

Transhumance effect on husbandry practices, milk composition and physiochemical attributes of Chauri in Rasuwa District

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Abstract

An experiment was conducted in Dhunche and Syaphru VDCs of Rasuwa district, Nepal from September, 2008 to March, 2009 using 28 chauries of 3 to 16 years to study the dynamics in husbandry practices, physiobiochemistry, and milk composition during transhumance. Physiobiochemistry and milk composition were evaluated by 2 x 4 Factorial Completely Randomized Design with two levels of altitude (high-3300 masl and low-1655 masl) and four levels of age group (G1-up to 6 yrs, G2- 7 to 9 yrs, G3- 10 to 13 yrs and G4-above 13 yrs); information regarding husbandry practices were collected from herders (n=60) using purposefully prepared semi- structured questionnaire. The blood and milk samples and physiological vitals were taken from two different altitude pastures (3300 vs. 1655 masl) and analyzed by standard procedures. Almost all animals were managed for generation back (86.67%) on absolute grazing (98.33%) on open roof system (93.33%) without any supplementation but in lean period, almost half (46.67 %) herders supplemented their milking animals with locally available alternatives. Average first calving age was 3.07 years (85%); lactation length of 6-7 months (58.33%); calf weaning age of less than 15 days (46.67%); calving interval of 13-14 months (91.67%); average herd size of 23.1 (7-50) animals and milk production of 2-4 L/ day (48.33%). Two third herders had basic knowledge on common diseases, despite having higher faith on traditional healers (58.33%) and almost none animals (91.67%) were found vaccinated. Pastures deterioration and increasing disease prevalence were the major constraints of chauri keeping. Physiobiochemistry of chauri varied greatly during transhumance. Rectal temperature, respiration rate, pulse rate and DSI showed significant variation ($P<0.01$) with higher values when animals were at low altitude pasture. Biochemically, SGPT, SGOT, serum protein (total protein & globulin) and Ca ($p<0.01$); and Na ($p<0.05$) showed significant variation with higher SGPT, SGOT, total protein, globulin and Na at high altitude pasture with higher Ca at low altitude pasture. But, no such response ($P>0.05$) were evidenced with respect to age. In spite of huge dynamics, they all were found to be within the normal physiological range as referenced for bovine species. Likewise, Fat and SNF content were significantly higher ($P<0.01$) in low altitude while protein content ($P<0.01$) at high altitude but milk ash content was not affected ($P>0.05$). SNF was also found to have age specific trend with higher content ($P<0.01$) in animals at younger age, followed by a progressive descends with advancing age till 10-13 years. Thus, findings of this study revealed that transhumance, the rule of chauri management, is herders' rational farming approach to make use of pastures available at different altitudes and have a distinct impact on rearing system, animals' physiology and milk composition. (This study was conducted for the fulfillment of master's degree research)