



# Vegetable Breeding & Trait Development at Vineland

## An Integration Hub for Trait Development in Horticulture

Vineland's partnerships span academic researchers through to end-users. These collaborations leverage cutting-edge discovery research enabling the development of traits vital to the horticulture sector.

## An Integrated, Multidisciplinary Approach

Research expertise of Vineland's 85 staff members include Applied Genomics (genetics and breeding, biochemistry, bioinformatics), Horticultural Production Systems (plant pathology, entomology, agronomics, post-harvest science) and Consumer Insights (sensory evaluation, consumer science, economics).

## Our Target Crops

Our breeding and trait development programs are focused on important Canadian greenhouse crops (tomatoes and bell peppers), as well as field crops such as sweet potatoes.

## Accessing Novel Traits via Reverse Genetics

Vineland has developed a proprietary genetic variant detection platform that takes only weeks to go from a candidate gene to plant lines representing an allelic series of variations in the target gene.

## Traits under Development

### Disease Resistance

We are mapping natural disease resistance genes and developing novel alleles that confer resistance to current and emerging pathogens in horticultural crop production.

### Improved Flavour

By integrating flavour-related chemical profiling, sensory evaluation and consumer preference data, Vineland is applying the latest knowledge of tomato flavour perception and genetics to direct our breeding program toward tastier tomatoes desired by consumers.

### Adaptation to Climate and Local Environment

As Canada's only greenhouse vegetable breeding centre, Vineland is focused on the development of traits that confer abiotic stress tolerance (i.e. temperature extremes, low light, drought) and higher yielding varieties that are ideally suited to Canada's climate.



**vineland**  
RESEARCH & INNOVATION CENTRE

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