Impact of Genetic and Non-genetic Factors on Birth Weight of Crossbred Red Angus and Simmental with Local Cattle in Sudan

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ABSTRACT

A crossbreeding program designed to produce a new beef breed was initiated by the Ministry of Animal Resources, Fisheries and Rangelands, and was executed in collaboration with the Ministry of Agriculture in Khartoum State and the private sector. The main objective of this paper was to determine the factors affecting birth weight of crossbred Red Angus and Simmental with local Sudanese cattle raised under Sudan conditions. The study was conducted at Dr. Mohamed Alamin farm in Alkadawor area, Khartoum North, Khartoum State, Sudan, about 40 km from Khartoum city center. Four hundred cows were purchased from local markets of different states. The cows were split into two groups randomly and were inseminated with Simmental and Red Angus imported semen using artificial insemination. The calves produced were weighed immediately after birth. The birth data were classified according to sex of calf, season and year of birth, sire breed, dam ecotype and dam weight. The results showed that the average birth weight was 25.56 kg. Sire breed, dam ecotype, season of birth and sex of calf had no significant (P>0.05) influence on the birth weight, while it was significantly (P<0.001) affected by year of birth and dam weight. The calves born in 2011 were significantly (P≤0.05) heavier in birth weight than those obtained in 2012. The birth weight showed a significantly (P≤0.05) increasing trend with increase in body weight of dam. Male calves recorded an insignificantly (P>0.05) higher birth weight than female calves. The birth weight of calves born in the winter season was the highest (P≤0.05) followed by dry summer calves, while wet summer calves recorded the lowest birth weight. The birth weight of Simmental crossbred calves was insignificantly greater than that of Red Angus crossbred calves. The study concluded that birth weight of crossbred calves from exotic beef breeds with local cattle of Sudan is moderate and resulted in easy calving with no cases of dystocia. The use of these two exotic breeds in a crossing program designed to produce a new beef breed is recommended.

Key word: Crossbreeding; beef; Red Angus; Simmental; birth weight