

DIRECTIVES

COUNCIL DIRECTIVE 2007/33/EC

of 11 June 2007

on the control of potato cyst nematodes and repealing Directive 69/465/EEC

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 37 thereof,

Having regard to the proposal from the Commission,

Having regard to the Opinion of the European Parliament,

Whereas:

- (1) Since the adoption of Council Directive 69/465/EEC of 8 December 1969 on control of Potato Cyst Eelworm ⁽¹⁾, there have been significant developments in the nomenclature, biology and epidemiology of potato cyst nematode species and populations and their distribution pattern.
- (2) Potato cyst nematodes (*Globodera pallida* (Stone) Behrens (European populations) and *Globodera rostochiensis* (Wollenweber) Behrens (European populations)) are recognised as harmful organisms of potatoes.
- (3) The provisions of Directive 69/465/EEC have been re-examined and, as a result of this re-examination, have been found insufficient. Therefore, the adoption of more comprehensive provisions is necessary.
- (4) The provisions should take into account that official investigations are necessary to ensure that no potato cyst nematodes are found in fields in which seed potatoes intended for the production of seed potatoes, and certain plants intended for the production of plants for planting, are planted or stored.
- (5) Official surveys should be carried out on fields used for the production of potatoes other than those used for the production of seed potatoes in order to determine the distribution of the potato cyst nematodes.
- (6) Sampling and testing procedures should be set out for conducting such official investigations and surveys.
- (7) Account should be taken of the means of spread of the pathogen.
- (8) The provisions should take into account that the control of potato cyst nematodes is traditionally by crop rotation as it is recognised that several years in the absence of potato cultivation will reduce the population of nematodes by a significant degree. More recently crop rotation has been supplemented by the use of resistant potato varieties.
- (9) Furthermore, Member States should be able to take additional or stricter measures where necessary, provided that there is no hindrance to the movement of potatoes within the Community, except insofar as laid down in Council Directive 2000/29/EC of 8 May 2000 on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community ⁽²⁾. Such measures should be notified to the Commission and to the other Member States.
- (10) Directive 69/465/EEC should therefore be repealed.
- (11) Since the objectives of this Directive, namely to determine the distribution of potato cyst nematodes to prevent their spread and to control them, cannot be sufficiently achieved by the Member States and can therefore by reason of the scale and effects of this Directive be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve those objectives.

⁽¹⁾ OJ L 323, 24.12.1969, p. 3. Directive as last amended by the Act of Accession of 1994.

⁽²⁾ OJ L 169, 10.7.2000, p. 1. Directive as last amended by Commission Directive 2006/35/EC (OJ L 88, 25.3.2006, p. 9).

- (12) The measures necessary for the implementation of this Directive should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission ⁽¹⁾,

officially notified to the Commission and to the other Member States.

2. Further provisions related to the criteria for the definition of a field may be adopted in accordance with the procedure referred to in Article 17(2).

HAS ADOPTED THIS DIRECTIVE:

CHAPTER I

SUBJECT-MATTER AND DEFINITIONS

Article 1

This Directive establishes the measures to be taken by the Member States against *Globodera pallida* (Stone) Behrens (European populations) and *Globodera rostochiensis* (Wollenweber) Behrens (European populations), hereinafter referred to as 'potato cyst nematodes', in order to determine their distribution, to prevent their spread and to control them.

Article 2

For the purpose of this Directive, the following definitions shall apply:

- (a) 'official' or 'officially' means established, authorised or performed by the responsible official bodies of a Member State as defined in Article 2(1)(g) of Directive 2000/29/EC;
- (b) 'resistant potato variety' means a variety that when grown significantly inhibits the development of a particular population of potato cyst nematodes;
- (c) 'investigation' means a methodical procedure to determine the presence of potato cyst nematodes in a field;
- (d) 'survey means' a methodical procedure conducted over a defined period of time to determine the distribution of potato cyst nematodes in the territory of a Member State.

Article 3

1. The responsible official bodies of the Member State shall define what constitutes a field for the purposes of this Directive in order to ensure that phytosanitary conditions within a field are homogeneous as regards the risk of potato cyst nematodes. In doing so, they shall take into account sound scientific and statistical principles, the biology of the potato cyst nematode, the cultivation of the field and the particular production systems of the host plants of potato cyst nematodes in that Member State. The detailed criteria for the definition of a field shall be

CHAPTER II

DETECTION

Article 4

1. Member States shall prescribe that an official investigation for the presence of potato cyst nematodes shall be carried out on the field in which the plants listed in Annex I, intended for the production of plants for planting, or seed potatoes intended for the production of seed potatoes, are to be planted or stored.

2. The official investigation provided for in paragraph 1 shall be carried out in the period between the harvesting of the last crop in the field and the planting of the plants or seed potatoes mentioned in paragraph 1. It may be carried out earlier, in which case documentary evidence shall be available of the results of that investigation confirming that potato cyst nematodes have not been found and that potatoes and other host plants listed in point 1 of Annex I were not present at the time of the investigation and have not been grown since the investigation.

3. Results of official investigations other than those referred to in paragraph 1 and carried out before 1 July 2010 may be considered as evidence as referred to in paragraph 2.

4. If the responsible official bodies of a Member State have established that there is no risk of spreading potato cyst nematodes, the official investigation referred to in paragraph 1 shall not be required for:

- (a) the planting of plants listed in Annex I, intended for the production of plants for planting to be used within the same place of production situated in an officially defined area;
- (b) the planting of seed potatoes, intended for the production of seed potatoes to be used within the same place of production situated in an officially defined area;
- (c) the planting of plants listed in point 2 of Annex I, intended for the production of plants for planting where the harvested plants are to be subject to the officially approved measures referred to in Section III(A) of Annex III.

⁽¹⁾ OJ L 184, 17.7.1999, p. 23. Decision as amended by Decision 2006/512/EC (OJ L 200, 22.7.2006, p. 11).

5. Member States shall ensure that the results of the investigations referred to in paragraphs 1 and 3 are officially recorded and are accessible to the Commission.

Article 5

1. In the case of fields in which seed potatoes or plants listed in point 1 of Annex I intended for the production of plants for planting, are to be planted or stored, the official investigation referred to in Article 4(1) shall involve sampling and testing for the presence of potato cyst nematodes in accordance with Annex II.

2. In the case of fields in which the plants listed in point 2 of Annex I, intended for the production of plants for planting, are to be planted or stored, the official investigation referred to in Article 4(1) shall involve sampling and testing for the presence of potato cyst nematodes in accordance with Annex II or verification as set out in Section I of Annex III.

Article 6

1. Member States shall provide that official surveys are carried out on fields used for the production of potatoes, other than those intended for the production of seed potatoes, in order to determine the distribution of potato cyst nematodes.

2. The official surveys shall involve sampling and testing for the presence of potato cyst nematodes in accordance with paragraph 2 of Annex II and shall be carried out in accordance with Section II of Annex III.

3. The results of the official surveys shall be notified in writing to the Commission in accordance with Section II of Annex III.

Article 7

If, as a result of the official investigation referred to in Article 4(1) and the other official investigations referred to in Article 4(3), no potato cyst nematodes are found, the responsible official bodies of a Member State shall ensure that this information is officially recorded.

Article 8

1. When a field is found infested with potato cyst nematodes during the official investigation referred to in Article 4(1), the responsible official bodies of a Member State shall ensure that this information is officially recorded.

2. When a field is found infested with potato cyst nematodes during the official survey referred to in Article 6(1), the responsible official bodies of a Member State shall ensure that this information is officially recorded.

3. Potatoes or plants listed in Annex I which come from a field officially recorded as infested with potato cyst nematodes as referred to in paragraph 1 or paragraph 2 of this Article, or have been in contact with soil in which potato cyst nematodes have been found, shall be officially designated as contaminated.

CHAPTER III

CONTROL MEASURES

Article 9

1. Member States shall prescribe that in a field which has been officially recorded as infested as referred to in Article 8(1) or 8(2):

(a) no potatoes intended for the production of seed potatoes shall be planted; and

(b) no plants listed in Annex I, intended for replanting, shall be planted or stored. However, plants listed in point 2 of Annex I may be planted in that field provided that these plants are to be subject to the officially approved measures referred to in Section III(A) of Annex III, such that there is no identifiable risk of spreading potato cyst nematodes.

2. In the case of fields to be used for planting potatoes, other than those intended for the production of seed potatoes, officially recorded as infested as referred to in Article 8(1) or 8(2), the responsible official bodies of the Member States shall prescribe that these fields shall be subject to an official control programme aiming at least at the suppression of potato cyst nematodes.

The programme referred to in paragraph 2 of this Article shall take into account the particular production and marketing systems for host plants of potato cyst nematodes in the relevant Member State, the characteristics of the population of potato cyst nematodes present, the use of resistant potato varieties of the highest levels of resistance available as specified in Section I of Annex IV and, where appropriate, other measures. This programme shall be notified in writing to the Commission and to the other Member States with a view to ensuring comparable levels of assurance between the Member States.

The degree of resistance of potato varieties, other than those already notified under Article 10(1) of Directive 69/465/EEC shall be quantified according to the standard scoring notation table set out in Section I of Annex IV of this Directive. Testing for resistance shall be carried out according to the protocol set out in Section II of Annex IV of this Directive.

Article 10

1. Member States shall prescribe that for potatoes or plants listed in Annex I, which have been designated as contaminated under Article 8(3):

- (a) in the case of seed potatoes and the host plants listed in point 1 of Annex I, they shall not be planted unless they have been decontaminated under the supervision of the responsible official bodies of a Member State using an appropriate method adopted under paragraph 2 of this Article, based on scientific evidence that there is no risk of spreading potato cyst nematodes;
- (b) in the case of potatoes intended for industrial processing or grading, they shall be subject to officially approved measures in accordance with Section III(B) of Annex III;
- (c) in the case of plants listed in point 2 of Annex I, they shall not be planted unless they have been subject to the officially approved measures as referred to in Section III(A) of Annex III, such that they are no longer contaminated.

2. Specifications of the methods referred to in paragraph 1(a) of this Article shall be adopted in accordance with the procedure referred to in Article 17(2).

Article 11

1. Without prejudice to Article 16(1) of Directive 2000/29/EC, Member States shall prescribe that the suspected occurrence or confirmed presence of potato cyst nematodes in their territory resulting from a breakdown or change in the effectiveness of a resistant potato variety which relates to an exceptional change in the composition of nematode species, pathotype or virulence group shall be reported to their own responsible official bodies.

2. For all cases reported under paragraph 1, Member States shall provide that the potato cyst nematode species and, where applicable, the pathotype or virulence group involved, are investigated and confirmed by appropriate methods.

3. The details of the confirmations referred to in paragraph 2 shall be sent in writing each year by 31 December at the latest to the Commission and to the other Member States.

4. The appropriate methods referred to in paragraph 2 of this Article may be adopted in accordance with the procedure referred to in Article 17(2).

Article 12

Member States shall notify in writing to the Commission and to the other Member States each year by 31 January at the latest, a

list of all new varieties of potatoes which they have found by official testing to be resistant to potato cyst nematodes. They shall state the species, pathotypes, virulence groups or populations to which the varieties are resistant, the degree of resistance and the year of its determination.

Article 13

If, after the officially approved measures referred to in Section III(C) of Annex III have been taken, the presence of potato cyst nematodes is not confirmed, the responsible official bodies of the Member State shall ensure that the official record referred to in Article 4(5), Article 8(1) and Article 8(2) is updated and any restrictions imposed on the field are revoked.

Article 14

Without prejudice to Articles 3 and 5 of Directive 2000/29/EC, Member States may authorise derogations from the measures referred to in Articles 9 and 10 of this Directive in accordance with the provisions laid down in Commission Directive 95/44/EC of 26 July 1995 establishing the conditions under which certain harmful organisms, plants, plant products and other objects listed in Annexes I to V to Council Directive 77/93/EEC may be introduced into or moved within the Community or certain protected zones thereof, for trial or scientific purposes and for work on varietal selections⁽¹⁾.

CHAPTER IV

GENERAL AND FINAL PROVISIONS

Article 15

Member States may adopt in relation to their own production such additional or stricter measures as may be required to control potato cyst nematodes or to prevent them spreading in so far as they are in compliance with Directive 2000/29/EC.

Those measures shall be notified in writing to the Commission and to the other Member States.

Article 16

Amendments to the Annexes, to be made in the light of developments in scientific or technical knowledge, shall be adopted in accordance with the procedure referred to in Article 17(2).

Article 17

1. The Commission shall be assisted by the Standing Committee on Plant Health, hereinafter referred to as 'the Committee'.

⁽¹⁾ OJ L 184, 3.8.1995, p. 34. Directive as last amended by Commission Directive 97/46/EC (OJ L 204, 31.7.1997, p. 43).

2. Where reference is made to this paragraph, Articles 5 and 7 of Decision 1999/468/EC shall apply.

The period laid down in Article 5(6) of Decision 1999/468/EC shall be set at three months.

Article 18

1. Member States shall adopt and publish by 30 June 2010 at the latest the laws, regulations and administrative provisions necessary to comply with this Directive. They shall forthwith communicate to the Commission the text of those provisions and a correlation table between those provisions and this Directive.

They shall apply those provisions from 1 July 2010.

When Member States adopt those provisions, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

2. Member States shall communicate to the Commission the text of the main provisions of national law, which they adopt in the field governed by this Directive.

Article 19

Directive 69/465/EEC is repealed with effect from 1 July 2010.

Article 20

This Directive shall enter into force on the 20th day following its publication in the *Official Journal of the European Union*.

This Directive is addressed to the Member States.

Done at Luxembourg, 11 June 2007.

For the Council

The President

H. SEEHOFER

ANNEX I

List of plants referred to in Articles 4(1), 4(2), 4(4), 5(1), 5(2), 8(3), 9(1)(b), and 10(1)

1. Host plants with roots:

Capsicum spp.,

Lycopersicon lycopersicum (L.) Karsten ex Farw.,

Solanum melongena L.

2. (a) Other plants with roots:

Allium porrum L.,

Beta vulgaris L.,

Brassica spp.,

Fragaria L.,

Asparagus officinalis L.

(b) Bulbs, tubers and rhizomes, not subjected to the officially approved measures as referred to in Section III(A) of Annex III, grown in soil and intended for planting, other than those for which there shall be evidence by their packaging or by other means that they are intended for sale to final consumers not involved in professional plant or cut flower production, of:

Allium ascalonicum L.,

Allium cepa L.,

Dahlia spp.,

Gladiolus Tourn. Ex L.,

Hyacinthus spp.,

Iris spp.,

Lilium spp.,

Narcissus L.,

Tulipa L.

ANNEX II

1. With reference to the sampling and testing for the official investigation referred to in Article 5(1) and 5(2):
 - (a) sampling shall involve a soil sample with a standard rate of at least 1 500 ml soil/ha collected from at least 100 cores/ha preferably in a rectangular grid of not less than 5 metres in width and not more than 20 metres in length between sampling points covering the entire field. The whole sample shall be used for further examination, i.e. extraction of cysts, species identification and, if applicable, pathotype/virulence group determination;
 - (b) testing shall involve methods for the extraction of potato cyst nematodes described in the relevant Phytosanitary Procedures or Diagnostic Protocols for *Globodera pallida* and *Globodera rostochiensis*: EPPO standards.

2. With reference to the sampling and testing for the official survey referred to in Article 6(2):
 - (a) sampling shall be:
 - the sampling described in paragraph 1 with a minimum sampling rate of soil of at least 400 ml/ha,
 - or
 - targeted sampling of at least 400 ml of soil after visual examination of roots where there are visual symptoms,
 - or
 - sampling of at least 400 ml of soil associated with the potatoes after harvesting provided that the field where the potatoes were grown is traceable;
 - (b) testing shall be the testing referred to in paragraph 1.

3. By way of derogation the standard sampling rate referred to in paragraph 1 may be reduced to a minimum of 400 ml of soil/ha provided that:
 - (a) there is documentary evidence that no potatoes or other host plants listed in point 1 of Annex I have been grown and were present in the field in the six years prior to the official investigation;
 - or
 - (b) no potato cyst nematodes have been found during the last two successive official investigations in samples of 1 500 ml soil/ha and no potatoes or other host plants listed in point 1 of Annex I, other than those for which an official investigation is required according to Article 4(1), have been grown after the first official investigation;
 - or
 - (c) no potato cyst nematodes or potato cyst nematode cysts without live content have been found in the last official investigation which must have consisted of a sample size of at least 1 500 ml soil/ha and no potatoes or other host plants listed in point 1 of Annex I, other than those for which an official investigation is required according to Article 4(1), have been grown in the field since the last official investigation.

Results of other official investigations carried out before 1 July 2010 may be considered as official investigations as referred to in subparagraphs (b) and (c).

4. By way of derogation the sampling rate referred to at paragraphs 1 and 3 may be reduced for fields larger than 8 ha and 4 ha respectively:
 - (a) in the case of the standard rate referred to in paragraph 1, the first 8 ha shall be sampled at the rate specified therein, but may be reduced for each additional hectare to a minimum of 400 ml of soil/ha;
 - (b) in the case of the reduced rate referred to in paragraph 3, the first 4 ha shall be sampled at the rate specified therein, but may be further reduced for each additional hectare to a minimum of 200 ml of soil/ha.

5. The use of the reduced sample size as referred to at paragraphs 3 and 4 may be continued in the subsequent official investigations referred to in Article 4(1) until potato cyst nematodes have been found in the field concerned.
 6. By way of derogation the standard size of the soil sample referred to in paragraph 1 may be reduced to a minimum of 200 ml of soil/ha provided that the field is situated in an area declared free from potato cyst nematodes, and designated, maintained and surveyed in accordance with the relevant International Standards for Phytosanitary Measures. Details of such areas shall be officially notified in writing to the Commission and the other Member States.
 7. The minimum size of the soil sample in all cases shall be 100 ml of soil per field.
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ANNEX III

SECTION I

VERIFICATION

With reference to Article 5(2), the official investigation referred to in Article 4(1) shall establish that at the time of verification one of the following criteria are met:

— no history of potato cyst nematodes in the field during the last 12 years, based on the results of appropriate officially approved testing,

or

— a known cropping history in which no potatoes or other hosts plants listed in point 1 of Annex I have been grown in the field in the past 12 years.

SECTION II

SURVEYS

The official surveys referred to in Article 6(1), shall be conducted on at least 0,5 % of the acreage used in the relevant year for the production of potatoes, other than that intended for the production of seed potatoes. The results of the surveys shall be notified to the Commission by 1 April for the previous 12 month period.

SECTION III

OFFICIAL MEASURES

(A) The officially approved measures referred to in Article 4(4)(c), 9(1)(b) Article 10(1)(c) and in paragraph 2b of Annex I are:

1. disinfestation by appropriate methods such that there is no identifiable risk of the potato cyst nematodes spreading;
2. removal of soil by washing or brushing until practically free of soil such that there is no identifiable risk of the potato cyst nematodes spreading.

(B) The officially approved measures referred to in Article 10(1)(b) are delivery to a processing or grading plant with appropriate and officially approved waste disposal procedures for which it has been established that there is no risk of the potato cyst nematodes spreading.

(C) The officially approved measures referred to in Article 13 are an official re-sampling of the field officially recorded as infested as referred to in Article 8(1) or 8(2), and testing using one of the methods specified in Annex II, after a minimum period of six years counting from the positive confirmation of potato cyst nematodes, or counting from the growing of the last potato crop. This period may be reduced to a minimum of three years if appropriate officially approved control measures have been taken.

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ANNEX IV

SECTION I

DEGREE OF RESISTANCE

The degree of susceptibility of potatoes to potato cyst nematodes shall be quantified according to the following standard scoring notation as referred to in Article 9(2).

The score 9 indicates the highest level of resistance.

Relative susceptibility (%)	Score
< 1	9
1,1-3	8
3,1-5	7
5,1-10	6
10,1-15	5
15,1-25	4
25,1-50	3
50,1-100	2
> 100	1

SECTION II

PROTOCOL FOR RESISTANCE TESTING

- The test shall be performed in a quarantine facility either outside, in glasshouses, or in climate chambers.
- The test shall be performed in pots each containing at least one litre of soil (or suitable substrate).
- The soil temperature during the course of the test shall not exceed 25 °C and adequate watering shall be provided.
- When planting the test or control variety one potato eye plug of each test or control variety shall be used. Removal of all stems except one is recommended.
- The potato variety 'Désirée' shall be used as a standard susceptible control variety in every test. Additional fully susceptible control varieties of local relevance may be added as internal checks. The standard susceptible control variety may be changed if research indicates that other varieties are either more suitable or more accessible.
- The following standard populations of potato cyst nematodes shall be used against pathotypes Ro1, Ro5, Pa1 and Pa3:
 - Ro1: population Ecosse
 - Ro5: population Harmerz
 - Pa1: population Scottish
 - Pa3: population Chavornay

Other potato cyst nematode populations of local relevance may be added.
- The identity of the standard population used shall be checked using appropriate methods. It is recommended that at least two resistant varieties or two differential standard clones of known resistance capacity are used in the test experiments.

8. The potato cyst nematode inoculum (Pi) shall consist in total of five infective eggs and juveniles per ml of soil. It is recommended that the number of potato cyst nematodes to be inoculated per ml of soil is determined in hatching experiments. The potato cyst nematodes may be inoculated as cysts, or combined as eggs and juveniles in a suspension.
 9. The viability of the potato cyst nematode cyst content used as the inoculum source shall be at least 70 %. It is recommended that the cysts are 6-24 months old and are kept for at least four months at 4 °C immediately prior to use.
 10. There shall be at least four replicates (pots) per combination of potato cyst nematode population and potato variety tested. It is recommended to use at least 10 replicates for the standard susceptible control variety.
 11. The duration of the test shall be at least three months and the maturity of developing females shall be checked before breaking up the experiment.
 12. Potato cyst nematode cysts from the four replicates shall be extracted and counted separately for each pot.
 13. The final population (Pf) on the standard susceptible control variety at the end of the resistance test shall be determined by counting all cysts from all replicates and the eggs and juveniles from at least four replicates.
 14. A multiplication rate of at least $20 \times (Pf/Pi)$ on the standard susceptible control variety shall be achieved.
 15. The coefficient of variation (CV) on the standard susceptible control variety shall not exceed 35 %.
 16. The relative susceptibility of the tested potato variety to the standard susceptible control variety shall be determined and expressed as a percentage according to the formula:
$$Pf_{\text{test variety}}/Pf_{\text{standard susceptible control variety}} \times 100 \%$$
 17. If a tested potato variety has a relative susceptibility of more than 3 %, cyst counts will suffice. In cases where the relative susceptibility is less than 3 %, eggs and juveniles shall be counted in addition to cyst counts.
 18. Where the results of tests in the first year indicate that a variety is fully susceptible to a pathotype, there is no requirement to repeat these tests in a second year.
 19. The results of the tests shall be confirmed by at least one other trial performed in another year. The arithmetic mean of the relative susceptibility in the two years shall be used to derive the score according to the standard scoring notation.
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