

## Nutritional evaluation of *chuletro* leaves in rabbit

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The climatic conditions of Sikkim are suitable for rabbit rearing (Labas *et al.* 1986, Bujarbaruah *et al.* 1996). Scarcity of fodder is the main constraint in rabbit rearing during lean period i.e. November to April (Das *et al.* 2002, De *et al.* 2001a, 2000b) and during these months farmers of Sikkim region feed their livestock with tree fodder (Gupta *et al.* 1999). The present experiment was conducted to study the nutritive value of *chuletro* (*Brassiopsis mitis*) leaves in rabbits.

Freshly lopped *chuletro* (*Brassiopsis mitis*) leaves were offered *ad lib* to 10 adult crossbred (Soviet Chinchilla × New Zealand White) rabbits (average body weight 2325.10±55.85 g). All the animals were individually housed in wire cages with arrangement for individual feeding and faeces collection. Fresh clean drinking water was provided free of choice. Daily feed intake was recorded. After 15 days of preliminary

feeding, a metabolism trial of 5 days collection was conducted. Feed, residue, faeces and urine samples were analysed for proximate principles (AOAC 1984) and mineral contents were analyzed using atomic absorption spectrophotometer.

Chemical composition of *chuletro* leaves were similar to that reported by Singh *et al.* (1996). However, fibre content was higher as compared to the earlier report (Table 1). This variation might be due to late lopping of *chuletro* leaves. CP content of *chuletro* leaves was comparable with *Mevaro* (*Ficus hooker*) leaves, a major tree fodder used by the farmers of this region (De *et al.* 2001a).

The DM intake (g/day, g/kg/bw and g/kg W<sup>0.75</sup>) was 68.26, 29.36 and 36.25, respectively (Table 2), which may be considered lower as compared to that of *Mevaro* fodder based diet (De *et al.* 2001a and Das *et al.* 2002). This low DM intake

Table 1. Chemical composition of *chuletro* (*Brassiopsis mitis*) leaves

Particulars	<i>Brassiopsis mitis</i> leaves
Proximate Composition(% DM basis)	
DM	34.13
OM	92.58
CP	14.32
EE	1.00
NDF	63.10
Total Ash	7.42
Mineral content (mg/kg DM)	
Cu	11.60
Mn	111.40
Zn	63.40
Co	11.00
Fe	271.20
Mg	61.80
K	883.50
Ca	3807.00
Na	6925.00

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Table 2. Feed intake and nutrient digestibility in rabbits fed *Chuletro* (*Brassiopsis mitis*) leaves

Particulars	
Initial body weight (g)	2325.10±55.85
Final body weight (g)	1963.50±60.57
<i>Nutrient digestibility</i> (%)	
DM	57.75±1.85
OM	57.56±1.86
CP	66.32±1.97
EE	17.13±3.37
NDF	55.66±6.23
<i>Nutrient intake</i>	
DM intake (g/d)	68.26±3.55
DMI (g/kg/b/wt)	29.36±1.80
DMI (g/kg W <sup>0.75</sup> )	36.25±2.07
Digestible DM intake (g/d)	39.32±2.23
Digestible OM intake (g/d)	36.28±2.06
Digestible CP intake (g/d)	6.47±0.35
<i>Nitrogen balance</i>	
N intake (g/d)	1.56±0.11
N voided through Faeces (g/d)	0.73±0.11
N voided through urine (g/d)	0.87±0.05
Total N voided (g/d)	1.60±0.09
N balance (g/d)	-0.04±0.00
N absorbed (g/d)	0.83±0.08

Table 3. Digestibility and balance of minerals in rabbits fed *chuletra* (*Brassiopsis mitis*) leaves

Mineral	Intake (mg/d)	Voided through faeces (mg/d)	Voided through urine (mg/d)	Digestibility (%)	Balance (mg)
Ca	259.86±13.51	332.38±22.72	78.34±6.00	-	-150.86±13.51
K	60.31±3.13	25.21±1.72	157.21±12.04	58.34±1.82	-122.11±12.04
Na	472.70±24.57	95.89±6.55	25.18±1.93	79.78±0.88	351.63±18.89
Mg	4.22±0.22	1.79±0.12	14.40±1.10	57.72±1.86	-11.87±0.92
Cu	0.79±0.04	0.40±0.03	0.05±0.00	50.09±2.19	0.34±0.02
Mn	7.61±0.39	5.43±0.37	0.16±0.01	28.81±3.11	2.01±0.17
Zn	4.33±0.23	3.25±0.22	0.26±0.02	25.58±3.21	0.82±0.13
Co	0.75±0.04	0.32±0.02	0.00	57.08±1.81	0.43±0.02
Fe	18.51±0.96	19.24±1.32	2.37±0.18	-	-3.10±0.72

might be due to high fibre content of *chuletra* leaves. Digestible DM intake (g/day), digestible OM intake (g/day) and digestible CP intake (g/day) were 39.32, 36.28 and 6.47 respectively, which were not sufficient to meet the requirement of adult rabbits. DM, OM, CP and NDF digestibility (%) were fairly high but EE digestibility was very low. Protein (9.77 g/day) and fat (0.68 g/day) intake by the animal in this experiment was far below than the maintenance requirement (CP, 14.4 g/day and fat 2.4 g/day) of adult rabbit of 2.00 kg average body weight (NRC 1977).

Nitrogen balance of rabbits fed *chuletra* leaves was found to be negative (Table 2). This negative nitrogen balance coupled with body weight lossess indicated mobilization of muscle protein to meet the body requirement.

Intake of Ca, K, Mg and Mn were far below the requirement (Mg 300–400 mg/day, Mn 2.5 mg/day) recommended by NRC (1977). Apparent digestibility of Cu, Mg, Co, K and Na was higher (Table 3) as compared to digestibility of Ca, Zn, Mn and Fe. However, the Mg, K, Ca and Fe balance was negative due to more excretion of these animal through urine.

Within 20 days rabbits lost 361.60 g body weight due to poor N assimilation and mineral utilization pattern. From the result, it appeared that *chuletra* leaves as a sole diet can not meet the requirement of adult crossbred rabbits.

#### SUMMARY

An attempt was made to explore the possibility of feeding *chuletra* (*Brassiopsis mitis*) leaves in crossbred adult rabbits. Freshly harvested *chuletra* leaves were fed *ad lib* to 10 adult crossbred (Soviet Chinchilla×New Zealand White) rabbits for

20 days to study feed intake and digestibility. The result indicated that sole feeding of *chuletra* leaves was unable to support the maintenance requirement of adult rabbits.

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