

Table 1. Nutrient specifications of the phase C bull-test diet (2000), on a dry-matter basis.

Nutrient	Minimum	Maximum
ME (MJ/kg DM)	11.0	-
Crude protein (CP)	135 g/kg	150 g/kg
Un-digestible intake protein (UIP)	45 g/kg	-
Urea	-	7 g/kg
Protein from NPN (% of CP)	-	20 %
Crude fibre	125 g/kg	-
Roughage	200g/kg	-
Fat	30 g/kg	70 g/kg
Calcium	6 g/kg	10 g/kg
Phosphor	3 g/kg	5 g/kg 2.5:1
Ca : P	1.5:1	3 g/kg
Sulphur	1.5 g/kg	12:1
N : S	8:1	13 g/kg
Potassium	5 g/kg	-
Magnesium	2.5 g/kg	-
Vitamin A**	4500 000 IE*/ton	-
Vitamin D3	250 000 IE/ton	-
Vitamin E	5000 IE/ton	-
Vitamin B1 (Thiamine)	3000 IE/ton	-
Niacin	100 000 mg/ton	-
Copper**	15 g/ton	-
Manganese	40 g/ton	-
Zinc	54 g/ton	-
Cobalt	0.5 g/ton	-
Iodine	2 g/ton	-
Iron	50 g/ton	-
Selenium	0.15 g/ton	-
Monensin-Na	29 g/ton	-
Zn-bacitracin	25 g/ton	-

* IE = International units.

** It is assumed that feed components do not contain sufficient vitamins and micro minerals and need to be supplemented with a premix.

Table 2. List of allowed feed components to mix a phase C bull test diet (2000), and their minimum & maximum inclusion in the diet^a (% on DM-basis).

COMPONENT	% Inclusion in diet	
	Min.	Max.
Maize meal (coarsely ground)	15	40
Sorghum meal	0	20
Hominy Chop (>5% fat) ^b	0	25
Wheaten bran	5	15
Brewers grain (dried)	0	15
Sunflower OCM ^c	0	5
Soy bean OCM ^c	0	5
Cotton OCM ^c	0	5
Gluten 20	0	5
Cotton seed (heel)	0	5
Molasses syrup	5	10
Lucerne hay	3	10
Eragrostis hay	0	17
Maize stover	0	17
Wheat straw	0	17
Feed grade urea	0.3	0.7
Feed grade Ammonium sulphate	-	1.0
Feed grade salt	0.45	0.55
Feed lime	0.5	1.5
Mono calcium phosphate	0	1.0
Vit/Min Premix ^d	0.2	0.2

^a Diet must adhere to Act 36 of 1947 regulations.

^b When using by products such as hominy chop, wheat bran, etc. ensure that the products are from one suppliers and ensure the products are of comparable nutrient compositions.

^c Total oil cake meal (OCM) inclusion must be at least 2.0 % of the diet dry matter.

^d **NB** Rumensin (ionophore) must be included in the Premix

Table 3a. List of allowed feed components to mix a phase C bull test diet (2000), and estimated nutrient contents (% on DM-basis) as used by ARC – Irene feed formulation matrix).

Components ^a	Nutrients							
	DM	ME	RP	UIP ^c	RV	Vet		
Maize meal	87	13.82	10.20	4.8	2.30	4.60		
Sorghum meal	90	13.93	12.50	6.9	2.70	3.10		
Hominy Chop	90	13.64	11.80	4.7	6.70	8.00		
Wheaten bran	90	10.52	16.20	2.6	11.70	4.60		
Brewers grain	90	11.16	24.10	14.5	37.80	8.22		
Sun flower OCM	90	11.34	41.40	8.3	13.40	1.10		
Soy bean OCM	92	12.60	55.00	21.5	3.50	1.00		
Cotton OCM	93	11.73	46.70	21.5	11.90	5.50		
Gluten 20 ^b	90	12.09	23.80	5.0	8.70	3.91		
Cotton seed	90	13.49	22.20	6.7 0	23.00	19.40		
Molasses syrup	73	11.30	4.80	3.3	-	4.80		
Lucerne hay	89	8.41	15.90	5.4	32.80	2.10		
Eragrostis hay	90	8.42	8.30	3.6	42.10	4.50		
Maize stover	91	8.60	6.50	2.5 ^b	34.00	1.80		
Wheat straw	90	6.90	3.60	-	41.70	2.00		
Feed grade urea ^b	99		291	-				
Ammonium sulphate ^b	100		134	-				
Feed grade salt ^b	100			-				
Feed lime ^b	100							
Mono Ca P ^b	97							

^a Values obtained from "A manual on the nutritive value and chemical composition of commonly used South African farm feeds", deur R M Bredon, P G Steward and T J Dugmore, 1987. Natal region, Department of Agriculture and water supply. ISBN 0 621 12067 7, unless stated differently. ^b Values obtained from "Nutrient requirements of beef cattle" 7th revised version, 1996 by: National Research Council, ISBN 0 309 05426 5; ^c Values obtained from: L J Erasmus (1992), AFMA Matrix, June 1992.

Tabel 3b. List of allowed feed components to mix a phase C bull test diet (2000), and estimated nutrient contents (% on DM-basis) as used by ARC – Irene feed formulation matrix

Components ^a	Nutrients							
	DM	Ca ^b	P ^b	S	K	Na	Cl	
Maize meal	87	0.01	0.30	0.14	0.33	0.01	0.06	
Sorghum meal	90	0.05	0.35	0.14	0.38	0.01	0.09	
Hominy Chop	90	0.06	0.58	0.06	0.68	0.09	0.06	
Wheaten bran	90	0.16	1.32	0.19	1.39	0.06	0.06	
Brewers grain	90	0.22	0.33	0.40	0.58	0.15	0.17	
Sun flower OCM	90	0.33	0.56	0.30	0.96	0.03	0.11	
Soy bean OCM	92	0.29	0.71	0.48	2.36	0.01	0.08	
Cotton OCM	93	0.25	1.15	0.38	1.56	0.03	0	
Gluten 20 ^b	90	0.07	0.95	0.47	1.40	0.26	0.25	
Cotton seed	90	0.16	0.76	0.26	1.22	0.03	0	
Molasses syrup	73	0.90	0.10	0.47	4.01	0.22	3.04	
Lucerne hay	89	1.70	0.27	0.28	1.56	0.12	0.38	
Eragrostis hay	90	2.20	1.30	0.18	2.20	-	-	
Maize stover	91	0.60	0.10	0.15	1.60	0.06	0	
Wheat straw	90	0.18	0.05	0.19	1.40 0	0.14 0	0.32 0	
Feed grade urea ^b	99				0	0	0	
Ammonium sulphate ^b	100			24.10	0	39.34	60.66	
Feed grade salt ^b	100				0.12	0.06	0.03	
Feed lime ^b	100	34.0	0.02	0.04	0.08	0.06	0	
Mono Ca P ^b	97	16.4	21.6	1.22				

^a Values obtained from: “Nutrient requirements of beef cattle” 7th revised version, 1996 by: National Research Council, ISBN 0 309 05426 5, unless stated differently.

^b Values obtained from: ”A manual on the nutritive value and chemical composition of commonly used South African farm feeds”, deur R M Bredon, P G Steward and T J Dugmore, 1987. Natal region, Department of Agriculture and water supply. ISBN 0 621 12067 7,