



## Case study

# New method for storing Sovereign Coronation grapes cuts costs, increases income for growers

## Background

Eating fresh, local Ontario grapes is a treat that could only be enjoyed for a short time every year - until recently. The Sovereign Coronation variety is the grape of choice for many growers since it can withstand the province's cold weather, but the quality of the fruit deteriorates quickly after harvest.

More than 100 Ontario growers with over 770 acres of vineyards produce 82 per cent of all the table grapes grown in Canada.

## Challenge

Sovereign Coronation is the main variety of fresh market grapes grown in Ontario. They are blue-skinned and seedless and were introduced to the province in 2000.

Traditionally they could be stored for only about two weeks before mold and brown spots rendered more than six per cent of grape yield unmarketable per year. The grapes were also getting crowded out of the market by other fruits available at this time of the year, resulting in significant income losses for growers.

## Getting answers

Researchers at Vineland were asked to find ways to extend the storage life of these grapes to decrease growers' losses, maintain the value of their crops and reduce food waste.

In other countries, pads infused with sulphur dioxide (SO<sub>2</sub>) are placed in the storage container to maintain grape freshness.

After trying different concentrations of SO<sub>2</sub> and evaluating the pads' effectiveness after three, five and seven weeks of storage, researchers determined the best treatment: a dual release pad that sends out a high concentration of SO<sub>2</sub> in the first 24 hours, and then a slower rate of release over many days. Using these pads, along with careful handling during the harvest, removal of decayed and damaged fruit, and quick cooling of fruit following harvest resulted in grapes that stayed fresh and marketable for five weeks. That's more than twice as long as previously possible.

## Impact

Growers who use this storage technology can sell their crops at optimal quality and price. Storing grapes longer also means selling into the early-winter season when other local fresh products are not available.

The enhanced storability also means less waste. In Ontario this will translate to an estimated 103 tons of grapes that are saved from the food waste stream, helping growers to realize an extra \$145,000 in net returns each season. After hearing of Vineland's research results, ProduceTech, a packaging company based in Quebec became the Canadian distributor of sulphur pads for Ontario's grape growers.



- **A new storage protocol has more than doubled the storability of Sovereign Coronation grapes allowing freshness to be maintained for five weeks**
- **A Canadian company is now a licensed distributor of sulphur pads for Ontario's grape growers**
- **103 tons of grapes are being diverted from the food waste stream**

