

RATIONS USED AND RESULTS FROM FEEDING TRIALS

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SUMMARY

The components of rations used were maize grain, urea-molasses, cottonseed cake, maize silage. Four breeds were studied : unimproved Boran, improved Boran, large crossbred, small crossbreds. For Boran a ration with 50 p. 100 of maize-silage give the best results. Crossbreds only realise their potential performance if feed rations containing a high percentage of energy concentrates.

RESUME

Rations utilisées et résultats d'essais d'embouche

Les diverses rations employées étaient composées de maïs-grains, mélange mélasse-urée, tourteau de coton et ensilage de maïs. Quatre types d'animaux ont été étudiés : Boran courant, Boran sélectionné, croisements avec grandes et petites races taurines importées. Pour les Boran, les meilleurs résultats sont obtenus lorsque la ration comporte 50 p. 100 d'ensilage de maïs. Seuls les animaux de croisement extériorisent leurs potentialités si la ration contient un taux élevé de concentrés.

The standard rations employed by the Project were designed to study the effects of using different proportions of roughage and concentrates in the diet. They were as follows :

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Ration	N°2	N°3	N°4	N°5	N°6
Maize Grain (p.100)	-	20.61	36.66	52.83	68.33
Urea-Molasses (p.100)	9.40	9.93	10.52	11.10	11.67
Cottonseed cake (p.100)	2.65	2.65	2.65	2.65	2.65
Forage (p.100)	87.95	86.81	50.17	33.42	16.35
Crude Protein (p.100)	9.48	10.09	10.61	11.13	11.65
Calculated ME (mega cal/kg)	2.99	2.74	2.87	3.00	3.11
Costs (K cent/kg)	19.25	22.13	24.40	26.66	29.00

Using the Rations 3 and 5 above a breed characterisation trial was undertaken to gain further knowledge of the response to intensive feeding of the various breeds and crosses available in Kenya. The design of the trial was 4 x 2 split plot with four breed groups ; half the cattle were slaughtered after 68 days and the other half 43 days later. The breed groups were established as follows :

(*) U.N.D.P./F.A.O. Kenya beef industry development project.

1) Unimproved Boran : Bos indicus purchased from pastoralists ;

2) Improved Boran : Bos indicus purchased from ranches ;

3) Large Crossbreds : Crosses between Improved Boran and Bos taurus breeds of large mature body size, e.g. Friesian or Charolais ;

4) Small Crossbreds : Crosses between Improved Boran and exotic breeds or small mature body size, e.g. Hereford or Aberdeen Angus.

The results of two replications of this trial are in process of being analysed and some of the data is summarised in the attached Table 2.

The Small Crossbreds were included in the trial as representative of a type of cross breeding programme which could be implemented in Kenya. In fact there are few animals of this cross available at the present time, and the commercial feeding programme has concentrated almost entirely upon Borans and Large Crossbreds. The overall results of the commercial feeding programme and the live weight gains obtained the standard rations, are shown in the following Table.

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Data from commercial throughout of Kenya beef project showing rate of gain (ROG) for breed and ration.

BREED	BORAN N.E.P.			BORAN IMPROVED			LARGE CROSSBRED			TOTAL		
	Days			Days			Days			Days		
	No.	fed	ROG	No.	fed	ROG	No.	fed	ROG	No.	fed	ROG
R 3	213	93.1	993	627	128.5	734	284	123.2	855	1104	118.3	803
R 4	2857	87.8	1012	1206	97.5	1044	980	114.8	1077	5045	95.4	1035
R 5	276	89.6	906	320	108.0	815	630	112.4	1200	1478	107.4	1092
	3346	88.3	1002	2155	107.7	818	2124	114.8	1086	7625	101.2	1007

ROG = Rate of gain in grammes

OBSERVATIONS

1) These results leave little doubt that the Boran cattle respond best to rations with 50 p. 100 of the feed coming from maize silage (on an oven dry matter basis). The reason for their comparative failure, on higher energy rations, relates to the high incidence of digestive disturbance and liminitis which was encountered with concentrate levels exceeding 50 p. 100 of the ration.

2) Silage produced from tropical varieties of maize does not contain sufficient digestible nutrients to sustain profitable rates of live weight gain in crossbred cattle. Indeed all cattle require a certain quantity of energy concentrates in their rations.

3) Crossbreds will only realise their potential performance if fed rations containing a high percentage of energy concentrates.

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**Data from the breed characterization trial.
Rationnement et résultats de croissance.**

Concentrate : Roughage		57 : 33 (ration 5)				33 : 67 (ration 3)			
Ration									
<u>(a) Short Feeding Period</u> (68 days)									
BREED		I Boran N.E.P.	II Boran Imp.	III Large X	IV Small X	I Boran N.E.P.	II Boran Imp.	III Large X	IV Small X
11	Number of Head	44	45	44	46	46	44	48	48
2	Final Weight (kg)	380	392	426	401	382	375	414	384
3	C.D.W. (kg)	195	202	216	202	190	188	201	190
4	Average Daily Gain (g)	1015	1360	1470	1370	1045	1130	1265	1115
5	Adjusted Daily Gain (g)	1045	1420	1420	1290	890	1020	965	940
6	Grade Score :	4.16	4.58	4.07	4.59	4.33	4.52	3.94	4.42
7	Fat (p.100)	23.8	22.2	19.5	20.7	23.6	21.0	17.4	19.1
8	Bone (p.100)	16.3	16.9	18.0	17.5	16.4	17.3	19.1	18.3
9	Wt. Bone (kg)	32	34	39	35	31	33	38	35
<u>(b) Long Feeding Period</u> (111 days)									
1	Number of head	46	44	47	46	48	48	48	48
2	Final Weight (kg)	414	435	467	448	416	426	459	436
3	C.D.W. (kg)	220	233	248	237	216	223	235	224
4	Average Daily Gain (g)	925	1210	1245	1260	945	1135	1190	1150
5	Adjusted Daily Gain (g)	1075	1400	1410	1405	1005	1230	1205	1175
6	Grade Score :	4.04	4.88	4.66	4.92	4.00	4.75	4.33	4.79
7	Fat (p.100)	28.0	25.1	23.0	23.6	26.2	23.2	21.0	21.1
8	Bone (p.100)	14.9	15.8	16.6	16.4	15.5	16.5	17.4	17.4
9	Wt. of Bone (kg)	33	37	41	39	33	37	41	39