Session 8: Adaptation, resilience and agroecological transition in small ruminants and camelids.

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A TIME-SERIES ANALYSIS OF ALPINE AND SAANEN GOAT MILK PRODUCTIVITY TRENDS IN TAIWAN

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In order to project amounts and fluctuations in goat milk and milk components in Taiwan, it is necessary to analyze long-term animal data with multiple lactations. This study analyses the trend and seasonality of goat milk production and its components between 2018 and 2022. A total of 20,738 lactation records were collected from 2,376 Alpine goats and 522 Saanen goats from January 2018 to December 2022. In each record, the goat's lactation total milk, fat, and protein yields were calculated. Time series decomposition was used to determine milk productivity's trend and seasonal pattern. The results showed distinct trends and seasonality between goat breeds and lactation numbers. We observed similar seasonal and amplitude patterns across all lactations for fat, protein, and lactose yield, respectively. Higher lactation numbers also showed a larger seasonality amplitude for all yields (milk, fat, protein, and lactose). Additionally, different patterns were observed for all yields between Alpine and Saanen goats regardless of lactation. The results could be used for advising management decisions according to farm and breed productivity goals. In addition, trend and seasonal patterns can be utilized in Taiwan goat milk industry to forecast milk, milk component, and component production by specific breeds of goats.