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## An investigation of techniques used to predict fleece rot incidence in sheep

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### INTRODUCTION

Fleece rot is a bacterial exudative dermatitis in sheep (Burrell, 1988) which occurs when the skin has been continuously wet for 4 - 9 days. It is a major predisposing factor to the incidence of bodystrike - a form of flystrike - with a high genetic correlation of 0.9 (Atkins and McGuirk, 1979). This trial investigated the possibility of using fleece colour characteristics to predict the incidence of fleece rot in sheep.

### MATERIALS AND METHODS

200 ewe hoggets on each of three South Island properties (two in Marlborough - Corriedale and Merino and one in Canterbury - Corriedale) were monitored for fleece rot incidence over two years. The sheep were not dipped for flystrike prevention and were closely monitored for flystrike incidence during the trial period. Midside samples were collected at hogget shearing (October/November). The samples were scored for greasy colour and measured for yellow predictive colour (YPC) (Aitken *et al.*, 1994) - a method of assessing propensity to yellow. The YPC results were both scored visually and measured using a spectrophotometer. Assessment for fleece rot incidence and severity was carried out 8 - 10 months after the samples were collected. The relationships between the fleece colour assessments and measurements, and fleece rot incidence were statistically analysed.

### RESULTS AND DISCUSSION

There was a high incidence (65% - 100%) of fleece rot on the three properties in both years. The average assessed greasy colour on the wool samples collected before the monitored periods ranged between 2.6 and 3.4 (1=white, 5=yellow). The colour of the greasy sample was a significant ( $P<0.05$ ) to highly significant ( $P<0.01$ ) predictor of fleece rot on two of the three properties in both years. Mean YPC scores over the three properties ranged from 5.3 ( $\pm 0.08$ ) to 9.2 ( $\pm 0.09$ ) - (where 1-2 = resistant, 3-5 = partly susceptible and 6 = susceptible to yellowing), indicating that the majority of the sheep monitored were susceptible

to wool yellowing. The relationship between fleece rot and YPC score was significant ( $P<0.05$ ) on only one property in one year. The measured YPC absorbance values were significantly ( $P<0.05$ ) correlated with liability (a statistical calculation of probability of fleece rot) on only one property in one year (not the same property where YPC score was significant).

Although the structure of this trial was different than others previously carried out to determine wool colour and fleece rot relationships, the results were similar. This trial focused on the predictive value of greasy wool colour whereas previous work has generally been retrospective - i.e. collecting samples after the fleece rot has developed and then analysing colour relationships. Scored greasy wool colour has been found to have a high and consistent phenotypic correlation with fleece rot (James *et al.*, 1987; Raadsma and Wilkinson, 1990), assessed in the same fleece as the fleece rot developed in. Measured greasy colour has also been found to be of greater benefit than the YPC results in predicting fleece rot under controlled wetting and fleece rot development conditions in Australia (Raadsma and Wilkinson 1990). The results of this trial were in general agreement with previous findings.

### CONCLUSIONS

Subjective assessment of greasy fleece colour was the best predictor of propensity to fleece rot. Although the YPC test indicated that most of the sheep in the trial were susceptible to wool yellowing, the test was not reliable in predicting fleece rot development.

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