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Performance of Crossbred Male Cattle Calves Fed Fast Finishing Ration Under Urban Area of Mizan Aman City, South West Ethiopia

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Abstract

The study was aimed at evaluating the growth performance and cost per gain of crossbreed (local × Holstein Friesian) male calves under two different improved feed and one conventional feed treatments to determine the appropriate ration for economic production in urban system of Mizan Aman city administration, South Nation Nationality and Reginal State, Ethiopia. Due to Mass oestrus synchronization and artificial insemination service program of dairy cattle, the birth of male calves and unwillingness of rearing them due to voracious eating behavior as well as expensive to feed them at urban area is a rising concern in the study area. The purpose of the reperch is to investigate the coincidence of animals to fattening as a solution.

Twenty-one crossbred (Local × Holstein-Friesian) bulls (average body weight 90.08 ± 2.5 kg) of five months age were divided into three equal groups and fed on three diets (T1, T2 and T3) up to 90 day, where T1 and T2 referred as improved diets from locally available energy and Protein source andT3 referred to the conventional diet.T1=Roasted ground and decaffeinated coffee(70%) + Rice bran(30%)+Pasture hay,T2=Bean bran(70%) + Taro(30%)+Pasture hay and T3= Pasture hay

The results revealed that dry matter intake (DMI), feed conversion ratio (FCR) and average daily weight gain (ADG) varied significantly (P< 0.01) among different treatment groups. Feed cost expressed as per kg live weight gain (EB/kg LWG); 1USD=27.58 Ethiopian Birr).cross breed male calves feed T2 had significantly (p<0.1) higher dry mater intake (6.4 kg/day) , FCR (12.03 kg/day) than T1 (5.5 kg/day dry matter intake and 11 DM intake/daily gain of FCR) and T3(1.63 kg/day DMI and 9.8 DM intake/daily gain FCR).Crossbred bulls fed diet T2 had significantly (P<0.1) higher ADG (0.53 kg/day/bull) than T3 (0.17kg/day/bull) and T1 (0.50 kg/day/bull) feed and comparatively lower feed costs (8.3 EB/kg LWG) as compared with T3 (12.12 EB/kg LWG) and T1(11.24 EB/kg LWG.

Therefore, considering the growth performance and cost per kg gain of the experimental animals, it is concluded that the crossbred (L× HF) bulls treated with T1 is economic male cattle calves fast finishing ration next to T2 in study area.

Keywords: Crossbred bulls; Fatting; Locally available feed; Mizan Aman city

Introduction

There are about 58 million cattle in Ethiopia of which 1.2 million crossbred dairy cattle (Million Tadesse. 2018). The cattle population in Ethiopia comprises 99.4% indigenous (Zebu), 0.5% crossbreeds and 0.1% exotic breeds which are mainly kept under smallholder subsistence farming [1].

The local × Holstein Friesian (L × HF) crossbred animals are expected to be a faster growing than native animals for profitable beef production. The growth and carcass yield potentials of indigenous and crossbred cattle may not be sufficiently exploited, unless adequate nutrition both in terms of quantity and quality is ensured. Local farmers mostly fed local grass to their cattle, and the local grass poor quality roughage, failed to support even the maintenance requirement of energy and protein while it is fed alone [2].

Crossbreeding has resulted in good improvements in production of milk and meat, especially when supplemented with adequate management levels in terms of nutrition and disease control. Since the productive and reproductive potentials of Zebu cattle are relatively low, crossbreeding with B. taurus ensures high productive and reproductive performance . Depending on the breed combination and environmental factors the growth rate of the crossbred animal is 5 to 25% faster; crossbred animals utilize their feed more efficiently. Artificial Insemination (AI) services in Ethiopia have been the most widely practiced animal biotechnology all over the country for enhancing crossbreeding [3].

Growth ability belongs among the most important parameters concerning the production of beef . The growth of calves and their weaning weight is influenced by a number of factors, e.g. nutrition, and others genotype as well as individual, the sex of calves , the year and period of calving, difficulty of calving [4] .

The General objective of the study was to: To develop cost effective fast finishing feed for urban male crossbred calves of SNNPR. Specific objectifies to introduce as well as evaluate available feed resources on weight gain of urban cross bred male calves and to determine the least cost and efficient available feed resources for urban cross bred male calves [5].

Materials and Methods

Description of study area

Mizan Aman city administration, three kebele (Shesheqa, Komota and Adis ketema) were selected for present study, where the cross-breed cattle population highest in the Benchmaji Zone of south west Ethiopia

#		Feeds	# Ans
1	T1	Roasted ground and decaffeinated coffee (70%) + Rice bran (30%) +Pasture hay	7
2	T2	Bean bran (70%) + Taro (30%) +Pasture hay	7
3	T3	Pasture hay	7

Table 1. Treatment used.

Experimental site, animals and housing

The experiment was conducted at Mizan Aman City administration, at Sheshega, Komota and Adis ketema kebele for a period of 90 days of experimental and 15-day adaptation starting from January 8, 2013 to Ethiopian Eastern festival (April 8 ,2018). Twenty-one crossbred (Local × Holstein-Friesian) bulls (average body weight 90.08 ± 2.5 kg)

The experimental animals were kept in individual stall of with adequate space and separate feeding and watering system. The animals were kept under hygienic conditions and uniform management throughout the experimental period. Each animal was de-wormed with anthelmintics immediately before starting the experimental diets.

Feeding

The ration was supplied on the basis of dry matter requirement according to their live weight. Feed intake was determined by subtracting the refusal from the amount given. Feed refusals were collected every morning before feeding, and weighed out regularly to find out daily feed intake.

Results and discussion

The authors confirmed that the weaning age of crossbreed at the area is 3 months. There was significance difference between test diet and control on final weight, Average total body weight gain, Average daily body weight gain, DMI and FCR. As a result, the two test diets i.e. Roasted ground and decaffeinated coffee (70%) + Rice bran (30%) +Pasture hay =T1 and Bean bran (70%) + Taro (30%) +Pasture hay=T2 was treatments that made animals to gain an average daily body weight gain of 0.50 kg/day/bull and 0.53 kg/day/bull which is significantly different from control diet(T3= Pasture hay) that made animals to gain 0.17 kg/day/bull.

Conclusion

It is concluded that improved feed for Crossbreed bulls (local × Holstein Friesian) from local available feed i.e. T2 =feed Bean bran (70%) + Taro (30%) +Pasture hay proved to be more effective and economic as they have higher ADG and higher FCR then T1= Roasted ground and decaffeinated coffee (70%) + Rice bran (30%) +Pasture hay as compared to feed treatment T3 which is conventional feed. Thus, the conventional feeding is not suitable for profitable cross breed bulls fatting in the study area. Therefore, for crossbreed bulls fatting at the urban and Periurban study area T2 and T3 can be used equally as optional.

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