

CALF MANAGEMENT SYSTEM IN PAKISTAN

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Buffalo and Cattle Population

(In million)

Description	Buffalo		Cattle	
	1996*	2006**	1996*	2006**
Total animal population	20.27	28.40	20.42	25.50
Total adult female population	10.24	13.54	8.71	10.47
Calf population < 1 year***	6.02	8.94	5.15	6.20
Male calve***	2.79	3.69	2.79	3.36
Female calve***	3.23	4.27	2.36	2.84

*Livestock Census, 1996

**Agriculture Statistics of Pakistan

***Calculated on the basis of AGR, buffaloes = 3.23, Cattle = 2.02

Dairy Production Systems

- **Rural Small Holder Production Systems**
 - Subsistence production system
 - Market oriented production system
 - **Rural Commercial Production System**

Contd...

- **Progressive Farmers Production System**
 - **Purebred cattle and buffalo**
 - **Crossbred cattle**
- **Peri-Urban Milk Production System**

Calf Management

- Calving
- Calf Care

Feeding and Management Practices

- Colostrum
- Milk
- Green Fodder
- Dry Fodder
- Concentrate
- Water
- Housing

Health Management

- **Disinfecting the Naval**
- **Dehorning**
- **Removal of extra teats**
- **De-worming**
- **Vaccination**

Problems in calf production

- **High mortality rate**
- **Depressed growth rate**
- **Uneconomical milk feeding system**
- **Late maturity**
- **Short productive life**
- **Slaughtering of calves at early age**
- **Economic losses**

Major causes of the problems

- **Delayed colostrum feeding**
- **Poor health management**
- **Inadequate milk feeding**
- **Imbalanced nutrition**
- **Lack of technical information**
- **Poor price structure for veal/beef**

APPROACH-I

- **Early weaning diets as a substitute of milk in calve feeding**

Methodology

- **Animals** 15 buffalo/cow calves
- **Age** 21 to 25 days
- **Diets** Whole milk/Milk Replacer +calve starter and EWD-I, EWD-II
- **Feeding system** Individual and Twice a day
- **Adjustment period** 10-15 days
- **Duration** 60-days
- **De-worming** as per recommended doses
- **Weighing** weekly

Performance of calves fed on Milk and Early Weaning Diets (Phase I)

Parameters	Milk or Milk Replacer		EWD-I*		EWD-II**	
	*** Buffalo	**** Cow	Buffalo	Cow	Buffalo	Cow
Av. Weight gain (Kg/day)	0.50	0.57	0.560	0.616	0.490	0.519
Average DM intake (Kg/day)	0.60	1.56	1.251	1.417	1.335	1.392
Feed efficiency	1.20	2.74	2.24	2.30	2.70	2.68
Economic efficiency (feed cost Rs./kg gain)	162	156	71.71	72.80	76.86	73.55

*Early weaning diet-I is based on soybean meal

**Early weaning diet-II is based on cottonseed meal

***Whole milk

****Milk replacer + Calve starter

Performance of calves fed on Milk and Early Weaning Diets (Phase II)

Parameters	Milk or Milk Replacer		EWD-I*		EWD-II**	
	*** Buffalo	**** Cow	Buffalo	Cow	Buffalo	Cow
Av. Weight gain (Kg/day)	0.49	0.63	0.478	0.57	0.51	0.64
Average DM intake (Kg/day)	0.71	1.48	1.030	1.70	1.060	1.72
Feed efficiency	1.44	2.33	2.16	2.98	2.07	2.65
Economic efficiency (feed cost Rs./kg gain)	174.50	169.52	70.48	83.72	69.25	79.00

*Early weaning diet-I without supplementation

**Early weaning diet-II supplemented with lysine (0.67%), methionine (0.70%)

***Whole milk

****Milk replacer + Calve starter

Advantages of Early Weaning Diets

- **Help to wean calves at 4-5 weeks of age**
- **Facilitate to feed calves as per their nutritional requirements**
- **Cost effective feeding system**
- **Help to save milk for human**
- **Increase veal and beef production**
- **Increase the overall profit**
- **Animal welfare**

APPROACH-II

- **Development and feeding of milk replacer and early weaning diets for calves**

Methodology

- **Animals** 15 buffalo calves
- **Age** 15 to 20 days
- **Diets** Whole milk, Milk Replacer and EWD
- **Feeding system** Individual and Twice a day
- **Adjustment period** 10-15 days
- **Duration** 60-days
- **De-worming** as per recommended doses
- **Weighing** weekly

Performance of buffalo calves fed on Milk and Milk Replacer+ EWD

Parameters	Milk	MR	Milk + EWD	MR + EWD
Milk or MR intake (lit/day)	4.35	4.20	1.25	1.10
Dry matter intake g/day	620.00	580.00	1118.00	1225.00
Water intake (lit/day)	2.66	2.63	2.83	2.76
Weight gain (g/day)	469.00	450.00	533.00	542.00
Feed efficiency (feed cost Rs./kg gain)	1.32	1.28	2.10	2.26
Economic Efficiency (feed cost Rs./kg gain)	185.50	140.00	78.36	59.94

WAY FORWARD

- **Farming community awareness on calve rearing practices**
- **Technological dissemination of EWD production to commercial feed mills**
- **Initiation of EWD feeding system at govt. farms**
- **Introduction and popularization of EWD feeding in farming community**
- **Introduction of milk replacer feeding at govt. farms and commercial farms**