

Industry Update: COVID19 and Technology Innovation Research

Synopsis of findings from the report “Feasibility Evaluation of Innovative Fish Farming Technologies to Prevent the Spread of COVID19 and Increase Productivity at Ontario Aquaculture Farms” by Ron Hill, Velocity Aqua

Purpose: OAA commissioned Velocity Aqua to research innovative fish farming technology that could be adopted by members and make recommendations on the feasibility of implementation for each technology. 14 prominent industry members were interviewed to give a representative sample of how the industry was adapting to the challenge of COVID19, the technology level in place and the technology needs of the industry to fight COVID19 and increase production.

This fact sheet is a synopsis of the feasibility findings in the report.

Feasibility rating system:

Technology recommendations from industry members were vetted and compiled into categories. Categories had their feasibility rated based on: effectiveness to prevent COVID19, cost, impact on efficiency, ease of installation, time to implement, labour reduction, and labour specialization needs.

Net-Pens

Fish Pumps: 9.14- Fish pumps scored high on their ability to keep workers separate and reduce the amount of labour needed for harvests and fish movement. Fish pumps also score high for being easy to use and easy to implement.

Centralized Feed System: 7.14- Implementation will change the way feeding and feed handling are executed at a farm, better preventing transmission. However, feed systems are expensive and require custom installation.

Materials Handling Equipment: 8.43- Materials handling equipment covers equipment needed to move equipment, totes, and feed around the farm and on/off vehicles. Items such as jacks, cranes and capstans can help prevent COVID19 by eliminating the shoulder-to-shoulder work needed to move items.

Harvesting Equipment: 7.43- Automated harvesting equipment like electric stunners can speed and streamline the harvesting process while providing increased physical distancing.



Photo: Velocity Aqua



Photo: Ellsen Marine Winches



Photo: Harmony Marine Shipbrokers

Boats and Barges: 6.71- Increasing the fleet size offers more space for properly distanced transport and workspace for employees.

Land-Based

Fish Pumps: 9.57- Fish pumps score well in every category at land-based farms. Fish pumps are the industry standard for fish movement and are a keystone technology in automated fish processes.

HVAC: 5.93- While highly effective for preventing COVID19, upgraded ventilation systems did not score well for increasing the productivity of the farm long term.

Fish Counters and Graders: 6.93- Upgrading these devices can prevent the spread of COVID19 by automating the process to reduce the manual workload. They require a fish pump to be effective and have a high capital cost.

Egg Sorters: 8.21- Despite their initial cost for such a small unit, egg sorters are an effective technology to prevent COVID19 transmission in cramped egg rooms and increase productivity. These efficient units are standard at farms with high volumes of eggs that need to reduce labour.

Centralized/Non-Centralized Automated Feed Systems: 7.14- Centralized systems are the best to prevent COVID19 spread but can be difficult to install and expensive to purchase. Though non-centralized units are less expensive they are less effective in preventing COVID19 spread and reducing labour.

Monitoring and Control Units: 6.36- While of great benefit to the operator in the long and short term, a control and monitoring system has limited value to stop the spread of COVID19 and is expensive and complex to adopt.

Accessibility Controls: 7.07- Accessibility controls can be a preventative control to keep the virus from entering a facility, but they can be complicated to install, and they offer little to improve efficiency or labour.

Conclusions: By adopting innovative technologies to provide automation and reduce shoulder-to-shoulder labour, Ontario aquaculture farms can limit the spread of COVID19 and increase their productivity long term. Fish pumps, materials handling equipment and centralized feeders are the best recommendations for net-pen farmers. Land-base farms have much more diverse needs. Automation like fish pumps, graders, counters, and egg sorters will allow many operations to further protect their workers from the spread of COVID19 and to expand their production.



Photo: Vaki Iceland 2021



Photo: Jensorter 2021



Photo Faivre 2021