

928 Influence of body weight and body condition score at breeding on conception and prolificacy of Merino and Composite Coopworth, East Friesian, Romney and Texel sheep in Tasmania, Australia. A. E. O. Malau-Aduli*¹, G. H. Bond¹, and M. Dunbabin², ¹University of Tasmania, Hobart, Tasmania, Australia, ²Bangor, Dunalley, Tasmania, Australia.

We evaluated ewe conception and prolificacy in six flocks on three sheep farms with similar commercial management conditions in the Australian State of Tasmania. The aim was to investigate the effects of BW and BCS at mating, age group, and breed on reproductive traits. 1759 Merino, Composite Merino/Coopworth (M/Coop), Composite East Friesian/Romney (EF/Rom), and Composite Coopworth/East Friesian/Texel (Coop/EF/Tex) ewes of maiden (7 mo) and mature (18 to 30 mo) age groups were evaluated. Body weight and BCS of ewes were recorded before rams were introduced to the breeding mob. Ultrasound scanning 90 d after ram removal was carried out. Results demonstrated that ewes that conceived were consistently of greater BW and BCS than barren ewes. The average BW of non-pregnant, single, and multiple-bearing ewes were 41.3, 43.7, and 54.6 kg respectively, while their corresponding BCS were 2.77, 2.80, and 2.85. However, highly significant ($P < 0.0001$) breed, age group, and flock variations were observed: 7 mo-old maiden ewes had a significantly lower conception rate than 18 mo-old ewes at the same BW at breeding. Within the 18-mo age groups, percentages of non-pregnant ewes were 16.7, 3.0, and 2.4% and percentages of multiple fetus-bearing ewes were 1.4, 53.6, and 74.2% for Merino, Coop/EF/Tex, and M/Coop, respectively. The Coop/EF/Tex flocks were consistently more prolific than other breeds with 74.2, and 77.5% of ewes scanned as multiple fetus-carrying at ages 18 and 30 mo, respectively. Above BW of approximately 55 kg, the probability of multiple conceptions began to increase at a greater rate at the expense of single conceptions. The study shows that nutritional management prior to joining in commercial Tasmanian sheep flocks has the potential to increase reproductive performance in ewes. This is of particular importance when ewes are bred as lambs or from breeds with characteristically low fertility levels.

Key Words: Conception, Prolificacy, Sheep Bodyweight