



Growth and viability of Liaoning Cashmere goat hair follicles during the annual hair follicle cycle

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ABSTRACT. Here, we studied hair follicle development of Liaoning Cashmere goats. Every month for 1 year, skin samples were collected from five 1.5-year-old female goats, and made into paraffin sections. A number of parameters were measured of primary and secondary hair follicles via microscopic observation including follicle depth, hair bulb width, dermis and epidermis thickness, changes in follicle activity, and histology. The results showed the presence of three phases in the annual hair cycle: anagen, catagen, and telogen. Primary and secondary hair follicle depth varied across the months; however, no significant difference was obtained between adjacent months ($P > 0.05$). Primary hair follicles had a bigger hair bulb width compared to secondary hair follicles; however, this difference declined during hair follicle developed in anagen. As hair follicle growth slowed, the hair bulb broadened, and hair root depth became shallower. During the entire hair cycle, hair

follicle depth and dermis thickness were positively correlated; however, this relationship was not significant ($P > 0.05$) for primary and secondary hair follicle density and the ratio of secondary hair follicle density and primary hair follicle density (S/P ratio). In addition, new and old primary hair follicles coexisted with secondary hair follicles. Finally, secondary hair follicles had a higher activity rate compared to primary hair follicle in adult Liaoning Cashmere goats in certain months.

Key words: Adult Liaoning Cashmere goats; Hair follicle viability; Primary hair follicle; Secondary hair follicle; Hair follicle cycle