Breeding objectives for the Boran breed in Kenya: Model development and application to pasture-based production systems

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ABSTRACT

Bio-economic profit models were developed and applied to evaluate biological and economic variables that characterize production systems utilizing the Boran breed. Production systems were described according to their sale age (24 months short-fed or 36 months long-fed), levels of input (low, medium or high) and final goal (beef or dual purpose) representing practical circumstances that exist in the various beef cattle farms in Kenya. The input variables were classified into production and economic variables. The outputs from the profit models included revenue, costs and feed intake of cows, heifers and steers in the different production systems. These models can be used to simulate changes in production and marketing circumstances. The biological relationships and assumptions in the model are general and flexible and can therefore be applied to a wide range of beef cattle production circumstances by changing the input variables. In addition, by modifying the herd dynamics and management variables this model may be applied in Kenya or other countries to production systems that utilize indigenous cattle genetic resources or their crosses with Bos taurus breeds.