ANNEX VIII TO THE DECISION

OECD SCHEME FOR THE VARIETAL CERTIFICATION OF CEREAL SEED

SPECIFIC RULES AND REGULATIONS

1 General

1.1 The OECD Cereal Seed Scheme shall cover seed of varieties of cereals produced, processed, sampled, labelled and fastened in accordance with the Common Rules and Regulations above, and those which form the subject of the following paragraphs and which are regarded as minimum requirements.

1.2 The list of species eligible for certification according to the Scheme is given in Appendix 2 of this Scheme. This list can be increased by common agreement of the National Designated Authorities.

1.3 The Scheme shall be implemented in the participating countries under the responsibility of the national governments that will designate Authorities for this purpose.

2 Lot size

2.1 One seed lot shall not exceed 30 000 kg for eligible species of *Avena* spp., *Triticum aestivum*, *Triticum turgidum*, *Triticum spelta*, *Hordeum vulgare*, *Oryza sativa*, *Secale cereale* and *x Triticosecale*, and shall not exceed 10 000 kg for *Eleusine coracana*, *Fagopyrum esculentum* and *Phalaris canariensis*. These maximum sizes do not apply to lots to be fastened as not finally certified seed.

2.2 Seed in excess of 30 000 kg (or 10 000 kg where applicable as mentioned in 2.1) shall be divided into lots no larger than 30 000 kg each (or 10 000 kg where applicable) identified according to Rule 9.1 as a separate seed lot.

2.3 A tolerance of five per cent on these maxima is permissible

Appendix 1

Minimum Requirements for the Production of Basic and Certified Seed

A) Minimum Requirements for all Varieties

1. Previous cropping

1.1 ***The National Designated Authority shall***:

- require the grower to furnish particulars concerning the previous cropping in each seed field;
- reject fields when the previous cropping history is not in accordance with regulations published by the National Designated Authority. There shall be a minimum time interval of at least two years between cereal crops of the same species. Successive crops of the same variety and category of seed may be grown on the same field without any time-interval, provided that satisfactory varietal purity is maintained.

2. Isolation

2.1 Seed crops of cross-pollinating species, and of mainly cross-pollinating varieties of triticale (*x Triticosecale* Wittm.) shall be isolated from all other crops of rye and triticale respectively by:

– Basic Seed 300 metres

– Certified Seed 250 metres

Seed crops of self-pollinating varieties of triticale shall be isolated from all other crops of triticale by:

– Basic Seed 50 metres

– Certified Seed 20 metres

2.2 These distances can be disregarded when there is sufficient protection from undesirable pollen sources.

2.3 The seed crops of self-fertilising species shall be isolated from other cereal crops by a definite barrier or a space sufficient to prevent mixture during harvest.

3. Weeds

Crops containing an excessive number of weeds shall be rejected.

4. Field inspection

4.1 The crop must be in a fit state to permit accurate determination of varietal and species purity.

4.2 Inspectors shall be specially trained. In their field inspection they shall be responsible only to the National Designated Authority. Additional conditions apply to authorised inspectors as indicated in Common Appendix 5.

4.3 There shall be at least one field inspection of each seed crop after the emergence of the inflorescence.

4.4 The field inspector shall check that all the minimum requirements laid down in this Appendix have been satisfied.

4.5 Control plots grown from samples of the seed used to sow the crop entered for certification should, whenever possible, be available for detailed examination at the time of field inspection of the seed crops. This examination is intended to supplement the examination made for the determination of varietal purity at field inspection.

4.6 The National Designated Authority must decide for each field whether or not approval can be given to the field following inspection and, whenever possible, a study of the results of the examination of the corresponding pre-control plot.

4.7 When determining the number of plants not true to the variety and the number of plants of other species, the inspector shall work to an appropriate method (Methods are described in the OECD document "Guidelines for Control Plot Tests and Field Inspection of Seed Crops").

5. Number of harvest years

The National Designated Authority shall decide the number of harvest years to be permitted for a seed field, with particular attention when multiplying foreign varieties to the effects of changed ecological conditions on varietal purity. These harvest years shall not be interrupted by one or more years in which the crop is not under the supervision of the National Designated Authority.

6. Varietal purity

6.1 Varietal purity standards apply to all seed-producing fields and shall be checked at field inspection.

6.2 Where post-control plots are grown in accordance with Rule 7 these also shall be used as a check.

6.3 Minimum percentages of varietal purity shall apply to some species according the following table:

Species	Basic Seed	Certified Seed First Generation	Certified Seed Second Generation
Triticum aestivum, *Hordeum vulgare*, Avena spp., *Oryza sativa* and *Eleusine coracana*	99.9%	99.7%	99.0%
Mainly self-pollinating varieties of *x Triticosecale*	99.7%	99.0%	98.0%

6.4 Maximum number of plants of the same species being not true to variety for cross-pollinating varieties of some species

For cross-pollinating varieties of *Secale cereale* and ***x*** *Triticosecale*, the number of plants of the same species which are recognisable as being not true to the variety concerned shall not exceed one plant in thirty square metres in fields to produce Basic Seed, and one plant in ten square metres in fields to produce Certified Seed.

Summary Table: Maximum number of plants of the same species being not true to cross-pollinating variety

Species	Basic Seed	Certified Seed
Cross-pollinating varieties of *Secale cereale* and ***x*** *Triticosecale*	1 in 30 sq. m	1 in 10 sq. m

B) Additional Minimum Requirements for Hybrid Cereals

7. Previous cropping

The National Designated Authority shall:

a) require the grower to furnish particulars concerning the previous cropping in each seed field;

b) reject fields when the previous cropping history is not in accordance with regulations published by the National Designated Authority. Crops to produce hybrid seed may not be grown on the same field in successive years.

8. Isolation

8.1 Seed crops to produce Certified Seed of a hybrid variety of wheat, barley, oats or rice shall be isolated from sources of contaminating pollen. The female seed parent must be not less than 25 metres from any other variety of the same species except from a crop of the male pollen parent. This isolation distance may be modified by a National Designated Authority to ensure further protection against contamination by foreign pollen. A distance of not less than 100 metres may be considered to permit modification of the requirements of 9.6 below in respect of the determination of varietal purity.

8.2 Seed crops to produce the Basic seed components and Certified seed of a hybrid variety of rye or a hybrid variety of Triticale shall be isolated at every stage of seed production from sources of contaminating pollen that might result in undesirable foreign pollination. The minimum isolation distances shall be as follows:

a) for the production of Basic Seed:

where male sterility is used	1 000 m
where male sterility is not used	600 m

b) for the production of Certified Seed 500 m

8.3 A National Designated Authority can modify these distances where there is sufficient protection from undesirable pollen or where the possibility of cross-fertilisation is eliminated as a result of a clear difference in time of flowering.

9. Field inspection

9.1 For crops to produce Basic Seed of parental varieties or parental lines intended for the production of hybrid varieties using a Chemical Hybridizing Agent (CHA), an inspection should be made as for seed of conventional cereal varieties.

9.2 For crops to produce Basic Seed of hybrid varieties using genetic or cytoplasmic male sterility, an inspection should be made of the male sterile line, the pollen parent of the male sterile single cross hybrid, the maintainer line and the male restorer component.

9.3 For crops to produce Certified Seed of a hybrid variety at least one inspection will be made when ear emergence of both parents is complete to check that the technical details for the production of the hybrid variety, agreed with the National Designated Authority, have been met.

9.4 Where male sterility is used in the production of a hybrid variety, to be eligible for seed certification, the level of sterility of the male sterile component shall be:

- basic seed of CMS barley, at least 99.7 per cent[10]
- all other cases, at least 98 per cent.

This is subject to any other examinations required by the National Designated Authority in accordance with section 11 below "Determination of Varietal Purity".

9.5 For crops to produce F1 hybrid seed by means of CHA the National Designated Authority may require a second inspection to be carried out when the grains are ripe to determine the level of male sterility of the female seed-parent and / or the hybridity of the seed.

At the second inspection the crop inspector will calculate either the percentage sterility or the percentage hybridity as follows:

9.5.1 Percentage Sterility

It is equal to: $100\left(1 - {}^{a}/_{b}\right)$,

where *a* is the number of fertilised grains in a specified number of ears sampled from CHA treated female seed-parent plants which have been protected by pollen-proof bags or tents put in place after the application of CHA but before anthesis of either parent;

and *b* is the number of fertilised grains in a sample of the same specified number of ears of untreated female seed-parent plants taken from an area which has been protected from CHA treatment by a further tent. To prevent the escape of pollen from these untreated female plants this tent must remain in position until anthesis has ended.

9.5.2 Percentage Hybridity

It is equal to: $100(1 - {}^{a}/_{c})$,

where *a* is the number of fertilised grains in a specified number of ears sampled from CHA treated female seed parent plants which have been protected by pollen-proof bags or tents put in place after the application of

[10] The standards for male sterility in basic seed production of the male sterile component of CMS hybrid varieties of barley (*Hordeum vulgare*) have been approved as a provisional measure and are applicable until 31 December 2020, at which date the standards will revert back to the prior standard, as reproduced in the consolidated OECD Seed Schemes Rules [TAD/CA/S(2009)6/REV3], unless otherwise decided.

CHA but before anthesis of either parent; and ***c*** is the number of fertilised grains in a sample of the same specified number of ears of CHA treated female seed parent plants which have not been protected by pollen-proof bags or tents.

9.6 Crops which meet a hybridity standard of 95 per cent will be eligible for certification of the seed, subject to any other examinations required by the National Designated Authority in accordance with section 11 below "Determination of Varietal Purity". Exceptionally, National Designated Authorities requiring isolation distances of not less than 100 metres may accept the level of hybridity assessed in the field as the level of varietal purity of the hybrid, provided that the assessed level is not less than 85 per cent for hybrid barley produced by CMS[11] and 90 per cent for other hybrid cereals.

10. Varietal purity and identity

10.1 ***Trueness to hybrid variety***

The hybrid variety must be satisfactory for trueness to variety and the plants must conform to the characteristics of the variety when listed by the National Designated Authority.

10.2 ***Minimum varietal purity standard in seed crops***

For hybrid varieties of wheat, barley, oat and rice, the minimum varietal purity standards in crops to produce basic seed of parental lines or varieties and in crops to produce certified seed, as well as in post-control of certified seed, will be as follows:

<table>
<tr><th>Species</th><th>Fields to produce Basic Seed (of parental lines)</th><th>Fields to produce Certified Seed (of the hybrid variety)</th><th>Post-control plots of Certified Seed (of the hybrid variety)</th></tr>
<tr><td>Triticum aestivum, Hordeum vulgare, Avena spp., Oryza sativa</td><td rowspan="2">99.9%</td><td rowspan="2">99.7%</td><td>90.0%</td></tr>
<tr><td>Hordeum vulgare - Cytoplasmic male sterility method (CMS)</td><td>85.0%[12]</td></tr>
</table>

10.3 ***Maximum number of plants not being true to variety in crops of rye or triticale hybrid varieties***

In crops of *Secale cereale* or ***x*** *triticosecale* to produce:

– Basic seed of parental lines, the number of plants of the crop species which are recognisable as obviously not being true to the single cross hybrid or synthetic variety concerned shall not exceed one plant in thirty square metres;

[11] The standards for varietal purity of certified seed of the CMS hybrid varieties of Barley (*Hordeum vulgare*) have been approved as a provisional measure and are applicable until 31 December 2020, at which date the standards will revert back to the prior standard, as reproduced in the consolidated OECD Seed Schemes Rules [TAD/CA/S(2009)6/REV3], unless otherwise decided.

[12] The varietal purity standard for post-control plots of certified seed of the CMS hybrid varieties of Barley (*Hordeum vulgare*) have been approved as a provisional measure and are applicable until 31 December 2020, at which date the standards will revert back to the prior standard, as reproduced in the consolidated OECD Seed Schemes Rules [TAD/CA/S(2009)6/REV3], unless otherwise decided.

– Certified seed of the hybrid variety, the number of plants of the crop species which are recognisable as obviously not being true to the single cross hybrid concerned shall not exceed one plant in ten square metres.

In post-control plots of *Secale cereale* or ***x triticosecale*** of:

– Basic seed (single cross hybrid), the number of plants of the crop species which are recognisable in post-control as obviously not being true to the single cross hybrid cultivar concerned shall not exceed six plants in 1 000 plants;

– Certified seed, the hybrid must be satisfactory for trueness to variety and the plants must conform to the characteristics of the hybrid variety when listed by the National Designated Authority.

11. Determination of varietal purity

Varietal purity will be determined by an approved method appropriate to the maintenance system. At least one of the following assessments must be made:

a) measurement of hybridity in the hybrid seed production field (see 9.5.2 above); this must be combined with other assessments including the results of field inspection and isolation control. It is to be noted that hybridity is not to be equated with varietal purity and there is not necessarily a close correlation between them;

b) a post-harvest control conducted before certification using an internationally recognised test of the hybrid seed, excluding rye and triticosecale.

Appendix 2

Cereal Species Eligible for the Scheme

Botanical Name	French Name	English Name
AVENA spp.:		
AVENA SATIVA L. [includes *A. byzantina*]	AVOINE, AVOINE BYZANTINE	OATS, RED OAT
AVENA NUDA L.	AVOINE NUE	SMALL NAKED OAT, HULLESS OAT
AVENA STRIGOSA Schreb.	AVOINE RUDE	BLACK OAT, BRISTLE OAT
ELEUSINE CORACANA (L.) Gaertn	ÉLEUSINE	FINGER MILLET
FAGOPYRUM ESCULENTUM Moench	SARRASIN	BUCKWHEAT
HORDEUM VULGARE (L.)	ORGE	BARLEY
ORYZA SATIVA (L.)	RIZ	RICE
PHALARIS CANARIENSIS (L.)	ALPISTE	CANARY GRASS
SECALE CEREALE (L.)	SEIGLE	RYE
TRITICUM AESTIVUM (L.) emend. Fiori et Paol.	BLÉ TENDRE	WHEAT
TRITICUM TURGIDUM L. subsp. DURUM (Desf.) Husn.	BLÉ DUR	DURUM WHEAT
TRITICUM SPELTA (L.)	ÉPAUTRE	SPELT WHEAT
x TRITICOSECALE Wittm.	TRITICALE	TRITICALE

Appendix 3

Countries Eligible for Certification of Cereal Seed

ALBANIA	C(2005)170	21/12/05
ARGENTINA	C(82)15	02/03/82
AUSTRALIA	C(80)40	27/02/80
AUSTRIA	C(87)213/Final	16/02/88
BELGIUM	C(79)189	09/10/79
BOLIVIA	C(96)169/Final	16/12/96
BRAZIL	C(99)174/Final	10/12/99
BULGARIA	C(79)168	17/08/79
CANADA	C(88)18/Final	20/10/88
CHILE	C(72)56	22/02/72
CROATIA	C(94)205/Final	12/01/95
CZECH REPUBLIC	C(93)131/Final	02/06/94
DENMARK	C(85)143	10/05/85
EGYPT	C(98)178/Final	01/12/98
ESTONIA	C(97)187/Final	23/10/97
FINLAND	C(89)165/Final	07/11/89
FRANCE	C(86)71	13/08/85
GERMANY	C(87)61/Final	16/02/88
GREECE	C(85)148	05/06/85
HUNGARY	C(70)196	17/12/70
ICELAND	*	
INDIA	C(2008)150	23/10/08
IRAN	C(2015)171	23/12/15
IRELAND	C(73)171	04/04/73
ISRAEL	C(78)236	11/01/79
ITALY	C(84)137	25/09/84
JAPAN	TAD/CA(2009)5	10/09/09
KENYA	C(73)35	15/02/73
KYRGYZSTAN	C(2005)169	21/12/05
LATVIA	C(2001)264	29/11/01
LITHUANIA	C(99)173/Final	10/12/99
LUXEMBOURG	*	
MEXICO	C(2001)288	22/01/02
MOLDOVA	C(2008)151	23/10/08
MOROCCO	C(88)196/Final	26/01/89

NETHERLANDS	C(88)184/Final	09/02/89
NEW ZEALAND	C(76)213	02/12/76
NORWAY	C(86)77	22/01/86
POLAND	C(80)194	13/02/80
PORTUGAL	C(88)15/Final	20/10/88
ROMANIA	C(70)190	12/12/70
RUSSIAN FEDERATION	C(2001)266	29/11/01
SENEGAL	C(2015)171	23/12/15
SERBIA	C(2001)265	29/11/01
SLOVAKIA	C(93)129/Final	02/06/94
SLOVENIA	C(96)170/Final	16/12/96
SOUTH AFRICA	TAD/CA(2010)10	31/07/10
SPAIN	C(70)176	03/11/70
SWEDEN	C(86)75	09/12/85
SWITZERLAND	C(93)183/Final	08/02/94
TANZANIA	C(2016)177	23/12/16
TUNISIA	C(78)100	07/08/78
TURKEY	C(88)46/Final	20/10/88
UGANDA	C(2004)210	24/01/05
UKRAINE	C(2009)155	16/11/09
UNITED KINGDOM	C(86)73	15/11/85
UNITED STATES	C(74)85	06/05/74
URUGUAY	C(94)22/Final	08/04/94
ZIMBABWE	C(92)54/Final	30/04/92

* OECD Member country participating without official notification