**Complete this form before a course, project, experiment, method, when implementing new work procedure and all changes in work procedures. It is recommended to make a yearly review.**

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| **Title** (Project/Course/Method)**:** |  | |
| Tick off (use one form for each course) | **Scientific work** | |
| **Course** | **Contract research** | |
| **Master Theis** | **Routine** | |
| **Ph.D Thesis** | **Other**  Klikk eller trykk her for å skrive inn tekst. | |
| **Project manager/course coordinator/supervisor/ Head** (Name)**:** |  | |
| **Name of participants/employees** (For courses, add participant list)**:** |  | |
| **Faculty/institute/unit:** |  | |
| **Research group reponible/head:** |  | |
| **The work is performed:** | From: | To: |

|  |  |
| --- | --- |
| **Checkpoints** | |
| Have the participant’s access to and are able to use a MSDS (Material Safety Data Sheet)? | Yes  No |
| Have the participants checked MSDS (EcoOnline) and assessed **hazards**, the use of personal protective equipment, other safety requirements and waste management? | Yes  No  Klikk eller trykk her for å skrive inn tekst.  Vurderingene som er gjort skal dokumenteres skriftlig og følge utfylt skjema til arkiv. |
| Are **CM**- (carcinogenic og mutagenic (concerns H350, H350i, H340)) substances or lead /lead compounds used? | Yes  No  If yes, make sure **all use** of these substances are registered in Eco Exposure. Send an e-mail to [berit.ingebrigtsen@nmbu.no](mailto:berit.ingebrigtsen@nmbu.no) and specify who will need a user-license to register their use.  If yes, has **substitution been considered?**  Yes  No |
| Are hazards in connection with instrument use, such as noise, repetitive work strain, electrical hazards, temperature conditions etc. considered? | Yes  No |
| Describe briefly measures taken to avoid injuries/strain: | Klikk eller trykk her for å skrive inn tekst. |

Attach a separate sheet if necessary.

Date:

Signatures project manager/head/ participants/employee

**Original document can: be part of a method description, be a part of a work process, be part of the work on planning a doctoral or master's degree, be documentation of a course or procedure. The documentation have to be available on demand.**

**Send a copy to:** [labsikkerhet@nmbu.no](mailto:labsikkerhet@nmbu.no)

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| **Work description: (What and how?)** |
| **List of chemicals and pathogens used and risks associated with the work:**  **For other fish**  **For Personnel** |
| **Protection/safety measures:** |
| Conclusion/comment: |

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| **Work description: (What and how?)**  Monitoring and sampling fish infected with *Y. ruckeri* (BSL1 pathogen - https://www.atcc.org/products/29908#detailed-product-information) |
| **List of chemicals and pathogens used and risks associated with the work:**  **For other fish**  Risk of infection due to cross-contamination through material.  **For Personnel**  **EXAMPLE**  Risk of falling due to water on the floor.  Use of blades when sampling fish: risk of cut.  Some hazardous chemicals are used in the sampling procedure:  Ethanol: surface disinfection  H225 Highly flammable liquid and vapour.  H319 Causes serious eye irritation.  Chloride 10% solution (surface disinfection)  H314 Causes severe burns to skin and eyes.  H411 Toxic with long-term effects to aquatic organisms.  H290 May be corrosive to metals.  EUH 206 Warning! Do not use with other products. Can release dangerous gases (chlorine).  H400 Very toxic to aquatic organisms.  Formalin solution (for organ storage)  H350 May cause cancer.  H341 Suspected of causing genetic damage.  H317 May cause an allergic skin reaction.  H302 Harmful if swallowed.  Dry ice (for sample storage)  Non flammable.  Protect eyes, face and skin from contact with product.  Do not ingest nor inhale.  In case of skin or eye contact, rinse with water.  RNAlater  Non flammable.  Non hazardous.  Protect eyes, face and skin from contact with product.  Do not ingest nor inhale.  In case of skin or eye contact, rinse with water. |
| **Protection/safety measures:**  **General – anti-infection spread**  - Change of shoes when arriving to the infection facility.  - Wellington boots for each specific infection room at the facility should be provided (avoid risk of falling and risk of cross-contamination between rooms and experiments).  - Disinfection solution for the boots should be available to be used before going out of the infection area. Procedure: step inside the disinfection solution for at least 30 sec, step on a mat to dry boots, change shoes.  - Lab coats/gowns and shoes/boots (defined now on as “set”) should be changed every time: one set to transit through the hallways of the infection facility, changed to a “working set” when entering an infection room, and disposing it or leaving it for washing after finishing the work (Do not reuse). Change to the “transit set” when moving out. Change the “transit set” to a “work set” again when entering another infection room.  - *Y. ruckeri* infections can be transmitted by direct contact between infected and non-infected fish, and through water and material contaminated with the bacterium. Studies show that an entry route are the gills, which makes the transmission and infection very fast. Do not share material between rooms when working with other experiments and in other rooms. (<https://doi.org/10.1186/s13567-015-0238-4>).  - Dispose infected fish and biological samples in biological waste bins.  - Surgical material used for sampling fish should be disinfected, washed and autoclaved.  **For manipulating material in the infection room**  Use Virkon solution or similar before using fishing nets or any other material to be put in contact with the fish in the experimental tanks. This will avoid contamination with other pathogens that will endanger the outcome of the experiment.  Do not share material/equipment with other rooms in the facility before disinfecting them according to the standard protocols of the facility.  **Protective equipment**  Nitrile gloves, lab coat/gown and lab goggles. Contaminated gloves and coat will be changed immediately. Lab goggles are used when monitoring the fish and when sampling. After disposal of gloves, face, hands and forearms are washed with soap and dried. Hands and forearms are splashed with ethanol 70% letting it air dry.  **Prohibition to visit fish maintenance facilities for at least 48h after being at the infection facility. Personnel should inform that they were in an infection facility before entering any other fish facility.**  **Sampling**  - Mind to manipulate blades carefully, avoiding handling them from the sharp side.  - In case blood or any other fluid or organ touch the skin, rinse with water and soap immediately.  - Keep tubes with formalin inside a fume hood. Take one tube at a time to store the corresponding tissue(s). Open the tube as far from you as possible in case ventilation in the sampling area is appropriate (air circulation). If not, place the tissue to be stored in a weighing boat and go to the fume hood to store the tissue.  - Mind manipulating the dry ice containers carefully, avoiding the contact with skin. |
| Conclusion/comment: As long as the risk assessments are followed, risks are minimized. |