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## INDICES OF BODY COMPOSITION AND REPEATABILITY OF RESIDUAL FEED INTAKE IN GROWING COLUMBIA EWES FED THE SAME DIET

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Residual feed intake (RFI), an efficiency measurement based upon the difference in expected and actual feed intake, is used to improve production efficiency of livestock. The purpose of this study was to evaluate the repeatability of ewe RFI measured for two consecutive years, and to investigate the relationship between indices of body composition in yearling ewes and RFI. Two trials, using the same Columbia ewe lambs ( $n = 17$ ) were conducted in consecutive years (2014, 2015) using the same diet. RFI was calculated for each ewe each year. RFI did not differ ( $P = 0.77$ ) between years. Each year, ewes were separated into RFI classes (LOW (efficient); MOD (average); HIGH (inefficient)). In 2014, ewe lamb performance did not differ among classes ( $P > 0.3$ ). In 2015, dry matter intake was greater for HIGH ewes ( $P < 0.0002$ ). Ribeye area (REA;  $\text{cm}^2$ ) and backfat thickness (BF; cm) were measured by ultrasound on day 0 (start of trial), 17, and 45 (end of trial) in 2015 and used to calculate estimates of final body composition. RFI classification did not affect REA or BF ( $P > 0.25$ ). There was a trend for whole-body muscle mass to differ among RFI classes ( $P = 0.09$ ), but no other body composition estimates were affected. Results suggest that RFI is repeatable; however, indices of body composition seem to be independent of RFI in Columbia ewes fed the same diet under similar conditions.