

Genetic improvement of cranberry crops in the face of global climate change.

As our climate changes, high temperature extremes and drought conditions are expected to increase. With increasing abiotic stress, conditions such as Sunscald are a threat to commercial fruit crops. Cranberry is particularly at risk as their low-lying shrubby growth habit increases exposure to UV radiation and heat. A study published this month in BMC Plant Biology offers hope that berries with a high epicuticular wax load may have greater protection from the effects of heat, light and water stress. In this study, researchers used QTL analysis to identify regions of the cranberry genome associated with epicuticular wax deposition, then generated a SNP molecular marker and identified candidate genes associated with increased wax content, and successfully validated the markers using PACE® genotyping assays. The molecular markers developed in this study can be used for marker-assisted selection of high wax strains. The result - breeder-friendly molecular tools to improve the sustainability of cranberry production.



“This work serves to advance the genetic improvement of cranberry crops in the face of global climate change.”

Reference:

Erndwein, L., Kawash, J., Knowles, S., Vorsa, N., & Polashock, J. (2023). Cranberry fruit epicuticular wax benefits and identification of a wax-associated molecular marker. BMC Plant Biology, 23(1), 181.

