

RSPM 27. IMPORTATION AND CONFINED FIELD RELEASE OF TRANSGENIC ARTHROPODS IN NAPPO MEMBER COUNTRIES

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RELEVANT STANDARDS

- **NAPPO RSPM No. 14**
 - ***IMPORTATION AND RELEASE INTO THE ENVIRONMENT OF TRANSGENIC PLANTS IN NAPPO MEMBER COUNTRIES***

- **NAPPO RSPM No. 22**
 - ***GUIDELINES FOR CONSTRUCTION AND OPERATION OF A CONTAINMENT FACILITY FOR INSECTS AND MITES USED AS BIOLOGICAL CONTROL AGENTS***

- **IPPC ISPM No. 11**
 - ***PEST RISK ANALYSIS FOR QUARANTINE PESTS, INCLUDING ANALYSIS OF ENVIRONMENTAL RISKS AND LIVING MODIFIED ORGANISMS***

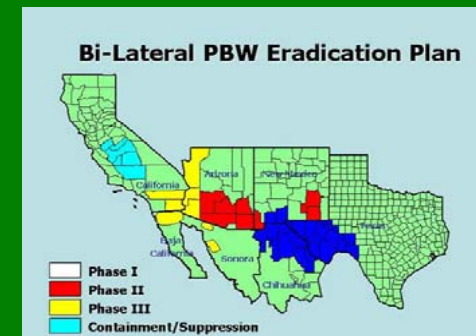
- **IPPC ISPM No. 3**
 - ***GUIDELINES FOR THE EXPORT, SHIPMENT, IMPORTATION, AND RELEASE OF BIOLOGICAL CONTROL AGENTS AND OTHER BENEFICIAL ORGANISMS***

TRANSGENIC ARTHROPOD

- **Genetically Modified Organism**
- **Isolated DNA sequence is integrated into the genome**
- **Integrated DNA is inherited by the offspring**
- **Technology is established in arthropods**

JUSTIFICATION

- **TRANSGENIC STRAINS AVAILABLE**
 - Pink Bollworm
 - Mediterranean fruit fly
 - Mexican fruit fly
 - Codling moth
- **USE IN PLANT PEST CONTROL PROGRAMS**
 - Impact other NAPPO countries
 - Released arthropods may cross borders
- **NEED NAPPO GUIDELINES**
 - Protect interests of NAPPO countries

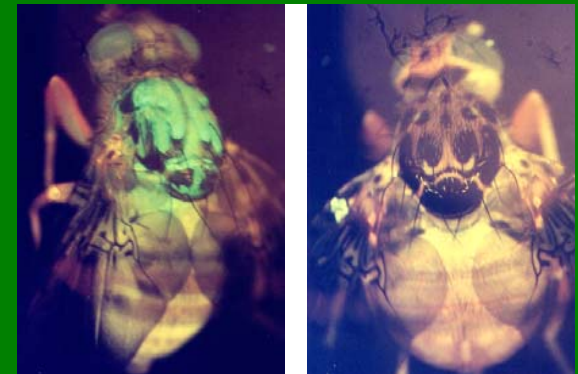


PROPOSED APPLICATIONS

- **MALE-ONLY STRAINS FOR SIT**
 - KILL FEMALES EARLY IN REARING
 - REDUCE PRODUCTION COSTS
 - BIOSECURITY ISSUES

- **AUTOMATIC STERILIZATION**
 - REDUCE COST OF FACILITIES
 - REDUCE LABOR COSTS
 - REDUCE IRRADIATION DAMAGE

- **INTERNAL GENETIC MARKER**
 - OPERATIONAL EFFICIENCIES
 - AUTOMATED TRAP SCREENING



SCOPE

- **TRANSGENIC ARTHROPODS**
 - KNOWN PLANT PESTS
 - KNOWN TO AFFECT PLANT HEALTH
 - BENEFICIAL ARTHROPODS
 - POTENTIAL TO AFFECT PLANT HEALTH

- **SPECIFICALLY EXCLUDES**
 - PARATRANSGENIC ARTHROPODS
 - NEMATODES

- **APPLICATIONS**
 - IMPORTATION INTO CONTAINMENT
 - CONFINED FIELD RELEASE

OUTLINE OF REQUIREMENTS

- **APPLICANT PROVIDES INFORMATION**
 - Identify the transgenic arthropod
 - State the type of action proposed
 - Propose risk management options
- **ANALYSIS OF POTENTIAL PHYTOSANITARY RISK**
 - Unmodified recipient arthropod
 - Transgenic arthropod
- **DETERMINATION ON RISK MANAGEMENT**
 - Specific assessment criteria
 - Available risk management options

IMPORTATION: INFORMATION REQUIREMENTS

- **ADMINISTRATIVE INFORMATION**
- **DESCRIPTION OF THE TRANSGENIC ARTHROPOD**
 - **TRANSGENIC TECHNOLOGY**
 - **GENETIC CONSTRUCT**
 - **TRANSGENIC ARTHROPOD**
 - **LIFE STAGE**
 - **PHENOTYPE**
 - **METHODS TO DISTINGUISH IT**
- **RISK MANAGEMENT OPTIONS**
 - **PACKAGING**
 - **CONTAINMENT**
 - **MONITORING**
 - **CONTINGENCY PLANS**
 - **DEVITALIZATION AND DISPOSAL**

IMPORTATION: ANALYSIS CRITERIA

- **POTENTIAL PHYTOSANITARY RISK**
- **REVIEWED ON CASE-BY-CASE BASIS**
 - **COMPLETENESS**
 - **ACCEPTABILITY**
- **CONTAINMENT FACILITY INSPECTION**

IMPORTATION: AUTHORIZATIONS

- **NO SIGNIFICANT PHYTOSANITARY RISK**
- **VALID FOR FIXED TIME PERIOD**
- **CONDITIONAL UPON MEETING:**
 - **TRANSPORT REQUIREMENTS**
 - **IDENTIFICATION**
 - **CONTAINMENT**
 - **CONTAINMENT FACILITY REQUIREMENTS**
 - **LOCATION**
 - **CONTAINMENT**
 - **DISPOSAL**

CONFINED FIELD RELEASE

- EVALUATE STRAIN CHARACTERISTICS
- COMPILE SAFETY DATA
- MINIMIZE INTERACTION WITH ENVIRONMENT
- NO TRANSGENIC MATERIAL WILL PERSIST
- RESTRICT POTENTIAL IMPACT TO CONFINED SITE



CONFINED FIELD RELEASE

- **WELL CHARACTERIZED TRANSGENIC STRAIN**
- **EVALUATION OF POTENTIAL PLANT PEST RISKS**
 - **RELATIVE TO UNMODIFIED ARTHROPOD**
 - **IMPACT OF NEW GENETIC TRAIT ON PLANT PEST STATUS**
- **MINIMIZE RISK TO ENVIRONMENT**
 - **CONFINEMENT MEASURES**
 - **ISOLATION OF RELEASE SITE**
 - **CONVENTIONAL CONTROL MEASURES IN BORDER AREAS**
 - **REMOVAL OF TRANSGENIC ARTHROPODS**

CONFINED: INFORMATION REQUIREMENTS

- **ADMINISTRATIVE INFORMATION**
- **DESCRIPTION OF THE TRANSGENIC ARTHROPOD**
 - **RECIPIENT ARTHROPOD**
 - **TRANSGENIC TECHNOLOGY**
 - **GENETIC CONSTRUCT**
 - **CHARACTERIZATION OF TRANSGENE**
 - **PHENOTYPE OF TRANSGENIC ARTHROPOD**
- **CONFINED FIELD RELEASE SITE**
 - **FULL DESCRIPTION WITH MAPS**
 - **CONFINEMENT MEASURES**
 - **RELEASE PROTOCOLS**
- **RISK MANAGEMENT OPTIONS**
 - **MEASURES**
 - **HANDLING**
 - **RECORD KEEPING**

CONFINED: ANALYSIS CRITERIA

- **MINIMIZE RISK FROM TRANSFORMATION VECTOR**
- **MINIMIZE RISK OF DISSEMINATION**
 - **CONFINEMENT MEASURES**
 - **PHYSICAL**
 - **BIOLOGICAL**
 - **TEMPORAL**
 - **GEOGRAPHIC**
 - **DETECTION SURVEY**
- **MINIMIZE LIKELIHOOD OF DETRIMENTAL EFFECTS**
 - **CONFINEMENT MEASURES**
 - **LIMIT SIZE OF CONFINED FIELD RELEASE**
 - **APPROPRIATE SITE SELECTION**
 - **REPRODUCTIVE ISOLATION**
 - **CONTINGENCY PLAN**

CONFINED: AUTHORIZATIONS

- VALID FOR FIXED TIME PERIOD
- EMPLOY RISK MANAGEMENT OPTIONS
- SUBJECT TO INSPECTION BY NPPO
- MUST REPORT CHANGE IN PHYTOSANITARY RISK
- RECORDS MAINTAINED
- FINAL REPORT

IMPLEMENTATION

- **Canada**
 - **CFIA**
 - **Plant pest authority under Plant Protection Act**
 - **Environment Canada**
 - **Environmental Protection Act of 1999**
 - **Uses other than pest control**

- **Mexico**
 - **SAGARPA**
 - **Plant pest authority under Biosafety and Genetically Modified Organisms Act**
 - **Official Mexican Standard to be developed**

- **USA**
 - **USDA APHIS Biotechnology Regulatory Services**
 - **Plant Protection Act of 2000**
 - **Regulatory framework is in place**



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