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131 Effects of high feeding level on caprine mammary gland development and milk yield potential. J. M. Aubry[1,2], L. Finot[1,2], L. Yart[1,2], S. Wiart[1,2], E. Siroux[1], M. Chorho[1], J. Lassalas[1], and F. Dessauge*[1,2], *[1]INRA, UMR1348 Pegase, Saint-Gilles, France, [2]Agrocampus Ouest, UMR1348 Pegase, Rennes, France.*

The correlation between growth rate during rearing and the subsequent milk yield potential has been extensively studied in dairy cattle and sheep. Many studies highlighted that high feeding level before puberty negatively affected mammary development, but such results are scarce in dairy goats. Present study aimed then to investigate the effect of high feeding level from rearing to kidding on caprine mammary gland development and milk yield potential. A total of 52 Alpine dairy goats were submitted to 2 feeding levels (n = 26 per treatment). From weaning (17 kg, 60 d of age) to kidding (50 kg, 12 mo of age), they received either a controlled standard diet according to commercial recommendations (BD, 92 UFL - 17 MAT) or an ad libitum diet (HD, 85 UFL - 17 MAT). Goats weighed twice monthly and were milked twice daily. Milk yield (MY) and composition were recorded twice a week. At mid-gestation, 6 goats of each group were slaughtered and mammary glands were collected. Mammary glands were weighed and dissected for molecular analysis. DNA mammary concentration analysis was measured and used to estimate the total number of mammary cells. Expression of proteins involved in mammogenesis was evaluated on mammary tissue by real-time qPCR, Western Blotting and immunohistochemical staining (ER α, PCNA, MMPs). Before weaning, average daily gain (ADG) were similar between the 2 groups of animals (230 g/d). From weaning to 4 mo of age and from 4 mo of age to conception, HD goats grew faster than BD goats: 180 and 154 g/d vs. 128 and 127 g/d, respectively. At mid-gestation, HD goats had a well developed mammary gland. At slaughter, mammary glands from HD goats already presented a well organized mammary ductal network with the presence of milk. During lactation one, they had a higher milk yield than BD goats (2.92 kg/d vs. 2.73 kg/d on average, $P < 0.05$) during first 2 mo of lactation. Reproduction performance was not affected. In conclusion, high feeding level from weaning to first kidding does not affect mammogenesis and milk yield potential in dairy goats.

Key Words: mammary gland, feeding level, goats