

BIOSECURITY PROTOCOL

Southwest Virginia Aquaculture REC - Saltville, VA
September 2003

DEFINITION/GOAL OF BIOSECURITY

Biosecurity in aquaculture is the protection of fish, shellfish or aquatic plants from infectious (viral, fungal, bacterial or parasitic) and non-infectious (toxins) agents.

EMPLOYEES

Need to add some additional material here about employees.

No personal pet animals are allowed in the building. Feral animals will be excluded or trapped when necessary. The maintenance of home aquaria or aquaculture facilities outside the Center is discouraged. Any individuals conducting such activities will be required take appropriate sanitation measures, including limiting outside fish system contact prior to arrival, changing clothing and footwear, and thorough washing of hands and arms with antibacterial cleansers.

VISITORS

Whenever possible, visitors will be confined to the Center's conference room. Communication of the Center's objectives, information on species held, system operations, etc. can more easily be accomplished in the quiet of the conference room with no risk of contamination to the production or hatchery areas. A "Biosecurity Policy" statement (see Table 1) will be conspicuously placed in the conference room at the entrance to the production area and all other entrances and exits. This statement will explain the above policy to the general public with the goal to limit outside exposure of fish in both the production and hatchery areas.

Visitors will not normally be allowed beyond the conference room unless accompanied by a Center's staff member. Visitors will be required to sign in, and be asked if they have been on a fish farm or culture facility in the last 72 hours prior to entering the building. Anyone answering, "yes" to the previous question AND wearing any of the same clothing will not be allowed into the production or hatchery areas under any circumstances. Anyone answering "yes" to the previous question needing access to the production or hatchery areas will be required to change into disposable, sterile coveralls (provided by the Center) before entering any of these areas. Visitors entering the production or hatchery areas will be instructed to observe with their eyes-only; with absolutely NO hands or fingers in tanks or on tank sides.

PREVENTION

Footbaths filled with disinfectant (400 ppm quaternary ammonium compound solution, include commercial name of product and source) will be placed at all entrances to the production and hatchery areas. Center staff will use the baths at all times and will monitor all visitors to ensure that anyone entering these areas uses the baths as well. The footbaths will be checked twice daily with a Q10 strip (commercial source) and the solution replaced when the concentration is less than 300 ppm. Disposable plastic foot covers (commercial source) will be provided for

any visitors in sandals or other footwear to allow stepping in footbath without exposure to skin or footwear. Hands and arms must be thoroughly washed with soap, rinsed, and sanitized (50 ppm quaternary ammonium compound) before working on different tank systems. Sterile gloves will be given to visitors allergic to ammonia and will be worn when appropriate.

Individual nets, buckets and other material will be provided for each separate system. After each use, nets, buckets and other materials will be dipped and/or brushed with disinfectant solution (400 ppm quaternary ammonium compound solution) located at each system. The solution will be checked daily with Q10 strips and replaced when the concentration is less than 300 ppm.

Work areas and floors will be cleaned and sanitized with 200 ppm quaternary ammonium compound solution after use. Use is defined as "any activity that transfers tank water or fish mucus, excrement or associated substances to floors or other areas". Examples might be fish sampling or transfer, tank cleaning, etc.

WATER TESTING

Water samples from visitors may be tested in the Center's laboratory at the discretion of the superintendent. Probes will be disinfected with 70% isopropyl alcohol and other equipment, surfaces or floors that may have come in contact with off-site water will be disinfected with a 10% bleach solution (5.25% sodium hypochlorite). At no time will outside water or equipment used to test outside samples be allowed in any of the production or hatchery areas.

QUARANTINE PROCEDURES

For the introduction of new fish to the Center, a sample of fish to be acquired should be sent to Virginia Tech's College of Veterinary Medicine or other appropriate veterinary diagnostic facility for health evaluation a minimum of two weeks before shipment to the Center. A copy of the health report or veterinary health certificate should be placed in the tracking files of each respective group of fish. Upon delivery, a representative sample of the fish will also be sent to Virginia Tech's College of Veterinary Medicine or other appropriate diagnostic facility for health evaluation within 24 hours after arrival. Any fish that arrive at the Center must be quarantined 4 weeks prior to entering the hatchery or production area. In lieu of the ability to quarantine fish, an "all in, all out" policy will be observed. This is to say that all stocks of fish are to be removed from the production bay prior to receipt of the next group of fish.

FISH HEALTH PROBLEMS

If disease is suspected in a housed population of fish, both the project PI and the Center Superintendent will be immediately contacted who will then relay pertinent information to the Center's Advisory Committee at Virginia Tech. Appropriate samples should be immediately sent to a veterinary diagnostic laboratory for evaluation. If a disease is confirmed, therapeutic and/or management recommendations should be strictly followed. All recommendations and outcomes of

water quality and health monitoring should be noted on the tracking sheet of the fish involved.

Once nets, buckets or other equipment have been used on diseased tanks, items must be immersed in 400 ppm quaternary ammonium compound solution for 24 hours prior to re-use on the system involved. The concentration of disinfectant should be checked prior to immersion of the equipment. If the equipment cannot be immersed, other appropriate methods of sanitation should be utilized, such as drying which kills many fish pathogens. All trucks, seines, and other equipment that have been used for fish from another facility or from the wild should be rinsed (warm soapy water is even better) and allowed to completely dry before re-use. This is especially critical equipment that have been used to harvest and/or transport sick fish. As a mechanism to transfer disease from farm to farm, a wet mucus-laden seine is almost as dangerous as the transfer of infected fish 1.

ADDITIONAL INFORMATION

Information on the following topics may be found in the Center's SOP:

- * Feed purchase, storage and monitoring.
- * Storage and records for chemicals added to culture water.
- * Storage and records for chemotherapeutics for fish.
- * Treatment of city water by in-line carbon filter.

REFERENCES

1. Biosecurity Protection for Fish Operations, Dr. Andy Goodwin, Associate Professor of Fish Health/Pathology, University of Arkansas at Pine Bluff.

Last Modified: 9/03 Todd Wenzel