

WELCOME

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**ECONOMICS OF FEEDING SHEANUT
(*Vitellaria paradoxa*) CAKE BASED
COMPLETE DIETS
ON LACTATING BUFFALOES**

INTRODUCTION

- Complete diet technology enables to utilize the crop residues and agro industrial by products effectively for livestock feeding with higher nutrient utilization of such diets
- Attempt was made to utilize sheanut cake & palm press fibre at different levels along with other locally available concentrate ingredients in complete diets for lactating Murrah buffaloes and to evaluate the effect of Sheanut cake based complete diets on cost economics



- Sheanut cake a solid residue from the shea fat industry is available in large quantities in west Africa is now receiving attention as a potential feed ingredient in our country too.
- Palm press fibre is the fibrous residue of the pericarp of oil palm fruit after separation of nut & has potential importance for livestock feeding.

Shea tree





Shea nut



Objective

- To Assess the cost of production (Rs.) of per kg milk and 6% fat corrected milk (6% FCM) of lactating graded Murrah buffaloes fed with conventional (RI) and complete feed (RII, RIII).

EXPERIMENTAL DIETS

Ingredient	Concentrate mixture(R I)	(R II)	(R III)
Jowar straw	-	20.00	25.00
Palm press fibre	-	20.00	15.00
Maize	30	10.00	10.00
Deoiled rice bran	17.00	10.50	4.00
Wheat bran	20.00	9.00	5.00
Groundnut cake	15.00	9.00	10.00
Cottonseed cake	15.00	-	-
Sheanut Cake	-	18.50	28.00
Salt	1.00	1.00	1.00
Mineral mixture	2.00	2.00	2.00
Total	100.00	100.00	100.00
Vitamin AD3 (g/qt)	-	10.00	10.00

CHEMICAL COMPOSITION OF EXPERIMENTAL RATIONS (%DM)

Nutrient	Complete diet		Ration I (Control)			Shea nut cake	Palm press fiber
	Ration II	Ration III	Concentrate mixture	Chopped jowar straw	Jowar green fodder		
Organic matter	92.78	93.48	91.32	88.24	91.74	92.19	90.76
Crude protein	12.12	12.30	17.94	3.46	7.18	13.21	8.28
Ether extract	1.50	1.79	5.34	1.11	1.24	2.12	9.16
NFE	55.32	55.17	58.48	53.55	55.30	67.04	34.58
NDF	59.92	56.20	33.26	70.20	66.48	60.27	72.14
ADF	46.62	46.92	17.22	50.70	46.31	41.13	53.12

MATERIALS AND METHODS

- Animals : 12 Graded Murrah Buffaloes in mid lactation
- No. of Diets: 3 (RI, RII, RIII)
- RI Conventional,- Concentrate Mixture, Chopped jowar straw, Jowar fodder
- RII - Sheanut Cake 18.50%, Palm press fibre 20.00%
- RIII - Sheanut Cake 28.00, Palm press fibre 15.00%
- Duration: 4 Months
- Design : RBD Layout

Traits measured

- Daily feed intake
- Milk Yield
- Milk Fat Yield
- 6% FCM Yield
- Feed Cost

RESULTS

Mean performance

Attribute	Conventional diet (R I)	Mash (R II)	Mash (R III)
Milk yield (kg)	5.82 ± 0.52	6.45 ± 0.29	6.52 ± 0.46
Milk Fat (%)	7.85 ± 0.19	7.80 ± 0.06	7.67 ± 0.02
Milk fat yield (kg)	0.45 ±0.03	0.50 ± 0.02	0.50 ±0.03
6% FCM yield (kg)	7.02 ± 0.49	7.78 ± 0.31	7.78 ± 0.55
SNF (%)	8.73 ±0.04	8.81 ± 0.05	8.84 ± 0.03
TS(%)	16.58 ±0.16	16.60 ± 0.07	16.51 ±0.03

- Average daily milk yield, milk fat, SNF & Total solids%, 6%FCM were comparable among the experimental rations
- DMI per kg milk yield, 6%FCM yield were comparable among all 3 diets.
- The cost of feed /Kg 6%FCM yield was 4.6% lower in RIII than conventional diet.

Attribute	RI	RII	RIII
DM intake/kg MY(kg)	2.08±0.27	1.91± 0.13	1.87±0.008
DM intake/kg 6% FCM Yield (kg)	1.70± 0.18	1.58 ± 0.10	1.57± 0.06
Cost of feed/kg/MY (Rs.)	10.56± 1.32	10.55± 0.70	9.86± 0.41
Cost of feed/kg 6% FCM Yield (Rs.)	8.66±0.96	8.73± 0.53	8.26±0.34

- The average cost of feed per kg milk yield for the experimental rations I,II and III was Rs.10.56 \pm 1.32,10.55 \pm 0.70 and 9.86 \pm 0.41 respectively.
- The average cost of feed per kg 6% FCM yield for experimental rations I,II and III was Rs.8.66 \pm 0.96,8.26 \pm 0.34 and 8.26 \pm 0.33 respectively.
- Observed no significant difference between conventional diet (RI) and complete diets (RII and RIII)

- Present study indicated that feed cost was lowered by 6.63 percent unit with complete diet (RIII) when compared with conventional diet (RI) which seems to be beneficial in large commercial dairy units.
- The feed cost per kg 6% FCM yield was comparable among diets though a 40 paisa reduction was observed per kg of 6%FCM yield when diet (RIII) compared to conventional ration (RI).

- The results of the present study indicated that the complete diet (RIII) containing jowar straw (25%) PPF (15%) and sheanut cake (28%) showed positive tendency in improving milk yield, milk fat yield, 6%FCM yield and decreased cost of milk production

CONCLUSION

- The unconventional feed ingredients like palm press fibre and sheanut cake could be included in complete diets of lactating buffaloes up to 20% and 28% respectively along with locally available feed ingredients in roughage concentrate ratio of 40:60

- Feeding of complete diets increased the production performance and quality of milk in buffaloes
- The cost of feed per kg 6% FCM reduced by 4.62 percent compared to conventional ration.

THANK YOU