

## SCHEDULE 2

Regulations 12 and 17

### **INFORMATION TO BE INCLUDED IN APPLICATIONS FOR CONSENT TO RELEASE OR MARKET GENETICALLY MODIFIED ORGANISMS OTHER THAN GENETICALLY MODIFIED HIGHER PLANTS**

#### **Part I**

##### **GENERAL INFORMATION**

1. The name and address of the applicant, and the name, qualifications and experience of the scientist and of every other person who will be responsible for planning and carrying out the release of the genetically modified organisms, and for the supervision, monitoring and safety of the release.
2. The title of the project.

#### **Part II**

##### **INFORMATION RELATING TO THE GENETICALLY MODIFIED ORGANISMS**

###### *Characteristics of donor, parental and recipient organisms*

3. Scientific name and taxonomy.
4. Usual strain, cultivar or other name.
5. Phenotypic and genetic markers.
6. The degree of relatedness between donor and recipient or between parental organisms.
7. The description of identification and detection techniques.
8. The sensitivity, reliability (in quantitative terms) and specificity of detection and identification techniques.
9. The description of the geographic distribution and of the natural habitat of the organisms including information on natural predators, prey, parasites and competitors, symbionts and hosts.
10. The organisms with which transfer of genetic material is known to occur under natural conditions.
11. Verification of the genetic stability of the organisms and factors affecting that stability.
12. The following pathological, ecological and physiological traits—
  - (a) the classification of hazard according to existing Community rules concerning the protection of human health and the environment;
  - (b) the generation time in natural ecosystems, sexual and asexual reproductive cycle;
  - (c) information on survivability, including seasonability and the ability to form survival structures, including seeds, spores and sclerotia;
  - (d) pathogenicity, including infectivity, toxigenicity, virulence, allergenicity, carrier (vector) of pathogen, possible vectors, host range including non-target organisms and possible activation of latent viruses (proviruses) and ability to colonise other organisms;

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- (e) antibiotic resistance, and potential use of these antibiotics in humans and domestic organisms for prophylaxis and therapy;
  - (f) involvement in environmental processes, including primary production, nutrient turnover, decomposition of organic matter and respiration.
13. The sequence, frequency of mobilisation and specificity of indigenous vectors, and the presence in those vectors of genes which confer resistance to environmental stresses.
14. The history of previous genetic modifications.

*Characteristics of the vector*

15. The nature and source of the vector.
16. The sequence of transposons, vectors and other non-coding genetic segments used to construct the genetically modified organisms and to make the introduced vector and insert functions in those organisms.
17. The frequency of mobilisation, genetic transfer capabilities and/or methods of determination of the inserted vector.
18. The degree to which the vector is limited to the DNA required to perform the intended function.

*Characteristics of the genetically modified organisms*

19. The methods used for the modification.
20. The methods used—
- (a) to construct inserts and to introduce it or them into the recipient organism;
  - (b) to delete a sequence.
21. The description of any insert and/or vector construction.
22. The purity of the insert from any unknown sequence and information on the degree to which the inserted sequence is limited to the DNA required to perform the intended function.
23. The methods and criteria used for selection.
24. The sequence, functional identity and location of the altered, inserted or deleted nucleic acid segments in question, and in particular any known harmful sequence.

*Characteristics of the genetically modified organisms*

25. The description of genetic trait or traits or phenotypic characteristics and in particular any new traits and characteristics which may be expressed or no longer expressed.
26. The structure and amount of any vector or donor nucleic acid remaining in the final construction of the modified organisms.
27. The stability of the organisms in terms of genetic traits.
28. The rate and level of expression of the new genetic material in the organisms, and the method and sensitivity of measurement of that rate and level.
29. The activity of the gene product.
30. The description of identification and detection techniques, including techniques for the identification and detection of the inserted sequence and vector.

31. The sensitivity, reliability (in quantitative terms), and specificity of detection and identification techniques.
32. The history of previous releases or uses of the organisms.
33. In relation to human health, animal health and plant health—
  - (a) the toxic or allergenic effects of the organisms and/or their metabolic products,
  - (b) the comparison of the organisms to the donor, recipient or (where appropriate) parental organisms regarding pathogenicity,
  - (c) the capacity of the organisms for colonisation,
  - (d) if the organisms are pathogenic to humans who are immunocompetent—
    - (i) diseases caused and mechanism of pathogenicity including invasiveness and virulence,
    - (ii) communicability,
    - (iii) infective dose,
    - (iv) host range and possibility of alteration,
    - (v) possibility of survival outside of human host,
    - (vi) presence of vectors or means of dissemination,
    - (vii) biological stability,
    - (viii) antibiotic resistance patterns,
    - (ix) allergenicity, and
    - (x) availability of appropriate therapies; and
  - (e) the other product hazards.

### **Part III**

#### **INFORMATION RELATING TO THE CONDITIONS OF RELEASE**

##### *The release*

34. The description of the proposed deliberate release, including the purpose or purposes of the release and any intention to use the genetically modified organism as or in a product in the future.
35. The intended dates of the release and time planning of the experiment including frequency and duration of releases.
36. The preparation of the site before the release.
37. The size of the site.
38. The methods to be used for the release.
39. The quantity of organisms to be released.
40. The disturbance of the site, including the type and method of cultivation, and mining, irrigation or other activities.
41. The worker protection measures taken during the release.
42. The post-release treatment of the site.

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43. The techniques foreseen for elimination or inactivation of the genetically modified organisms at the end of the experiment or other purpose of the release.

44. Information on, and the results of, previous releases of the genetically modified organisms, and in particular, releases on a different scale or into different ecosystems.

*The environment (both on the site and in the wider environment)*

45. The geographical location and national grid reference of the site onto which the release will be made, or the foreseen areas of use of the product.

46. The physical or biological proximity of the site of the genetically modified organisms to humans and other significant biota.

47. The proximity to significant biotopes, protected areas or drinking water supplies.

48. The climatic characteristics of the region or regions likely to be affected.

49. The geographical, geological and pedological characteristics.

50. The flora and fauna, including crops, livestock and migratory species.

51. The description of the target and non-target ecosystems likely to be affected.

52. The comparison of the natural habitat of the recipient organisms with the proposed site or sites of release.

53. Any known planned developments or changes in land use in the region which could influence the environmental impact of the release.

## **Part IV**

### **INFORMATION RELATING TO THE INTERACTIONS BETWEEN THE GENETICALLY MODIFIED ORGANISMS AND THE ENVIRONMENT**

*Characteristics affecting survival, multiplication and dissemination*

54. The biological features which affect survival, multiplication and dispersal.

55. The known or predicted environmental conditions which may affect survival, multiplication and dissemination, including wind, water, soil, temperature and pH.

56. The sensitivity to specific agents.

*Interactions with the environment*

57. The predicted habitat of the genetically modified organisms.

58. The studies on the behaviour and characteristics of the organisms and their ecological impact carried out in simulated natural environments, such as microcosms, growth rooms and greenhouses.

59. The capability of post-release transfer of genetic material—

(a) from the genetically modified organisms into organisms in affected ecosystems,

(b) from indigenous organisms to the genetically modified organisms.

60. The likelihood of post-release selection leading to the expression of unexpected and/or undesirable traits in the genetically modified organisms.

61. The measures employed to ensure and to verify genetic stability, the description of genetic traits which may prevent or minimise dispersal of genetic material, and methods to verify genetic stability.

62. The routes of biological dispersal, known or potential modes of interaction with the disseminating agent, including inhalation, ingestion, surface contact and burrowing.

63. The description of ecosystems to which the genetically modified organisms could be disseminated.

64. The potential for excessive population increase of the genetically modified organisms in the environment.

65. The competitive advantage of the organisms in relation to the unmodified recipient or parental organism or organisms.

66. The identification and description of the target organisms if applicable.

67. The anticipated mechanism and result of interaction between the released organisms and the target organisms, if applicable.

68. The identification and description of non-target organisms which may be adversely affected by the release of the genetically modified organisms, and the anticipated mechanisms of any identified adverse interaction.

69. The likelihood of post release shifts in biological interactions or in the host range.

70. The known or predicted interactions with non-target organisms in the environment, including competitors, preys, hosts, symbionts, predators, parasites and pathogens.

71. The known or predicted involvement of the organisms in biogeochemical processes.

72. Any other potential interactions of the organisms with the environment.

## **Part V**

### **INFORMATION ON MONITORING, CONTROL, WASTE TREATMENT AND EMERGENCY RESPONSE PLANS**

#### *Monitoring techniques*

73. Methods for tracing the organisms and for monitoring their effects.

74. Specificity (to identify the genetically modified organisms, and to distinguish them from the donor, recipient or, where appropriate, the parental organisms), sensitivity and reliability of the monitoring techniques.

75. Techniques for detecting transfer of the donated genetic material to other organisms.

76. Duration and frequency of the monitoring.

#### *Control of the release*

77. Methods and procedures to avoid and/or minimise the spread of the genetically modified organisms beyond the site of release or the designated area for use.

78. Methods and procedures to protect the site from intrusion by unauthorised individuals.

79. Methods and procedures to prevent other organisms from entering the site.

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*Waste treatment*

- 80. Type of waste generated.
- 81. Expected amount of waste.
- 82. Description of treatment envisaged.

*Emergency response plans*

- 83. Methods and procedures for controlling the genetically modified organisms in case of unexpected spread.
- 84. Methods, such as eradication of the genetically modified organisms, for decontamination of the areas affected.
- 85. Methods for disposal or sanitation of plants, animals, soils, and any other thing exposed during or after the spread.
- 86. Methods for the isolation of the areas affected by the spread.
- 87. Plans for protecting human health and the environment in case of the occurrence of an undesirable effect.

**Part VI**

**INFORMATION ON METHODOLOGY**

- 88. A description of the methods used or a reference to standardised or internationally recognised methods used to compile the information required by this Schedule, and the name of the body or bodies responsible for carrying out the studies.