

your Rothamsted dairy will prove particularly valuable to me, and to your numerous American readers.

I was anxious to compare your statement with the theory of Jules Crevat's book on the "Rational feeding of stock" (Fischer) as contained in the printed notes I had the honor of sending you lately. The results of such comparison may prove interesting, bringing out, as they do, in a most favorable manner, the exactness of Crevat's theory. He recommends, for a cow of 1200 lbs. weight for a full maintenance ration :

	Dry matter.	Sugar.	Digestible proteine.	Digestible fat.
from 2 to 4	11.20	0.79	0.22	
To which must be added the chemical elements of about 20 lbs. of milk for your six winter months	0.80	0.80	0.80	
Giving a total according to Crevat, of 12.00	1.59	1.02		

Now, taking the chemical digestible contents of your rations, according to the table I sent you, we have :

	Dry matter.	Sugar.	Digestible proteine.	Digestible fat.
4 lbs. cotton cake.....	3.596	1.096	1.220	0.392
3½ " bran.....	3.041	1.606	0.392	0.105
3.6 " hay chaff.....	3.085	1.400	0.199	0.066
7.2 " oat straw chaff...	6.170	2.462	0.122	0.072
51 " mangels.....	6.834	5.200	0.572	0.052
Practical ration.....	22.726	11.764	2.505	0.677
Theoretical ".....		12.000	1.590	1.020
Difference.....		-0.236	+0.915	-0.343
Which is equalized by transforming 0.915 of proteine into fat (x.485) or.....				+0.437
Now transforming this surplus of +0.094 of fat into sugar (x2.76) gives in sugar.....		+0.257		+0.094
Leaving a surplus of sugar of.....		+0.021		

MILK PRODUCTION.

EXPERIMENTS AT ROTHAMSTEAD IN WHICH THE QUANTITY OF OILCAKE GIVEN IS REGULATED BY THE AMOUNT OF MILK YIELD 1886-1890.

NAMES OF COWS.	Average cake per head per day.	Yield of milk per head per day.	Milk per lb. of cake.	Weeks in milk.	w. d.	NAMES OF COWS.	Average cake per head per day.	Yield of milk per head per day.	Milk per lb. of cake.	Weeks in milk.	w. d.
2 Marchioness.....	5.09	35.25	6.93	53.4	51 Jewel.....	3.63	24.75	6.82	60.2		
3 Sally.....	5.00	34.88	6.93	45.3	52 Queen Bess.....	3.61	24.56	6.80	44.4		
4 Stella.....	4.90	34.94	7.12	42.1	53 Kate.....	3.61	24.06	6.66	36.3		
5 Stella.....	4.88	34.25	7.02	41.3	54 Favourite.....	3.55	24.50	6.90	63.4		
6 Rhoda.....	4.83	33.81	6.93	45.3	55 Counie.....	3.55	24.00	6.76	47.2		
7 Dinah.....	4.86	34.38	7.07	49.3	56 Maud.....	3.50	23.25	6.64	54.6		
8 Florie.....	4.75	33.25	7.00	40.6	57 Snowflake.....	3.50	22.88	6.54	33.3		
9 Ayrshire.....	4.56	32.19	7.06	45.5	58 Florie.....	3.50	22.13	6.32	50.3		
10 Nelly.....	4.50	31.69	7.04	22.6	59 Maud.....	3.48	22.81	6.55	40.2		
11 Sylvia.....	4.50	31.19	6.93	49.3	60 Gussie.....	3.47	23.00	6.63	38.0		
12 Lucy.....	4.50	30.69	6.82	64.1	61 Wonder.....	3.47	23.00	6.63	34.3		
13 Joan of Arc.....	4.48	30.94	6.91	40.3	62 Wonder.....	3.45	23.13	6.70	42.5		
14 Florie.....	4.44	31.00	6.99	50.5	63 Blanche.....	3.43	23.63	6.89	49.4		
15 Victoria.....	4.38	30.31	6.92	65.0	64 Flora.....	3.43	22.88	6.67	41.4		
16 Bright eye.....	4.38	30.25	6.91	40.3	65 Edith.....	3.41	22.25	6.52	29.4		
17 Liddy.....	4.36	30.75	7.05	79.0	66 Minnie.....	3.38	24.13	7.14	39.6		
18 Sally.....	4.32	30.38	7.03	48.0	67 Darling.....	3.38	22.88	6.77	41.2		
19 Lively.....	4.32	29.94	6.93	44.0	68 Sweetbriar.....	3.38	22.44	6.64	77.3		
20 Rhoda.....	4.26	29.69	6.97	52.5	69 Carrie.....	3.38	22.19	6.57	47.0		
21 Jane.....	4.25	29.44	6.93	42.5	70 Daffodil.....	3.38	21.69	6.42	42.5		
22 Maud.....	4.24	29.13	6.87	36.1	71 Edith.....	3.35	21.94	6.55	39.3		
23 Nelly.....	4.21	29.25	6.95	38.1	72 Snowflake.....	3.21	20.83	6.50	35.5		
24 Ayrshire.....	4.21	28.81	6.84	47.0	73 Darling.....	3.20	20.94	6.54	42.0		
25 Jane.....	4.15	29.06	7.00	45.2	74 Adelaide.....	3.19	20.56	6.45	40.5		
26 Dinah.....	4.13	28.88	6.99	87.4	75 Connie.....	3.17	21.00	6.54	59.5		
27 Parody.....	4.07	27.13	6.67	41.3	76 Rhoda.....	3.15	20.88	6.63	68.2		
28 Gertrude.....	4.03	27.88	6.92	63.6	77 Vinca.....	3.14	20.88	6.65	67.1		
29 Ladybird.....	4.02	27.50	6.84	32.4	78 Martha.....	3.13	20.75	6.63	47.1		
30 Flora.....	4.01	27.31	6.81	38.6	79 Blanche.....	3.13	19.56	6.25	50.5		
31 Parody.....	4.00	27.56	6.89	43.0	80 Jane.....	3.12	21.00	6.73	60.3		
32 Sylvia.....	3.97	27.25	6.89	41.2	81 Kate.....	3.11	20.31	6.63	45.2		
33 Flora.....	3.97	26.75	6.74	38.5	82 Kate.....	3.08	19.88	6.45	40.3		
34 Pansy.....	3.94	26.81	6.80	36.2	83 Carrie.....	3.06	19.63	6.42	36.1		
35 Ann.....	3.91	27.44	7.02	39.1	84 Edith.....	3.00	18.56	6.19	50.3		
36 Queen Bess.....	3.88	26.69	6.88	36.5	85 Aurora.....	2.89	18.88	6.53	48.1		
37 Blanche.....	3.86	27.38	7.09	37.3	86 Surprise.....	2.88	18.06	6.27	72.1		
38 Minnie.....	3.85	26.69	6.93	60.1	87 Daffodil.....	2.79	17.56	6.29	37.5		
39 Ayrshire.....	3.79	25.81	6.81	44.2	88 Louisa.....	2.76	16.88	6.12	29.4		
40 Marchioness.....	3.78	25.69	6.80	50.3	89 Dolly.....	2.68	17.06	6.36	40.1		
41 Adelaide.....	3.77	25.44	6.75	28.3	90 Emma.....	2.67	16.63	6.23	44.0		
42 Carrie.....	3.75	25.56	6.82	45.2	91 Louisa.....	2.62	16.19	6.18	42.3		
43 Minnie.....	3.75	25.44	6.78	45.2	92 Bright eye.....	2.61	16.33	6.28	44.4		
44 Chrystal.....	3.75	25.31	6.75	47.4	93 Baroness.....	2.45	15.13	6.18	48.0		
45 Strawberry.....	3.75	23.06	6.15	78.3	94 Dolly.....	2.35	14.38	6.12	57.0		
46 Fanny.....	3.74	25.06	6.70	63.5	95 Butterfly.....	2.33	14.56	6.25	64.6		
47 Chrystal.....	3.72	25.00	6.72	43.5	96 Butterfly.....	2.31	14.13	6.12	57.2		
48 Pansy.....	3.68	25.25	6.86	35.5	97 Sunbeam.....	2.28	13.88	6.09	40.6		
49 Ann.....	3.67	24.25	6.61	50.0	98 Wonder.....	1.88	11.13	5.92	34.1		
Mean 1-49.....	4.21	29.06	6.89	47.0	Mean 50-98.....	3.12	20.32	6.49	46.6		
					" 1-98.....	3.66	24.69	6.69	47.0		