Transport of Biological Materials Procedure

Section 1 - Purpose and Scope

(1) This Procedure outlines the requirements at the University of Queensland (UQ) for transporting biological material – including infectious, diagnostic, genetically modified and biosecurity material by air or surface transport. The definition of "biological material" for the purposes of this Procedure is provided in the Appendix.

(2) This Procedure applies to all UQ workers transporting biological material at UQ. The definition of UQ workers is provided in the Appendix.

(3) It includes biological material classified as hazardous biological material as defined in the Working with Hazardous Risk Biological Material Procedure.

(4) This Procedure supports and should be read in conjunction with UQ's Biosafety Policy and other relevant procedures associated with biological material.

Context

(5) This Procedure has been developed to assist UQ meet the requirements of its responsibilities as a Person in Control of a Workplace or Undertaking (PCBU) under the Work Health and Safety Act 2011 as well as other Australian legislative requirements.

(6) The Australian Government regulates genetically modified organisms (GMO) under the Gene Technology Act 2000. The Office of the Gene Technology Regulator (OGTR) administers requirements of this Act and classifies materials based on risk to the health and safety of people and the environment.

(7) The Australian Government regulates imported biological material under the Biosecurity Act 2015. The Department of Agriculture, Fisheries and Forestry (DAFF) administers the requirements of this Act and regulates the importation of biological material into the country.

(8) The Queensland Government regulates certain biological material under the Biosecurity Act 2014 (Qld). The Department of Primary Industries (DPI) administers the requirements of this Act and regulates biological material mentioned in the schedules of this Act.

(9) Other state governments may regulate certain biological material under the relevant biosecurity or similar Acts.

Section 2 - Process and Key Controls

(10) UQ workers must comply with all relevant legislation, guidelines and directions when transporting biological materials associated with research and teaching activities at UQ.

(11) The transport of biological materials must comply with relevant requirements of the following:

a. The National Transport Commission's Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code);

b. Transport of GMOs within Australia;
c. The International Air Transport Association (IATA) requirements for transport of goods via air transport;
d. Directions issued by DAFF in relation to imported biological goods;
e. Directions issued by the Department of Primary Industries (DPI) in relation to biological material regulated by the Biosecurity Act 2014 (Qld) within Queensland;
f. Directions from other government departments, including Queensland, other states, or the Commonwealth as they relate to the biological material;
g. Directions issued by the UQ Institutional Biosafety Sub-Committee (IBSC);
h. Complete any mandatory training associated with packaging of Dangerous goods (if required);
i. Any other direction issued by a Regulator.

(12) Where a documented risk assessment demonstrates that a biological material transported presents low risk of infection, contamination, environmental release or biosecurity impact, alternative transport arrangements may be used, provided all legislative and regulatory requirements continue to be met.

Section 3 - Key Requirements

(13) UQ workers must undertake the following prior to acquiring or transporting biological material:

a. Determine whether the biological materials are classified as dangerous goods by the ADG Code and comply with relevant transport requirements or restrictions;
b. Determine and comply with additional regulatory requirements including in relation to:
    i. import/export conditions;
    ii. transport of GMOs;
    iii. air, road, rail and postal transportation; and
    iv. packaging and labelling;
c. Complete a risk assessment for transport and it is to include risks associated with spills, loss or theft during transport and implement suitable controls;
d. Ensure that recording, tracking and accounting procedures are in place to manage the transport of the biological material.

(14) Spills, loss or theft of biological materials must be reported to the Biosafety Team by email and/or telephone (+61 7 3365 2365) as soon as practicable and the incident must be recorded in the BioRisk form in UQSafe.

Dangerous good requirements

(15) Goods classified under the ADG Code must meet the transport requirements for their class. Class 6.2 of the ADG Code identifies Infectious Substances that are known or are reasonably expected to contain pathogens. There are two categories of biological material defined in Class 6.2:

a. Category A – Infectious substances transported in a form that when exposure occurs, can cause permanent disability, life-threatening or fatal disease in otherwise healthy humans or animals. These are assigned to UN2814 (humans) or UN2900 (animals)
b. Category B – Infectious substances that do not meet the criteria for inclusion in Category A, these are assigned to UN3373.

(16) Biological material that does not contain infectious substances or is unlikely to cause disease in humans or animals, is not subject to the ADG Code unless they meet criteria for inclusion in another class.

(17) Toxins from plant, animal or bacterial sources must be considered under Class 6.1 Toxic Substances. These are assigned to UN numbers such as UN3172 or UN3462, depending on toxicity and form – refer to the ADG Code for further detail or contact your local Health and Safety Team.

(18) GMOs that do not meet the definition of a toxic or infectious substance must be transported according to the OGTR transport guidelines and/or the conditions listed in the licence or approval.

Import and export requirements

(19) A permit may be required for importing or exporting biological material. UQ workers must ensure that all requirements for the import and export of biological materials are met in accordance with the following:

a. Working with Biosecurity Goods Procedure;
b. Export controls including requirements for materials on the Defence and Strategic Goods List (DSGL); and
c. Security Sensitive Biological Agents (SSBA) Regulatory Scheme.

(20) Contact your local Health and Safety Team or UQ's Biosafety Team (biosafety@uq.edu.au) for more information about import requirements for transporting biological material.

(21) For advice on Export Controls, contact International Safeguards in Research Ethics and Integrity.

(22) The University of Queensland Biological Resources (UQBR) manages the handling and transport of live laboratory animals under their direct control within the University. Persons wishing to transport animals must refer to the following:

a. Holding Laboratory Animals Outside Biological Resources Facilities Guideline
b. Animal Ethics in Teaching and Research Procedure

(23) UQBR have Local Standard Operating Protocols (LSOP) that outline the requirements for packing, unpacking and tracking animals outside of UQBR facilities. These should be read in conjunction with any approvals issued by the UQ IBC, DAFF or the OGTR.

(24) Anyone moving live animals outside of UQBR controlled facilities must have the proper procedures and risk assessments in place to ensure the safe transport of the animals.

(25) Animals and plants containing genetically modified (GM) microorganisms have specific containment, labelling and decontamination procedures under the OGTR's Guidelines for the Transport, Storage and Disposal of GMOs. The guideline notes that consideration should be given to alternatives to the transport of animals or plants that host pathogenic GM microorganisms, such as transporting cultures of the microorganisms for later inoculation.

(26) Genetically modified animals not containing GM microorganisms have their own specific containment, labelling, segregation and decontamination of containers procedures within the OGTR guidelines depending upon their physical containment status.

(27) Transport of non-GM live animals may be subject to other requirements. Refer to the Working with Biosecurity Goods Procedure and other guidelines, procedures and LSOPs.

(28) Contact your local Health and Safety Team, UQBR Training and Compliance (br.traincomp@uq.edu.au) or UQ's Biosafety Team (biosafety@uq.edu.au) for more information regarding requirements for transporting live animals.

Transportation by air

(29) Any biological material to be transported by air must be packaged and labelled according to International Air

Transport Association (IATA) requirements and accompanied by a declaration from an IATA approved packager.

(30) UQ workers transporting biological materials by air must complete the IATA's packaging training or contact the local Health and Safety Team for details of IATA approved packagers. It is advised that a recognised courier be engaged to transport any infectious material to comply with IATA requirements.

(31) UQ workers must consult individual airlines for requirements for carrying biological materials on commercial flights.

(32) UQ workers must be aware of the following:

a. Infectious substances are prohibited by Australia Post via international mail. Infectious substances may be sent domestically within Australia from UQ using Australia Post under very strict conditions as set out in Prohibited and Restricted Items List and Packaging Guide (2024).
b. Some countries will not accept any biological material through international post, it is the sender's responsibility to determine what these requirements are – refer to the International Post Guide.

Transportation by road or rail

(33) The ADG Code requires biological material to be packaged and labelled as per the specific biological material transport requirements.

(34) The use of private vehicles for transporting any biological materials is not permitted unless a documented risk assessment demonstrates the material presents a negligible risk of infection, contamination, environmental release or biosecurity impact.

(35) UQ workers must use the Properties and Facilities (P&F) courier service or an external courier service when transporting any biological material that is classified as dangerous goods under the ADG Code.

(36) For all other biological material not classified as dangerous goods under the ADG Code, UQ workers must use a UQ vehicle, P&F courier service or external courier for transporting biological material by road.

(37) Transport for Brisbane (Translink) does not permit the carrying of Infectious Substances (class 6.2 – Category A or B) or any biological material packed with dry ice on public transport.

Transport on a UQ campus or site

(38) UQ workers may transport biological material within a campus or site (e.g. between buildings) provided that packaging and labelling requirements are met as outlined in this procedure.

(39) Decontamination of containers (including wheelie bins, trolleys and eskies) is required prior to transport and on arrival (unless kept in a certified facility). The outer surfaces of the goods and the outermost container must be free of contamination prior to transport. Decontamination must be with an approved and effective disinfectant.

Transport within UQ buildings

(40) Where biological material is transported within a building and outside of certified spaces, the material must be contained in an appropriate manner as determined by the category of material and the classification of the facility.

(41) PC2 material must be double contained, the outside of the container always decontaminated with an appropriate and effective disinfectant and accompanied by an authorised person.

(42) PC3 material must be triple contained, the outside of the container always decontaminated with an appropriate and effective disinfectant and accompanied by an authorised person.

(43) PC3 material may only be transported to another PC3 facility unless authorised by the OGTR (GMOs) or IBC.

(44) Biological material that is subject to a high-risk biological approval may only be moved between facilities or locations on the approval memo or in the Laboratory Activity Register in UQSafe.

(45) Under no circumstances should the person transporting biological material pass through or visit a food outlet when moving across campus.

Transport on a non-UQ campus or site

(46) UQ workers working on non-UQ sites must follow the procedures for transport of biological material in effect on that site.

Transport of biological waste on a UQ campus or site

(47) Biological waste being transported for treatment or disposal at another building on campus must be double contained (i.e. two clinical waste bags) and placed in a ridged container such as a clinical waste wheely bin or lidded bucket.

(48) The outer ridged container must be labelled as follows:

a. For Risk Group 2 infectious organisms – “Biohazard” label
b. For GMOs - “GMO” label
c. For Biosecurity Goods – “Biosecurity Waste”

(49) More than one type of label may be required depending on the classification of the waste.

(50) The authorised person transporting the waste must proceed via the most direct route to the destination.

Packaging and labelling

(51) These general conditions apply to packaging biological materials for transport:

a. The container must consist of four components:
    i. A sealed, unbreakable, leak-proof primary container;
    ii. A sealed, unbreakable, leak-proof secondary package;
    iii. Labelling to identify regulated contents (i.e. GMO, Biosecurity Goods);
    iv. Spill control (if applicable).
b. The secondary package must be of adequate strength (impact resistant) for its capacity, mass and intended use; and labelled to identify the contents and contact details of person to contact in the event of a spill.
c. For liquids, absorbent material in sufficient quantity to absorb the entire contents should be placed between the primary receptacle and the secondary package.
d. When multiple fragile primary receptacles are placed in a single secondary package, they should be either individually wrapped or separated to prevent contact between them.
e. If dry ice, liquid nitrogen or other gaseous agents are used, then pressure relief or venting mechanism must be in place to prevent pressurisation of the outer package.

(52) In addition, specific requirements for GM plant and animals include:

a. Plants – sealed in unbreakable containers to prevent the release during transport.
b. Animals without GM micro-organisms sealed, secure primary containers (e.g. cages); tagged or labelled

individually (microchip, tattoo, ear tag).

c. Where ventilation is required for the transport of plants or animals containing GM micro-organisms, consideration for HEPA filtration on the primary or secondary container must be used.

(53) If transporting by air, the packaging must be IATA approved and stamped with an approval. In addition, the outermost layer must have the appropriate UN number or UN ID, the shipping name, an itemised list of the contents and a shipper's declaration. For more information, consult Business Queensland and IATA.

(54) If it is intended to re-use transport containers or packaging:

a. examine packaging before re-use;
b. do not re-use if damaged in any way;
c. if secondary or outer packaging is soiled then packaging must be decontaminated before re-use; and
d. remove irrelevant markings before re-use.

(55) External surfaces of the outermost container must be decontaminated with an approved and effective disinfectant before dispatch.

(56) Where the biological material is covered by a GMO licence (Dealing Involving Intentional Release (DIR); Dealing Not Involving Intentional Release (DNIR); and Notifiable Low-Risk Dealing (NLRD)) refer to specific license conditions and Guidelines for the Transport, Storage and Disposal of GMOs.

(57) Where the biological material has been imported or is subject to a biosecurity direction or instrument issued by DAFF or DPI, refer to the conditions of the permit, direction or instrument for guidance on what is required for packaging and labelling.

Management of spills, loss or theft of materials

(58) A risk assessment must be conducted to determine the risk associated with spills, loss or theft during transport.

(59) Recording, tracking and accounting procedures must be in place to minimise loss of goods. Records are required to reflect biological material sent and received.

(60) Where a spill, loss or theft has occurred, all reasonable action must be taken to obtain the material and/or render it non-viable.

(61) Spill, loss or theft must be reported to Biosafety (biosafety@uq.edu.au) as soon as possible along with any actions taken to recover the material. Biosafety will notify the relevant regulator as required.

(62) The incident must be reported by the BioRisk Form in R3 version of UQSafe.

(63) Contingency plans must be in place for all transport to account for spills or loss of material during transport, and/or the failure of delivery. This plan must include a spill procedure, emergency contacts and a copy of the dealing if the material is a GMO or biosecurity permit or instrument if the goods are of biosecurity concern.

(64) In addition to the spill instructions, a decontamination agent may need to be included in transport. It is essential to assess any additional risks that may be introduced by a decontamination agent; for example, bleach is classified as a dangerous good.

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Section 4 - Roles, Responsibilities and Accountabilities

Chief Investigators

(65) Chief Investigators are responsible for the ongoing monitoring, management and oversight of the transport of biological material from their research group(s).

(66) They are responsible for:

a. ensuring that transport is in accordance with this Procedure;
b. ensuring that approvals from DAFF, OGTR, DPI and UQ's IBC allow for the transport of the material;
c. records are kept of the transport as per the requirements of the relevant Regulator;
d. UQ workers are trained and competent in the tasks associated with the transporting of the material;
e. approving any risk assessments associated with the transport of biological material;
f. ensuring that any spills, loss and theft of biological material is notified in a timely manner.

UQ Workers

(67) All UQ workers working with biological material at UQ must comply with this Procedure, understand and comply with any additional regulatory requirements, including ensuring that:

a. they are trained in the approvals from DAFF, OGTR, DPI and UQ's IBC;
b. material is packaged and transported appropriate for the type of transportation and destination of the biological material;
c. where required, material is packaged and transported according to the appropriate ADG Code class and IATA requirements;
d. records are kept of transport as per the requirements of the relevant Regulator;
e. spills, loss and theft of biological material is notified to a UQ Biosafety Advisor and report in the BioRisk Form in R3 version of UQSafe;
f. writing or contributing to any risk assessments associated with the transport of biological material.

Health, Safety and Wellness Division

(68) The Health, Safety and Wellness Division is responsible for providing UQ workers with education, advice and support regarding the transport of biological material.

Biosafety Advisors

(69) Biosafety Advisors are responsible for:

a. providing UQ workers with, information, workplace safety obligations and regulatory compliance on the transport of biological material; and
b. liaising with the Regulators in relation to regulated biological material (GMO, biosecurity goods) including reportable or notifiable events of biological material.

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Section 5 - Monitoring, Review and Assurance

(70) Transport of biological material practices will be reviewed and monitored regularly by the relevant Chief Investigator to ensure:

a. compliance with regulatory and University requirements; and
b. that accurate records of transport are maintained.

(71) UQ's Biosafety Advisors will:

a. review transport records during annual certified facility inspections; and
b. monitor University and regulatory requirements including changes to industry codes, standards and guidelines; and
c. revise this Procedure as required to ensure its relevancy and currency.

(72) Annual inspections of the University's certified facilities, Approved Arrangements and facilities authorised by the UQ Institutional Biosafety Committee (IBC), to ensure that:

a. dealings, transport and facilities meet requirements for working with regulated and high-risk biological material; and
b. all UQ workers working with, handling, using or storing biological materials are compliant with regulations and transport requirements.

Non-compliance

(73) If a non-compliance is detected, the Chief Investigator or their delegate, must inform Biosafety as soon as practicable and complete a BioRisk Incident Form in UQSafe.

(74) UQ workers and Chief Investigators that do not comply with this Procedure may be subject to corrective actions from the IBC if conditions are not met.

(75) Breaches of transport regulations may result in non-compliance corrective actions being issued by the relevant Regulator.

(76) The IBC, based on the evidence of multiple non-compliances, may refuse approval which may affect future work and other applications from the University e.g. OGTR licences, import permits, grants and ethics approvals.

Section 6 - Recording and Reporting

(77) The Health, Safety and Wellness Division reports regularly to senior UQ management, including the reporting of any non-compliances involving significant engagement with the involved regulators.

(78) The IBC, through the Biosafety Team is responsible for reporting non-compliances to the OGTR and Department of Agriculture, Fisheries and Forestry and Department of Primary Industries.

(79) All incidents or near misses involving biological materials are reported in BioRisk Form in UQSafe and may be investigated by the relevant Chief Investigator and Biosafety Advisors.

(80) All notifiable or reportable events are mentioned in reports to University Senior Executives.

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Section 7 - Appendix

Definitions

Term	Definition
Authorised Person	A UQ worker who has undergone the appropriate training required by the University and is deemed competent to undertake activities associated with biological material.
Biological material	Any material derived from living organisms. It also includes waste derived from biological material or has been in contact with biological material. It may also be referred to as biosecurity/biological goods, biosecurity/biological matter or biological agents. For the purposes of this Procedure this will include GMO, Genetically Modified Microorganism (GMMO), biosecurity goods that have been imported into Australia, biosecurity goods that are described in the Biosecurity Act 2014 (Qld), and hazardous biological material as described in the Working with Hazardous Risk Biological Material Procedure or by the UQ IBC or UQ IBSC.
Biosecurity	Biological goods that are imported under the Biosecurity Act 2015 or biological matter that is mentioned in the Biosecurity Act 2014 (Qld).
Chief Investigator	For the purposes of this Procedure, includes Supervisors, Managers, Project Leaders and academic principal advisors that are conducting research at UQ and hold an academic or research appointment.
DAFF	Department of Agriculture, Fisheries and Forestry (Commonwealth)
DPI	Department of Primary Industries (Queensland)
GM/GMO/GMMO	Genetically Modified/Genetically Modified Organism/Genetically Modified Microorganism.
Hazardous biological material	Biological material that has the potential to cause harm to humans, animals, plants and the environment if not correctly contained and handled during research activities. It includes waste that was derived from hazardous biological material or has been in contact with hazardous biological material (i.e. pipette tips, sharps etc.)
High Risk Biological approvals	Approvals issued by the IBSC permitting work with hazardous biological material as described in the Working with Hazardous Risk Biological Material Procedure.
IATA	International Air Transport Association.
IBC	UQ’s Institutional Biosafety Committee.
IBSC	UQ’s Institutional Biosafety Sub-Committee.
OGTR	Office of the Gene Technology Regulator (Australian Government).
Pathogens	Microorganisms (including bacteria, viruses, rickettsia, parasites, fungi) and other agents such as prions, which can cause disease in humans or animals.
Primary Container	A container immediately surrounding the GMO.
Secondary Container	The container immediately surrounding the primary container.
Unbreakable	Able to withstand all reasonably expected conditions of transport and storage such as the forces, shocks and impacts expected during handling; or changes of temperature, humidity or air pressure.
UN number / UN ID	The 4-digit number that identifies dangerous goods, hazardous substances and articles in the framework of international transport.
UQ workers	For the purposes of this Procedure includes: 1.staff – continuing, fixed-term, research (contingent funding) and casual staff members; 2. visiting academics and researchers; 3. affiliates – academic titles holders, visiting academics, emeritus professors, adjunct and honorary title holders, industry fellows and conjoint appointments; and 4. Higher Degree by Research students.

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