

Worksheet for Determining Whether Field Trials are Categorically Excluded from NEPA

Permit #	04-131-01r
Institution	Iowa State University
Organism	corn
Category	pharmaceutical intent-vaccine
Transgene	<i>E. coli</i> LT-B subunit protein
1. Confinement	
Confinement and mitigation conditions have been reviewed and determined to be adequate	X
2. Threatened or Endangered Species or its habitat	
Resident or migratory in counties and harm to threatened or endangered species or habitat is likely	
Resident or migratory in counties and harm to threatened or endangered species is unlikely	X
None observed in area (no harm to threatened and endangered species)	
New or Novel	
3. New or Novel Crop	
Never used in a field trial	
Not new but no prior EA	X
Not new and prior EA	
4. New or Novel Trait (gene product)	
Never used in a field trial	
Not new but no prior EA	X
Not new and prior EA	
5. Cumulative Effects	
Cumulative effects likely	
Cumulative effects possible	
Cumulative effects unlikely	X
6. Plant Pollination	
Primarily bee or insect pollinated crop	
Primarily wind pollinated food or feed crop	X
Primarily self fertilized food or feed crop	
Non-food or feed crop	
7. Effects on Food/Feed Supply	
Known allergen, antinutritive, oral toxicant	
Food safety not established	X
GRAS status or approved food additive for native protein	
GRAS status or approved food additive for plant produced protein	
8. Isolation Distance	
AOSCA standard for crop	1/8 mile
Proposed isolation distance	3+ miles
9. Scale	
>100 acres/trait/crop/company/year	
50-99 acres/trait/crop/company/year	
10-49 acres/trait/crop/company/year	
<10 acres/trait/crop/company/year	X
10. Effects (positive or negative) on other species	
Significant effects expected/observed	
Minimal, non-cumulative effects expected/observed	
No effects expected/observed	X
11. Sexually Compatible Relatives	
Relatives within dispersal distance	
Relatives not within dispersal distance	X
12. Seed Dormancy	
>3 years	
3 years	
2 years	
<2 years	X
13. Persistence in environment	
Crop can naturalize	
Crop can persist 3-5 years without human intervention	
Crop does not persist without intervention	X
14. Comments	

NEPA Decision Summary

Based on a review of Permit 04-131-01r, the following determinations were made:

- The threatened or endangered species known to be present in the county where the field trial will be performed are not known to inhabit or forage in corn fields, and the gene products at issue in the proposed field trials have no known toxic effects on wildlife. Therefore these field trials will not harm or have adverse or other significant effects on threatened or endangered species.
- Hundreds of field trials have been performed with transgenic corn plants under APHIS authority, and APHIS is familiar with corn biology and methods to manage confined corn field trials.
- Corn is wind pollinated, and is not generally pollinated by bees and several studies have indicated that 660 feet separation distance between corn fields is sufficient to reduce outcrossing to insignificant levels. This is the distance recommended by the Association of Official Seed Certifying Agencies (AOSCA) for the production of the foundation class of certified seed. APHIS requires a 1 mile isolation distance for corn and the applicant believes that the actual separation distance will be over 3 miles or 25 times the distance recommended by AOSCA for the production of foundation seed.
- Any plant material left after harvest, containing only insignificant amounts of the proteins, will be plowed under the soil surface. The proteins have no known or foreseeable toxic effects, so this method of disposal should have no negative impacts on the environment.
- The gene product proposed for this field trial has been shown to not have toxic effects when ingested. In fact, it is being developed as a possible oral booster vaccine. The protein does not have characteristics of known toxins or allergens. No foreseeable effects on other organisms are expected.
- The proposed field trial is less than 10 acres. Trials of such small size are and have been easily monitored and confined to permitted areas, under environmental mitigation measures similar to those specified in the permit application and in the standard and supplemental permit conditions.
- Corn is not observed to be capable of establishment in unmanaged environments: it is reliant on continuous human intervention for its survival. In previous field tests and applications, seed dormancy in corn has not been observed.
- There are no sexually-compatible relatives of corn known to exist in the area where the trials will be performed.

For the above reasons, APHIS has determined that (1) pursuant to 7 C.F.R. §372, the field trials proposed under permit #04-131-01r will not significantly affect the physical environment and (2) there are no applicable, extraordinary, or other reasonably foreseeable circumstances under which significant environmental effects could occur given the protective and ameliorative measures specified above. Therefore, this field test is deemed confined within the meaning of 7 C.F.R. §372.5.

Signed: _____

Neil E. Hoffman
Director of Regulatory Programs

Date: _____7.19.04_____