
SMALL RUMINANT PRODUCTION II

109 Effect of sire breed on pregnancy rate in landrace hair sheep during summer Mating.

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Caribbean hair sheep breeds are aseasonal breeders in their native environment and display extended seasonal breeding under temperate environments, thus facilitating their use in accelerated mating. This project introduced terminal sire mating into an accelerated hair sheep production system, and here we evaluated the influence of sire breed on fertility during the transitional breeding season. A flock of 112 purebred Barbados Blackbelly (BB) and St. Croix (SC) ewes were mated in July as part of an accelerated breeding system. In this system, ewes were managed on pasture and lambs weaned 2 to 4 wk before mating. Before breeding, ewes were fed supplement containing 0.3 mg/(head · d) melengestrol acetate at 1% of BW for 10 d to synchronize estrus. Ewes were randomly allocated by breed type to be bred by like-breed sires or Dorset (DO) rams in single sire groups of 10 to 18 ewes (3 BB, 3 SC, and 3 DO sire groups). Rams had passed a breeding soundness examination before breeding and were fitted with a marking harness. Estrus marks were recorded daily when ewes were fed corn supplement at 0.5% BW (DM basis). Pregnancy was determined at the end of the 30-d mating period and again 21 d later by transrectal ultrasonography. Data were collected during two July mating periods, using a total of 5 BB, 6 SC and 5 DO rams, and were analyzed using Chi-square to determine effects of mating type (purebred vs. crossbred) on pregnancy rate and rebreeding frequency. Overall pregnancy rate was greater in purebred than crossbred matings (95.8% vs. 68.9%, respectively; $P < 0.01$) and different between years (88.5% vs. 78.2%, respectively; $P < 0.05$). The pregnancy rate to the initial synchronized estrus was greater ($P < 0.001$) purebred than crossbred matings (77.5 vs. 27.2%) and contributed to the difference in overall pregnancy rates between mating types. Concurrently, incidence of repeat breeding marks was greater in crossbred than purebred matings (37.9 vs. 18.6%, respectively; $P < 0.01$), and resulted in a later average breeding date for crossbred matings after onset of the breeding season (15.2 vs. 6.2 d, respectively; $P < 0.001$). Data indicated that fertility of DO rams in a July mating was less than in BB and SC rams, which could impact the lamb crop produced. The later breeding date will also affect ewe rebreeding performance under an accelerated mating system.

Key words: Transitional breeding; Hair sheep; Pregnancy rate

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110 Use of fecal NIRS to predict red cedar intake by goats.

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The objective of this study was to develop a NIRS calibration equation for fecal samples so that the percent red cedar in the diet could be predicted in a vegetation management study. Thirty Boer yearling wethers (45.3, SD = 9.4 kg initial BW) were penned individually and assigned to one of 5 basal diets (basal concentrate, alfalfa pellets, chopped native grass hay, chopped mixed hay or chopped wheat hay). Five levels of fresh harvested red cedar needles (0, 6, 12, 18, and 24% of dietary DM) were substituted for the basal diet, 1 wk at each level. Five basal diets were used to make the prediction equation robust across diets (prevent confounding between cedar level and basal diet level). Fecal samples were collected for the last 3 d during each feeding week using fecal bags for approximately 2h/d. Fecal samples were dried at 65°C and ground in a Cyclotec[™] mill to pass a 1 mm screen. Fecal samples were scanned from 680 nm to 2500 nm using a Unity Spectra Star[™] NIR spectrophotometer. Wethers fed chopped wheat hay had lower total feed intake ($P < 0.01$) compared to all other basal diets. Total feed intake and basal diet intake were not affected by red cedar levels ($P > 0.05$). Basal diet intake was higher ($P < 0.01$) for wethers consuming the basal concentrate or alfalfa pellets compared to wethers fed any of the chopped hays. Red cedar intake was lower ($P < 0.01$) for wethers fed basal concentrate compared to all other diets. A prediction equation was developed using red cedar intake reference data and fecal spectra data using UCal[™] software. The predictive equation had a R^2 of 0.83 and a standard error of calibration of 3.37%. This equation should be suitable for predicting red cedar intake from fecal samples of grazing goats.

Key words: Near Infrared Spectroscopy, fecal analysis, red cedar, goat

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111 Effects of dietary AcidBuf supplementation with different levels of salt on productive performance and carcass characteristics of growing lambs.

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Thirty 4-mo-old Awassi male lambs (BW 23.5 ± 1.3 kg) were used in a 70-d trial to evaluate the effects of supplemental AcidBuf (calcified seaweed extract) with different levels of salt (sodium chloride) on performance, metabolic profile, carcass characteristics and meat quality of growing lambs. Animals were individually housed in shaded pens and randomly divided into 6 groups of 5 lambs each. The dietary treatments were: 1) no added supplemental AcidBuf or salt (control group; the basal