Detecting the attributes of a wheat crop using digital imagery acquired from a low-altitude platform

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Abstract

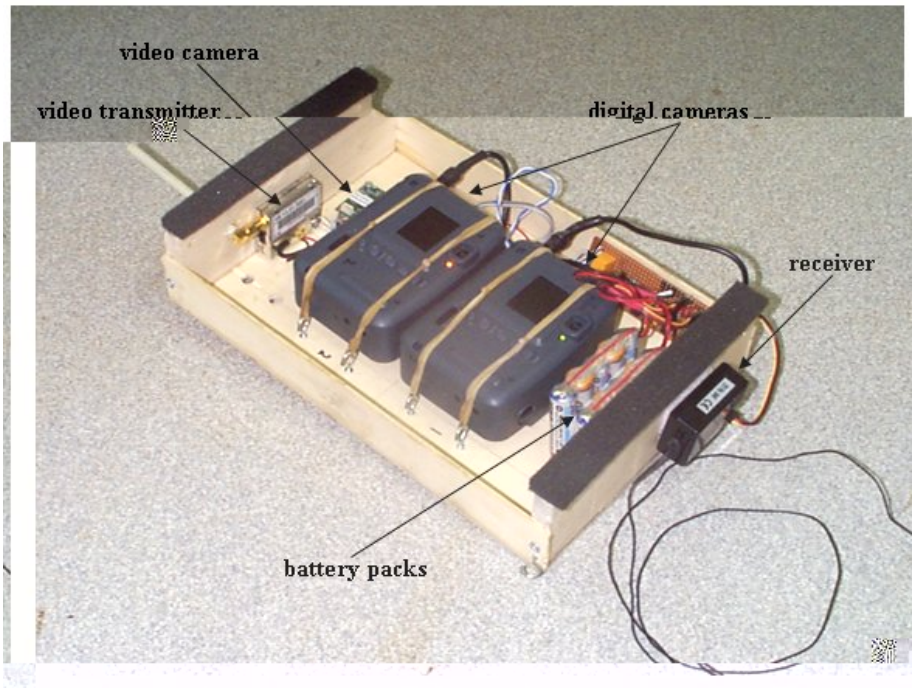
Keywords:

Detecting the attributes of a wheat crop using digital 3D imagery acquired from a low-altitude platform.

1. Introduction

2. Materials and methods

Figure 1 The various components of the sensor system.



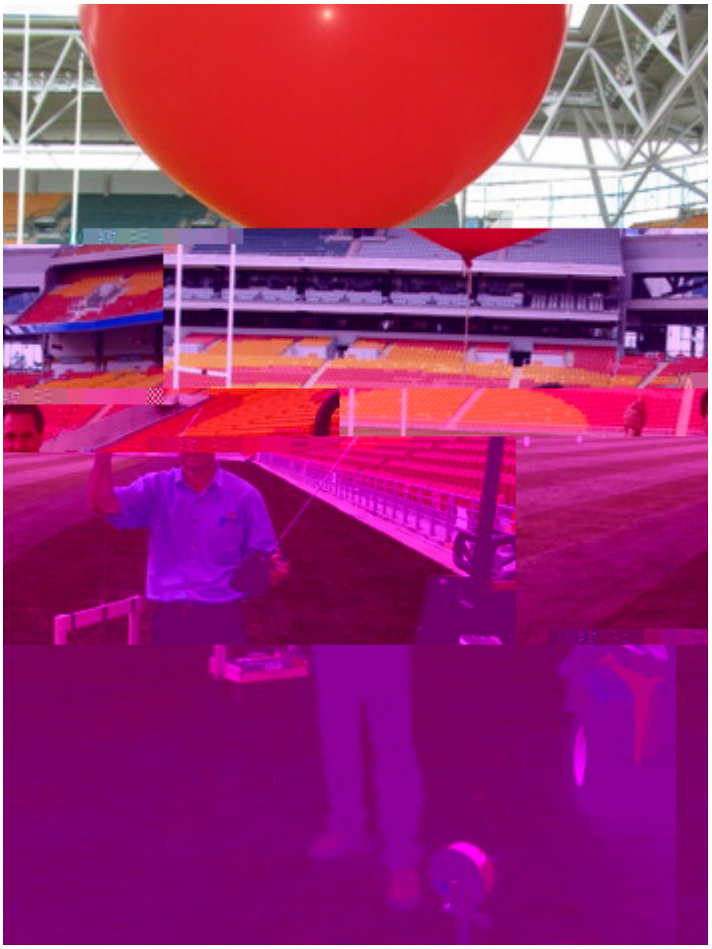


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Figure 3 One of the colour images collected above the trial site.

Figure 4 The spectral response for a typical CCD (sourced from www.pulnix.com).

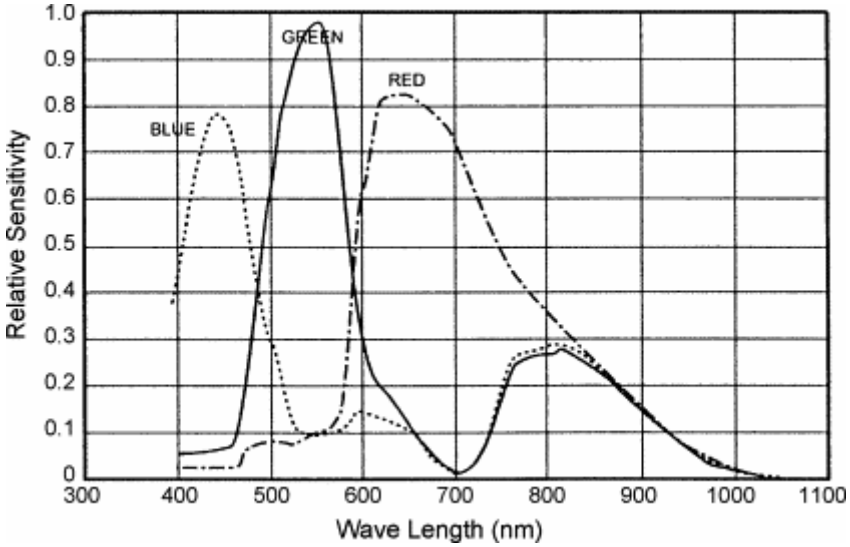


Table 1 ***Spectral bands and vegetation indices used in this study***

Name	Abbreviation	Approximate spectral range (nm)
		≈

Name	Abbreviation	Formula	Reference

3 Results and discussion

Table 2 The summary statistics of the band values for a 40 units of N-applied plot

	R	G	B	NIRR	NIRG	NIRB

Table 3 The summary statistics for yield and protein of the entire trial site.

[a,b,c] **Significance at the 0.05 level**

Figure 5 The relationship between yield/protein and DVI for the various amounts of N applied (kg/ha).

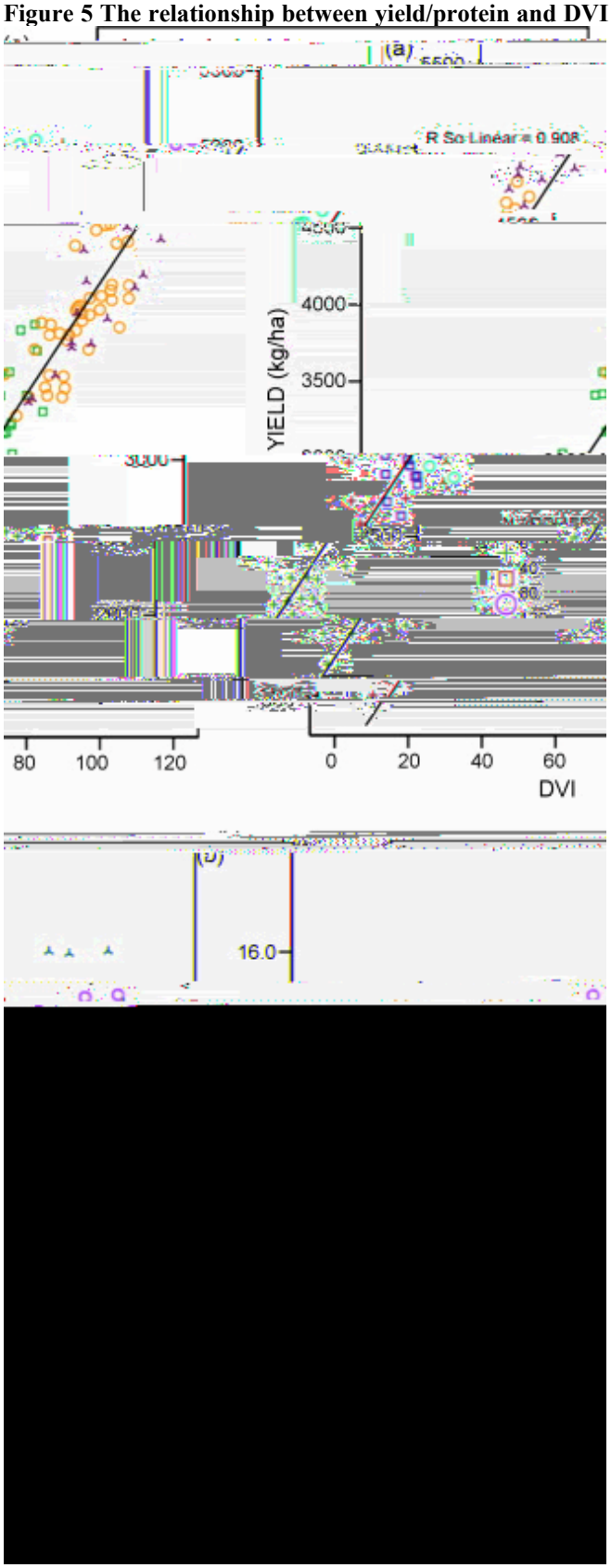
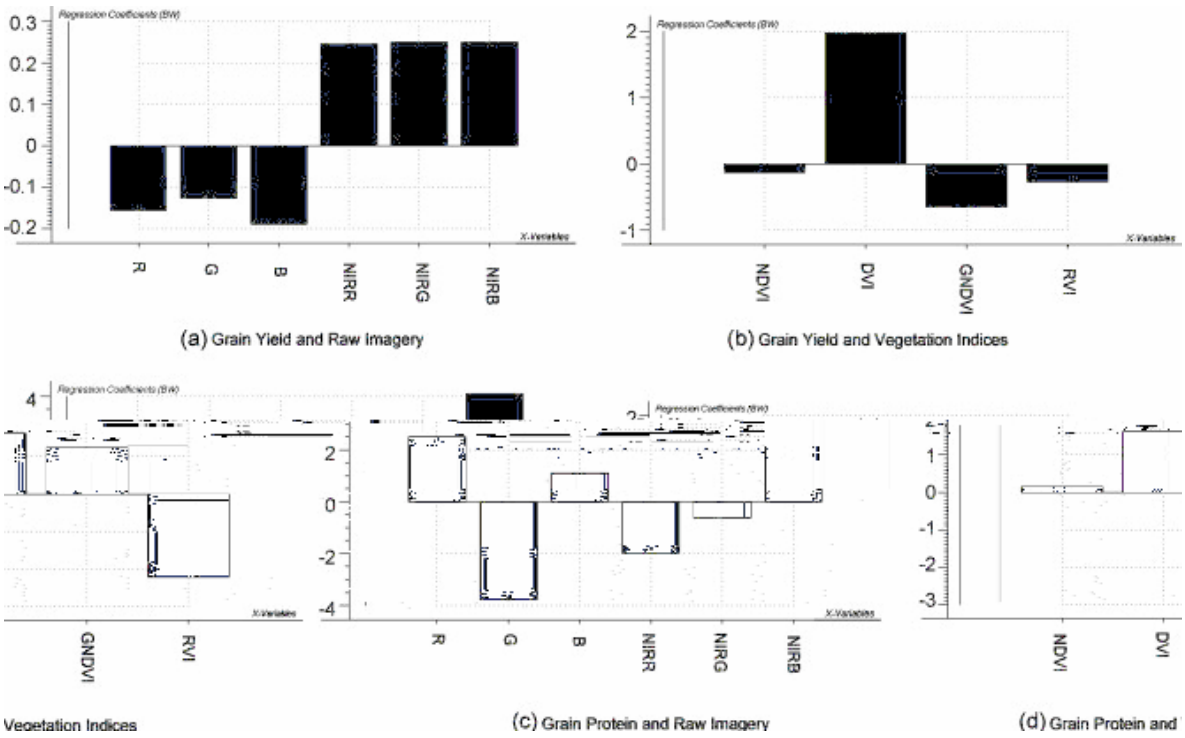


Table 4 Prediction accuracy of fertilizer treatment classification using discriminant analysis

Table 5 PLS regression results of imagery values and yield and protein

Figure 6 Regression coefficients for the cross-calibrated prediction model involving grain yield, grain protein, raw imagery values, and vegetation indices.



4 Conclusions

Acknowledgements

References