Rogers, G.R.; Orwin, D.F.G.; Fraser, M.C.; Bray, A.R.; Smith, M.C.; Baird, D.B.; Clarke, J.N.; Bickerstaffe, R. 1990. Selective breeding for high and low strength Romney wools. *Proceedings of the 8th International Wool Textile Research Conference.* **II:** 180-188.

Ross, D.A. 1965. Wool growth of the New Zealand Romney. *New Zealand Journal of Agricultural Research.* **8:** 585-601.

Scobie, D.R.; Bray, A.R.; Maher, A.P.; Smith, M.C.; Merrick, N.C. 1994a. Staple strength in crossbred wool : the sensible solution. *Proceedings of the Australian Society of Animal Production.* **20:** 301-304.

Scobie, D.R.; Merrick, N.C.; Saville, D.J. 1994b. Comparison of methods for measuring fibre diameter of Romney wool. *Proceedings of the New Zealand Society of Animal Production.* **54:** 155-157.

Scobie, D.R.; Walls, R.J.; Markham, L.J.; Woods, J.L.; Bray, A.R. 1995. Variation in tenacity of wool fibres and staples from Romney sheep. Submitted to *Australian Journal of Agricultural Research.*

Story, L.F.; Ross, D.A. 1960. Effect of shearing time on wool. VI. The rate of growth of wool and its relation to time of shearing. *New Zealand Journal of Agricultural Research.* **3:** 113-124.

Sumner, R.M.W. 1979. Efficiency of wool and body growth in pen-fed Romney, Coopworth, Perendale and Corriedale sheep. New Zealand Journal of Agricultural Research. 22: 251-257.

Woods, J.L.; Orwin, D.F.G. 1988. Seasonal variations in the dimensions of individual Romney wool fibres determined by a rapid autoradiographic technique. *New Zealand Journal of Agricultural Research.* **31:** 311-323.

Wool yellowing susceptibility: Heritability, genetic and phonotypic correlations with productive traits in Australian Merino, Corriedale and New Zealand Romney sheep

M.V. BENAVIDES[1], M.Y. YOUNG, P.R. BEATSON, A.P. MAHER AND T.C. REID

[1]Wool Science Department, PO Box 84, Lincoln University, Canterbury, New Zealand.

ABSTRACT

Colour is an important characteristic affecting wool price. Canary yellow wool incidence is low in dry years but individuals can be classified according to their degree of susceptibility to wool yellowing based on results of wool incubation test.

Australian Merino, Corriedale and New Zealand Romney *populations* were tested. A number of 603, 1369 and 476 progenies and 21, 52 and 24 sires *were* used for these populations, respectively. Susceptibility to wool yellowing (YPC), greasy (GFW) and clean fleece weights (CFW), yield (Y) and mean fibre diameter (MFD) were analysed in a sire model.

Heritability values for YPC were 0.21±0.11, 0.28±0.08 and 0.19±0.07 for Merino, Corriedale and Romney, respectively. Genetic correlations between YPC and other traits were -0.04±0.31 with GFW, -0.10 ±0.31 with CFW, -0.11±0.29 with Y and 0.51±0.29 with MFD for Merinos; 0.30±0.18, 0.17±0.19, -0.12±0.18 and 0.33±0.19 for Corriedale, respectively, and 0.77±0.22, 0.44±0.31, -0.70±0.35 and 0.25±0.30 for Romney, respectively. Phenotypic correlations were negligible among this traits for these three populations, except for YPC and Y (-0.33±0.10).

Selection strategies to reduce wool yellowing susceptibility will differ between genotypes. Low frequency of susceptible sheep in Merino population showed little justification for including YPC in genetic programmes for this particular breed only.

Paper not received by due date.