The development of longer-season wheat cultivars in Australia has allowed increasing use of wheat as a grazing resource in winter, replacing either pasture or forage oats. There are few data for diet composition, intake or forage digestibility in young sheep grazing wheat forage, especially in comparison with oats or pasture. Over 2 years, we used the n-alkane method to estimate diet composition (year 2), OM intake, fecal output and diet digestibility in 30 kg Merino sheep. In July of year 1, sheep grazed wheat, oats or a phalaris-based pasture for 22d at 33 animals/ha. In year 2, they grazed wheat for 34d at 33 animals/ha, within a larger fertilizer-response study. In each year, data were analyzed as replicated randomized blocks using plot mean data. There were no fertilizer effects on intake variables in year 2, so overall means are reported. In year 1, OM intakes did not differ significantly between sheep grazing oats (1162 g/d), wheat (1403 g/d) or pasture (1510 g/d). However, fecal OM excretion was significantly greater (P = 0.01) in animals grazing pasture (362.1 g OM/d) than crop (mean 146.2 g OM/d). OM digestibility of the pasture was thus significantly less (0.758; P = 0.01) than for either oats (0.861) or wheat (0.901), which did not differ. Digestible OM intakes (mean 1140 g OM/d), liveweight gains (mean 254 g/d) and liveweight gains/kg OM intake (mean 189 g/kg OM) did not differ between treatments. Crop growth in year 2 was reduced by drought and by the end of the grazing period, crop biomass was < 400 kg DM/ha and constrained intake. The crop also contained more weeds. Nevertheless, alkane-based estimates of diet composition showed that 89% of forage intake was from herbage. Herbage intake (862 g OM/d), whole-diet digestibility (0.762) and liveweight gain (162 g/d) were all less than in year 1. Liveweight gains/kg of OM intake were very similar (190 g/kg OM) to year 1, suggesting that reduced liveweight gains were due to lower intakes. The results also indicate that in year 1, the digestibility of crop forage was greater than pasture, but OM and DOM intakes by young sheep were similar across forages.

Key Words: alkanes, intake, wheat forage
pellet feed, n = 9; group 3, fed with extruded pellet feed, n = 9). Lambs were individually fed with the same ingredient of concentrate feed (2.5 Mcal/kg) and had free access to water until 43 kg of slaughter weight. The initial live weight of lambs were similar \( (P > 0.05) \) 29.56 ± 1.27, 29.89 ± 1.07 and 28.89 ± 0.83 for group 1, 2 and 3, respectively \( (P > 0.05) \). At the end of fattening period the final live weights of lambs were also similar \( (P > 0.05) \). The results showed that total weight gain and average daily gain (ADG) of ram lambs during the study were 12.75 ± 1.05 kg and 180.90 ± 17.70 g for group 1, 12.78 ± 0.90 kg and 25.10 ± 21.50g for group 2, and 14.56 ± 0.55 kg and 287.80 ± 23.40 g for group 3, respectively. The difference of ADG among groups were significant \( (P < 0.01) \). The best feed conversion rate (FCR) was estimated for the lambs in group 3 (6.50 ± 0.30) while the other FCR results were greater than group 3 (8.20 ± 0.50 and 6.90 ± 0.40 for group 1 and group 2, respectively) \( (P < 0.05) \). Lambs fed with extruded pellet feed (group 3) tend to have lower fattening period (19 d less) than group 1 \( (P = 0.07) \). The results of the current study shows that feeding of Awassi ram lambs with extruded feed had positive effects on fattening performance, feed conversion rate and fattening period, which are economically important for sheep farms.

Key Words: Awassi lambs, extruded feed, fattening performance

Effect of anaerobic enzyme matrix on fiber digestibility. H. M. Gado*1 and B. E. Borhami2, 1Ain Shams University, Department of Animal Production, Faculty of Agriculture, Cairo, Egypt, 2Alexandria University, Department of Animal Production, Faculty of Agriculture (El-Shatby), Alexandria, Egypt.

The intend of this study was to verify the effect of nutritive value aerobic constancy of rice straw. Also, if it could be enhanced by addition of exogenous cellulases, hemicellulase, protease and α amylase enzymes (ZAD) preparations at ensiling. Rice straw was chopped to 5 cm without treatment (control) or after treatment with ZAD (1 or 3 L/ 1 ton of DM of rice straw) including 30 kg of sugar cane molasses and 20 kg of DDGS. The enzymes were sprayed on the rice straw at ensiling (50% of water was added). Ten 500-kg replicates of chopped (5 cm) rice straw were ensiled for 30 d in plastic bales. Five plastic bales per treatment were used for chemical analysis and 5 for aerobic constancy monitoring. The silage juice was analyzed for organic acids, pH, water-soluble carbohydrates (WSC), ammonia-N, and soluble N. Samples were analyzed for crude protein (CP), neutral detergent fiber (NDF), and acid detergent fiber (ADF). In vitro digestibility of DM (IVDMD), NDF (IVNDFD), and ADF (IVADF D) were determined. Materials treated with ZAD had lower \( (P < 0.05) \) DM losses, and lower \( (P < 0.05) \) pH and ammonia-N concentration than control silages. Residual WSC concentration was greater \( (P < 0.01) \) in ZAD treated silages either 1 or 3 L than in control silages. Compared with control silages, NDF concentration was lower \( (P < 0.01) \) in silages treated with 3 L followed 1 L of ZAD. Aerobic constancy was increased \( (P < 0.05) \) by ZAD. ZAD at 3L increased the IVDMD and IVNDFD at 6 and 48 h. The 48-h IVADF D was also increased \( (P < 0.01) \) by treatment with 3L ZAD. These results show that 3L ZAD applied at ensiling can improve the digestibility, fermentation, and aerobic constancy of rice straw silage.

Key Words: nutritive value, rice straw, ZAD