



ADVISORY COMMITTEE ON RELEASES TO THE ENVIRONMENT

Advice on an application for deliberate release of a GMO for research and development purposes

Applicant: Syngenta Seeds Ltd

Application: To release wheat genetically modified for fungal resistance to *Fusarium* pathogens and a marker gene conferring a capability to metabolise mannose.

Ref: 02/R34/4¹

Date: 10th March 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 genetically modified organism concerned. This should be in the form of reports submitted:

- either one month after the date of termination of the release or by 30 November 2003 whichever is the sooner and;
- by one year after the date of termination of the release or by 30 November 2004, whichever is the sooner to cover post-trial monitoring for the assessment of the effectiveness of measures to control volunteers; and
- by two years after the date of termination of the release or by 30 November 2005, whichever is the sooner to cover post-trial monitoring for;
 1. assessment of the effectiveness of measures to control volunteers, and
 2. the re-evaluation of the post trial monitoring requirements

¹Application reference 02/R34/4 dated 28 November 2002 taking into account all information and amendments as in the applicant's letter dated 12 February 2003

Comment

ACRE considered the risks to human health and the environment posed by the release of 6 lines of wheat genetically modified to confer tolerance to fungal pathogens and to metabolise mannose. This is a small scale release (35m x 40m) to take place at Syngenta's research centre in Bracknell between Spring and October 2003. In formulating its advice the committee gave consideration to a number of points including the potential for gene transfer to nearby crops, persistence, and non-target effects on fungi.

Wheat flowers display characteristics that do not favour cross-pollination, under normal circumstances the pollination of wheat relies mainly on self-pollination. Wheat pollen can be dispersed by the wind but dispersal is limited because the pollen is heavy and remains viable for a very short time span (30 minutes). A 5 metre barrier of unmodified wheat plants, to act as a pollen barrier, will surround the trial and the nearest wheat crops are winter varieties and will be at least 50m away from the trial site. The possibility of cross-pollination of nearby crops under these circumstances was therefore considered remote.

The traits introduced into the GM wheat are not expected to increase the persistence of wheat plants in the trial. Members agreed that because of the small scale of the trial any effect would be local and transient. ACRE requested that the wheat be harvested by hand to prevent contamination of farm machinery. After the trial has been terminated the site will be monitored for two years for the effective control of volunteers during which time a crop other than cereal will be grown, as specified by ACRE. Monitoring will be extended if volunteers persist. None of the GM wheat will be put in the human food chain or fed to livestock.

ACRE concluded that the proposed trial poses a very low risk to human health and the environment.

Items arising from public representations

ACRE considered the scientific issues raised in the 74 representations received from members of the public with respect to this application from Syngenta.

The main scientific concern raised by the public was the possibility of cross-pollination of the GM wheat and the subsequent risk of contamination of non-GM and organic crops. ACRE considered that cross pollination is extremely unlikely due to several factors: 1) wheat is predominately self-pollinating 2) wheat pollen is relatively heavy and does not remain viable for longer than 30 minutes 3) the nearest wheat and barley crops will be at least 50m away from the release site and 4) the GM wheat will be surrounded by a border of non-GM wheat which will act as a pollen barrier.

Some concern was raised by the public regarding potential effects on microorganisms in the soil. ACRE raised a similar issue regarding the impact of this GM wheat on fungi in the soil. In light of this Syngenta have been advised that ACRE would welcome data regarding the effect of the release of this GM wheat on fungal associations in soil. To date Syngenta have not carried out such analysis however, as the protein conferring tolerance to fungal pathogens is not directly acting on the fungus, effects on fungal associations in the soil is not anticipated. ACRE were content that this trial could proceed on the basis of the risk assessment and the fact that this is a small scale well controlled release. However, ACRE noted that should Syngenta wish to carry out larger scale releases of this GMO then further information regarding fungal/soil associations would be required.