

Characterisation of frost affected lentils, post harvest, using sensor technologies

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Post-farm gate pulse value is based on visual characteristics, which can be affected by both abiotic and biotic stresses during the growing season. If segregation using spectral-based characterisation were available this would provide benefit through adding value post-harvest. Lentil (*Lens culinaris*) is well adapted to southern Australia and is important for diversity within cropping rotations and contributes significantly to farm profitability. One of the risks associated with growing lentil in the southern region is that it is highly susceptible to frost, particularly during flowering and pod-set. The likelihood of the occurrence of frost in this region is high; decreasing grain yield, reducing quality and devaluing the commodity.

The aim of this research is to develop and validate novel practices using spectral-based technologies to objectively quantify the impact of frost on the whole grain lentil samples. The development of algorithms that estimate the portion of non-frost affected grain within a frost affected crop offer opportunities to potentially segregate grain using rapid-objective measures.