Utilization of Performance-tested and NSIP Sires Improved Progeny Performance and Value in Ram Test Program. Andrew R. Weaver¹, Donald L. Wright², Scott P. Greiner³. North Carolina State University, ²Southwest Virginia Agricultural Research and Extension Center, ³Virginia Tech

Sire selection can have long-term impacts on flock performance. The objective here was to evaluate the effect of performance-tested and/or NSIP rams on progeny performance and value in a ram test program. Rams (Katahdin = 104, Dorper = 7, Texel = 3, Cheviot = 3) were delivered to the Southwest Virginia Agricultural Research and Extension Center (SWAREC) Ram Test on June 1. Ram pedigrees were obtained from consignors and rams were classified based on whether their sires were tested in a previous SWAREC Ram Test (TESTED), enrolled in the National Sheep Improvement Program (NSIP), or neither TESTED nor NSIP (NEITHER). Some sires (16%) were previously tested and enrolled in NSIP. Rams were dewormed and rested for two weeks. On June 22, rams were given Haemonchus contortus larvae adjusted for body weight (average = 5000 L3). FAMACHA scores and fecal egg counts (FEC) were monitored every two weeks until August 31. Rams were dewormed based on FAMACHA ≥ 3. Select rams were sold at auction as breeding stock. Statistical analysis were performed using SAS (SAS Institute, Cary, NC). Rams requiring deworming had greater FAMACHA scores and FEC at all time points (P < 0.05), despite not requiring treatment until August 17 (5%) and August 31 (12%). In total, 17% of rams were dewormed. Of the dewormed rams, a smaller portion of rams sired by TESTED rams (10%) and NSIP rams (15%) required treatment compared to rams sired by NEITHER rams (85%; P < 0.05). Rams sired by TESTED and NSIP rams had a higher average value than those sired by NEITHER rams ($2070 and $1838, respectively, vs. $1078; P < 0.05). Selection of sires that are TESTED and/or NSIP resulted in progeny that had a lesser chance of requiring treatment and sold for greater value.

Keywords: performance test, sheep, sire selection

Evaluation of Sire FEC EBV Type and Haemonchus contortus Infection on Feed Efficiency in Katahdin Sheep. Camren L. Maierle¹, Andrew R. Weaver², Eugene Maierle¹, Scott P. Greiner³. West Virginia University, ²North Carolina State University, ³Virginia Tech

Understanding the impact of genetic resistance to internal parasitism and infection status on feed efficiency could be valuable to selection and management programs. The aim of this study was to evaluate the effect of fecal egg count (FEC) estimated breeding value (EBV) and Haemonchus contortus (H.C.) infection on intake, feed:gain (F:G), and residual feed intake (RFI). Over two years, Katahdin lambs divergently selected for FEC EBV (LowFEC, n = 86; HighFEC, n = 87) were born mid-March at the Southwest Virginia Agricultural Research and Extension Center. Mid-July, lambs were transported to West Virginia University’s Animal Science Farm and fed using a Growsafe™. Lambs were provided a complete pellet (16% CP) ad libitum while individual intake was measured. Half of the lambs from each sire FEC EBV type were infected with 5,000 H.C. L3 larvae and observed for 6 weeks alongside uninfected contemporaries. Artificial H.C. infection resulted in lambs becoming moderately infected with FEC ranging from (0 – 1208 eggs/g). RFI was calculated as the difference between actual and expected intake. Expected intake was predicted based on average daily gain and metabolic body size. Intake was not affected by sire FEC EBV type or infection status (P > 0.10). Infection status did not affect F:G, however HighFEC lambs tended to have greater F:G values (13.5 vs. 6.8 kg feed:kg gain; P = 0.07). RFI was not affected by sire FEC EBV type or infection status (P > 0.10). Individual sire (n = 9) had a significant effect on intake and RFI (P < 0.05). Year and year x sire interaction did not have an effect on RFI or F:G (P > 0.40). Sire FEC EBV type and infection status did not impact feed efficiency. However, variation between sires independent of year indicates potential sire impact on progeny feed efficiency in sheep.

Keywords: Katahdin, Intake, RFI