



Nutritive value of green maize (*Zea mays* L.) leaves for crossbred heifers

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ABSTRACT : Green maize leaves (*Zea mays* L.) were fed as a sole feed to 15 crossbred heifers of 7 to 24 month age with an average body weight of 79.8 ± 0.80 kg. The green maize leaves could meet the maintenance requirement of crossbred heifers. Voluntary DM intake was 3.94 ± 0.12 kg / 100 kg body weight and digestibility co-efficient for DM, CP, EE, CF and NFE were 65.46, 65.66, 67.09, 62.41 and 70.77, respectively. The DCP and TDN contents were 7.13 and 55.58 per cent, respectively.

KEY WORDS : DCP- digestible crude protein, TDN - Total digestible nutrients, DM- dry matter

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INTRODUCTION

Livestock play an important role in sustaining livelihood nutritional and environmental security and growth of Indian agriculture. The giant strides made in livestock in past decades are major reason for the positive growth recorded in agriculture sector. As a result, the livestock sector contributes 27 per cent of agricultural allied GDP. Livestock sector has been steadily growing faster than any other subsectors. It is predicted that livestock sector will account more than half of total agriculture output by 2020 in economic terms (Gensis and Chander, 2010).

The common name of maize is maize, corn, dent corn, flint corn having the species *Zea mays* belonging to family *Poaceae*. Maize can be fed whole to livestock (grazed, chopped and ensiled). Animal can graze the leaves and stalks left in the field after harvest.

Traditionally maize (*Zea mays* L.) is an important forage crop grown as well as dry fodder with the possibility of growing maize round the year; it forms one of the major forage crops of the state of the Maharashtra. The maize is known as ideally suited for summer season when no other cereals forage crop is as productive as maize. The green fodder of maize is valuable cattle feed both in terms of yield and nutritive value.

Fifteen crossbred heifers were solely fed on green maize leaves for 120 days (17th weeks). The digestibility trial was conducted following 7 days collection period. The record of daily feed consumed and weekly body gain was maintained throughout the experiment. The samples of feed and faeces were analyzed for proximate chemical composition as per A.O.A.C. (1990). The data collected during the experiment for weekly dry matter intake, crude protein intake and body weight gain were analyzed statistically as per Amble (1975).

Chemical composition, digestibility and growth performance in crossbred heifers fed on green maize leaves are presented in Table 1. The proximate chemical composition of green maize leaves was DM 25.75, CP 9.76, EE 1.17, CF 32.73, NFE 48.53, TA 7.81 per cent.

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Table 1 : Chemical composition, digestibility and performance in crossbred heifers of green maize leave

Particulars	Mean \pm S.E.
Chemical composition	
DM (%)	25.75 \pm 1.02
CP (%)	9.76 \pm 1.78
EE (%)	1.17 \pm 1.61
CF (%)	32.73 \pm 2.72
NFE (%)	48.53 \pm 2.20
Ash (%)	7.81 \pm 0.82
Digestibility co-efficient (%)	
DM (%)	65.46 \pm 1.32
CP (%)	65.66 \pm 0.12
EE (%)	67.09 \pm 0.56
CF (%)	62.41 \pm 1.03
NFE (%)	70.77 \pm 0.11
Nutritive values	
DCP (%)	7.13 \pm 0.12
TDN (%)	55.58 \pm 0.28
Performance of heifers	
DM intake kg/100 kg body weight (kg)	3.94 \pm 0.12
Voluntary water intake (lit)	11.42 \pm 1.02
Total body weight gain (kg)	53.40 \pm 0.8

The results obtained in the present study for chemical composition of green maize leaves are similar to that reported by Negi (1977).

The digestibility co-efficient of different nutrients of green maize leaves were dry matter 65.40 per cent. Digestibility co-efficient of CP was lowest (65.66 %) and that of NFE was highest (70.77 %). The digestibility co-efficients of other nutrient were in between (Table 1).

The mean DCP and TDN were found to be 7.13 and 55.58 per cent, respectively. The DMI per 100 kg body weight through green maize leaves was 3.94 \pm 0.14 kg corroborates with Mehta and Bhaid (1984). Voluntary water intake was 11.42 lit, similar to that reported by Ludri and Singh (1987). The total body weight gain was 53.40 \pm 0.04 g, indicates that the green maize leaves as a sole feed serves the purpose of maintenance and growth.

Statistical analysis :

The obtained data was analyzed by statistical significant at P<0.05 level, S.E. and C.D. at 5 per cent level by the procedure given by (Gomez and Gomez, 1984).

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