

## Theme 6: Animal species & genotypes suited to their environment

### **ID: 23 Evaluation of exotic Terminal and Prolific Sheep breeds for their appropriate use in terminal crossbreeding systems in specific production and marketing situation in Turkey**

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Improving efficiency of commercial lamb production is a paramount step towards achieving sustainable livestock. Broad diversity among breeds of sheep is a precious industry resource. The beneficial genetic effects of each breed can best be realized in terminal crossbreeding systems that utilize sire breeds to complement characteristics of maternal crossbred ewes, thus greatly improving the efficiency of commercial lamb production.

In this study, three terminal sires, Suffolk, Charollais and composite breed (half Charollais, quarter Romanov, quarter Turkish native breed: CRT) and F1 Romanov ewes were used. Terminal sires (n=5 from each breed) were mated to F1 Romanov ewes (n=50 for each sire). The crossbred offspring of these three breeds were compared for reproductive traits and total productivity. Ewes synchronized with intravaginal CIDR (Pfizer) (12 d) and received 400 I.U. eCG by intramuscular injection at the time of CIDR removal. Rams were introduced 24 h after CIDR removal and mating was continued up to 5 days. All ewes were scanned transabdominally by using a real-time ultrasound (Draminski, Poland) at day 45 post mating. Lambs were born in an enclosed building and reared by their mother until a weaning age of 75d. All lambs were switched to a total-mixed growing diet at about ten weeks of age. Lambs were weighed at weaning and 16 weeks of age. Productivity of ewes (litter size) was measured at birth and weaning. Also, litter weight at 16 weeks of age was used as an indicator of income per ewe.

The conception rate obtained in this study did not differ for the ewes mated with different breeds of ram (Suffolk: 85%; Charollais: 87% and CRT: 88%). Charollais rams (192%) were superior ( $P > 0.05$ ) to Suffolk (179%) and CRT (161%) rams based on litter size at birth. Lamb survival until weaning was significantly different among lambs sired by different terminal sires and, CRT sired lambs had the highest survival rates (91%) than those recorded for Suffolk (82%) and Charollais (82%) sired lambs. Total productivity was measured 34.9 kg, 43.3kg and 25.9kg for Suffolk, Charollais and CRT sired ewes. It was concluded that the Charollais breed was the best sire in terms of total productivity which is accepted as a reliable indicator of income per ewe.