

TABLE 7

MJ NET ENERGY ALLOWANCE FOR MAINTENANCE AND LIVELWEIGHT GAIN IN GROWING AND FATTENING ANIMALS

Gain in kg	Liveweight W in kg										
	100	150	200	250	300	350	400	450	500	550	600
0	12.4	15.6	18.8	22.0	25.2	28.4	31.6	34.8	38.0	41.2	44.4
0.1	13.3	16.6	19.9	23.2	26.5	29.8	33.1	36.4	39.7	43.0	46.3
0.2	14.2	17.6	21.0	24.5	27.9	31.3	34.7	38.1	41.5	44.9	48.3
0.3	15.2	18.8	22.3	25.8	29.3	32.9	36.4	39.9	43.4	47.0	50.5
0.4	16.3	19.9	23.6	27.2	30.9	34.5	38.2	41.8	45.5	49.1	52.8
0.5	17.4	21.2	25.0	28.8	32.6	36.3	40.1	43.9	47.7	51.5	55.2

0.6	18.7	22.6	26.5	30.4	34.4	38.3	42.2	46.1	50.2	54.0	57.9
0.7	20.0	24.2	28.1	32.2	36.3	40.4	44.4	48.5	52.6	56.7	60.7
0.8	21.4	25.7	29.9	34.1	38.4	42.6	46.9	51.1	55.3	59.6	63.8
0.9	23.0	27.4	31.8	36.2	40.6	45.0	49.5	53.9	58.3	62.7	67.1
1.0	24.6	29.3	33.9	38.5	43.1	47.7	52.3	56.9	61.5	66.1	70.7

1.1	-	31.3	36.1	40.9	45.7	50.6	55.4	60.2	65.0	69.9	74.7
1.2	-	-	38.6	43.6	48.7	53.7	58.8	63.8	68.9	73.9	79.0
1.3	-	-	-	46.6	51.9	57.2	62.5	67.8	73.1	78.4	83.7
1.4	-	-	-	-	55.4	61.0	66.6	72.2	77.7	83.3	88.9
1.5	-	-	-	-	-	65.2	71.1	77.0	82.9	88.8	94.7

(including safety margin)

$$\text{Based on } E_m = 1.05 \sqrt{5.67 + 0.061 W}$$

$$\text{and } E_g = 1.05 \sqrt{\frac{\text{LWG} (6.28 + 0.0188 W)}{(1 - 0.3 \text{ LWG})}}$$

Yugoslavia energy and protein feeding standards for growing and fattening cattle

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For the evaluation of feeds for ruminants, Kellner's Starch Equivalent system is generally accepted in Yugoslavia. In some parts of the country it is used as kilograms of SE, while in others it is expressed as "oat feed unit" which is based on 1 kg of oats = 0.6 kg SE.

Starch Equivalent values are calculated from Tables listing the digestibility coefficients for the respective feeds, or on digestibility experiments with sheep or cattle for crude protein, crude fibre and N-free extractives. These digestible nutrients are then multiplied with the following coefficients.

- 0.94 for protein
 - 1.91 for fat from roughages
 - 2.12 for fat from grains
 - 2.41 for fat from oil seeds
 - 1.00 for N-free extractives (without sugar) and crude fibre
 - 0.76 for sugar
- By such an estimate the SE/kg of feed is obtained.

The value for roughages is corrected in relation to the crude fibre content by subtraction of the product of crude fibre content as a percentage and the following factors for grass and legumes :

0.29 for feeds with maximum	4 per cent crude fibre
0.34	4 — 6 per cent crude fibre
0.38	6 — 8 per cent crude fibre
0.43	8 — 10 per cent crude fibre
0.48	10 — 12 per cent crude fibre
0.53	12 — 14 per cent crude fibre
0.58	over 14 per cent crude fibre

The corresponding factors for dried grass are :

0.27 for grass containing more than	15 per cent crude protein
0.44 for grass containing more than 13 —	15 per cent crude protein
0.58 for hay, straw and dried grass containing less than	13 per cent crude protein

The amount of protein is estimated ($N \times 6.25$) on the basis of N, determined by the Kjeldahl method.

The nutrient requirements of ruminants and feeding standards used in Yugoslavia are based on starch units (Kellner), kg/day and digestible protein, g/day. The latest recommendations according to OBRAČEVIĆ (1975) are shown in Table 1.

TABLE 1

RECOMMENDATIONS FOR FATTENING OF BULLS (AVERAGE DAILY LIVELWEIGHT GAIN
1.0 - 1.2 kg)

Liveweight kg	Starch units kg/day	Digestible protein g/day
120 - 150	2.2 - 2.6	400 - 470
150 - 200	2.6 - 2.9	400 - 510
200 - 250	3.0 - 3.5	470 - 540
250 - 300	3.4 - 4.0	490 - 560
300 - 350	4.0 - 4.6	510 - 580
350 - 400	4.5 - 5.2	540 - 600
400 - 500	5.1 - 5.9	550 - 620

These recommendations were established on the basis of digestibility studies and trials with housed bulls of dual purpose breeds fed intensively on mixed and high concentrate diets.