

## Ontario Tree Fruit Innovation and Technology Roadmap

### Autonomous Sprayers

#### Evaluating New Technologies

	Feasibility and cost	Implement	Labour Reduced	Changes in production	Training for staff	Impact on risk of COVID-19 Transmission
Identified Technology	low, medium, high	easy, medium, challenging	% estimate	easy, medium, hard	none, medium, high	none, low, medium, high
Autonomous sprayers	high	challenging	50	medium	medium	high

Current Status - These sprayers are developed and ready to introduce. However, regulations currently do not permit autonomous sprayers for Ontario.

Feasibility of Implementing – The capital cost to purchase this equipment is high, making it more economical for larger farms. This equipment requires a significant initial time allocation for setup, mission planning and programming, and would require some changes to orchard operations and processes. Training would also be needed.

Impact on Labour – These unmanned systems improve labour productivity, reduce labour requirements, and create cost efficiency in tree fruit orchards by automating tasks such as spray applications. Additionally, this equipment can be used for prolonged periods of time and run continuously stopping only to be refilled with water, crop protection products and to be re-fuelled.

COVID-19 Mitigation Risk – This technology helps to reduce overall labour requirements for orchard operations therefore implementation can lower the overall risk of COVID-19 exposure and transmission for orchard operations.

Need for Change, Research and Training – This equipment would require a significant initial time allocation for setup, mission planning and programming, and would require some changes to orchard operations and processes. Training would also be needed.