USE OF HISTORICAL FLEECE-TESTING DATA FOR BUILDING WOOL SALE LINES

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Since their introduction, mobile fleece testing instruments (Brims *et al.* 1999; Humphries *et al.* 2001) have undergone widespread use on-farm, for clip preparation and sheep selection purposes. The test data is most often employed in real time, or shortly afterwards, but can also be used at subsequent shearings. This study compared an OFDA2000 device (Brims *et al.* 1999) to conventional mid-side testing (Laboratory) for establishing lines of wool for sale the year after the samples were tested.

Two year-old Merino ewes (n = 673; mean fibre diameter (MFD) 19.6 μm) and wethers (n = 517; MFD 18.2 μm), of the same lamb drop, were shorn and fleece-tested as hoggets in December 2000 (Brien *et al.* 2001) and grazed separately during 2001. At shearing in December 2001, individual hogget MFD values, adjusted upwards for age by 0.7 μm, were used as the main criterion to prepare 4 main fleece lines per sex, with MFD cut offs for lines calculated using 'Virtual Wool Classer©'(Semple and Atkins 2000). Fleeces were weighed and fleece samples collected for MFD testing by OFDA2000 and Laboratory methods. Repeatability analyses (based on 2000 and 2001 data) were performed using ASREML.

Repeatability estimates for MFD were 0.59 (se = 0.04) and 0.67 (se = 0.07) for Laboratory and OFDA2000 fleece-testing, respectively. Fleece and core testing results and prices received for 2001 sale lines using hogget MFD data collected for shearing in December 2000, are shown in Table 1.

Table 1. Mean fibre diameter (MFD) weighted averages from fleece-testing, core-test results and prices on 2001 sale lines.

Sale Line	Laboratory MFD (μm)	OFDA2000 MFD (μm)	Core Test MFD (μm)	Staple Strength (N/ktex)	Mid Breaks (%)	Clean Price Paid on 5/02/02 (c/kg)
Ewes						
Super Fine	18.2	18.5	18.2	34	9	1388
Fine	18.6	19.0	18.6	25	19	1221
Medium	19.3	19.8	19.6	30	18	997
Strong	20.1	20.6	20.5	30	10	969
Wethers						
Super Fine	16.8	17.2	16.9	32	26	2116
Fine	17.9	18.1	17.8	33	13	1522
Medium	18.2	18.5	18.3	32	16	1382
Strong	18.9	19.3	18.9	31	23	1158

A differentiation of 2.3 and 2.0 μm between the lowest and highest sale lines for core test MFD was achieved at the December 2001 shearing for the ewe and wether flock, respectively. This compares favourably with a difference of 3.2 μm between the lowest and highest of 5 sale lines for core test MFD the previous year (Brien *et al*. 2001). For the 2001 clip, the Pearson Correlation Coefficient between fleece-testing methods was 0.91 for MFD on individual fleeces ($P<0.001$), and between either fleece-testing method and core test for sale lines was 1.00 ($P< 0.05$). Compared with the sale of a single main line, preparing sale lines using individual hogget MFD data gave a profit of $0.96 per head, when costs are defrayed over 2 years. In conclusion, both conventional and OFDA2000 tests are highly repeatable between years, allowing hogget data to be effectively used in clip preparation the following year.

BRIEN, F.D., FERGUSON, M.B. and KONSTANTINOV, K. (2001). *Proc.Assoc.Adv.Anim.Breed.Genet.* **14**, 277-280.

BRIMS, M.A., PETERSON, A.D. and GHERARDI, S.G. (1999). IWTO Tech. Rep. RWG 04, Florence.

HUMPHRIES, W., VUCKOVIC, L., ASPROS, W.A. and HIGGERSON, G.J. (2001). IWTO Tech. Rep. CTFO4, Shanghai.

SEMPLE, S.J. and ATKINS, K.D. (2000). *Proc. Wool Sheepmeat Services Prog. Ann. Conf.* p. 143.

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