Title: Preventing, responding to, and reporting unintentional release of genetically modified invertebrates

Purpose: To describe requirements for how to prevent, detect and respond to the escape of flying GM invertebrates from PC2 facilities.

Research groups are responsible for the preparation of Safe Operating Procedures (SOPs) and Risk Assessments for their own work.

Preventing escape of GM invertebrates

- Ensure that facility doors are always closed other than as you enter or exit the facility.
- All GM invertebrates must be housed within an OGTR-certified PC2 *Invertebrate Facility*.
- All invertebrates must be housed in enclosures designed to prevent their escape.
- When being handled for experimental procedures, invertebrates must be contained or otherwise always controlled and must not be let loose in the facility.
- Ensure that others with access to the facility can identify GM invertebrates by including GMO labels on all containers, housing rooms, growth cabinets, etc. (as applicable).
- Before exiting an invertebrate facility, check the outside of your PPE, clothing, exposed skin, and hair for any adhering GM invertebrates. When noticed, loose invertebrates must be captured and returned to a container or euthanised before you exit the facility.

Detecting escape of GM invertebrates

- Any escape of GM invertebrates that is noticed at the time it is happening (e.g., you see a GM fly escape its container as you open it) must be dealt with at once. See 'Responding to escaped GM invertebrates' below.
- PC2 invertebrate facilities and laboratories where GM invertebrates are handled must have insect-trapping devices in the room(s). These may include:
    - Sticky traps
    - Insectocutors – electric/UV light traps
    - Bottle traps with attractants if suitable for the species you are handling.
- It is important that you have a procedure to routinely check the insect traps to detect any significant or ongoing containment issues early.

Responding to escaped GM invertebrates

1. If you can see the escaped invertebrate, either trap it and return to a container or squash it at once.
2. If you cannot immediately recapture the invertebrate, check that all doors to the facility are closed. Place a sign on the door saying, 'Do not enter'.
3. Consider whether insect spray should be used in areas outside of the invertebrate containment facility/insect holding areas.
    a. Consult the Chief Investigator and IBC beforehand as using such spray may be damaging to invertebrates housed within the containment facility, particularly if the facility has negative air pressure or recirculated air flowing into insect holding areas.
4. Notify the Chief Investigator and the IBC.
5. Increase the number of insect traps inside and outside of the facility and check traps daily for 2 weeks to look for capture of escaped invertebrates and/or presence of any invertebrates with potential to crossbreed. Record with photographs.

a. Notify the IBC of monitoring results at the end of the 2 weeks.

Planning for management of an unintentional release before it happens

1	Ensure that everyone working in the facility is aware of and familiar with these procedures.
2	Ensure that a copy of the unintentional release poster is printed and available in the facility.
3	Have a supply of insect traps and insect spray available for the facility.
4	Have a contact list for staff who need to be notified in case of a release – chief investigators, technical officers, IBC research compliance officers, etc.

Legislation, Guidelines and Standards:

- Gene Technology Act 2000
- OGTR Guidelines for Certification of PC2 Invertebrate Facilities

This guidance document is supplied to specify requirements under relevant legislation, guidelines and standards relating to the compliant handling of regulated biological materials including, but not limited to GMOs, microorganisms and samples/organisms containing these.

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