APPENDIX A

Appendix A lists all phytoplankton growth and grazing parameter and function definitions for the original SALMO-OO model and the three alternative models from Arhonditsis and Brett (2005), Hongping and Jianyi (2002) and CLEANER, which are highlighted in yellow.

Symbol	Type	Definition	Units
AEXP$i_{T,E,H}$	Function	Phytoplankton export rate in the mixed layer; epilimnion; hypolimnion	-
AFLUX$i_{T,E,H}$	Function	Exchange of phytoplankton biomass between the epilimnion and hypolimnion	-
AGRA$i_{T,E,H}$	Function	Phytoplankton grazing by zooplankton rate in the mixed layer/epilimnion; hypolimnion	-
AGRO$i_{T,E,H}$	Function	Phytoplankton growth process rate in the mixed layer/epilimnion; in the hypolimnion	-
Ai	State Variable	Phytoplankton biomass in mixed layer, epilimnion and hypolimnion	cm^{-3} m^{-3}
AIN$i_{T,E,H}$	Function	Phytoplankton import rate in the mixed layer/epilimnion; hypolimnion	-
ASED$i_{T,E,H}$	Function	Phytoplankton sedimentation rate in the mixed layer/epilimnion; hypolimnion	-
EPS	Function	Total extinction coefficient	-
FMIN	Constant parameter	Minimum concentration of phytoplankton available as food	g m^{-3}
FP	Function	Photoperiod	-
GMAX	Constant parameter	Maximum ingestion rate by zooplankton	g d^{-1}
Gmax	Constant parameter	Maximum grazing rate by zooplankton	d^{-1}
GMIN	Constant parameter	Minimum value of specific ingestion rate	g d^{-1}
GT	Function	Temperature term for ingestion rate	°C
I	Input data	Incident light	J cm^{-2} d^{-1}
IRDEZ	Function	Incident light attenuation with depth (zmix)	-
IS	Constant parameter	Saturated light intensity	J cm^2 d^{-1}
KAG	Function	Half-saturation constant for the ingestion of food by zooplankton	g m^{-3}
Kc	Constant parameter	Extinction coefficient due to phytoplankton biomass and POM	m^{-1}
KIi	Constant parameter	Half-saturation constant for absorption of light	J cm^{-2} d^{-1}
KNi	Constant parameter	Half-saturation constant for N uptake by algae	g m^{-3}
KPi	Constant parameter	Half-saturation constant for P uptake by algae	mg m^{-3}
Kw	Constant parameter	Extinction coefficient of water	m^{-1}
KZ	Function	Half-saturation constant of the inverse relationship between ingestion rate of each food source and zooplankton biomass	g m^{-3}
KZMIN	Constant parameter	Theoretical minimum value of KZ	g m^{-3}

N	State Variable	Dissolved inorganic nitrogen	g m^{-3}
P	State Variable	Dissolved inorganic phosphorous	mg m^{-3}
PFA*i*	Constant parameter	Preference factor for the ingestion of each food source	-
PHOL*i*	Function	Light limited growth function	-
PHOMAX*i*	Constant parameter	Maximum photosynthesis rate	d^{-1}
PHOMIN*i*	Constant parameter	Photosynthesis rate at 0°C	d^{-1}
PHON*i*	Function	Growth limited by dissolved inorganic nitrogen	-
PHOP*i*	Function	Growth limited by dissolved inorganic phosphorous	-
PHOT*i*	Function	Temperature limited growth function	-
Q10	Constant parameter	Temperature coefficient	-
R	Constant parameter	Dependence of ingestion rate on water temperature	-
RA*i*	Function	Phytoplankton respiration process rate	d^{-1}
RATMIN*i*	Constant parameter	Phytoplankton respiration rate at 0°C	d^{-1}
RATOPT*i*	Constant parameter	Phytoplankton respiration rate at optimum temperature	d^{-1}
RO*i*	Constant parameter	Constant phytoplankton respiration rate	d^{-1}
T	Input data	Water temperature	°C
TMAXA*i*	Constant parameter	Maximum temperature for growth	°C
TMAXZ	Constant parameter	Maximum temperature for zooplankton grazing	°C
TMINA*i*	Constant parameter	Minimum temperature for growth	°C
TMINZ	Constant parameter	Minimum temperature for zooplankton grazing	°C
TOPTA*i*	Constant parameter	Optimum temperature for phytoplankton growth	°C
TOPTZ	Constant parameter	Optimal temperature for zooplankton feeding activity	°C
Z	State Variable	Zooplankton biomass	cm^{-3} m^{-3}

APPENDIX B

Calibrated parameter values for phytoplankton respiration rate (RO) and the maximum grazing rate (Gmax) for each alternative growth and grazing model and the best four combinations of each, for each data set analysed.

HJ – Hongping and Jianyi (2002);
AB – Arhonditsis and Brett (2005);
CL – CLEANER (Scavia and Park, 1976).

BAUTZEN RESERVOIR

	RO	Gmax
Growth HJ	0.03	-
Growth AB	0.08	-
Growth CL	0.1	-
Graz HJ	-	0.43
Graz AB	-	0.4
Graz CL	-	0.54
Growth AB & Graz HJ	0.08	0.43
Growth CL & Graz HJ	0.08	0.43
Growth AB & Graz CL	0.1	0.6
Growth CL & Graz AB	0.06	0.4

LAKE KLIPVOOR

	RO	Gmax
Growth HJ	0.07	-
Growth AB	0.2	-
Growth CL	0.2	-
Graz HJ	-	0.68
Graz AB	-	0.6
Graz CL	-	0.6
Growth CL & Graz AB	0.15	0.25
Growth AB & Graz AB	0.1	0.3
Growth CL & Graz CL	0.2	0.4
Growth HJ & Graz CL	0.03	0.4

LAKE SOYANG

	RO	Gmax
Growth HJ	0.1	-
Growth AB	0.25	-
Growth CL	0.35	-
Graz HJ	-	1.3
Graz AB	-	1.3
Graz CL	-	1.3
Growth HJ & Graz HJ	0.1	1.3
Growth CL & Graz AB	0.35	1.3
Growth CL & Graz CL	0.35	1.3
Growth HJ & Graz AB	0.1	1.3

LAKE ROODEPLAAT

	RO	Gmax
Growth HJ	0.03	-
Growth AB	0.06	-
Growth CL	0.1	-
Graz HJ	-	0.43
Graz AB	-	0.45
Graz CL	-	0.5
Growth CL & Graz AB	0.12	0.45
Growth AB & Graz AB	0.08	0.45
Growth CL & Graz HJ	0.12	0.45
Growth AB & Graz CL	0.08	0.5

LAKE STECHLIN

	RO	Gmax
Growth HJ	0.05	-
Growth AB	0.1	-
Growth CL	0.12	-
Graz HJ	-	0.6
Graz AB	-	1.3
Graz CL	-	0.9
Growth AB & Graz HJ	0.1	0.9
Growth CL & Graz AB	0.12	1.3
Growth CL & Graz CL	0.12	1.3
Growth HJ & Graz HJ	0.12	0.9

LAKE HARTBEESPOORT

	RO	Gmax
Growth HJ	0.02	-
Growth AB	0.02	-
Growth CL	0.01	-
Graz HJ	-	0.55
Graz AB	-	0.3
Graz CL	-	0.55
Growth AB & Graz AB	0.02	0.3
Growth CL & Graz AB	0.02	0.3
Growth CL & Graz CL	0.08	0.5
Growth AB & Graz CL	0.08	0.5

LAKE WEIDA

	RO	Gmax
Growth HJ	0.05	-
Growth AB	0.1	-
Growth CL	0.22	-
Graz HJ	-	0.45
Graz AB	-	0.35
Graz CL	-	0.5
Growth HJ & Graz HJ	0.05	0.45
Growth CL & Graz AB	0.22	0.55
Growth CL & Graz CL	0.15	0.55
Growth HJ & Graz CL	0.05	0.55

LAKE ARENDSEE

	RO	Gmax
Growth HJ	0.03	-
Growth AB	0.2	-
Growth CL	0.2	-
Graz HJ	-	0.43
Graz AB	-	0.3
Graz CL	-	0.5
Growth AB & Graz HJ	0.2	0.55
Growth CL & Graz AB	0.2	0.3
Growth CL & Graz HJ	0.2	0.3
Growth CL & Graz CL	0.2	0.3

SAIDENBACH RESERVOIR

	RO	Gmax
Growth HJ	0.01	-
Growth AB	0.08	-
Growth CL	0.2	-
Graz HJ	-	0.5
Graz AB	-	0.9
Graz CL	-	0.54
Growth AB & Graz AB	0.08	0.45
Growth CL & Graz AB	0.2	0.9
Growth CL & Graz HJ	0.2	0.48
Growth HJ & Graz AB	0.01	0.9
Growth AB & Graz CL	0.08	0.45

APPENDIX C

This appendix contains the complete AlgaeLibrary.class code, including all code pertaining to the alternative growth and grazing functions, plus commands controlling the selection of the alternative models based on user information.

NOTE: Appendix C is included in the print copy of the thesis held in the University of Adelaide Library.

APPENDIX D

Presented below are the tabulated results of the statistical analysis for each water body investigated. Comparisons of r^2 and root mean square error values (RMSE) are made between total phytoplankton biomass, zooplankton biomass and phosphate concentration, in regards to alternative growth and grazing process models and combinations of each. The yellow grids indicate the highest r^2 value and the green grids indicate the lowest RMSE for each state variable.

| Lake ARENDSEE | Total Algae | | PO$_4$-P | |
Germany	r^2	RMSE	r^2	RMSE
Growth HJ	0.31	5.93	0.833	96.84
Growth AB	0.68	7.36	0.834	117.95
Growth CL	0.44	4.69	0.84	103.92
Graz HJ	0.41	5.1	0.86	102.09
Graz AB	0.56	5.31	0.87	95.37
Graz CL	0.57	5.88	0.83	106.49
SALMO-OO	0.65	5.19	0.86	102.43
Growth AB & graz CL	0.35	6.15	0.83	114.08
Growth AB & graz AB	0.32	6.2	0.86	101.16
Growth AB & graz HJ	0.25	4.77	0.84	113.13
Growth CL & graz HJ	0.55	4.91	0.87	96.36
Growth CL & graz AB	0.51	4.5	0.88	90.27
Growth CL & graz CL	0.63	5.29	0.89	86.4
SALMO-OO	0.65	5.19	0.86	102.43

| BAUTZEN Reservoir | Total Algae | | Zooplankton | | PO$_4$-P | |
Germany	r^2	RMSE	r^2	RMSE	r^2	RMSE
Growth HJ	0.019	10.26	0.65	4.24	0.16	55.06
Growth AB	0.06	9.4	0.72	3.45	0.11	62.46
Growth CL	0.09	8.99	0.7	7.9	0.43	39.08
Graz HJ	0.12	10.07	0.41	5.65	0.22	54.88
Graz AB	0.012	9.72	0.73	5.72	0.32	29.54
Graz CL	0.09	10.87	0.32	5.62	0.13	59.06
SALMO-OO	0.0013	10.32	0.65	4.72	0.31	45.29
Growth CL & graz HJ	0.15	8.89	0.62	8.77	0.17	51.42
Growth AB & graz HJ	0.13	8.74	0.63	5.35	0.05	63.88
Growth CL & graz AB	0.09	8.43	0.74	11.81	0.48	27.73
Growth AB & graz CL	0.06	9.14	0.7	4.48	0.02	66.55
Growth CL & graz CL	0.05	9.64	0.78	7.57	0.03	62.27
Growth HJ & graz HJ	0.04	9.51	0.63	5.46	0.07	63.13
SALMO-OO	0.001	10.32	0.65	4.72	0.31	45.29

Lake HARTBEESPOORT South Africa	Total Algae		PO$_4$-P	
	r^2	RMSE	r^2	RMSE
Growth HJ	0.02	22.46	0.0004	87.09
Growth AB	0.03	23.18	0.0001	74.33
Growth CL	0.22	18.4	0.12	51.05
Graz HJ	0.04	22.43	0.03	66.81
Graz AB	0.03	20.94	0.06	33.1
Graz CL	0.04	24.15	0.05	54.0
SALMO-OO	0.03	24.18	0.02	79.67
Growth AB & graz CL	0.05	20.41	0.004	89.68
Growth AB & graz HJ	0.03	21.59	0.004	89.97
Growth AB & graz AB	0.12	19.87	0.007	37.67
Growth HJ & graz HJ	0.002	22.52	0.01	97.92
Growth HJ & graz CL	0.05	20.44	0.005	88.93
Growth CL & graz AB	0.1	20.27	0.02	56.06
Growth CL & graz CL	0.06	20.39	0.001	61.85
Growth CL & graz HJ	0.04	21.21	0.002	65.59
SALMO-OO	0.03	24.18	0.02	79.67

Lake ROODEPLAAT South Africa	Total Algae		PO$_4$-P	
	r^2	RMSE	r^2	RMSE
Growth HJ	0.18	11.49	0.254	134.58
Growth AB	0.186	12.38	0.264	129.12
Growth CL	0.131	13.19	0.29	116.32
Graz HJ	0.1	14.78	0.2	119.38
Graz AB	0.175	9.1	0.27	99.96
Graz CL	0.09	15.67	0.19	117.04
SALMO-OO	0.125	16.03	0.259	128.96
Growth CL & graz HJ	0.22	10.5	0.272	120.69
Growth AB & graz HJ	0.2	9.66	0.258	123.82
Growth CL & graz AB	0.24	9.33	0.32	96.48
Growth AB & graz CL	0.21	9.93	0.261	128.33
Growth CL & graz CL	0.13	12.47	0.22	118.08
Growth HJ & graz AB	0.216	8.93	0.273	106.61
Growth AB & graz AB	0.27	9.48	0.28	101.58
Growth HJ & graz CL	0.08	10.87	0.2	125.04
SALMO-OO	0.125	16.03	0.259	128.96

Lake KLIPVOOR South Africa	Total Algae		PO$_4$-P	
	r^2	RMSE	r^2	RMSE
Growth HJ	0.1	48.7	0.14	844.5
Growth AB	0.07	51.6	0.16	866.9
Growth CL	0.1	47.3	0.17	876.8
Graz HJ	0.002	70.2	0.15	875.8
Graz AB	0.1	67.4	0.15	852.0
Graz CL	0.03	60.4	0.23	805.1
SALMO-OO	0.07	61.26	0.18	810.84
Growth AB & graz CL	0.17	60.6	0.32	774.4
Growth AB & graz HJ	0.1	72.8	0.23	822.5
Growth AB & graz AB	0.03	70.1	0.29	787.6
Growth HJ & graz HJ	0.09	73.2	0.24	820.6
Growth HJ & graz CL	0.11	72.4	0.19	759.7
Growth CL & graz AB	0.08	69.1	0.3	780.6
Growth CL & graz CL	0.15	58.3	0.32	799.5
Growth HJ & graz AB	0.0002	79.2	0.28	778.9
Growth CL & graz HJ	0.008	88.3	0.24	833.4
SALMO-OO	0.07	61.26	0.18	810.84

Lake WEIDA Germany	Total Algae		Zooplankton		PO₄-P	
	r^2	RMSE	r^2	RMSE	r^2	RMSE
Growth HJ	0.23	1.82	0.76	1.0	0.16	9.96
Growth AB	0.24	1.77	0.82	0.95	0.18	10.1
Growth CL	0.27	1.86	0.85	1.01	0.21	10.05
Graz HJ	0.57	1.41	0.68	1.1	0.07	11.03
Graz AB	0.12	2.45	0.56	1.13	0.13	10.65
Graz CL	0.26	1.74	0.65	1.11	0.09	10.65
SALMO-OO	0.22	1.74	0.75	0.94	0.11	10.14
Growth CL & graz AB	0.25	1.81	0.78	1.25	0.22	10.3
Growth AB & graz CL	0.23	1.78	0.82	1.19	0.16	10.03
Growth AB & graz HJ	0.15	1.89	0.88	1.12	0.14	10.86
Growth HJ & graz CL	0.24	1.8	0.75	1.2	0.15	10.13
Growth CL & graz HJ	0.16	1.91	0.91	1.27	0.16	11.56
Growth HJ & graz HJ	0.67	1.44	0.76	1.44	0.12	10.48
Growth CL & graz CL	0.23	1.94	0.88	1.32	0.19	9.91
SALMO-OO	0.22	1.74	0.75	0.94	0.11	10.14

SAIDENBACH Reservoir Germany	Total Algae		Zooplankton		PO₄-P	
	r^2	RMSE	r^2	RMSE	r^2	RMSE
Growth HJ	0.05	1.99	0.18	2.14	0.03	8.89
Growth AB	0.11	1.92	0.20	2.12	0.03	9.06
Growth CL	0.13	1.63	0.18	2.22	0.18	3.63
Graz HJ	0.08	2.07	0.1	2.53	0.00009	6.39
Graz AB	0.13	2.0	0.19	2.6	0.02	7.04
Graz CL	0.08	1.88	0.03	2.76	0.001	5.76
SALMO-OO	0.04	1.77	0.1	2.4	0.05	7.12
Growth AB & graz AB	0.34	1.82	0.26	2.71	0.07	10.85
Growth HJ & graz AB	0.31	1.73	0.26	2.73	0.07	10.32
Growth CL & graz AB	0.23	1.7	0.3	3.09	0.03	5.78
Growth AB & graz CL	0.22	1.93	0.04	2.79	0.0002	6.05
Growth AB & graz HJ	0.2	2.16	0.12	2.41	0.0006	6.45
Growth HJ & graz CL	0.19	1.84	0.03	2.82	0.002	5.35
Growth CL & graz HJ	0.16	1.59	0.34	2.04	0.17	4.07
Growth HJ & graz HJ	0.16	1.92	0.12	2.52	0.01	5.64
Growth CL & graz CL	0.13	1.62	0.11	2.78	0.15	3.67
SALMO-OO	0.04	1.77	0.1	2.4	0.05	7.12

Lake STECHLIN Germany	Total Algae r²	RMSE	Zooplankton r²	RMSE	PO₄-P r²	RMSE
Growth HJ	0.001	0.72	0.45	0.48	0.02	5.75
Growth AB	0.11	0.72	0.54	0.57	0.004	5.02
Growth CL	0.21	0.78	0.55	0.75	0.006	3.16
Graz HJ	0.02	1.1	0.6	0.75	0.05	4.84
Graz AB	0.1	1.29	0.79	0.84	0.08	4.92
Graz CL	0.01	0.67	0.77	0.81	0.07	5.1
SALMO-OO	0.03	0.89	0.46	0.61	0.04	4.3
Growth CL & graz CL	0.61	0.28	0.78	1.11	0.00005	3.93
Growth CL & graz HJ	0.29	0.43	0.83	1.07	0.0026	3.8
Growth CL & graz AB	0.15	0.84	0.8	1.1	0.0041	3.75
Growth AB & graz HJ	0.08	0.6	0.76	0.86	0.02	6.26
Growth AB & graz CL	0.07	0.5	0.74	0.82	0.03	6.54
Growth HJ & graz AB	0.04	0.85	0.77	0.62	0.04	6.02
Growth AB & graz AB	0.008	0.98	0.79	0.74	0.01	6.27
SALMO-OO	0.03	0.89	0.46	0.61	0.04	4.3

Lake SOYANG South Korea	Total Algae r²	RMSE	PO₄-P r²	RMSE
Growth HJ	0.26	1.67	0.0015	5.0
Growth AB	0.21	1.78	0.0001	4.47
Growth CL	0.23	1.81	0.0062	4.74
Graz HJ	0.1	0.83	0.001	4.92
Graz AB	0.15	1.11	0.00005	4.23
Graz CL	0.05	0.96	0.002	5.02
SALMO-OO	0.21	2.1	0.0085	3.52
Growth CL & graz AB	0.18	0.77	0.0033	4.67
Growth HJ & graz HJ	0.16	0.76	0.0021	5.76
Growth HJ & graz AB	0.15	0.71	0.001	5.63
Growth CL & graz CL	0.13	0.9	0.0011	5.83
Growth CL & graz HJ	0.11	0.84	0.0013	4.84
Growth AB & graz HJ	0.07	0.78	0.0002	4.85
SALMO-OO	0.21	2.1	0.0085	3.52

Statistical results for algal functional groups

Comparisons of r^2 and root mean square error values (RMSE) are made between diatoms, green algae and blue-green algae biomass, in regards to alternative growth and grazing process models and combinations of each. The yellow grids indicate the highest r^2 value and the green grids indicate the lowest RMSE for each state variable.

Lake WEIDA Germany	Diatoms		Green Algae	
	r^2	RMSE	r^2	RMSE
Growth HJ	0.013	1.65	0.002	2.24
Growth AB	0.12	1.64	0.05	2.04
Growth CL	0.007	1.61	0.06	1.89
Graz HJ	0.00003	1.65	0.03	1.99
Graz AB	0.16	1.24	0.005	2.16
Graz CL	0.39	1.51	0.0003	2.19
SALMO-OO	0.09	1.58	0.002	2.01
Growth CL & graz CL	0.04	1.5	0.02	1.77
Growth CL & graz HJ	0.01	1.64	0.09	1.82
Growth CL & graz AB	0.04	1.37	0.14	1.41
Growth AB & graz HJ	0.02	1.65	0.003	2.07
Growth AB & graz CL	0.04	1.63	0.025	2.03
Growth HJ & graz CL	0.0003	1.64	0.0004	2.24
Growth HJ & graz HJ	0.02	1.66	0.05	2.04
SALMO-OO	0.09	1.58	0.002	2.01

Lake KLIPVOOR South Africa	Diatoms		Green Algae		Blue-green Algae	
	r^2	RMSE	r^2	RMSE	r^2	RMSE
Growth HJ	0.0002	7.71	0.08	26.3	0.03	52.8
Growth AB	0.0002	7.72	0.005	5.9	0.19	60.8
Growth CL	0.00008	7.72	0.0005	5.8	0.25	45.8
Graz HJ	0.001	8.95	0.01	29.4	0.006	52.9
Graz AB	0.02	12.01	0.002	25.0	0.01	28.04
Graz CL	0.03	7.9	0.04	37.9	0.02	54.9
SALMO-OO	0.003	11.9	0.06	34.9	0.02	68.5
Growth CL & graz CL	0.24	6.2	0.00005	50.8	0.003	46.5
Growth CL & graz HJ	0.0003	7.7	0.005	5.9	0.09	97.6
Growth CL & graz AB	0.28	11.2	0.004	65.9	0.004	33.1
Growth AB & graz HJ	0.0003	7.7	0.005	5.87	0.07	95.0
Growth AB & graz CL	0.004	7.4	0.01	59.1	0.012	41.1
Growth HJ & graz CL	0.001	7.7	0.04	50.4	0.0002	83.7
Growth HJ & graz AB	0.03	9.1	0.0002	71.1	0.03	34.3
Growth HJ & graz HJ	0.0003	7.7	0.003	5.8	0.06	95.2
Growth AB & graz AB	0.21	5.3	0.0003	57.2	0.00001	40.7
SALMO-OO	0.003	11.9	0.06	34.9	0.02	68.5

Lake ROODPLAAT South Africa	Diatoms r²	RMSE	Green Algae r²	RMSE	Blue-green Algae r²	RMSE
Growth HJ	0.26	2.27	0.04	2.87	0.04	8.97
Growth AB	0.26	2.26	0.05	2.88	0.07	13.63
Growth CL	0.26	2.27	0.04	2.87	0.03	13.83
Graz HJ	0.25	2.19	0.05	2.86	0.07	16.56
Graz AB	0.03	2.66	0.17	6.55	0.08	5.02
Graz CL	0.25	2.12	0.05	2.82	0.07	17.77
SALMO-OO	0.26	2.24	0.05	2.85	0.08	16.81
Growth CL & graz AB	0.0005	2.27	0.17	5.67	0.1	5.42
Growth AB & graz CL	0.25	2.25	0.05	2.89	0.06	10.35
Growth HJ & graz AB	0.009	1.72	0.17	6.91	0.02	5.63
Growth AB & graz AB	0.007	1.7	0.17	7.48	0.12	5.37
SALMO-OO	0.26	2.24	0.05	2.85	0.08	16.81

Lake HARTBEESPOORT South Africa	Diatoms r²	RMSE	Green Algae r²	RMSE	Blue-green Algae r²	RMSE
Growth HJ	0.007	1.46	0.83	1.99	0.01	23.55
Growth AB	0.007	1.46	0.88	1.91	0.02	24.78
Growth CL	0.007	1.43	0.09	9.07	0.15	20.15
Graz HJ	0.004	1.47	0.06	5.22	0.07	21.91
Graz AB	0.04	5.56	0.01	8.07	0.02	22.65
Graz CL	0.003	1.46	0.003	8.19	0.04	22.61
SALMO-OO	0.005	1.45	0.42	2.89	0.01	22.18
Growth CL & graz AB	0.04	4.7	0.15	7.0	0.08	21.57
Growth AB & graz AB	0.003	3.97	0.03	7.55	0.1	20.53
Growth CL & graz CL	0.004	1.45	0.85	1.81	0.07	21.49
Growth AB & graz CL	0.004	1.46	0.92	2.12	0.06	21.18
SALMO-OO	0.005	1.45	0.42	2.89	0.01	22.18

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