



## THE USE OF OPTICAL SENSORS TO ESTIMATE PASTURE QUALITY

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*Abstract- Optical remote sensing tools are being used in a number of agricultural applications by recording an object's transmission of electromagnetic energy from reflecting and radiating surfaces. This unique spectral information is used to characterize the features of green vegetation. With the development of proximal sensing tools, vegetation or crop health can be determined and monitored in real-time. This information provides an opportunity for precise management of input resources to optimise plant growth and reduce the potential for an adverse environmental effect.*

*Pasture management is of major importance in New Zealand. This paper describes the operation of multispectral (Crop Circle™ and CROPSCAN™) and hyper spectral sensors (ASD Field Spec® Pro) to explore the pasture quality and quantity. The ability to manage these factors is an important component in grazing, livestock management, and a key driver of animal performance and productivity. The results indicate that these sensors have the potential to assess vegetation characteristics.*

**Index terms:** electromagnetic energy, optical remote sensing, pasture management, multispectral, hyperspectral