

Appendix 3a

Ration Worksheet - Growing Cattle

BASIC INFORMATION

1	No of cattle	6	Predicted M/D (MJ/kg DM)	Table 3.2
2	Breed type/sex	7	ME requirement (MJ/day)	Table 3.3
3	Daily gain (kg)	8	Required CP in diet (Decimal)	Table 4.1
4	Start weight (kg)	9	Average weight (kg)	Start + Final ÷ 2
5	Final weight (kg)	10	Total liveweight gain (kg)	Final- Start
		11	Feeding period (days)	Total gain ÷ Daily gain

FEED INGREDIENTS

12	13	14	15
Feed ingredients	DM (Decimal)	ME (MJ/kgDM)	CP (Decimal)

Look up Table 3.1 or a feed analysis for values in columns 13, 14 and 15

FORAGE POTENTIAL

16	17	18	19
Potential forage DMI (kg)	Potential forage ME (MJ/day)	Forage ME shortfall (MJ/day)?	Concentrate substitution (kg forage/kg concentrates)

Column 16: Look up value in Table 2.1

Column 17: Potential forage DMI from 16 x forage ME from 14

Column 18: Total ME requirement from 7 minus potential forage ME from 17

Column 19: Look up reduction in forage DMI per kg concentrates fed in Table 2.1

RATION FORMULATION

20	21	22	23	24
Feed ingredients	Net value of 1 kg concentrates (MJ ME/kg DM)	Concentrate DMI (kg/day)	Concentrate ME (MJ ME/kg DM)	Actual forage DMI (kg/day)

Column 21: The ME of 1 kg concentrates from 14 minus substitution from 19 x forage ME from 14

Column 22: ME shortfall from 18 ÷ net value of concentrates from 21

Column 23: Concentrate DMI x ME of concentrates from 14

Column 24: Total ME from 7 minus concentrate ME from 23 ÷ forage ME from 14.

CHECK RATION M/D AND CP CONTENT

25	26	27	28
Feed ingredients	DMI (kg/day)	ME (MJ/day)	CP (ration proportion)
Forage			
Concentrates			
Totals			
M/D (MJ ME/kg DM)	-		-
CP (ration proportion)	-	-	
		M/D OK?	CP content OK?

Column 26: Concentrate DMI + forage DMI

Column 27: Concentrate ME value from 23 + forage DMI from 24 x ME value from 14. Divide the total ME by the total DMI from 26, calculate the actual M/D and check that it is within 0.5 of the predicted value in 6. If the difference is more go back to 6 and enter the M/D from 27, enter a revised ME requirement in 7 and revise values in columns 18, 22, 23, 24, 26 and 27

Column 28: Concentrate DMI from 22 x concentrate CP value from 15 + Forage DMI x forage CP value from 15. Divide by the total DM and check that the actual ration CP content is not more than 0.01 below the requirement in 8, or above. If above, are protein savings possible?

DAILY RATION AND FEED BUDGETS

29	30	31	32	33
Feed ingredients	Daily Concentrates	Daily Forage	Feed budget per head	Total feed budget
	(kg fresh weight)	(kg fresh weight)	(tonnes)	(tonnes)

Column 30: Concentrate DMI from 22 ÷ Concentrate DM content from 13

Column 31: Forage DMI from 24 ÷ Forage DM content from 13

Column 32: Daily concentrates from 30 x feeding period from 11. Daily forage from 31 x feeding period. If required calculate daily feed cost and feed cost per kg gain.

Column 33: Feed budget per head x number of cattle from 1

