



ADVISORY COMMITTEE ON RELEASES TO THE ENVIRONMENT

Advice on an application for Deliberate Release of a GMO for research and development purposes

Applicant: John Innes Centre

Application: To release peas genetically modified for a reporter gene linked to a drought responsive promoter and for herbicide tolerance.

Ref: 03/R29/04¹

Date: 1st May 2003

Advice of the Advisory Committee on Releases to the Environment to the Secretary of State under section 124 of the Environmental Protection Act 1990

ACRE is satisfied that all appropriate measures have been taken to avoid adverse effects on human health and the environment from the proposed release and sees no reason for the release not to proceed on the following condition.

The holder of the consent shall notify the following information at the times shown:

The effects of the release as authorised by the consent, for the assessment of any risks there are of damage to human health and the environment from the GMOs concerned. This should be in the form of a report submitted:

- by either one month after the date of termination of each release in the programme of work or by 31 October 2003, whichever is the sooner, and each year thereafter until 31 October 2004

¹Application reference 03/R29/04 dated 13th February 2003 taking into account all information and amendments as in the applicant's letters dated 30th March 2003 and 30th April 2003.

Background

ACRE considered the risks to human health and the environment posed by the release of 4 lines of peas genetically modified to contain a reporter gene linked to a drought-responsive promoter and for tolerance to the herbicide glufosinate ammonium. The proposed releases will be performed as one release per year over a period of two years between April and October 2003 - 2004. The releases will be of small-scale and take the form of two 1m x 2m beds per year contained within a poly-tunnel, for research and development. The purpose of the release is to test the responsiveness of the promoter-reporter gene combination to drought stress and produce leaf and seed material for metabolite profiling and other biochemical analyses.

Comment

In arriving at its advice Members considered the application against the requirements of the legislation and in particular:

- What is the likelihood and risk of gene flow?
- What is the likelihood of persistence in the environment?
- Do these GM peas have a selective advantage in the environment?
- Might there be effects on non-target organisms?
- Will they harm the environment?

ACRE noted that the modification introduced a drought responsive promoter linked to a reporter gene and that this combination was intended to provide information on the efficacy of the promoter but not to change the drought response of the whole plant.

Peas are primarily self pollinating, with out-crossing to compatible plants being a rare event. Pea has no sexually compatible wild relatives in the UK. The poly-tunnel will have bee netting at the ends and the GM peas will be surrounded by two rows of “guard”, non-GM peas. The poly-tunnel will itself also contribute a measure of isolation of the peas. The nearest peas outside the poly-tunnel will be over 100m away. The possibility of cross-pollination of nearby pea crops under these circumstances was therefore considered remote.

The traits introduced into the GM peas, herbicide tolerance and drought-responsive reporter gene activity, are not expected to confer a selective advantage or increase the persistence of plants in the trial. Members noted that small mammals might not be completely excluded from the site but were content that this did not pose an unacceptable risk. The peas will be grown in raised beds which will be destroyed after the final release and will abrogate effects on biogeochemical processes or on soil ecology. Members agreed that because of the small scale of the trial any unexpected effect would be local and transient and that the destruction of the raised beds alleviated the need for post-release monitoring.

Items arising from Public Representations

ACRE considered the representation received from a member of the public in respect of any science issues which might impact on this application. They noted and considered the comments which are summarised briefly here:

- Potential unexpected effects on wildlife and non-target species such as bees
- Unexpected effects arising from compositional changes due to the modification
- Exclusion of insects and small mammals

ACRE was content that these issues had been considered thoroughly during the Committee's assessment of the dossier and that no outstanding issues remained. In particular the Committee was content that the proposed risk management measures were proportionate to the assessed risk. ACRE was satisfied that no new issues had been raised.