

Fibre Transfer in Merino Ewes Mated with Damara, Merino or Dorper Rams in Central Western Queensland

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Considerable concern has been expressed by the Australian wool industry regarding the contamination of the clip with coloured or kempy fibres from imported breeds of sheep. As part of the evaluation of imported sheep meat breeds in western Queensland, a study is examining fibre growth and transfer of fibres and the potential to cause physical contamination of Merino fleeces. The breeds of concern in this study are the Damara, a fat-tailed breed with a hairy, coloured fleece and the Dorper which has both pigmented fibres and a kempy fleece which is shed cyclically. Three groups of Merino 27 ewes were mated to Merino, Damara and Dorper rams respectively and fibre transfer to the Merino ewes during mating, from lambing to weaning and during grazing, assessed. Both a direct field method and a laboratory method (Hatcher 1995) are being used. Those measured by direct count were measured immediately after joining and 2, 4 and 8 weeks subsequently. and the other ewes were shorn and sampled and measured in the laboratory using the dark fibre detector. This paper presents preliminary findings of those ewes monitored by the direct field method.

Table 1 presents the number and type of transferred fibres detected by direct field count on the three groups of Merino ewes. Transferred fibre was present in all groups following mating; the Damara group had no ewes without transferred fibres. However

there were no coloured fibres detected in the Merino group. The number of black or brown hairs found fluctuated at the 2nd and 4th week's count but by the 8th week there were no coloured fibres found in any group. However the small number found in individual animals even in the Merino group at the 2nd and 4th week suggests contamination from other sources such as dogs can be a factor. At all counts white kemp was found in the majority of ewes, even in the Merino group, and as there was no difference at the 8 week count between the Merino and Dorper group, it would appear that they could well be of Merino origin. Since kemp is brittle and short it tends to be lost during processing and not cause a contamination problem. Although these are only preliminary observations it appears that when contact ceases after joining, coloured fibres decrease and the number of white kemp fibres are similar to those found in the Merino group at both 4 and 8 weeks. Results from laboratory observations should further elucidate the fibre types and possible sources.

Hatcher, S. 1995. The potential of Awassi sheep and their Awassi x Merino progeny to cause fibre contamination. Ph.D. Thesis: University of Western Australia.

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Table 1. The number and type of transferred fibres detected by direct field count on three groups of Merino ewes, mated to Damara, Merino and Dorper rams respectively, immediately after joining, and 2, 4 and 8 weeks subsequently.

Date	Group	No. of ewes	No. with no transferred fibres (%)	Average no. of transferred fibres (range)	Total no. of black or brown hairs (range)	Total no. of brown down fibres (range)	Total no. of white hairs (range)	Total no. of white kemp fibres (range)
End of joining 2/7/99	Damara	13	-	5.5 (2-10)	10 (0-2)	1 (0-1)	4 (0-2)	57 (2-7)
	Merino	14	4 (28.5)	1.5 (0-3)	-	-	-	21 (0-3)
	Dorper	13	3 (23.1)	1.7 (0-5)	2 (0-1)	-	-	20 (0-5)
2 wks post-joining	Damara	13	1 (7.7)	3.6 (0-8)	3 ^a (0-1)	-	3(0-1)	41 (0-7)
	Merino	14	-	3.1 (1-6)	3 ^b (0-1)	-	-	40 (1-5)
	Dorper	13	1 (0.1)	2.2 (0-4)	4 ^c (0-1)	-	1 ^d (0-1)	23 (0-4)
4 wks post-joining	Damara	13	5 (38.5)	1.0 (0-4)	1 ^e (0-1)	-	-	12 (0-4)
	Merino	14	4 (28.6)	1.1 (0-3)	1 ^e (0-1)	-	-	14 (0-2)
	Dorper	13	3 (23.1)	1.1 (0-3)	3 ^f (0-1)	-	-	11 (0-2)
8 wks post-joining	Damara	13	3 (23.1)	1.5 (0-3)	-	-	-	20 (0-3)
	Merino	14	5 (35.7)	1.1 (0-3)	-	-	-	15 (0-3)
	Dorper	13	4 (30.8)	1.1 (1-3)	-	-	-	14 (0-3)

^a including 1 short black hair; ^b including 1 fine brown hair and 2 short black hairs; ^c all short black hairs; ^d short white hair; ^e black dog hairs; ^f including 1 fine black hair and 1 short black hair.