ECONOMIC WEIGHTS FOR SELECTION OBJECTIVES IN DAIRY GOAT SYSTEMS IN BRAZIL

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Abstract / Resumo:

Increasing food demand in tropical regions is a consequence of rapid human population growth. Profit from investments affect both consumers and producers, since cost reflects on commercialization prices. This is a preliminary study to identify relevant socio-economic traits and derivate economic weights for selection objectives in Brazilian milk goat production systems. Production and economic indicators for intensive and semi-intensive dairy goat systems in Brazil were evaluated, including feed and sanitary management and also productivity indices, using process from January 2010. An economic analysis of each system was carried out and only traits responsible for more than 10&percent; of the profit were selected. The component traits for selection objectives for dairy goat systems were: Milk production (kg/animal/day), food consumption (%), adult female weight (kg), disease resistance, lactation duration (days), total milk dry extract (%), somatic cell count, colony forming units, total mortality (%), kidding interval (months), fertility (%) and prolificacy (kids/partum). The economic value of the trait was calculated by the difference between profit before and after an increase in a single unit of each individual trait ($Ve = L' - L$), where L' is the average farm profit after increasing each trait by one unit (or 1%), keeping the average of others unaltered. For biological reasons, 0.1 was considered a change unit for prolificacy. Flock simulation was carried out considering 100 female goats. The determination of all economic and productive weights for both systems was carried out using Excel software. In general, the economic indicators showed similar results, with a slight advantage for the intensive system (up to 10%). Profit in both systems was practically the same, but average profit was significantly better for the semi-intensive system (R$ 0.185 and R$ 0.226 for the intensive and semi-intensive systems, respectively). Among the analyzed traits, only milk production (MP), food consumption (FC), total dry extract (TDE), somatic cell count (SCC) and colony forming units (CFU), were responsible for more than 10&percent; of the result economics (profit or loss) in dairy goat production in Brazil. The average economic weights for MP, FC, TDE, SCC and CFU were 0.3154, -0.2924, 0.0597, 0.0298 and 0.1194 for the intensive system, and 0.3335, -0,3429, 0.0596, 0.0298 and 0.1192 for the semi-intensive, respectively. Food consumption showed high and negative economic value. Highest economic value was for milk production. Milk total dry extract, along with colony forming units also showed high economic values and contributed significantly to average profit. Quantitative and qualitative traits that have significant economic weights should be used as selection objectives in goat production systems in Brazil. Total dry extract, number of colony forming units, somatic cell count and milk production are the most important traits. This study was supported by CAPRILAT for economic values of production systems and CNPq for funding research.