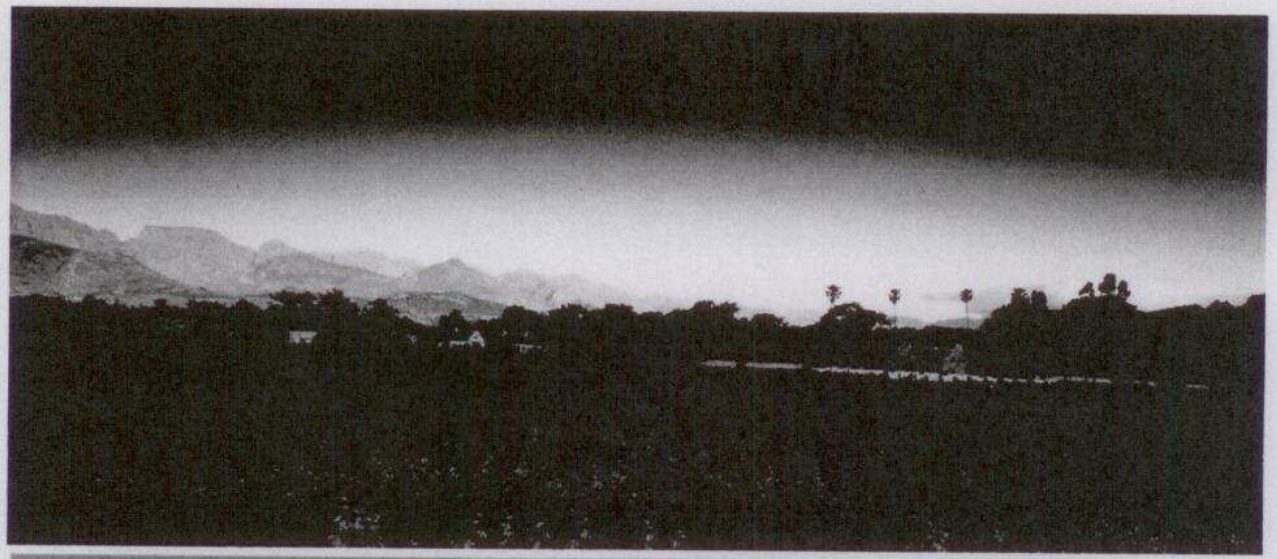
South African Society for Enology and Viticulture

34TH SASEV CONGRESS



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Assessment of grape bunch light environment and temperature variability in *Vitis vinifera* cv. Shiraz

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Light and temperature are important environmental factors that can affect grape bunch characteristics. At a microclimatic level, the bunches and berries may be affected by their relative positioning inside the canopy. The canopy elements surrounding the bunch are dynamic in nature and may be a major cause of the variability that exists in a bunch in terms of light and temperature at berry level. As a result of this variability, quantifying these factors at a bunch and berry level is challenging, and may lead to misinterpretation. Spatial as well as diurnal changes may be physiologically important, but not considered when measurements are averaged over time or space. In this study, measurements of light and temperature were focused at a microclimatic level and performed with the aim of characterising and detailing bunch and berry temperature and radiation quantity and quality in terms of spatial and temporal variability. Canopy manipulation, bunch exposure and trellis configuration were considered at two sites, in Robertson and Stellenbosch. Measurements included thermal imaging of bunch surface temperature variability, the surface, skin and pulp temperature of the berry itself as well as spectroradiometric measurements of light quality received by the bunch from different angles. Hemispherical photography as well as light quantity instruments such as the Ceptometer and Pyranometers were also used, in conjunction with mesoclimatic measurements of total radiation, wind speed/direction and temperature.