

9. Appendix

Table I. Results of investigation of micro-algal nutritional value (casein as internal control) as obtained in 7 day balance study on rats

Animal No.	Repetition	Group	DMI (g/day)	N-intake (mg/day)	N in feces (mg/day)	N in urine (mg/day)	N-balance (mg/day)	dWG (g)	aPD (%)	tPD (%)	NPU (%)	BV (%)	PPV (%)	PER	aAAD (%)
1	1	CAS	11.96	119.56	27.56	35.76	139.94	3.79	86.44	92.97	100.72	108.34	68.85	2.99	90.05
2	1		11.93	119.34	27.89	43.5	131.49	2.97	86.25	92.65	96.04	103.65	64.81	2.34	89.17
3	1		11.65	116.55	34.26	37.57	126.3	3.35	82.71	89.41	96.76	108.23	63.75	2.71	86.95
8	1		11.81	118.08	27.04	44.74	128.96	5.35	86.53	93.02	96.05	103.25	64.24	4.26	87.84
11	1		11.81	118.13	30.89	44.8	125.14	3.43	84.62	91.54	96.33	105.24	62.31	2.73	85.52
21	1		11.71	117.1	31.41	42.88	124.78	3.23	84.22	90.98	95.98	105.49	62.68	2.6	81.99
14	2		13.34	118.01	32.58	43.32	141.24	4.61	85	92.36	100.18	108.47	65.05	3.4	88.55
26	2		14.02	127.84	35.63	41.89	153.88	4.79	84.6	91.74	100.06	109.07	66.5	3.32	88.25
17	2		13.98	118.65	31.75	49.43	131.28	5.03	85.05	92.65	97.45	105.19	61.79	3.79	88.12
23	2		13.99	137.53	31.18	44.67	145.56	5.45	85.92	93.06	99.23	106.63	65.74	3.94	88.97
24	2		13.8	116.38	34.06	37.2	153.39	4.33	84.84	92.32	103.73	112.37	68.28	3.08	88.21
19	2		13.78	115.42	32.33	50.1	141.85	5.04	85.58	93.02	98.49	105.88	63.25	3.59	89
4	1	S-DA	11.51	266.82	90.65	63.48	26.6	1.5	49.84	55.97	44.73	79.92	14.72	1.33	38.91
5	1		11.84	280.43	97.66	55.78	32.39	1.29	47.44	53.66	47.58	88.67	17.43	1.11	46.8
7	1		11.86	279.58	97.76	51.58	36.88	1.19	47.5	54.04	51.61	95.5	19.8	1.02	33.5
14	1		11.87	279.7	73.67	61.08	51.62	1.48	60.47	66.89	58.91	88.07	27.7	1.27	56.78
22	1		11.98	276.05	82.41	48.72	56.91	1.59	56.18	62.32	59.92	96.16	30.26	1.36	47.59
26	1		11.97	275.59	88.4	48.12	51.45	1.33	52.97	59.49	59.01	99.19	27.37	1.13	39.82
1	2		13.75	276.77	83.03	62.51	81.29	2.17	63.4	70.48	69.32	98.35	35.84	1.53	68.43
2	2		13.69	266.4	90.59	62.89	72.46	2.16	59.91	66.89	65.03	97.23	32.07	1.53	66.57
12	2		13.71	272.85	101.81	48.91	75.52	2.58	55	61.59	64.28	104.37	33.38	1.82	61.13
16	2		13.56	263.33	92.92	60.41	70.39	2.47	58.47	64.72	60.72	93.81	31.46	1.76	63.21
6	2		13.74	261.2	114.5	59.11	53.17	1.64	49.51	55.94	53.47	95.59	23.45	1.16	58.02
20	2		13.48	255.67	96.22	56.01	70.3	2.48	56.76	63.52	63.52	99.99	31.59	1.79	60.4

Table I - continued

Animal No.	Repetition	Group	DMI (g/day)	N-intake (mg/day)	N in feces (mg/day)	N in urine (mg/day)	N-balance (mg/day)	dWG (g)	aPD (%)	tPD (%)	NPU (%)	BV (%)	PPV (%)	PER	aAAD (%)
12	1	ES-DA	11.8	115.11	99.29	57.36	32.16	0.81	47.41	53.96	48.99	90.79	17.03	0.69	45.09
16	1		11.9	118.36	101.21	69.19	20.06	1.07	46.86	53.02	40.4	76.19	10.53	0.9	44.13
17	1		11.8	118.61	97.67	60.46	30.68	1.46	48.27	54.54	46.78	85.76	16.25	1.23	56.08
18	1		11.53	118.7	92.8	48.84	42.78	1.27	49.68	55.66	52.45	94.22	23.2	1.11	57.17
23	1		11.64	119.77	110.59	54.42	21.2	0.62	40.61	46.8	41.61	88.91	11.39	0.53	36.94
25	1		11.54	119.72	103.01	47.53	34.13	1.08	44.22	50.01	46.72	93.42	18.48	0.94	40
3	2		13.84	118.65	122	62.08	26.24	1.95	41.99	49.56	48.07	97.01	12.48	1.49	47.21
8	2		13.32	119.73	114.87	68.13	19.44	-0.42	43.26	50.67	44.78	88.37	9.6	-0.33	47.67
5	2		13.64	118.22	118.24	40.58	48.53	1.96	42.98	49.57	54.08	109.09	23.41	1.51	49.19
7	2		13.17	118.58	107.45	39.89	52.78	1.85	46.31	53.25	59.2	111.17	26.37	1.48	51.44
10	2		13.06	119.17	108.17	55.91	34.42	1.57	45.51	52.59	50.95	96.89	17.34	1.27	56.1
13	2		12.78	118.65	112.35	53.98	27.97	1.21	42.18	49	46.89	95.68	14.4	1	46.37
6	1	US-DA	11.86	274.91	69.88	42.59	77.36	2.58	63.19	69.55	71.69	103.08	40.75	2.17	64.83
20	1		11.97	273.82	77.45	44.94	69.18	2.1	59.57	66.3	68.91	103.93	36.11	1.75	61.87
10	1		11.82	274.2	96.5	52.76	39.9	1.84	48.98	55.46	52.66	94.95	21.09	1.56	32.36
13	1		11.86	271.13	60.82	37.17	91.74	2.06	67.94	74.09	78.18	105.52	48.35	1.74	70.76
24	1		11.92	274.84	71.07	47.15	72.46	2.17	62.73	69.22	69.6	100.55	38	1.82	65.43
19	1		11.86	269.7	74.77	47.71	67.36	2.6	60.61	67.23	67.74	100.77	35.48	2.19	63.11
11	2		13.62	272.36	82.83	62.52	70.24	2.8	61.58	69.28	69.2	99.89	32.58	2.08	67.44
21	2		13.91	278.16	90.56	55.61	74.02	3.25	58.87	66.48	69.54	104.62	33.62	2.36	65.8
4	2		13.86	277.17	91.66	49.73	78.03	3.47	58.23	64.61	65.14	100.82	35.56	2.53	66.56
25	2		13.68	273.61	88.01	50.83	77.76	2.89	59.37	65.67	65.14	99.21	35.9	2.13	66.58
22	2		13.85	277	89.56	48.31	81.41	3.31	59.16	65.85	68.31	103.74	37.13	2.42	66.58
18	2		13.75	275.06	92.61	52.84	72.29	2.95	57.47	64.02	63.71	99.52	33.2	2.17	64.7

Table II. Biochemical parameters in plasma from rats fed green micro-algae for 28 days

Parameter	Animal No.	Day 0	Day 7	Day 14	Day 21	Day 28
ALAT (U/L)	1	34	24	28	41	39
	2	31	26	23	27	22
	3	33	28	21	31	
	4	21	20	26	20	34
	5	34	20	20	32	17
	6	37	56	22	26	98
	7	30	42	21	23	52
	8	33	21	21	23	37
	9	31	24	18	26	39
	10	39	27	31	24	
	11	56	43	26	37	57
ASAT (U/L)	1	98	71	75	113	93
	2	104	39	125	69	98
	3	89	81		121	
	4	102	50	46	69	74
	5	100	89	68	125	99
	6	104	50	113	63	92
	7	107	64	53	74	81
	8	114	70	75	68	64
	9	120	78	63	69	132
	10	100	92		98	102
	11	104	83	76	90	129

Table II. - continued

Parameter	Animal No.	Day 0	Day 7	Day 14	Day 21	Day 28
ALP (U/L)	1	172	314	231	212	139
	2	195	436	225	228	86
	3		165		175	
	4	152		304	241	195
	5	86	476	291	264	73
	6	261	860	152	102	99
	7	350	278	238	218	179
	8	179	413	225	182	50
	9	208	284	304	86	43
	10	225	433	255	215	175
	11	152	436	212	264	179
Urea (mmol/L)	1	6	6	12	7	8
	2	8	8	8	6	8
	3		7		8	8
	4	8	8	8	8	7
	5	8		7	7	5
	6	7	5	7	7	6
	7	8	8	7	8	7
	8	11	8	9	6	8
	9	11	8	7	7	6
	10	10	11	9	9	12
	11	9	9	9	8	8

Table II - continued

Parameter	Animal No.	Day 0	Day 7	Day 14	Day 21	Day 28
Creatinine ($\mu\text{mol/L}$)	1	54	51		79	79
	2	61	77	79	65	98
	3				119	
	4	44	44	58	63	56
	5	50		61	75	95
	6	107	107		79	63
	7	72	54	77	77	63
	8		51	68	75	65
	9	61		44	54	72
	10	58	65	54	91	
	11	75	54	63	82	72
Uric acid ($\mu\text{mol/L}$)	1	142	103	156	206	273
	2	156	165	120	151	474
	3	142	173	192	349	608
	4	103	112	109	128	131
	5	438	243	126	159	363
	6	290	547	140	190	181
	7	167	179	120	112	153
	8	153	109	145	89	98
	9	179	100	75	100	192
	10	137	201	153	326	393
	11	298	145	100	234	195

Table III. Daily feed intake (g) of rats fed casein or ultrasonicated and spray-dried *C. vulgaris* as sole protein source for 33 days

Day	CAS								US-DA							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2	10.9	10.8	10.9	10.9	10.9	10.9	10.9	10.1	7.2	9.8	6.9	8.3	7.5	7.9	9.1	7.1
3	10.9	9.9	10.7	10.6	10.5	10.5	10.6	9.9	6.0	8.4	6.3	8.2	6.7	7.4	7.4	4.7
4	10.9	10.9	10.7	10.4	10.7	10.6	10.3	10.3	8.5	8.2	8.1	9.9	8.4	8.9	9.7	8.6
5	10.8	10.6	10.4	10.4	10.3	10.5	10.2	10.4	9.0	8.9	8.2	10.1	9.3	9.9	10.5	8.4
6	10.9	10.9	10.8	10.8	11.0	11.0	10.6	10.8	10.1	10.8	10.2	10.3	10.9	10.3	10.9	10.2
7	10.8	10.8	10.9	10.8	10.8	10.7	10.6	10.7	10.4	10.7	9.2	10.6	10.6	10.4	10.7	10.2
8	10.9	10.7	10.8	10.8	10.9	10.9	10.8	10.8	10.4	10.7	10.0	10.5	10.6	10.7	10.7	10.6
9	10.9	10.7	10.9	10.9	10.8	10.8	10.8	10.8	10.5	10.7	10.4	10.7	10.7	10.7	10.7	10.6
10	10.9	11.0	10.9	10.9	10.8	10.8	10.9	10.7	10.7	10.8	10.7	10.7	10.7	10.6	10.7	10.7
11	11.0	10.7	10.8	10.6	10.9	10.9	10.9	10.8	10.7	10.8	10.7	10.7	10.7	10.8	10.8	10.7
12	11.0	10.9	10.7	11.0	10.9	10.9	10.8	10.8	10.8	10.7	10.6	10.6	10.8	10.8	10.8	10.7
13	11.8	11.5	11.3	11.8	10.0	11.9	11.4	9.6	10.0	10.7	10.6	10.6	10.1	9.6	10.8	9.7
14	11.7	11.3	10.5	11.7	9.5	11.9	11.7	10.0	9.5	10.6	10.8	10.7	9.6	10.2	10.8	9.5
15	11.5	11.7	11.1	11.6	11.4	11.8	11.7	11.6	8.5	10.6	10.4	10.5	9.0	9.7	10.8	8.6
16	11.7	11.4	11.2	11.7	10.1	12.0	11.8	10.4	9.6	10.5	10.3	10.5	10.1	10.3	10.8	9.7
17	11.6	11.1	11.1	11.5	11.7	11.6	11.6	11.5	9.7	10.4	10.6	10.7	10.2	10.2	10.8	9.5
18	11.7	11.7	10.9	11.7	10.4	12.0	11.8	10.4	8.0	10.5	10.5	10.3	9.9	10.3	10.8	9.8
19	11.6	11.2	11.0	11.5	11.7	11.8	11.7	11.5	8.4	10.7	10.6	10.6	9.7	10.5	10.8	9.6
20	11.8	10.6	9.3	11.3	11.6	11.9	11.4	11.4	10.3	11.6	10.9	11.7	10.0	9.4	11.8	10.5
21	11.8	10.9	11.1	11.7	11.7	12.0	11.5	11.4	9.9	11.6	11.0	11.6	11.2	9.2	11.9	10.3
22	11.3	10.0	10.7	11.1	11.5	11.5	11.0	10.8	9.5	11.4	8.9	11.2	10.7	10.2	11.6	10.0
23	13.8	12.6	12.7	14.0	13.8	13.9	13.9	14.0	11.2	11.4	9.5	11.7	11.7	9.8	11.9	11.6
24	14.1	15.1	15.4	14.0	13.7	14.0	13.9	13.9	10.6	11.7	9.3	11.8	11.7	9.0	11.9	11.4
25	13.8	13.1	13.4	13.8	12.8	13.7	13.3	13.7	10.2	11.7	10.3	11.6	11.3	9.4	11.7	11.2
26	14.1	13.4	13.7	13.7	13.1	14.0	13.7	13.9	10.6	11.7	11.5	11.6	11.3	10.7	11.9	11.6
27	14.1	13.7	14.0	14.1	13.2	14.0	13.9	13.9	9.6	11.9	9.7	11.8	11.6	8.9	11.7	11.5
28	13.8	13.3	13.6	13.4	13.1	13.7	13.3	13.5	10.7	11.7	9.3	11.6	11.4	10.1	11.8	11.3
29	15.7	15.6	15.9	15.9	15.0	16.0	15.8	16.0	11.0	12.9	10.3	12.7	12.7	11.1	12.9	12.1

Table III – continued

Day	CAS								US-DA							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
30	16.0	15.3	15.9	16.0	14.2	16.0	15.6	15.8	11.1	12.8	8.9	12.8	12.7	10.7	12.8	12.0
31	16.0	15.7	16.0	15.9	12.1	16.0	15.8	15.6	10.6	12.8	9.8	12.5	11.3	9.0	12.5	11.8
32	15.9	15.7	15.7	15.9	14.6	16.0	15.5	15.6	11.8	12.8	9.8	12.7	10.5	10.2	12.2	12.3
33	15.9	15.3	15.1	15.6	13.4	16.1	15.6	15.1	7.2	12.8	11.3	12.6	12.6	12.6	12.9	12.4

Table IV. Daily water intake (mL) of rats fed casein or ultrasonicated and spray-dried *C. vulgaris* as sole protein source for 33 days

Day	CAS								US-DA							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2	8.9	6.6	10.3	8.6	9.9	9.6	8.9	8.1	9.3	8.5	8.6	7.4	3.9	10.6	11.9	6.5
3	9.6	6.9	10.5	10.1	10.9	17.0	13.7	9.8	10.5	11.8	9.9	14.5	3.5	14.9	11.0	9.0
4	9.9	11.2	12.4	11.9	18.7	21.2	15.4	14.0	11.8	11.4	14.5	15.4	4.6	17.7	12.9	15.4
5	10.1	8.3	10.6	13.7	14.9	19.4	15.7	14.6	11.8	12.7	14.5	16.9	16.2	19.3	13.5	12.8
6	12.6	13.2	13.8	14.7	15.5	17.9	17.3	14.6	13.2	13.2	18.8	18.1	14.7	22.6	14.2	11.8
7	13.6	11.6	11.8	16.0	17.6	18.3	19.6	15.7	12.8	15.9	17.1	15.6	15.2	26.0	14.0	10.9
8	16.1	14.1	15.6	17.7	18.4	21.2	18.8	16.3	14.2	15.7	20.0	18.0	14.6	24.1	14.3	12.6
9	15.8	15.9	16.3	20.2	17.5	21.2	17.8	14.4	13.6	17.4	18.4	19.4	13.7	26.7	14.8	15.2
10	17.2	13.3	18.0	20.3	19.7	20.1	19.5	17.7	15.3	17.5	21.5	18.7	14.0	20.9	13.9	12.6
11	15.9	14.6	17.4	17.5	11.6	20.9	15.4	15.4	16.1	16.5	18.7	18.4	13.5	24.7	14.0	14.5
12	15.9	15.2	10.8	17.4	9.3	18.2	15.6	13.1	10.4	16.3	19.6	20.5	15.8	26.6	13.4	14.0
13	18.1	15.8	19.8	21.5	15.7	20.4	19.1	18.1	17.5	16.0	20.9	19.9	17.1	22.6	13.5	16.0
14	15.0	13.4	13.2	18.5	15.1	18.3	14.6	17.9	12.3	14.4	18.9	16.8	16.2	20.9	10.4	16.0
15	16.6	16.1	15.5	19.9	18.1	19.0	16.5	19.3	16.0	16.8	19.6	17.6	15.0	24.7	12.4	16.3
16	18.0	18.3	14.0	17.5	14.1	17.2	16.8	18.6	15.9	15.1	22.5	18.5	14.4	19.4	11.6	23.5
17	17.2	22.7	15.9	18.1	21.0	17.6	16.6	18.6	15.2	15.2	18.9	19.1	20.7	25.3	12.0	24.4
18	18.8	24.5	17.5	20.1	19.0	19.2	20.8	18.7	16.5	15.4	20.0	20.7	20.5	25.1	11.7	20.9
19	19.2	20.1	21.6	19.9	23.0	18.7	22.5	20.9	18.0	16.4	21.3	20.2	21.0	28.0	11.3	18.1
20	19.8	18.1	21.7	19.2	19.5	19.9	21.5	24.2	25.3	19.4	20.8	20.0	18.3	20.6	12.6	22.7

Table IV – continued

Day	CAS								US-DA							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
21	19.6	19.4	18.7	17.1	20.9	18.8	21.6	21.5	20.4	18.5	19.7	18.3	17.0	20.2	12.0	16.2
22	19.7	24.1	18.9	17.0	20.6	18.9	22.4	23.3	*	16.0	16.4	19.8	24.9	20.6	12.1	16.0
23	22.5	27.3	19.6	22.1	25.0	20.8	22.5	22.7	16.6	17.2	19.2	18.9	21.5	18.4	13.2	20.9
24	20.1	26.8	22.7	21.0	25.8	22.2	22.1	22.0	17.9	14.6	16.0	16.1	17.0	15.0	14.0	19.5
25	18.9	29.5	19.9	20.7	20.4	19.3	23.8	22.6	17.1	17.1	17.0	18.2	18.9	16.4	12.0	19.6
26	19.1	27.8	19.9	20.0	24.1	20.0	26.2	25.9	16.2	18.0	17.7	23.2	19.5	14.1	13.0	21.0
27	20.9	30.7	21.9	21.3	25.5	21.3	21.0	23.8	17.3	17.1	15.6	18.1	18.4	14.6	15.1	19.5
28	19.6	32.5	21.7	19.4	23.7	23.1	23.3	24.6	15.7	16.6	16.5	19.5	22.8	16.1	12.0	18.9
29	23.1	31.0	23.9	22.6	26.0	24.8	27.0	26.1	16.1	19.1	18.2	23.2	20.4	12.4	15.8	20.7
30	21.8	33.5	24.3	23.4	26.0	26.1	27.8	26.5	15.2	20.2	14.8	22.1	17.3	13.5	16.6	22.3
31	23.4	35.5	23.9	23.7	28.7	24.3	28.1	27.9	15.8	19.2	16.4	26.2	17.8	13.2	15.8	24.3
32	23.2	34.4	24.4	23.2	32.5	24.8	26.9	27.1	14.8	19.1	18.0	22.3	15.4	14.0	16.2	20.0
33	23.3	32.4	24.3	23.1	30.6	24.4	27.1	25.4	10.7	18.0	14.4	18.2	15.2	14.3	16.8	18.1

*nipple bottle fell during the measurements

Table V. Nutritional value of ultrasonicated and spray-dried *C. vulgaris* protein obtained in 7 day balance study on rats (see Experiment 3)

Animal No.	Group	DMI (g/day)	N-intake (mg/day)	N in feces (mg/day)	N in urine (mg/day)	N-balance (mg/day)	dWG (g)	aPD (%)	tPD (%)	NPU (%)	BV (%)	PPV (%)	PER	aAAD (%)
1	CAS	9.91	147.99	16.50	29.01	102.48	2.10	88.85	94.90	100.53	105.93	69.25	2.27	90.28
2		9.87	147.33	18.13	28.93	100.26	2.07	87.69	93.63	98.78	105.50	68.06	2.25	89.12
3		9.71	145.01	14.67	29.59	100.75	2.19	89.88	96.08	101.77	105.92	69.48	2.41	91.00
4		9.75	145.53	14.15	27.00	104.38	2.41	90.28	96.32	103.18	107.12	71.72	2.65	91.82
5		8.72	130.19	14.40	34.78	81.02	1.24	88.94	94.89	94.69	99.79	62.23	1.53	91.15
6		9.59	143.22	13.69	31.44	98.09	1.95	90.44	96.33	99.32	103.11	68.49	2.17	91.64
7		9.32	139.14	14.85	31.56	92.74	1.64	89.33	95.37	98.71	103.49	66.65	1.88	90.73
8		8.47	126.45	14.85	34.12	77.49	1.27	88.26	94.29	94.66	100.39	61.28	1.61	90.09
9	US-DA	8.60	133.23	54.66	32.25	46.33	0.51	58.98	64.20	63.64	99.11	34.77	0.62	63.05
10		9.85	152.60	65.19	30.89	56.52	0.95	57.28	62.75	65.37	104.17	37.04	0.99	59.85
11		9.35	144.78	63.03	33.24	48.51	1.09	56.47	61.75	61.51	99.62	33.51	1.20	58.08
12		9.63	149.15	60.47	38.77	49.91	0.88	59.46	64.69	60.83	94.03	33.46	0.94	62.30
13		9.36	144.98	58.62	30.05	56.31	0.77	59.57	64.80	66.56	102.71	38.84	0.85	61.87
14		9.59	148.48	60.34	36.63	51.52	1.28	59.37	64.47	61.47	95.34	34.70	1.38	62.22
15		9.82	152.15	61.93	37.57	52.65	0.63	59.30	64.72	62.71	96.90	34.60	0.66	62.97
16		8.69	134.65	47.51	30.71	56.43	0.53	64.71	70.02	71.02	101.43	41.91	0.63	67.66

Table VI. Body weight (g) of rats fed casein or ultrasonicated and spray-dried *C. vulgaris* as sole protein source for 33 days

Rat No.	Group	Day 0	Day 5	Day 12	Day 19	Day 26	Day 33
1	CAS	77,9	93,0	107,7	129,5	158,5	194,6
2		76,8	90,4	104,9	123,5	147,0	176,6
3		81,8	94,3	109,6	126,0	156,8	188,6
4		75,7	90,7	107,5	126,2	153,3	186,9
5		73,6	85,7	94,4	113,2	140,3	165,7
6		74,5	88,0	101,6	122,7	151,5	178,5
7		76,9	90,4	101,8	122,6	150,7	176,7
8		71,2	85,6	94,5	114,2	144,8	175,7
9	US-DA	74,6	78,0	81,6	87,1	103,0	110,7
10		78,2	88,8	95,5	105,1	118,9	131,9
11		76,0	81,3	89,0	98,9	107,9	113,7
12		75,8	82,7	88,8	95,8	110,8	122,8
13		74,4	81,5	86,9	95,5	108,8	123,6
14		73,1	78,4	87,4	96,6	106,5	117,6
15		82,9	88,7	93,1	105,2	114,1	129,4
16		76,5	80,0	83,7	93,8	106,8	119,3

Table VII. Rats' organ weights (g) after 33 days of feeding with casein or ultrasonicated and spray-dried *Chlorella vulgaris* as sole protein source

Rat No.	Group	Liver	Stomach	Small intestine	Large intestine	Caecum	Colon	Spleen	Lungs	Heart	Kidney		Testicle		Urinary bladder	Carcass
											left	right	left	right		
1	CAS	8.40	1.83	5.49	1.53	0.62	0.91	0.62	1.22	0.74	0.92	1.05	1.40	1.28	0.26	155.60
2		6.73	1.58	5.63	1.97	1.38	0.59	0.54	0.94	0.64	0.8	0.79	1.25	1.28	0.23	141.84
3		7.26	1.72	5.83	1.77	0.82	0.95	0.65	1.08	0.62	1.12	1.11	1.59	1.64	0.29	151.62
4		6.58	2.02	5.30	1.60	0.78	0.82	0.62	0.97	0.68	0.90	0.92	1.63	1.63	0.09	150.65
5		5.42	1.23	5.59	1.59	1.09	0.50	0.49	0.92	0.64	0.76	0.79	1.45	1.55	0.16	133.08
6		5.94	1.57	5.17	1.80	1.20	0.60	0.64	1.03	0.72	0.84	0.92	1.62	1.66	0.23	145.55
7		6.35	1.83	5.68	1.65	0.65	1.00	0.60	0.91	0.64	0.72	0.76	1.40	1.40	0.17	142.23
8		5.67	1.68	5.97	1.79	0.76	1.03	0.57	0.96	0.63	0.87	0.90	1.37	1.42	0.13	136.64
9	US-DA	3.83	0.99	4.45	2.15	1.35	0.80	0.47	0.70	0.55	0.61	0.66	1.15	1.31	0.07	83.44
10		5.20	1.05	4.90	1.64	0.91	0.73	0.67	0.70	0.76	0.74	0.76	1.43	1.46	0.14	98.39
11		4.12	0.97	4.93	1.70	0.93	0.77	0.74	0.67	0.56	0.68	0.69	1.36	1.34	0.07	80.91
12		4.31	1.16	5.34	2.09	0.80	1.29	0.74	0.81	0.68	0.72	0.78	1.28	1.27	0.15	88.92
13		4.92	1.12	4.71	1.99	1.12	0.87	0.73	0.71	0.61	0.68	0.68	1.33	1.31	0.17	91.69
14		4.00	1.07	4.68	1.91	1.09	0.82	0.66	0.63	0.56	0.65	0.63	1.31	1.26	0.07	85.53
15		4.46	1.25	6.05	1.89	0.90	0.99	0.50	0.77	0.58	0.71	0.78	1.28	1.30	0.12	96.63
16		4.30	1.10	5.21	1.84	0.72	1.12	0.50	0.71	0.59	0.68	0.68	0.44	0.41	0.07	89.90

Table VIII. Organ weights in respect to metabolic weight as percentage ratio (%) taken from rats after 33 days of feeding with casein or ultrasonicated and spray-dried *Chlorella vulgaris* as sole protein source

Rat No.	Group	Liver	Stomach	Small intestine	Large intestine	Caecum	Colon	Spleen	Lungs	Heart	Kidney		Testicle		Urinary bladder	Carcass
											left	right	left	right		
1	CAS	16.12	3.51	10.54	2.94	1.19	1.75	1.19	2.34	1.42	1.77	2.02	2.69	2.46	0.50	298.65
2		13.89	3.26	11.62	4.07	2.85	1.22	1.11	1.94	1.32	1.65	1.63	2.58	2.64	0.47	292.78
3		14.26	3.38	11.45	3.48	1.61	1.87	1.28	2.12	1.22	2.20	2.18	3.12	3.22	0.57	297.88
4		13.02	4.00	10.48	3.17	1.54	1.62	1.23	1.92	1.35	1.78	1.82	3.22	3.22	0.18	298.02
5		11.74	2.66	12.10	3.44	2.36	1.08	1.06	1.99	1.39	1.65	1.71	3.14	3.36	0.35	288.18
6		12.16	3.21	10.59	3.69	2.46	1.23	1.31	2.11	1.47	1.72	1.88	3.32	3.40	0.47	298.01
7		13.10	3.78	11.72	3.40	1.34	2.06	1.24	1.88	1.32	1.49	1.57	2.89	2.89	0.35	293.47
8		11.75	3.48	12.37	3.71	1.58	2.13	1.18	1.99	1.31	1.80	1.87	2.84	2.94	0.27	283.20
9	US-DA	11.22	2.90	13.04	6.30	3.96	2.34	1.38	2.05	1.61	1.79	1.93	3.37	3.84	0.21	244.51
10		13.36	2.70	12.59	4.21	2.34	1.88	1.72	1.80	1.95	1.90	1.95	3.67	3.75	0.36	252.85
11		11.84	2.79	14.16	4.88	2.67	2.21	2.13	1.92	1.61	1.95	1.98	3.91	3.85	0.20	232.45
12		11.69	3.15	14.48	5.67	2.17	3.50	2.01	2.20	1.84	1.95	2.11	3.47	3.44	0.41	241.09
13		13.27	3.02	12.71	5.37	3.02	2.35	1.97	1.92	1.65	1.83	1.83	3.59	3.53	0.46	247.35
14		11.20	3.00	13.11	5.35	3.05	2.30	1.85	1.76	1.57	1.82	1.76	3.67	3.53	0.20	239.58
15		11.63	3.26	15.77	4.93	2.35	2.58	1.30	2.01	1.51	1.85	2.03	3.34	3.39	0.31	251.92
16		11.92	3.05	14.44	5.10	2.00	3.10	1.39	1.97	1.63	1.88	1.88	1.22	1.14	0.19	249.12

Table IX. Lengths (cm) of gastrointestinal tract's parts taken from rats fed casein or ultrasonicated and spray-dried *C. vulgaris* for 33 days

Rat No.	Group	Stomach (<i>curvatura major</i>)	Small intestine	Caecum	Colon
1	CAS	8.2	75	6.8	14.5
2		7.0	92	9.0	11.5
3		6.7	92	8.5	16.0
4		6.2	98	8.2	16.0
5		5.5	98	7.4	10.0
6		5.1	97	6.5	12.0
7		6.6	89	7.7	14.0
8		8.1	100	6.7	12.0
9	US-DA	6.0	99	10.2	11.0
10		7.7	102	9.0	14.0
11		8.2	102	8.5	14.0
12		7.3	103	7.7	14.5
13		7.3	102	8.2	15.0
14		7.1	97	9.0	16.0
15		6.2	95	7.7	14.0
16		5.7	94	8.3	16.0

Table X. Biochemical parameters in serum collected from rats fed casein or ultrasonicated and spray-dried *C. vulgaris* for 33 days

Parameter	Day	CAS								US-DA							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ALAT (U/L)	12	33	37	33	33	25	33	26	31	32	39	48	36	25	29	26	19
	19	31	28	28	40	32	33	26	29	29	33	33	45	31	31	22	28
	26	32	30	31	33	29	33	26	32	39	39	31	37	36	31	28	35
	33	27	39	48	34	27	29	26	29	34	32	25	38	25	32	29	29
ASAT (U/L)	12	194	199	190	194	111	152	123	167	133	136	190	91	96	118	94	131
	19	124	122	119	214	184	169	165	176	88	115	96	144	139	123	103	122
	26	173	176	106	173	130	111	148	169	220	120	103	118	151	142	114	123
	33	101	120	148	119	106	94	114	100	116	98	121	162	101	144	101	122
ALP (U/L)	12	595	521	745	747	826	507	496	617	507	442	340	380	392	407	325	446
	19	503	517	533	739	622	465	541	572	335	307	355	466	338	361	312	348
	26	497	568	578	642	603	525	514	544	357	448	407	349	359	383	257	401
	33	414	711	980	672	497	398	414	519	303	332	312	274	319	394	306	379
GLDH (U/L)	12	13	19	18	18	26	23	22	26	23	22	31	17	21	17	25	31
	19	17	22	24	31	29	23	27	17	21	29	24	25	22	26	30	26
	26	18	31	22	25	24	31	27	15	38	25	26	25	16	11	23	27
	33	11	20	20	18	13	15	15	18	13	12	10	11	11	12	11	19
Total protein (g/L)	12	50	56	53	51	58	51	49	50	49	49	48	48	48	49	52	52
	19	49	54	57	55	57	50	55	52	54	54	48	61	51	55	59	56
	26	55	55	52	52	58	58	54	53	64	57	55	58	60	55	53	57
	33	50	78	85	64	55	56	56	60	64	51	51	51	54	57	55	58
Urea (mmol/L)	12	1.1	1.3	1.2	1.9	2.4	1.2	0.6	1.5	4.8	1.2	2.9	2.4	2.5	1.1	2.5	0.9
	19	1.4	1.7	1.6	3.4	0.7	1.4	1.0	0.8	1.3	2.9	1.3	3.3	2.0	1.8	3.4	1.3
	26	1.4	1.0	0.8	1.5	1.1	1.1	1.9	1.0	1.7	2.2	0.7	2.2	1.6	1.6	2.3	3.6
	33	2.2	0.6	1.1	1.6	0.8	1.4	1.0	1.5	2.0	1.4	2.9	1.2	4.1	3.3	1.5	1.8

Table X – continued

Parameter	Day	CAS								US-DA							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Creatinine ($\mu\text{mol/L}$)	12	39	39	42	42	42	46	39	46	33	46	66	39	46	42	44	52
	19	45	42	49	42	56	48	50	45	48	42	49	63	49	49	56	56
	26	84	80	78	118	68	70	95	76	80	65	110	60	90	60	70	55
	33	80	80	70	49	50	43	69	73	87	40	87	48	71	65	67	51
Allantoin (mmol/L)	0	2.5	1.8	2.7	2.8	3.0	2.3	2.6	2.1	2.0	2.3	2.4	2.9	1.4	1.9	2.8	2.5
	12	2.1	2.9	2.4	1.7	1.6	1.9	2.3	2.0	3.0	2.4	3.0	2.1	2.2	4.0	3.3	3.5
	19	3.1	2.8	2.9	3.1	3.5	3.3	2.8	2.9	3.5	2.6	3.5	2.1	3.0	3.2	2.8	2.7
	26	3.1	4.1	3.6	3.7	3.2	3.3	3.7	3.8	4.2	3.4	3.3	3.5	3.4	3.8	3.8	3.5
	33	2.6	2.9	3.3	2.5	2.7	2.7	2.9	2.8	2.7	3.4	2.8	2.2	2.8	3.2	2.0	2.6
Uric acid ($\mu\text{mol/L}$)	0	110	95	85	70	55	70	110	100	75	55	50	75	70	40	60	55
	12	90	150	120	100	100	40	130	110	150	150	250	80	110	110	90	90
	19	110	100	110	150	80	80	80	50	100	130	70	200	90	80	70	120
	26	95	75	105	95	90	65	100	50	95	50	95	65	100	95	65	100
	33	115	126	98	86	84	94	132	100	144	130	110	150	102	138	102	160

Table XI. Daily urine production (mL) in rats fed casein or ultrasonicated and spray-dried *C. vulgaris*

Day	CAS								US-DA							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2	2.8	2.9	3.0	4.1	3.7	4.7	5.0	5.7	5.0	7.4	5.7	4.7	4.1	9.0	8.3	3.5
3	5.3	4.9	6.2	6.0	6.4	12.1	10.4	5.5	4.2	6.1	5.0	7.6	1.5	9.6	7.6	3.8
4	5.4	4.7	7.2	7.4	11.4	12.5	10.0	8.4	4.2	4.7	8.3	7.8	0.8	10.3	6.3	6.5
5	3.3	3.6	3.3	5.1	6.0	11.0	7.5	6.9	4.2	4.8	8.1	8.7	0.8	11.0	6.2	5.0
6	4.6	5.2	4.0	6.2	5.9	7.5	7.1	6.9	4.4	5.3	7.7	7.5	4.0	13.4	3.8	2.5
7	5.0	4.1	3.9	7.3	7.3	8.5	9.6	7.2	4.0	5.3	6.5	5.6	8.4	15.3	4.6	2.6
8	7.4	7.0	6.1	9.8	8.6	10.4	8.1	8.5	5.3	9.1	8.6	10.3	7.0	14.5	5.0	3.6
9	5.7	6.6	7.1	11.1	7.5	12.0	7.2	6.5	4.2	8.7	6.8	9.5	4.4	16.1	5.1	5.1
10	7.6	4.7	6.1	10.1	5.8	9.2	10.5	6.6	4.7	8.6	10.6	8.7	6.2	11.3	6.1	5.9
11	7.3	5.7	6.7	10.0	4.1	11.2	7.3	6.1	6.5	8.2	8.2	8.5	8.0	16.0	5.6	7.0
12	7.9	8.9	6.0	7.7	4.3	11.4	9.5	7.9	3.9	7.6	9.5	10.9	8.2	16.4	4.8	6.1
13	5.5	5.4	6.7	11.7	5.6	8.6	6.0	9.0	7.4	6.5	10.0	9.0	7.2	12.9	3.9	7.0
14	8.8	6.8	8.5	12.9	7.1	10.1	7.8	11.6	4.1	7.1	10.2	9.3	10.9	13.8	3.9	9.4
15	7.1	9.7	6.6	11.4	8.7	11.4	10.1	11.5	5.9	8.4	11.1	9.2	6.5	16.4	6.5	7.4
16	7.7	10.5	6.0	9.3	6.9	9.5	7.0	10.9	4.4	6.9	11.3	9.9	6.5	11.7	4.5	12.7
17	6.5	12.6	5.8	8.1	10.6	8.0	9.2	9.5	3.9	5.5	7.9	9.8	8.7	14.1	4.3	9.3
18	6.5	14.2	6.0	9.8	11.0	9.7	10.4	9.4	3.9	4.7	9.4	11.3	11.4	12.1	2.5	7.2
19	8.4	8.9	8.2	6.1	11.3	7.5	12.9	9.9	4.5	4.6	7.2	9.3	18.2	14.9	2.9	7.4
20	6.2	5.4	6.4	3.8	5.8	7.4	6.8	12.2	6.7	5.2	8.0	7.7	5.1	7.5	1.4	7.2
21	8.9	6.0	6.5	4.8	9.1	9.0	10.5	11.0	3.1	6.0	6.6	5.8	6.6	9.4	1.5	3.6
22	6.7	8.2	5.9	4.7	8.3	7.8	8.5	11.0	3.6	2.2	6.3	6.7	9.7	7.3	1.3	1.9
23	6.5	13.2	6.4	10.1	11.8	7.6	8.1	11.2	5.4	3.7	6.3	8.4	8.7	7.0	2.0	10.6
24	8.2	12.8	7.9	12.3	14.0	11.0	11.9	12.9	7.8	5.4	7.8	7.4	8.2	6.7	4.8	9.4
25	9.0	16.6	10.1	10.8	9.8	8.8	9.2	13.0	6.0	6.0	7.3	8.7	8.9	7.2	5.0	9.7
26	8.6	13.7	8.6	8.6	11.2	9.2	15.0	16.3	5.5	7.7	7.9	13.3	9.1	4.1	4.9	9.9
27	9.2	14.9	6.8	8.8	11.1	8.5	8.9	12.8	6.1	6.5	6.3	8.5	7.2	6.2	4.8	8.8
28	8.9	18.3	9.7	9.5	11.8	12.0	12.4	13.4	3.1	6.6	5.8	11.2	10.9	5.3	4.7	7.8
29	10.2	15.4	9.6	8.8	9.6	11.4	13.5	13.0	2.9	6.9	6.4	11.0	7.3	3.7	5.8	7.8

Table XI – continued

Day	CAS								US-DA							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
30	8.8	16.9	8.1	10.8	11.4	12.8	13.7	15.3	2.6	7.7	5.3	11.5	6.3	3.3	5.4	8.5
31	9.9	17.4	7.5	10.5	11.9	10.3	13.6	14.3	1.7	6.7	4.0	11.0	7.2	3.9	5.2	8.6
32	10.6	17.1	10.1	8.4	15.3	9.8	11.9	14.2	0.6	5.5	4.6	10.0	4.2	3.2	5.8	5.3
33	11.5	15.2	9.5	10.5	16.1	10.3	13.6	13.0	3.1	5.6	4.7	6.5	3.2	3.8	5.6	5.0

Table XII. Daily urine allantoin excretion in rats fed casein or ultrasonicated and spray-dried *C. vulgaris* (μmol)

Day	CAS								US-DA							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2	418	426	499	515	593	488	757	562	764	848	672	503	555	723	1065	568
3	480	461	484	348	470	221	244	345	479	532	526	486	313	191	748	417
4	413	383	534	408	596	469	437	422	473	425	535	507	163	513	589	452
5	352	385	358	438	438	501	510	441	545	548	597	717	166	642	717	548
6	351	369	290	394	343	397	450	376	516	590	516	467	525	541	526	391
7	365	388	310	1889	323	403	427	356	485	625	439	496	690	665	512	320
8	371	374	321	428	397	434	361	375	537	626	553	586	612	528	466	341
9	339	352	380	374	356	449	370	324	411	559	487	444	507	550	436	393
10	366	302	324	382	316	396	449	321	469	627	597	546	529	448	583	424
11	371	330	383	411	214	445	385	262	507	586	519	478	488	630	425	449
12	305	323	279	235	150	361	293	288	235	452	454	488	434	489	356	266
13	310	280	294	362	225	235	276	189	368	481	584	453	435	473	250	385
14	479	434	504	557	317	416	371	448	322	439	571	429	527	635	359	454
15	411	321	378	426	439	499	489	230	418	561	709	540	482	569	558	477
16	294	362	332	316	363	492	331	388	272	471	421	577	394	452	400	358
17	322	467	313	383	444	487	556	432	297	437	486	543	443	665	505	482
18	243	208	260	226	288	343	265	258	185	325	432	490	345	325	279	327
19	399	413	335	255	356	402	371	332	198	441	469	460	854	437	368	346

Table XII – continued

Day	CAS								US-DA							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
20	303	290	292	194	377	371	647	319	292	452	370	438	300	328	255	400
21	407	288	325	229	321	303	404	271	206	450	398	404	381	424	203	140
22	292	290	275	200	346	388	354	339	171	267	408	424	485	286	292	142
23	390	248	342	407	476	459	402	413	464	392	405	615	538	381	404	554
24	426	445	396	387	401	498	471	449	456	460	464	621	547	365	495	557
25	386	464	426	397	435	447	328	377	392	510	486	516	543	327	353	448
26	421	403	401	370	416	462	484	441	324	524	447	666	503	254	479	338
27	504	562	387	456	454	545	329	532	378	604	477	470	497	416	714	598
28	497	493	407	330	456	463	479	387	213	511	370	581	541	405	485	468
29	510	612	517	456	459	571	632	549	257	572	453	643	457	377	623	497
30	563	552	430	480	446	558	547	487	188	556	375	450	422	326	538	540
31	654	517	489	505	562	590	587	467	160	565	394	599	555	356	572	485
32	584	578	542	462	577	529	570	554	97	531	409	561	399	345	650	403
33	644	455	420	496	438	577	587	461	298	580	440	470	357	410	578	338

Table XIII. Daily urine uric acid excretion in rats fed casein or ultrasonicated and spray-dried *C. vulgaris* (µmol)

Day	CAS								US-DA							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2	5	4	5	4	4	4	4	4	4	6	5	4	5	5	5	4
3	5	4	6	4	6	7	6	4	5	6	6	5	3	6	5	4
4	5	4	6	5	7	6	6	5	7	7	7	5	2	5	7	6
5	2	3	2	4	4	5	5	5	5	5	6	5	1	6	5	5
6	3	3	2	3	1	5	4	2	7	8	7	6	5	6	5	2
7	3	2	1	4	4	5	5	2	6	3	7	5	8	7	6	5
8	3	2	2	4	3	5	3	4	4	10	9	10	7	6	7	6
9	2	3	3	4	2	8	4	2	3	11	9	6	4	6	6	6
10	5	2	4	6	2	7	5	2	2	10	11	5	8	6	6	5

Table IX – continued

Day	CAS								US-DA							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
11	3	2	2	7	1	6	5	3	6	9	8	6	8	6	5	7
12	6	5	5	4	3	7	5	3	5	8	9	6	8	7	5	4
13	3	3	4	6	4	5	4	6	7	6	9	6	8	8	5	6
14	4	4	6	8	5	7	6	6	7	10	19	6	9	7	5	7
15	5	8	6	7	6	6	7	7	6	10	8	7	7	6	7	6
16	6	7	3	6	6	9	5	7	4	11	12	8	7	7	6	8
17	6	8	3	6	7	7	6	4	4	8	11	6	10	7	5	6
18	6	4	5	7	6	7	6	6	4	7	11	8	9	7	3	6
19	6	5	6	5	8	6	5	3	4	6	10	6	16	8	4	8
20	5	2	5	3	5	6	5	7	11	6	12	8	6	5	2	6
21	7	2	4	3	4	6	4	4	3	6	5	3	5	4	2	3
22	4	4	5	4	5	6	4	6	2	4	8	4	6	4	2	2
23	5	7	5	7	7	7	5	7	7	4	6	7	7	4	3	9
24	6	7	7	8	7	8	9	6	7	7	10	7	8	5	5	8
25	6	5	6	7	6	8	5	8	7	6	8	8	8	5	7	7
26	6	6	5	6	5	7	5	8	5	6	11	17	6	3	5	7
27	7	7	5	6	6	6	5	7	6	9	8	14	7	6	8	8
28	8	8	9	7	7	8	6	11	4	9	8	9	9	5	7	7
29	10	14	7	7	9	7	7	8	4	9	8	7	8	5	8	7
30	9	8	7	9	7	10	7	8	3	9	7	9	6	4	8	7
31	8	8	6	7	5	7	6	7	2	6	4	5	6	3	5	6
32	7	8	7	6	6	7	6	8	1	6	7	15	1	3	5	4
33	10	7	5	7	6	7	6	6	4	5	4	5	4	4	5	4

Table XIV. Hematological parameters recorded in blood collected from rats fed 33 days on casein or ultrasonicated and spray-dried *C. vulgaris*

Group	Rat No.	Ht (%)	RBC (10 ⁶ /μL)	Hb (g/100mL)	MCV (10 ⁻¹⁵ L)	MCH (10 ⁻⁹ g)	MCHC (g/100mL)	TBC (10 ³ /μL)	WBC (10 ³ /μL)	NI (%)	NM (%)	Lymph. (%)	Bas. (%)	Eos. (%)	Mon. (%)
CAS	2	35	5.6	12.2	62.4	21.7	34.9	1032	2.8	1	73	20	0	0	6
	4	34	5.7	11.0	60.1	19.4	32.4	1066	3.5	7	36	56	0	0	11
	5	35	5.8	12.0	60.2	20.7	34.3	1278	3.6	2	20	75	0	0	3
	6	34	5.1	10.6	66.1	20.6	31.2	1228	2.6	1	19	76	0	0	4
	7	32	6.4	12.4	50.0	19.4	38.8	1234	2.3	2	19	77	0	0	2
	8	38	5.8	11.9	65.9	20.6	31.3	1023	2.1	4	28	63	0	0	5
US-DA	9	35	5.1	10.3	68.8	20.2	29.4	2013	2.7	2	30	64	0	0	4
	12	25	5.9	11.1	42.4	18.8	44.4	1496	2.9	1	16	83	0	0	6
	13	38	5.5	10.3	69.6	18.9	27.1	1707	3.5	0	18	76	0	0	2
	14	25	6.0	10.3	41.6	17.1	41.2	1344	2.9	0	30	68	0	0	0
	16	35	6.2	11.3	56.8	18.3	32.3	1800	3.8	1	20	78	0	0	1

Table XV. Results of 6 days balance study of digestibility and utilization of feed with 1.0 % of *C. vulgaris*

Cage No.	Group	DMI (g/day)	N-intake (mg/day)	N in feces (mg/day)	N in urine (mg/day)	N-balance (mg/day)	dWG (g)	aPD (%)	tPD (%)	NPU (%)	BV (%)	PPV (%)	PER	aAAD (%)
1	CONTROL	6.97	289.49	76.57	176.32	36.60	1.13	73.55	76.79	22.37	29.13	12.64	0.62	82.77
2		6.38	264.88	77.24	146.75	40.89	1.11	70.84	74.38	26.06	35.04	15.44	0.67	84.42
3		5.58	231.65	58.93	127.40	45.32	1.54	74.56	78.61	31.71	40.34	19.56	1.06	87.68
4		6.49	269.34	71.88	157.65	39.80	1.15	73.31	76.79	25.23	32.85	14.78	0.68	81.85
5		6.63	275.19	75.42	159.92	39.85	1.81	72.59	76.00	24.71	32.51	14.48	1.05	82.00
6		6.43	267.02	69.24	145.44	52.34	1.25	74.07	77.58	30.14	38.85	19.60	0.75	82.49
7		7.58	314.87	78.25	194.01	42.62	1.55	75.15	78.13	22.47	28.76	13.53	0.79	80.71
8		6.75	280.48	84.41	154.41	41.65	1.41	69.90	73.25	24.88	33.97	14.85	0.80	81.37
9	ALGAE	6.61	292.13	70.33	173.10	48.70	1.28	75.92	79.13	26.30	33.24	16.67	0.70	81.76
10		6.61	292.22	73.90	177.86	40.46	1.16	74.71	77.92	23.48	30.13	13.84	0.64	82.87
11		7.04	311.17	77.68	186.98	46.52	1.11	75.04	78.05	23.99	30.74	14.95	0.57	80.85
12		6.81	301.35	82.79	177.56	41.01	0.95	72.53	75.64	22.95	30.34	13.61	0.50	82.16
13		6.84	302.67	76.57	179.93	46.18	1.58	74.70	77.80	24.55	31.56	15.26	0.84	80.97
14		6.95	307.16	71.01	204.64	31.50	1.02	76.88	79.93	19.42	24.29	10.26	0.53	81.62
15		7.12	315.11	84.04	189.23	41.84	1.32	73.33	76.31	22.21	29.11	13.28	0.67	78.82
16		6.57	290.63	84.64	176.79	29.20	1.04	70.88	74.10	19.73	26.63	10.05	0.57	77.81