



Climate Change impact on Table Grapes Industry



A study was conducted in 2022 into the impacts of Climate Change on Crimson seedless table grapes in Robinvale, Victoria.

The table to the right details the impact of Climate Change on average yields and growing season length for this crop type. The analysis assumes no change or adaptation to current management practices or varieties. The analysis was conducted across three different time horizons 2030, 2050 and 2070.

Given what is understood to be the current climate trajectory, the best estimates of climate scenarios are predicted to be somewhere between Representative Concentration Pathway (RCP) 4.5 and RCP 8.5.

This data represents the average of these two different climate scenarios.

Time Period	Yield	Growing season length
	Reduction (%)	Reduction (days)
2030	7	22
2050	18	39
2070	23	47

The below table summarises the main fruit quality issues of concern raised by the table grape industry.

Issue	Cause
Sugar maturity failure	High temperature related; immature fruit/harvesting too early
Sugar: acid ratio	High overnight temperatures encourage acid metabolism, offsetting the sugar:acid balance
Fungal diseases	Rainfall events and humidity can increase the likelihood of disease for fruit set to harvest.
Small crop size	High temperatures leading to early ripening (e.g. early February).
Late harvest varieties	Temperature-related: low temperatures slow sugar accumulation
Downgraded fruit quality and lower yields	Rainfall at harvest and high temperatures leading to sunburn and heat stress.
Berry size	High crop load can affect berry size, colour and softening. This can be influenced by climate but is largely dependent on growing practices.
Colour development and softening	Extreme temperatures (>38°C) and a combination of high daytime temperature and warm nights (e.g. less than 15°C difference between maximum and minimum temperatures) can inhibit colour development and increase softening.