
	Samples (Varieties)	Contaminated	Samples (Varieties)	Contaminated	Samples (Varieties)	Contaminated
Season 2001/02						
Maize	56(39)	0	56(42)	0	112(81)	0
Soy	28(10)	0	3(3)	0	31(13)	0
Rape	-	-	5(5)	0	5(5)	0
Sum	84(49)	0	56(50)	0	148(99)	0
Season 2002/03						
Maize	56(40)	0	50(43)	0	106(83)	0
Soy	20(11)	0	1(1)	0	21(12)	0
Rape	9(9)	0	8(8)	0	17(17)	0
Sum	85(60)	0	59(52)	0	144(112)	0
Season 2003/04						
Maize	58(42)	0	43(37)	0	101(79)	0
Soy	20(10)	1 (<0,1%)	-	-	20(10)	
Rape	8(7)	0	8(8)	0	16(15)	0
Sum	86(59)	0	51(45)	0	137(104)	0
Seasons 2001-2004						
Sum	255(168)	0	166(147)	0	429(315)	0

Table 1: Results of tests in the framework of the certification process and control measures of traded seeds for the seasons 2001/02, 2002/03 and 2003/04. The number of samples is equal to the number of tested seed lots, the number of tested varieties is lower in case more than one lot of a specific variety has been tested.

As the above table shows, 429 tests were carried out in the first three years after the regulation came into effect, and the results were negative in all cases but one. The contamination level of the one “positive” sample was below 0,1% and therefore legal according to the seed legislation.

In 2001 the authorities in some cases detected contamination of seeds for seed production only after they had been sown, so they tried to limit the possible damage by removing conspicuous looking plants from the field. The experience with this method suggests that it is an effective measure for reducing contamination during multiplication.⁸ The “Methods for

⁷ A season comprises the winter rape grown in autumn and the crops cultivated the following spring or summer.

⁸ As early as 2000, all basic seeds for maize seed production in Austria were intensively tested in the framework of field monitoring. In 4 out of 337 batches tested, contamination with GMO authorised in the EU (at around 0.1%) was detected. As the results were available only after the seeds had been sown, it was tried to “clear up” the seeds by identifying and removing the deviant plants (“outcrosses”). This strategy seems to have been at least partly successful, as the harvested seeds were contaminated to a lesser extent than the basic seeds. Incidentally, the analyses showed that these outcrosses produced significantly higher amounts of pollen than their male counterparts of pure varieties, i.e. their outcrossing potential is significantly increased. (Source see Reference i).

Seeds and Varieties” were consequently amended to this effect^{viii} and producers were urged to apply this method in order to reduce contamination with GMO during seed production.^{ix}

Table 2 summarises the results of tests conducted on basic seeds and crops in the multiplication fields⁹:

Plant Species	Basic Seeds		Multiplication Field			
	Samples	Contaminated	Fields/Varieties	Plants	Outcrosses	GMO
Season 2001/02						
Maize	12	0	18/16	992.100	220	1
Soy	8	0	5/5	441.750	24	2
Rape	-	-	-	-	-	-
Sum	20	0	23/21	1.433.850	244	3
Season 2002/03						
Maize	11	0	15/14	1.133.440	195	2
Soy	1	0	5/5	252.300	8	0
Rape	5	0	2/2	21.300	15	0
Sum	17	0	22/21	1.407.040	218	2
Season 2003/04						
Maize	11	0	16/14	1.068.900	224	0
Soy	1	0	4/4	209.500	11	0
Rape	4	0	-	-	-	-
Sum	16	0	20/18	1.278.400	235	0
Seasons 2001-2004						
Sum	53	0	65/60	4.119.290	697	5

Table 2: Results of tests on basic seeds and crops in the multiplication fields for the seasons 2001/02, 2002/03 und 2003/04. The right side of the table shows the results of leaf tests carried out in the field. In this table, “Fields” refers to the number of fields examined (which is equal to the number of seed lots), “Varieties” to the number of seed varieties included, “Plants” to the number of plants present on the fields under examination, “Outcrosses” to the number of plants removed from the fields because they looked conspicuous, and “GMO” to the sum of all outcrosses that were identified in analyses as GMO.

In none of the 53 samples of basic seed tested a contamination with GMOs was detected. In a few cases, very low contamination could be detected by testing the leaves in the multiplication field itself: Only 5 of the outcrosses 697 tested (out of a total of 4.119.290 plants) were genetically modified. For the year 2002, these results translate into a level of contamination of less than 0.01% for maize and less than 0.003% for soy¹⁰. The outcrosses were removed in the years 2002 and 2003, and afterwards no genetic modification was detectable in the harvested seeds any more.

⁹ The basic maize seeds tested originated predominantly from France and also from Chile, Canada, Poland, Austria, Germany, Italy and the US. Soy seeds originated predominantly from Canada and also from France and Austria. Rape seed originated from France, Germany and Denmark.

¹⁰ In this case the seeds originated from the US (maize) and Canada (soy).

Tabelle 3 summarises the results of tests conducted on control grows the Seed Authority has sown¹¹:

Plant Species	Control Grows			
	Fields/Varieties	Plants	Outcrosses	GMO
Season 2001/02				
Maize	53/?	9.010	22	0
Soy	84/15	58.800	30	0
Rape	-	-	-	-
Sum	137/?	67.810	52	0
Season 2002/03				
Maize	97/?	17.460	43	0
Soy	30/13	12.200	10	0
Rape	37/24	8.100	9	0
Sum	164/?	37.760	62	0
Season 2003/04				
Maize	116/?	20.880	24	0
Soy	54/17	21.600	24	0
Rape	25/20	10.000	20	0
Sum	195/?	52.480	68	0
Seasons 2001-2004				
Sum	496/?	158.050	182	0

Table 3: Results of tests on plants of control grows carried out by the Seed Authority for the seasons 2001/02, 2002/03 and 2003/04. The right side of the table shows the results of leaf tests carried out in the field. In this table, "Fields" refers to the number of fields examined (which is equal to the number of seed lots), "Varieties" to the number of seed varieties included, "Plants" to the number of plants present on the fields under examination, "Outcrosses" to the number of plants removed from the fields because they looked conspicuous, and "GMO" to the sum of all outcrosses that were identified in analyses as GMO..

During the seasons 2001-2004 a total number of 496 seed lots were tested in control grows and no contamination was detected.

In the framework of the authorisation of new varieties, tests for GMO have been conducted since 2003. Table 4 summarises the results.

GM contamination was detected in 4 out of 73 samples tested. One of the batches in question was withdrawn by the applicant, the remaining three were sold on the market. These sales did not violate the Regulation on Seeds and GE as the level of contamination in all cases was below 0.1%.

¹¹ The maize basic seeds originated from France, Chile, Germany, the US, Italy, Canada, Poland, Slovakia, Czech Republic, Hungary and Austria. The Soy basic seeds were produced in France, Canada, Switzerland and Austria,. Rape basic seeds originated from Denmark, Germany, France, UK and Austria.

Plant Species	Samples	Contaminated
Saison 2002/03		
Maize	41	4 ¹² <0,1%
Soy	1	0
Rape	6	0
Sum	48	4
Season 2003/04		
Maize	15	0
Soy	3	0
Rape	7	0
Sum	25	0
Seasons 2002-2004		
Sum	73	4 ¹²

Table 4: Results of tests in the framework of the authorisation of varieties in the seasons 2002/03 and 2003/04.

GE-free areas as an additional measure

So-called “closed cultivation areas” are to be created to ensure that seed production in Austria stays GE-free even if GE plants are cultivated. In this context, the term “closed cultivation areas” denominates geographical areas within which no GE varieties of the crop cultivated in this area for seed multiplication may be grown in order to protect GE-free seed production. For example, no GE maize may be grown in a certain radius around fields designated for the production of maize seeds. A detailed study was conducted to evaluate the situation in Austria. The unambiguous conclusion is that such areas of protection are necessary for maize, rape and sugar beet in any case, even if high contamination levels of between 0.3 and 0.5% were tolerated in seeds.^x In October 2004 the Austrian Minister of Agriculture, Erwin Pröll, submitted a draft regulation governing the creation of such areas.¹³

Austrian Purity Requirement as a model for EU legislation

The Austrian Regulation on Seeds and GE also has its weak points. If, for example, test controls done by the Seed Authority detect unapproved GMO, the authority does not take any action, so long as the 0.1-percent-limit is not exceeded. This is true even if the seed has not yet been sown in which case avoiding the release of these unassessed GMO into the environment would be very easy. Compared to the proposals by the EU Commission for an EU-wide regulation in this matter, however, it is an exemplary piece of legislation. According to first proposals, only seeds with a contamination level of or above 0.3, 0.5 or 0.7% (depending on the plant variety) would have had to be labelled. The latest draft set this limit at

¹² Initial analyses indicated that 6 samples are contaminated, but in control test confirmed only 4 samples to be „positive“.

¹³ The exact title of the regulation is to be: “Verordnung des Bundesministers für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft, mit der Bestimmungen über Anbauggebiete bei der Saatguterzeugung erlassen werden (Saatgut-Anbauggebiete-Verordnung)“ (Regulation of the Federal Minister for Agriculture, Forestry, Environment and Water Management containing provisions on cultivation areas for seed production (Regulation on Seed cultivation areas)).

0.3% for rape and maize. The proposal does not include any upper limit for contamination exceeding which the marketing of the seed would be illegal. The “purity requirement” laid down in the Austrian Regulation on Seeds and GE is therefore an example to be followed by the EU.

The experience of the first three years confirms that the principle of zero tolerance works well in practice. Therefore not only the Austrian Minister of Agriculture, Mr. Pröll, but also the Presidential Conference of the Austrian Chambers of Agriculture advocate the introduction of the purity requirement on EU level. The representatives of Austrian farmers write in a letter to the European Commission that with the Regulation on Seeds and GE, Austria has set the threshold for adventitious or technically unavoidable contamination of seeds with GMO at 0% in first tests and at 0.1% in control tests. They go on to say that these strict threshold values have proven themselves and that they are also accepted in ecological farming. The Presidential Conference of the Austrian Chambers of Agriculture therefore proposes to introduce this regulation Eu-wide.^{xi} One reason for this proposal may be the rapid increase in production area of maize seeds in the past years – maybe because of the Regulation on Seeds and GE, but in any case in spite of the purity requirement.¹⁴

*Prepared by Thomas Fertl for Greenpeace Central and Eastern Europe
Vienna, December 2004*

Annex:

The seed purity requirements are laid down in two regulations: The Regulation on Seeds and GE as the primary Regulation and the “Methods for Seeds and Varieties” supplementing the details regarding sampling and testing methods. Below translations of both of the regulations can be found.

The Authority in charge of the enforcement of these two regulations is called “Institut für Saatgut” (Institute for Seeds), which is part of the “Agentur für Ernährungssicherheit AGES” (Food Safety Agency).¹⁵

1. Regulation on Seeds and GE

Below you can find a not authorized translation of the „Verordnung des Bundesministers für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft über die Verunreinigung von Saatgut mit gentechnisch veränderten Organismen und die Kennzeichnung von GVO-Sorten und Saatgut von GVO-Sorten“ (Regulation of the Federal Minister of Agriculture and

¹⁴ Within three years the areas dedicated to the production of maize seeds have nearly doubled from 2,855ha in 2000 to 4,919ha in 2003.

¹⁵ Contact person at the Seed Authority: DI Leopold Girsch, Head of the Department “Landwirtschaft – Produktionsgrundlagen“ (Agriculture) at the Austrian Agency for Health and Food Safety (Österreichische Agentur für Gesundheit und Ernährungssicherheit, formerly Bundesanstalt und Forschungszentrum für Landwirtschaft BFL), Spargelfeldstrasse 191, A-1226 Wien, Postfach 400, AUSTRIA, Phone: 0043/1/73216-4500, Fax: 0043/1/73216-4174, Email: leopold.girsch@ages.at, Homepage: www.ages.at.

Forestry, Environment and Water Management on the contamination of seed with genetically engineered Organisms and labelling of GMO-Varieties and seeds of GMO-Varieties”, briefly called „Saatgut-Gentechnik-Verordnung“ (Regulation on Seeds and GE).^{xii}

Federal Law Gazette for the Republic of Austria
478th regulation: Regulation on Seeds and GE
Published and sent on December 21, 2001

478th regulation of the Federal Minister for Agriculture, Forestry, Environment and Water Management on the contamination of seeds with genetically modified organisms and on the labelling of GE varieties and seeds of GE varieties (Regulation on seeds and GE)

Based on the Articles 5, 6, 14, 15, 18, 19, 20, 52, 65, and 70 of the Seed Law 1997, BGBl. N°I 72/1997, last changed by the Agricultural Amending Law 2001, BGBl. I N°109/2001 it is declared:

Definitions

Article 1

For the purposes of this Act

- the term “GMO” means genetically modified organisms as defined in the Gene Technology Act, BGBl. N°510/1994, last changed by the federal law BG Bl. I N°73/1998,
- the term “approved GMO” means GMO whose release for purposes of cultivation is authorised according to the Council Directive 90/220/EEC of 23 April 1990 on the deliberate release of genetically modified organisms into the environment (OJ N°L 117 of 8 May 1990, p.15) or the Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release of genetically modified organisms into the environment and repealing Council Directive 90/220/EEC (OJ N°L 106 of 17 April 2001, p.1),
- the term “non-approved GMO” means GMO that do not meet the requirements under the previous points.

Scope

Article 2

(1) This regulation applies to the following species:

- Swede rape (*Brassica napus* L. var. *napobrassica*),
- Maize (*Zea mays*),
- Rape (*Brassica napus*)
- Turnip (*Brassica rapa*),
- Soya bean (*Glycine max*),
- Turnip (*Brassica rapa* L. var. *rapa*), and
- Tomato (*Lycopersicon lycopersicum*) for processing purposes, and
- Chicory (*Cichorium intybus* L.).

(2) Seeds containing GMO may only be put on the market if they meet the requirements of the Seed Law 1997 and of this regulation in combination with the Methods for Seeds and Varieties under Article 5 of the Seed Law 1997.

Tolerance thresholds for the adventitious presence of GE seeds in conventional seeds

Article 3

- In proceedings in accordance with the Seed Law 1997, adventitious presence of GE seeds in conventional seeds may not be detectable in first tests and may not exceed a 0.1% threshold in follow-up tests conducted in the course of control measures of seeds put on the market.

- Requirements for testing methods and statistical requirements for test results when testing seeds for genetic modification through contamination with approved or non-approved GMO are stipulated in Article 5 of the Seed Law 1997 (Methods for Seeds and Varieties).

Applications according to Seed Law 1997

Article 4

- In all proceedings according to the Seed Law 1997, the applicant shall confirm in writing to the Austrian Seed Certification Authority that he or she will meet the requirements of this regulation. Such a confirmation notwithstanding, the Seed Certification Authority may implement control measures. These may apply in particular to good production practices and to reports on tests for contamination with GMO.

- The term "good production practices" means all measures taken by the applicant in order to avoid contamination of seeds with GMO. The responsibility to apply good practices in order to avoid contamination with GMO lies with the seed producer and the seed processor at all stages in seed production and seed processing, in particular during the preparation stage and cultivation itself, during the implementation of agricultural measures on fields used for the production of seeds, during the harvest and all transports, during the storing and processing of seeds as well as during the labelling and sealing of the ready-for-use seeds and during final storage.

- The person authorized to market standard vegetable seeds for the first time shall be in possession of documents proving that the requirements of this regulation are met. These documents shall be kept for at least seven years and shall be made available free of charge to the Seed Certification Authority for controls according to the Seed Law 1997.

- In proceedings according to the Seed Law 1997 for which the application was made after 1 July 2001 and up to the date of the coming into effect of this regulation, the Seed Certification Authority shall be provided with a confirmation as under paragraph (1) within a month of the coming into effect of this regulation. If no such confirmation is provided, proceedings not yet concluded cannot continue.

- In all applications in proceedings according to the Seed Law 1997, a GE variety or seeds of a GE variety shall be clearly labelled "GE variety" or "GE seeds", together with the name of the GMO.

Labelling

Article 5

- Every category of seeds of an approved GE variety shall be clearly labelled "genetically modified variety", together with the name of the GMO, on every label and every accompanying document, official or other, attached to or enclosed with a batch of seeds.

- An approved GE variety shall be clearly labelled "genetically modified variety", together with the name of the GMO, in the part of the List of Varieties accessible to the public.

- Whoever offers an approved GE variety or seeds of a GE variety for sale shall clearly label them "genetically modified variety", together with the name of the GMO, in sales catalogues or other information or promotion material.

- The labelling according to paragraphs (1) to (3) shall include information on special properties of the product brought about by genetic modification (e.g. herbicide tolerance).

- Paragraphs (1) to (4) do not apply to seeds meeting the requirements under Article 3.
Coming into effect

Article 6

With the coming into effect of this regulation, the Regulation on the Labelling of Genetically Modified Seed, BGBl. II N° 74/1999, is invalidated.

Minister Molterer

2. Regulation on Methods for Seeds and Varieties

Below you can find a not authorised translation of the additional provisions the above-mentioned regulation is referring to (see Art. 3). These are laid down in a publication titled “Methoden für Saatgut und Sorten” (Methods for Seeds and Varieties), which was adopted by the Ministry of Agriculture and published by the Austrian Seed Authority^{xiii}. The translation covers only the part of the regulation which was amended in order to supplement the Regulation on Seeds and GE.

Modifications to Methods for Seeds and Varieties

(according to art. 5 of the Seed Law 1997, BGBl.I nr.72/1997, last modified by BGBl. I nr. 109/2001)

Requirements for seed properties and for methods to determine seed properties (Plant Varieties and Seeds Gazette [Sorten- und Saatgutblatt] 2000, vol. 8, Special Edition nr. 10, 4.5.2000)

Based on art. 5 of the Seed Law 1997, BGBl.I nr.72/1997, last modified by BGBl.I. nr. 109/2001 it is declared:

Page 107, part 3, item 3.6. is inserted:

3.6. Requirements for methods applied for testing seeds for contamination with approved or non-approved GMOs

3.6.1. General requirements for methods applied for testing seeds for contamination with approved or non-approved GMOs:

The methods applied for testing seeds for contamination with GMOs shall be in keeping with the latest scientific and technological developments and – if available – with the international standardized methods for seed testing.

3.6.1.1. Requirements for sampling:

The requirements for sampling have to be in keeping with the international seed sampling methods – in Austria the norms to be observed are the Norms and procedures for taking officially recognized representative samples including checking of labelling, packing and sealing (Normen und Verfahren zur Durchführung der amtlichen repräsentativen Probenahmen einschließlich Kontrolle der Kennzeichnung, Verpackung und Verschließung), laid down in the Plant Varieties and Seed Gazette 1998, vol. 6, Special Edition nr. 1, 28.4.1998 as amended.

3.6.1.2. Identification of samples in the laboratory:

The identity of the sampling organisation responsible as well as the kind and intactness of the seal of each sample shall be examined by the laboratory and shall be included in the report on findings.

Information on the identity of a sample shall always include at least the control or reference number, the botanical kind and the plant variety of the seed lot from which the sample was drawn.

3.6.1.3. Requirements for the preparation of samples:

The testing of seeds for contamination with GMOs shall be carried out on a working sample, composed of “pure seed“ and “seed of other species“, in accordance with the Methods for the determination of technical purity (Methoden zur Bestimmung der technischen Reinheit) (Plant Variety and Seed Gazette 2000, vol. 8, Special Edition nr. 10, 4.5.2000, part 2, item 3: Requirements for the properties of seeds with regard to technical purity, and part 3, item 1: Methods for the determination of technical purity). Determining „Innoxious contamination“ does not form part of the testing of seeds for contamination with approved or non-approved GMOs.

3.6.1.4. Other requirements for the preparation of samples:

Seed treatment (e.g. coating, incrusting, pelleting) and external contamination of the seeds, which could be a result of the testing of seeds for contamination with approved or non-approved GMOs, must be ruled out.

3.6.2. Special requirements for the testing method, the test plan, and the findings:

A test plan shall be drawn up according to the criteria of the testing method applied, in such a manner that the requirements of the Regulation on GE Seed Contamination as well as the requirements of the present Methods for Seeds and Varieties are fulfilled.

3.6.2.1. The smallest unit for which contamination with approved or non-approved GMOs may be stated is a single seed.

3.6.2.2. The working sample for the testing of seeds for contamination with approved or non-approved GMOs must contain a minimum of 3000 seeds.

3.6.2.3. Depending on the detection limit and the technical parameters used in the method applied, the test plan shall provide for sample portions, so that 1 genetically modified seed in 3000 seeds can be detected at any rate. This applies to initial testing as well as to follow-up testing and testing carried out in the course of control measures for imported seed.

3.6.2.4. Testing method and test plan shall be designed in such a way as to ensure with a 95% statistical reliability that no contamination with approved or non-approved GMOs is present in the seeds and that the real contamination of a seed lot with GMOs does not exceed the 0.1% threshold.

3.6.3. Minimum requirements that the report on findings for testing seeds for contamination with approved or non-approved GMOs has to fulfill:

3.6.3.1. General information in the report on findings:

- a) information about the laboratory carrying out the tests, in particular name and address, information on accreditation, etc;
- b) name and signature of the authorized signatory or signatories;
- c) name and address of the initiator of the testing;
- d) information regarding the existence of any subcontracts.

3.6.3.2. Information about the submitted sample:

- a) description of the identity of the sample by stating at least the control and reference numbers, the botanical kind and – if possible – the plant variety of the lot from which the sample was drawn;
- b) description of seed treatment (e.g. coating, incrusting, pelleting);
- c) description of the kind of seal sealing the sample;
- d) name of the sampling organisation responsible;
- e) date when the sample was drawn;
- f) date when the laboratory received the sample.

3.6.3.3. Information on testing:

- a) description of the testing method;
- b) description of the test plan, in particular information on the number of seeds examined;
- c) description of the parameters of the testing method applied and the test plan drawn up, in the context of a) and b);
- d) date when the testing was completed.

3.6.3.4. Stating the test results:

The test results shall be stated in accordance with the requirements of the Regulation on GE Seed Contamination and the requirements of the present Methods.

References:

ⁱ Parliamentary answer by Minister Molterer to question (3683/J) by MP Sima on seed and animal feed controls and the regulation on seed thresholds (3653/AB, XXI. GP, 21 May 2002), on the Internet at:

http://www.parlament.gv.at/pls/portal/docs/page/PG/DE/XXI/AB/AB_03653/daten_000000.doc (in German).

ⁱⁱ Parliamentary answer by Minister Haupt to question (3343/J) by MP Pirkhuber on GE contamination of seeds II (3321/AB, XXI. GP, 26 March 2002), on the Internet at:

http://www.parlament.gv.at/pls/portal/docs/page/PG/DE/XXI/AB/AB_03321/daten_000000.doc (in German).

ⁱⁱⁱ The opinion poll is available on the Internet at: http://www.greenpeace.at/uploads/media/greenpeace-meinungsumfrage_02.pdf (in German, for English version contact Greenpeace CEE).

^{iv} A valuable comprehensive survey on the topic is given in the special issue "Rechtliche Aspekte und methodische Ansätze im Zusammenhang mit dem Nachweis von GMO-Verunreinigungen in Saatgut" (Legal aspects and the methods for the detection of GMO contamination in seeds) by the "Arbeitsgemeinschaft Landwirtschaftlicher Versuchsanstalten Österreichs" (Work group of the Agricultural Research Institutes of Austria). Available on the Internet at: www.alva.at/sonderheft/inhalt.htm (in German).

^v L. Girsch, J. Hartmann, R. Hohegger, R. Gabernig, H. Zimmermann: Bericht über das Monitoring einer möglichen Verunreinigung mit zugelassenen und nicht zugelassenen Gentechnisch Veränderten Organismen (GVO) gemäß GVO-Überwachungs- und Monitoringplan bei Saatgut in der Saison 2001/2002. (Report on the Monitoring of possible Contamination with authorised and non-authorised Genetically Modified Organisms (GMO) according to the GMO Monitoring Plan for Seeds in the Season 2001/2002.). Agency for Food Safety (AGES), Seed Institute, Vienna, 13 pages. Available on the Internet at:

<http://www13.ages.at/servlet/sls/Tornado/web/ages/content/07475C9358932A12C1256E30003157D1> (in German).

^{vi} L. Girsch, J. Hartmann, R. Hohegger, H. Zimmermann: Bericht über das Monitoring einer möglichen Verunreinigung mit zugelassenen und nicht zugelassenen Gentechnisch Veränderten Organismen (GVO) gemäß GVO-Überwachungs- und Monitoringplan bei Saatgut in der Saison 2002/2003. (Report on the Monitoring of possible Contamination with authorised and non-authorised Genetically Modified Organisms (GMO) according to the GMO Monitoring Plan for Seeds in the Season 2002/2003.). AGES, Seed Institute, Vienna, 14 pages.

Available on the Internet at:

<http://www13.ages.at/servlet/sls/Tornado/web/ages/content/07475C9358932A12C1256E30003157D1> (in German).

^{vii} L. Girsch, J. Hartmann, H. Zimmermann, R. Hohegger: Bericht über das Monitoring einer möglichen Verunreinigung mit zugelassenen und nicht zugelassenen Gentechnisch Veränderten Organismen (GVO) gemäß GVO-Überwachungs- und Monitoringplan bei Saatgut in der Saison 2003/2004. (Report on the Monitoring of possible Contamination with authorised and non-authorised Genetically Modified Organisms (GMO) according to the GMO Monitoring Plan for Seeds in the Season 2003/2004.). AGES, Seed Institute, Vienna, 11 pages.

Available on the Internet at:

<http://www13.ages.at/servlet/sls/Tornado/web/ages/content/07475C9358932A12C1256E30003157D1> (in German).

^{viii} "Änderung der Methoden: Anforderungen an den Vermehrungsbetrieb, die Vermehrungsfläche und den Feldbestand der Vermehrungsfläche" (Modification of the Methods: Demands on seed production facilities, cultivation areas and fields). Sorten- und Saatgutblatt 2002/1, 10. Jahrgang, Heft 1, Teil C, (Varieties and Seeds Journal 2002/1, volume 10, issue 1, part C), 8 March 2002. Available on the Internet at:

[http://www13.ages.at/web/ages/content.nsf/73b5f92ac245b957c1256a9a004e1676/d40546bd4ae6e4efc1256e3003202ac/\\$FILE/methoden_feld.pdf](http://www13.ages.at/web/ages/content.nsf/73b5f92ac245b957c1256a9a004e1676/d40546bd4ae6e4efc1256e3003202ac/$FILE/methoden_feld.pdf) (in German).

^{ix} "Saatmaisproduktionen – Zeitgerechte Bereinigung von Nicht-sortenidenten Pflanzen (Fremdtypen) aus den Vermehrungsbeständen" (Seed maize production – Up-to-date methods of removing deviant plants (off-types) from seed production crops), information by the Seed Institute (Institut für Saatgut), 31 May 2002. Available on the Internet at:

[http://www13.ages.at/web/ages/content.nsf/73b5f92ac245b957c1256a9a004e1676/07475c9358932a12c1256e30003157d1/\\$FILE/bereinigung.pdf](http://www13.ages.at/web/ages/content.nsf/73b5f92ac245b957c1256a9a004e1676/07475c9358932a12c1256e30003157d1/$FILE/bereinigung.pdf) (in German).

^x "Die Produktion von Saatgut in abgegrenzten Erzeugungsprozessen zur Vermeidung einer Verunreinigung mit Gentechnisch Veränderten Organismen im Kontext mit der Koexistenz von konventioneller Landwirtschaft mit

oder ohne GVO und ökologischer Landwirtschaft“ (The production of seeds in closed production processes in order to avoid contamination with Genetically Modified Organisms in the context of coexistence of conventional farming, whether it involves GMO or not, and ecological farming), Study of the Austrian Agency for Food Safety (AGES). Vienna, May 2004. An abstract of the study in German and English is available on the Internet at:

[http://www13.ages.at/web/ages/content.nsf/73b5f92ac245b957c1256a9a004e1676/53d5bad67b4fd097c1256ea6003c704d/\\$FILE/gvo_koexistenz_ages_studie.pdf](http://www13.ages.at/web/ages/content.nsf/73b5f92ac245b957c1256a9a004e1676/53d5bad67b4fd097c1256ea6003c704d/$FILE/gvo_koexistenz_ages_studie.pdf)

^{xi} Letter of the Presidential Conference of the Austrian Chambers of Agriculture (signed by President Schwarzböck and Secretary General Astl) to the President of the European Commission, Romano Prodi. Vienna, 1 July 2004.

^{xii} The German text of the "Verordnung des Bundesministers für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft über die Verunreinigung von Saatgut mit gentechnisch veränderten Organismen und die Kennzeichnung von GVO-Sorten und Saatgut von GVO-Sorten" (Regulation of the Federal Minister of Agriculture and Forestry, Environment and Water Management on the contamination of seed with genetically engineered Organisms and labelling of GMO-Varieties and seeds of GMO-Varieties", briefly called "Saatgut-Gentechnik-Verordnung" (Regulation on Seeds and GE) is available on the Internet at:

[http://www13.ages.at/web/ages/content.nsf/73b5f92ac245b957c125a9a004e1676/d40546bd4ae6e4efc1256e30003202ac/\\$FILE/methodenpnbeschgvo.pdf](http://www13.ages.at/web/ages/content.nsf/73b5f92ac245b957c125a9a004e1676/d40546bd4ae6e4efc1256e30003202ac/$FILE/methodenpnbeschgvo.pdf).

^{xiii} The amendments to the "Methods for Seeds and Varieties" are available on the Internet at:

[http://www13.ages.at/web/ages/content.nsf/73b5f92ac245b957c1256a9a004e1676/d40546bd4ae6e4efc1256e30003202ac/\\$FILE/methodenpnbeschgvo.pdf](http://www13.ages.at/web/ages/content.nsf/73b5f92ac245b957c1256a9a004e1676/d40546bd4ae6e4efc1256e30003202ac/$FILE/methodenpnbeschgvo.pdf) (in German).