

PERFORMANCE OF WHITE FULANI CALVES WEANED AT DIFFERENT AGES

F I Ogundola

*Institute of Agricultural Research & Training, PMB 5029,
Ibadan, Nigeria*

Three groups of 6 White Fulani calves were weaned at 21, 35 and 49 days of age and growth rate up to 18 weeks of age measured. There was no effect on liveweight gain from birth to 18 weeks ($P > .05$), nor on feed conversion efficiency ($P > .05$). Consumption of starter feed differed significantly ($P < 0.01$) between groups.

The objective of the work reported here was to determine the earliest age at which White Fulani calves may be weaned successfully onto dry feeds.

Key words: calves, White Fulani, weaning age, growth rate

Materials and Methods

Eighteen White Fulani bull calves obtained at different times but within a 3 month period were reared in a humid tropical climate. Calves were housed in individual pens and allowed to receive their dam's colostrum for the first three days, and then bucket-fed whole milk at 5% of body weight in two feedings at 0900 h and 1600 h. Calf starter (Table 1) and water were available ad libitum at all times.

Calves were weaned abruptly at 21, 35 and 49 days of age onto the same complete starter ration (see Table 1). The calf starter and water were available ad libitum to them throughout the experimental period which lasted until 18 weeks of age. The feed intake and weight gains were measured, feed: gain ratio was calculated and the data was subjected to analysis of variance.

*Table 1:
Composition and analysis of the calf starter mixture*

Ingredients %	Dry Matter (DM)	Maize meal	Groundnut cake	Dried Brewers' grains	Molasses	Vitamins	
	84	54.7	32.3	5.0	7.5	0.5	
Chemical composition (% of DM)	P	Crude protein	Crude fibre	Ether extract	N F E	Ash	Ca
	.82	21.1	9.3	4.0	46.9	4.2	0.52

Results and Discussion

There was no significant effect of weaning age on the liveweight gain from birth to 18 weeks ($P > 0.05$) (Table 2). Despite this two of the calves weaned at 3 weeks lost weight initially due to a low consumption of dry feed. This agreed with Preston (1955) who reported that calves abruptly weaned at 23 days of age experienced a slight drop in growth rate shortly after weaning but at 12 weeks of age showed the same mean daily weight gains as calves weaned gradually at 31 days of age.

Table 2:
Performance of White Fulani calves weaned at 3, 5 and 7 weeks of age

	Age at Weaning			SE diff
	3 weeks	5 weeks	7 weeks	
No of animals	6	6	6	-
Average birth wt (kg)	27.8	28.4	27.2	+ 0.37
Weaning wt (kg)	34.4	39.1	43.8	+ 0.30
Average wt at 18 weeks (kg)	72.6	77.3	73.9	+ 0.94
Weight gained/day (kg) from birth to 18 weeks	0.36	0.39	0.37	+ 0.01
DM intake (kg) (weaning to 18 weeks)	128.5	136.8	127.9	+ 0.88
Feed: gain ratio ¹	2.87	2.80	2.74	+ 0.02

$$^1 \text{Feed: gain ratio} = \frac{\text{DM intake (weaning to 18 weeks)}}{18 \text{ week weight} - \text{birth weight}}$$

Consumption of starter by the calves from weaning to 18 weeks of age was greatest for the group weaned at 7 weeks of age. During the first week after weaning, the group weaned at 7 weeks consumed 0.45 kg/day, those at 5 weeks, 0.42 kg/day of starter while the calves weaned at 3 weeks consumed 0.39 kg/day of starter. The initial reduced feed intake of the calves weaned at 3 weeks of age and the refusal of some calves to quickly adjust to dry feed may reflect an inability of the 3 week-old calves to utilize dry feed. Preston (1957) also reported that some calves were successfully weaned onto dry feed as early as 2 weeks old, but others were unable to make adjustment to dry feeding although difficulties were rare when calves were weaned at 3 weeks.

Feed conversion ratio¹ appeared to improve slightly but not significantly ($P > 0.05$) as weaning age increased. In comparing only two weaning ages of 24 and 31 days, Preston (1956) also reported no significant differences in feed conversion rates. The performance of calves weaned at 3 weeks of age disagrees with the findings of others (Noller et al 1962, Quayle 1958) that calves weaned at 3 weeks of age will make satisfactory growth and suffer no ill-effects of early weaning, White Fulani calves appear to be less adaptable to consumption of dry feeds than the breeds used by these authors.

From the results of this trial, it was concluded that those calves that quickly consumed dry feed at an early age may be successfully weaned at 3 weeks of age. At 5 weeks of age, all healthy White Fulani calves may be successfully weaned.

$$^1 \text{Feed conversion ratio} = \frac{\text{DM intake (weaning to 18 weeks)}}{18 \text{ week weight} - \text{birth weight}}$$

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