

Supporting information

Table S1. Feedstock composition, dry-matter content and mass flow for each model component in the feed stream of the Aspen Plus® model. The considered mass flows are corrected for the mass of water that is added by the assumption that hydrolysis had already taken place. It is assumed that 80 % of the fatty acids had been bound in a triglyceride, while 20 % are free fatty acids. For carbohydrates, proteins and lignin it is assumed that 60 %, 70 % and 100 % of the model compounds had been bound in polymeric form, respectively.

Model compound	Spirulina	Sewage Sludge	Wheat straw
	Mass flow [kg/h]		
Water, total	4.146997	4.069573	4.077998
Total mass, dry-matter	0.853474	0.902789	0.901593
Dry-matter content [%]	17.1	18.2	18.1
Total mass, additional water	0.146890	0.069466	0.077891
Lipids	0.011397	0.079183	0.018849
Myristic acid	0.000274	0.006851	0.002284
Pentadecylic acid	0.000291	0.007272	0.002424
Palmitic acid	0.001026	0.012821	0.002051
Oleic acid	0.002259	0.028247	0.004519
Arachidic acid	0.005594	0.009376	0.003125
Behenic acid	0.001362	0.010218	0.003406
Glycerol	0.001114	0.008289	0.001962
Hydrolysis correction: 80 %	0.000523	0.003891	0.000922
Carbohydrates	0.336015	0.434125	0.756721
Glucose	0.055848	0.311673	0.401752
Xylose	0.273239	0.110647	0.336294
Acetic acid	0.036512	0.046901	0.081671
Hydrolysis correction: 60 %	0.029584	0.035096	0.062996
Proteins	0.433965	0.142934	0.043521
3-mercaptopropionic acid	0.013162	0.013905	0.002314
Glycine	0.042563	0.012011	0.001937
Glutamine	0.082865	0.010026	0.003771
Tryptophane	0.115798	0.014010	0.009476
Phenylalanine	0.034690	0.026431	0.007665
Lysine	0.030700	0.023390	0.003772
2-Ethylimidazol	0.045663	0.006595	0.000990
Pyrrolidine	0.033783	0.011380	0.001835
Valeric acid	0.048513	0.007006	0.001052
Tyrosine	0.038050	0.028991	0.014024
Formic acid	0.021862	0.003157	0.000474
ammonia	0.042576	0.008072	0.001250
Hydrolysis correction: 70 %	0.116260	0.022039	0.005039

Lignin	0.003522	0.059182	0.062664
4-allyl-2-methoxyphenol	0.000296	0.005599	0.005928
4-hydroxybenzaldehyde	0.000296	0.005593	0.005923
1.2-benzenediol	0.000500	0.000500	0.000500
Guaiacol	0.000295	0.005586	0.005921
Phenol	0.000296	0.005590	0.005920
Orcin	0.000295	0.005598	0.005921
Benzoic acid	0.000296	0.005593	0.005923
1.2-diphenylethanol	0.000295	0.005591	0.005928
Biphenol	0.000296	0.005586	0.005921
Bisphenol A	0.000294	0.005593	0.005936
2.3-dihydrobenzofuran	0.000296	0.005599	0.005923
1.4-diphenylbutan	0.000294	0.005594	0.005931
Diphenylether	0.000296	0.005600	0.005923
Hydrolysis correction: 100 %	0.000523	0.008440	0.008934
Extractives	0.005000	0.014993	0.005000
Phytan	0.000500	0.001500	0.000500
Farnesene	0.000501	0.001500	0.000501
Docosane	0.000500	0.001500	0.000500
Pentacosane	0.000501	0.001499	0.000501
Nonacosane	0.000499	0.001500	0.000499
α -pinene	0.000500	0.001499	0.000500
β -pinene	0.000500	0.001499	0.000500
α -terpinene	0.000500	0.001499	0.000500
Limonene	0.000500	0.001499	0.000500
Stigmasterol	0.000499	0.001498	0.000499
Ash	0.063576	0.172371	0.014838
Calcium oxide	0.001237	0.055548	0.004715
Potassium oxide	0.014455	0.002843	0.004746
Magnesium hydroxide	0.007606	0.003383	0.001377
Sodium oxide	0.005662	0.004138	0.000127
ammoniumdihydrogenphosphate	0.033798	0.096938	0.003710
Iron oxide	0.000818	0.009521	0.000163

Table S 2. All model compounds, their respective component ID in the Aspen Plus ® model and their respective molecular masses.

Component name	Component ID	molecular weight [kg/kmol]
N-HEXADECANOIC-ACID	HEXDECAC	256,42008
CARBON-DIOXIDE	CO2	44,0087
N-PENTADECANE	PENTDECA	212,41138
GLYCEROL	GLYCERIN	92,09182
FORMIC-ACID	FORMACID	46,02438

ACETALDEHYDE	ACEALDHY	44,05176
1,3-PROPANEDIOL	PROPDIOI	76,09282
WATER	WATER	18,01468
HYDROGEN	HYDROGEN	2,01568
DEXTROSE	GLUCOSE	180,15228
D-FRUCTOSE	FRUCTOSE	180,15228
5-HYDROXYMETHYLFURFURAL	5-HYMEFU	126,10824
GLYCINE	GLYCINE	75,0653
ACETIC-ACID	ACETIACI	60,05076
AMMONIA	AMMONNIA	17,03022
METHYL-AMINE	METHAMIN	31,0566
3-METHYL-2,5-PIPERAZINEDIONE	MEPIPEON	128,12762
TRYPTOPHAN	TRYPTOP	204,22318
SERINE	SERIN	105,09068
INDOLE	INDOL	117,14718
L-PHENYLALANINE	PHENALAN	165,18724
CINNAMIC-ACID	CINNACID	148,15702
PHENETHYLAMINE	PHNETYAM	121,17854
3-MERCAPTOPROPIONIC-ACID	MECPROAC	106,14214
PROPIONIC-ACID	PROPACID	74,07714
HYDROGEN-SULFIDE	H2S	34,08068
BENZENE	BENZENE	78,11124
DIPHENYL	DIPHENYL	154,2068
DIBENZOTHIOPHENE	DIBENTHI	184,25612
ANILINE	ANILINE	93,12578
DIPHENYLAMINE	DIPHEAMI	169,22134
DIBENZOPYRROLE	CARBAZOL	167,20566
4-ALLYL-2-METHOXYPHENOL	ALLMEPHE	164,19908
P-HYDROXY-BENZALDEHYDE	HYBENZAL	122,11994
1,2-BENZENEDIOL	BENZDIOL	110,10924
GUAIACOL	GUAIACOL	124,13562
PHENOL	PHENOL	94,11024
DIBENZOFURAN	DIBEZOFU	168,19012
1-PENTADECENE	PENTDECE	210,3957
PALMITIC-ACID-AMIDE	PALMACAM	255,43562
OLEIC-ACID	OLEICACI	282,45716
8-HEPTADECENE	8HEPDECE	238,44846
CYCLOHEXANONE	CYHEXNON	98,1416
CYCLOHEXANOL	CYHEXNOL	100,15728
CYCLOHEXENE	CYHEXENE	82,1426
CYCLOHEXANE	CYHEXANE	84,15828
NAPHTHALENE	NAPHTALE	128,16972

PHENANTHRENE	PHENANTR	178,2282
PYRENE	PYRENE	202,2496
OXYGEN	OXYGEN	31,998
CARBON-MONOXIDE	CO	28,0097
GLUTAMINE	GLUTAMIN	146,1423
GLUTARIC-ACID	GLUTARIC	132,11222
1,5-PENTANEDIOL	1:5-P-01	104,14558
STEARIC-ACID	STEAACID	284,47284
N-HEPTADECANE	C17	240,46414
2,5-DIMETHYLTETRAHYDROFURAN	2:5DMTHF	100,15728
INDOLE,-3-ETHYL-	3ETHINDO	145,19994
PROPANE	C3	44,09482
ETHANE	C2	30,06844
METHANE	C1	16,04206
PYRAZINE	PYRAZINE	80,08756
OCTAHYDROINDOLE	OCTHINDO	125,2099
STYRENE	STYROL	104,14832
ETHYLBENZENE	ETHYLBEN	106,164
N-PROPYLBENZENE	PROPBENZ	120,19038
N-PENTANE	C5	72,14758
CARBON-GRAPHITE	CARBON	12,0107
NITROGEN	NITROGEN	28,0134
ETHYLENE	ETHEN	28,05276
CIS-1-PROPENYLBENZENE	PROPENBE	118,1747
BICYCLOHEXYL	BICYCHEX	166,30088
LYSINE	LYSINE	146,18536
N-HEXANOIC-ACID	HEXAACID	116,15628
N-PENTYLAMINE	1AMIPENT	87,16212
OLEAMIDE	OLEAMIDE	281,4727
HEXANAMIDE	HEXAMIDE	115,17182
ACETAMIDE	ACETAMID	59,0663
METHANOL	METHANOL	32,04106
N-PROPYL-AMINE	PROPAMIN	59,10936
1,4-PENTADIENE	PENTADIE	68,11622
MONOETHANOLAMINE	ETHAMINE	61,08198
5-METHYLFURFURAL	5-METFUR	110,10924
1,3-BENZODIAZOLE	BENZIMID	118,13534
1,3-DIHYDROXY-2-PROPANONE	DIHYPRON	90,07614
1-AMINO-2-PROPANOL	AMIPROOL	75,10836
XYLOSE	XYLOSE	150,1269
1-PROPANOL	PROPANOL	60,09382
N-BUTYRIC-ACID	BUTYACID	88,10352

3-METHYL-2-CYCLOPENTEN-1-ONE	3ME2CYON	96,12592
N-HEXADECANE	C16	226,43776
CIS-DECALIN	DECALIN	138,24812
N-HEXANE	C6	86,17396
N-DECANE	C10	142,27948
N-OCTANE	C8	114,22672
N-DODECANE	C12	170,33224
N-BUTANE	C4	58,1212
N-TETRADECANE	C14	198,385
N-HEPTANE	C7	100,20034
N-NONANE	C9	128,2531
N-UNDECANE	C11	156,30586
N-TRIDECANE	C13	184,35862
METHYLCYCLOPENTANE	METCYCPE	84,15828
DIPHENYL-ETHER	DIPHEETH	170,2058
GAMMA-VALEROLACTONE	VALELACT	100,11422
2-METHYLTETRAHYDROFURAN	2-METTHF	86,1309
CALCIUM-OXIDE	CALCOXID	-
POTASSIUM-OXIDE	POTAOXID	-
MAGNESIUM-HYDROXIDE	MGHYOXID	-
SODIUM-OXIDE	SODIOXID	-
AMMONIUM-DIHYDROGEN-PHOSPHATE	AMMOOXID	-
N-OCTADECANE	C18	254,49052
ETHANOL	ETHANOL	46,06744
PROPYLENE	PROPEN	42,07914
1,3-DIHYDROXY-5-METHYLBENZENE	ORCIN	124,13562
TRANS-RESVERATROL	RESVERAT	228,24088
TOLUENE	TOLUOL	92,13762
BENZOIC-ACID	BENZACID	122,11994
ACETANILIDE	ACETANIL	135,16186
N-PROPYLMERCAPTAN	THIOPROP	44,09482
ACRYLIC-ACID	ACRYLACI	104,12646
1-PENTANOL	PENTANOL	88,14658
1,2-DIPHENYLETHANE	DIPHETHA	182,25956
N-ETHYLANILINE	ETHYANIL	121,17854
HEMATITE	FE2O3	-
2-METHYL-BUTANE	2-METBUT	72,14758
2-METHYL-PENTANE	2-METPEN	86,17396
2-METHYLHEXANE	2-METHEX	100,20034
ETHYLCYCLOHEXANE	ETHCYHEX	112,21104
INDOLINE	INDOLINE	119,16286
1-HEXANOL	HEXANOL	102,17296

1-HEPTANOL	HEPTANOL	116,19934
1-ETHYL-DECALIN	1-ETH-DE	166,30088
1-ETHYLNAPHTHALENE	1-ETH-NA	156,22248
1-METHYL-DECALIN	1-MET-DE	152,2745
1-METHYLNAPHTHALENE	1-MET-NA	142,1961
FLUORANTHENE	FLUORANT	202,2496
TETRAHYDRO-2-PYRANONE	DVALLACT	100,11422
FORMALDEHYDE	FORMALDE	30,02538
N-NONADECANE	C19	268,5169
C34H16O2-N1	C34H16O2	456,48724
1,2,3,5-TETRAMETHYL-BENZENE	1235MEBE	134,21676
1,2,3-TRIMETHYLBENZENE	123MEBE	120,19038
1,2,4,5-TETRAMETHYLBENZENE	1245MEBE	134,21676
1,2,4-TRIMETHYLBENZENE	124MEBE	120,19038
1,2-DIMETHYL-3-ETHYLBENZENE	12M3ETBE	134,21676
1,4-DIETHYLBENZENE	14ETBE	134,21676
1-ETHYL-2-ISOPROPYLBENZENE	1ET2PRBE	148,24314
1-METHYL-2-ISOPROPYLBENZENE	1ME2PRBE	134,21676
1-METHYL-4-ETHYLBENZENE	1ME4ETBE	120,19038
M-XYLENE	M-XYLENE	106,164
O-XYLENE	O-XYLENE	106,164
P-XYLENE	P-XYLENE	106,164
1-N-PENTYLNAPHTHALENE	1PENNAPH	198,30162
PYRROLIDINE	PYRROLID	71,12006
PYRIDINE	PYRIDINE	79,0994
S-(-)-NICOTINE	S-NICOTI	162,23016
4-(2-FURYL)-3-BUTEN-2-ONE	FURBUEON	136,14632
C13H10O3-N5	DIFURYC5	214,2145
FURFURAL	FURFURAL	96,08286
LEVULINIC-ACID	LEVUACID	116,11322
ACETONE	ACETONE	58,07814
1H-IMIDAZOLE,-2-ETHYL-	2ETIMIDA	96,12962
N-EICOSANIC-ACID	C20ACID	312,5256
N-DOCOSANOIC-ACID	C22ACID	340,57836
N-DOCOSANE	C22	310,59604
N-EICOSANE	C20	282,54328
UREA	UREA	60,05446
N-VALERIC-ACID	VALEACID	102,1299
2,5-DIMETHYLPYRROLIDINE	25DIMEPY	99,17282
2-BUTYLPYRROLIDINE	2BUTPYRR	127,22558
1,3-DIAZOLE	IMIDAZOL	68,07686
PYRROLE	PYRROLE	67,0887

PYRROLE,-2-ETHYL-	2ETPYRRO	95,14146
PYRROLE,-2-BUTYL-	2BUPYRRO	123,19422
N-BUTANOL	BUTANOL	74,1202
COUMAFURYL	COUMAFUR	298,28666
O-HYDROXYCINNAMIC-ACID	OH-CINAC	164,15602
COUMARIN	COUMARIN	146,14134
4-HYDROXYCOUMARIN	4-OH-COU	162,14034
DIHYDROBENZOPYRAN	H2BENZPY	134,1737
2,19-DIMETHYLEICOSANE	DIMEC20	310,59604
NONADECANE,-3-METHYL-	3MEC19	282,54328
7-METHYLOCTADECANE	7MEC18	268,5169
1-NONADECENE	C19EN	266,50122
9-METHYLHEPTADECANE	9MEC17	254,49052
16-METHYLHEPTADECANE	2MEC17	254,49052
1,2-DICYCLOHEXYLETHANE	12CYC6C2	194,35364
2-METHYLPENTADECANE	2MEC15	226,43776
8-METHYLPENTADECANE	8MEC15	226,43776
1-HEXADECENE	1-C16EN	224,42208
1-TRIDECENE	1C13EN	182,34294
6-TRIDECENE	6C13EN	182,34294
2,2,4-TRIMETHYLPENTANE	ISOOCTAN	114,22672
2-METHYLNONANE	2MEC9	142,27948
2-METHYLOCTANE	2MEC8	128,2531
2-METHYLDECANE	2MEC10	156,30586
N-PROPYLCYCLOHEXANE	PROCYC6	126,23742
1,1,3-TRIMETHYLCYCLOHEXANE	TRMECYC6	126,23742
1,4-DIETHYLCYCLOHEXANE	DIETCYC6	140,2638
1,2,3,5-TETRAMETHYLCYCLOHEXANE	TEMECYC6	140,2638
2-METHYLUKADECANE	2MEC11	170,33224
3-ETHYLDECANE	3ETC10	170,33224
1-DODECENE	1C12EN	168,31656
6-DODECENE	6C12EN	168,31656
7-TETRADECENE	7C14EN	196,36932
1-TETRADECENE	1C14EN	196,36932
DECYL-ETHYL-ETHER	C10OC2	186,33124
1-EICOSENE	1C20EN	280,5276
1-DOCOSENE	1C22EN	308,58036
1-OCTADECENE	1C18EN	252,47484
BENZYL-ETHYL-ETHER	BEETETHE	136,18938
1-UNDECENE	1C11EN	154,29018
2-METHYLHEPTANE	2MEC7	114,22672
CYCLOPENTANE	CYCC5	70,1319

3,5-DIMETHYLBENZOFURAN	DIMEBEFU	146,1844
3-COUMARANONE	3COUMANO	134,13064
RETENE	RETENE	234,33372
BENZO[A]PYRENE	BENAPREN	252,30808
9,10-DIMETHYLANTHRACENE	DIMEANTH	206,28096
CORONENE	CORONENE	300,35088
OVALENE	OVALENE	398,45216
N-TETRADECANOIC-ACID	C14ACID	226,37502
PENTADECANOIC-ACID	C15ACID	242,3937
TYROSINE	TYROSINE	181,18624
BENZENEETHANOL,-.ALPHA.-PHENYL-	DIPHC2OL	198,25856
P,P*-BIPHENOL	44BIPHOL	186,2048
BISPHENOL-A	BISPHENA	228,28394
2,3-DIHYDROBENZOFURAN	23H2BEFU	120,14732
BUTANE,-1,4-DIPHENYL-	DIPHENC4	210,31232
C20H42-N2	PHYTAN	282,54328
.ALPHA.-FARNESENE	FARNESEN	204,34866
N-PENTACOSANE	C25	352,67518
N-NONACOSANE	C29	408,7807
ALPHA-PINENE	A-PINENE	136,23244
BETA-PINENE	B-PINENE	136,23244
ALPHA-TERPINENE	TERPINEN	136,23244
D-LIMONENE	LIMONENE	136,23244
STIGMASTEROL	STIGMAST	412,68562
SITOSTEROL	SITOSTER	414,7013
SERYL-SERYL-ANHYDRIDE	SERSERAN	174,152
PIPERAZINE,-2,5-DIMETHYL-	PI25DIME	114,18736
2-METHYL-2-PHENYLTETRAHYDROFURAN	2M2PHTHF	162,22646
PYRUVIC-ALDEHYDE	PYRUVALD	72,06146
GLYCOL-ALDEHYDE	GLYCOALD	60,05076
ACETOL	OHACETON	74,07714
LACTIC-ACID	LACTACID	90,07614
MYRISTIC-AMIDE	C14AMIDE	227,38286
N-BUTYL-AMINE	C4AMINE	73,13574
N-BUTYLTETRADECANAMIDE	C14C4AMI	283,48838
N-HEXYLAMINE	C6AMINE	101,1885
N-PENTYLAMINE	C5AMINE	87,16212
N-HEXYLTETRADECANAMIDE	C14C6AMI	311,54114
N-HEXYLHEXADECANAMIDE	C16C6AMI	339,5939
DOCOSANAMIDE	C22AMIDE	339,5939
N-PENTADECYLBENZENE	C15BENZE	288,50694
ETHYL-AMINE	C2AMINE	31,07628

4-METHYLUNDECANE	4-METC11	170,33224
2-PHENYLPENTANE	2-PHEC5	148,24314
FARNESANE	FARNESAN	212,41138
BICYCLO[4.3.0]NONANE	BICYCLC9	124,22174
3-METHYL-3-ETHYLHEPTANE	3ME2ETC7	142,27948
DIHYDROBENZOPYRAN	DIHBENPY	134,1737
ALPHA-TOCOPHEROL	TOCOPHER	430,7003
9-METHYLANTHRACENE	9-MEANTH	192,25458
2-PENTYLFURAN	2-C5FURA	138,20506
2-PHENYL-4-METHYLFURAN	2PH4MEFU	158,1951
2-PROPYL-4-METHYLFURAN	2PR4MEFU	124,17868
2-TERT-BUTYLFURAN	2BUTFURA	124,17868
C12H20O-N3	BIIC4FU	180,2842
2,2,7,7-TETRAMETHYLOCTANE	2277TMC8	170,33224
2,2-DIMETHYLHEXANE	22DIMEC6	114,22672
BENZENE,-ISOPENTYL-	BENISC5	148,24314
N-UNDECYLBENZENE	C11BENZE	232,40142
1-AMINOOCCTADECANE	C18AMINE	269,50506
N-OCTYLAMINE	C8AMINE	129,24126
DODECANOL	C12OL	186,33124
1-TETRADECANOL	C14OL	214,384
2,3-DIMETHYLPYRAZINE	23DIMEPY	80,12692
2,3,5-TRIMETHYLPYRAZINE	235TMEPY	122,1667
LIGUSTRAZINE	TETMEPYR	136,19308
9,10-DIHYDROPHENANTHRENE	9,10HPHE	180,24388
1,2,3,4-TETRAHYDROPHENANTHRENE	1234HPHE	182,25956
C14H16-N28	6HPHENAN	184,27524
C14H18-N19	8HPHENAN	186,29092
PHENANTHRENE,-TETRADECAHYDRO-	14HPHENA	192,33796
SEC-BUTYLBENZENE	2BUTBENZ	134,21676
PYRIDINE,-3-BUTYL-	3BUTPYRI	135,20492
4-METHYLOCTANE	4METHYC8	128,2531
1-METHYL-3-ISOPROPYLBENZENE	3IPROTOL	134,21676
2,2-DIPHENYL-PROPANE	22DIPHC3	196,28594
(-)-(1S)-CIS-PINANE	CISPINAN	138,24812
P-MENTHANE	PMENTHAN	140,2638
PIPERAZINE,-2,5-DIMETHYL-	25DIMEPI	114,18736
4-METHYLOCTANE	4METC8	128,2531
1-ETHYL-2-METHYLCYCLOHEXANE	1E2MCYC6	126,23742
N-OCTYLBENZENE	C8BENZEN	190,32228
P-XYLENE,-2-OCTYL-	PXYLOLC8	218,37504
BENZENE,-1,2-DIMETHYL-4-OCTYL-	OXYLOLC8	218,37504

METHYL-ETHYL-KETONE	C4ONE	72,10452
2,5-HEXANEDIONE	C6DIONE	114,1406
2,6-HEPTANEDIONE	C7DIONE	128,16698
CYCLOPENTANONE	CYCC5ONE	84,11522
2-METHYLCYCLOPENTANONE	MECC5ONE	98,1416
2-ETHYL-2-CYCLOPENTENONE	C2CC5EON	110,1523
BENZOFURAN	BENZOFUR	118,13164
2-METHYLBENZOFURAN	MEBENFUR	132,15802
2-INDANONE	INDANONE	132,15802
2-COUMARONE	COUMARON	134,13064
HYDROXYHYDROQUINONE	TRIOHBEN	126,10824
P-HYDROQUINONE	14OHBENZ	110,10924
GAMMA-BUTYROLACTONE	BUTYLACT	86,08784
2-PYRROLIDONE	PYRLIDON	85,10338
ISOQUINOLINE	ISOQUINO	129,15788
BENZO[F]ISOQUINOLINE	BENISOQU	179,21636
ISOQUINOLINE,-3-METHYL-	MEISOQUI	143,18426
1,2,3,4-TETRAHYDROQUINOLINE	4HQUINOL	133,18924
QUINOLINE	QUINOLIN	129,15788
BENZOYLENEUREA	BENZUREA	162,14404
QUINAZOLINE	QUINAZOL	130,14604
QUINOXALINE	QUINOXAL	130,14604
2,3-DIMETHYLQUINOXALINE	DIMEQUOX	158,1988
9H-PYRIDO[3,4-B]INDOLE	NORHARMA	168,19382
PHENANTHRIDINE	PHENATHR	179,21636
BENZOPYRAZOLE	BENZPYRA	118,13534
3-INDAZOLINONE	INDAZNON	134,13434
1,7-PHENANTHROLINE	PHENATRO	180,20452
5-PHENYLACRIDINE	PHEACRID	255,31192
ACRIDINE	ACRIDINE	179,21636
PHENOXAZINE	PHENOXAZ	183,20466
CAFFEINE	CAFFEIN	194,1888
ETHYLCYCLOPENTANE	ETHCYC5	98,18466
1-METHYL-2-ETHYLBENZENE	1ME2ETBE	120,19038
1-METHYL-2-ETHYLNAPHTHALENE	1ME2ETNA	170,24886
INDANE	INDANE	118,1747
N-PENTYLBENZENE	C5BENZEN	148,24314
2-METHYL-BIPHENYL	2-MEBIPH	168,23318
1,3-DIPROPYLBENZENE	13PROBEN	162,26952
1,1*-BIPHENYL,-4-(PHENYLMETHYL)-	BENZBIPH	244,32874
CHRYSENE	CHRYSENE	228,28668
TETRAPHENYLPORPHINE	4PHPORPH	614,7328

DIPHENYLMETHANE	DIPHENC1	168,23318
PERYLENE,-3-HEXYL-	C6PERYLE	336,46636
OXYPHENISATIN-ACETATE	OXYPHENI	401,40746
N-PALMITOYL-PYRAZINAMIDE	C16NPYRA	361,5172
PROGESTERONE	PROGESTE	314,4579
BETA-CHOLESTEROL	CHOLESTE	386,64854
5-ALPHA-CHOLESTANE	CHOLESTA	372,66522
PREGNANE	PREGNANE	288,50694
N-BENZYLOLEAMIDE	BENC18AM	357,58794
QUERCETIN	QUERCETI	302,2319
3,6-DIMETHYL-2,5-PIPERAZINEDIONE	DIMEPION	142,154
TRIPHENYLMETHANE	TRIPHME	244,32874
DIBENZYLMETHANE	13DIPHC3	196,28594
1,4-DIPHENYLHEXANE	DIPHENC6	236,3494
2,6-DIISOPROPYLNAPHTHALENE	DIC3NAPH	212,328
1-CYCLOPENTENE,-3,4-DIPHENYL-	CYC5DIPH	220,30734
ANTHRAQUINONE	ANTHRAQU	136,14632
ANTHRACENE,-TETRADECAHYDRO-	14HANTHR	192,33796
METHYLCYCLOHEXANE	METHCYC6	98,18466
CIS-1,2-DIMETHYLCYCLOHEXANE	12DMCYC6	112,21104
CIS-1,3-DIMETHYLCYCLOHEXANE	13DMCYC6	112,21104
CIS-1,4-DIMETHYLCYCLOHEXANE	14DMCYC6	112,21104
QUINOLINE,-DECAHYDRO-,-TRANS-	H10QUINO	139,23628
EPSILON-CAPROLACTAM	ECAPROLA	113,15614
ACRIDINE,-1,7-DIAMINO-	NH3ACRID	209,24544
HEXAPHENYLMELAMINE	6PHEMELA	582,6927
.ALPHA.-PERHYDROACRIDINE	PERHACRI	193,32612
PERHYDROPYRENE	PERHPYRE	218,37504
METHANE,-TRICYCLOHEXYL-	TRCYC6ME	262,46986
2,2,4,7,7-PENTAMETHYLOCTANE	PENMEOCT	184,35862
1,1-DIMETHYLPERHYDROPHENANTHRENE	DIMEPHPH	220,39072
2,35-HEXATRIACONTANEDIONE	C36H70O2	534,932
16-HENTRIACONTANONE	C31H62O	450,81678
ALL-TRANS-LYCOPENE	C40H56	536,86704
3-PENTADECYL-2-DOCOSANE	C37H74	518,97606
DOHEPTACONTANE	C72H146	1011,91504
1-DOTRIACONTANOL	C32H66O	466,85884
DOHEXACONTANE	C62H126	871,65124
1-DECANAMINE,-N-DECYL-	C10NC10	297,55782
1-ICOSANAMINE	C20N	297,55782
1-HEXADECANAMINE,-N-HEXADECYL-	C16NC16	465,87438

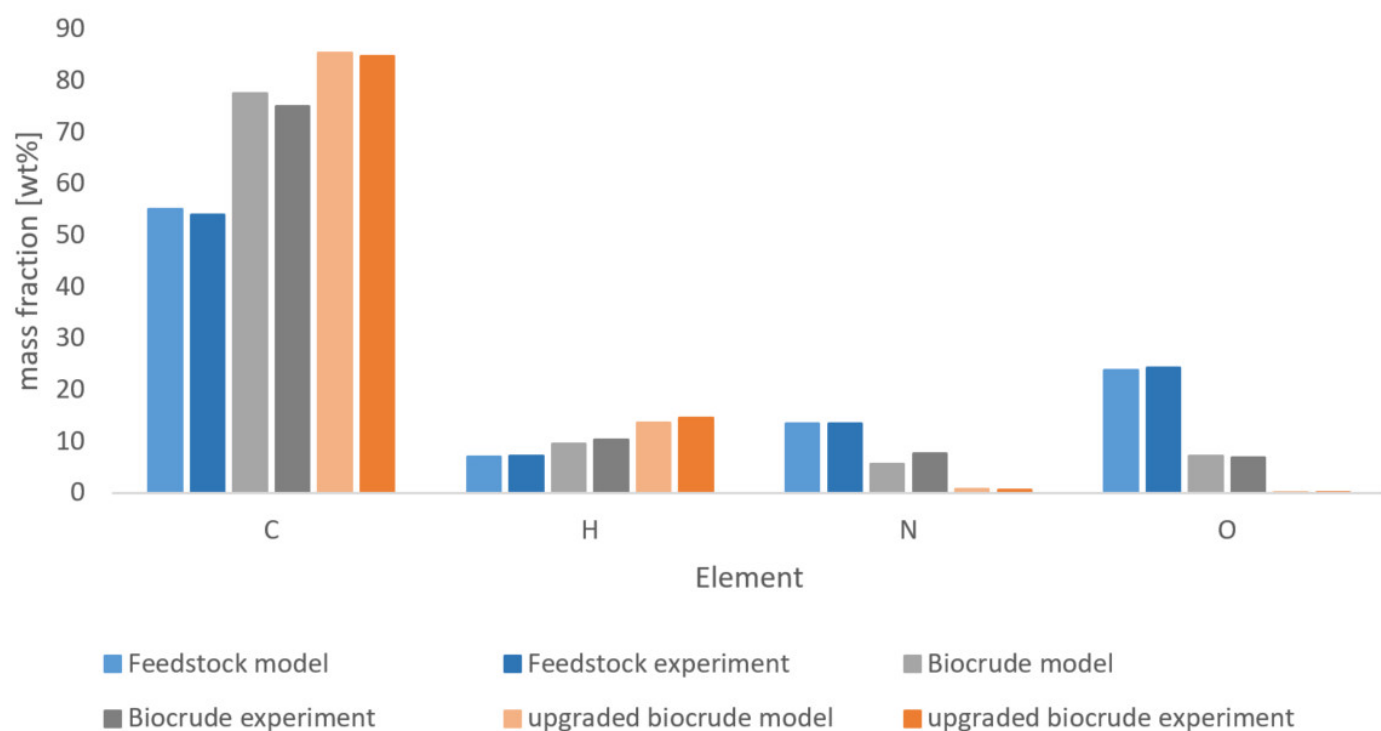


Figure S1. Elemental analysis of feedstock, biocrude and upgraded biocrude for Spirulina.

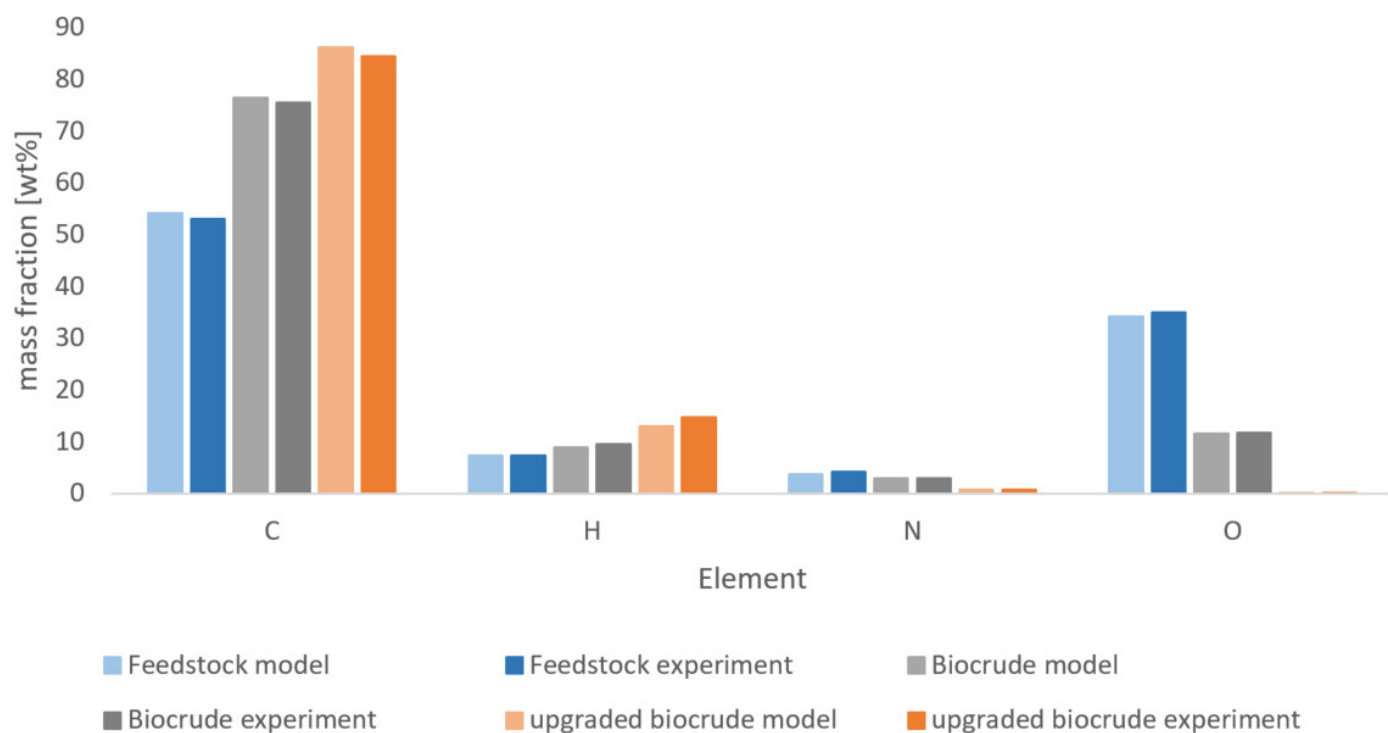


Figure S2. Elemental analysis of feedstock, biocrude and upgraded biocrude for sewage sludge.

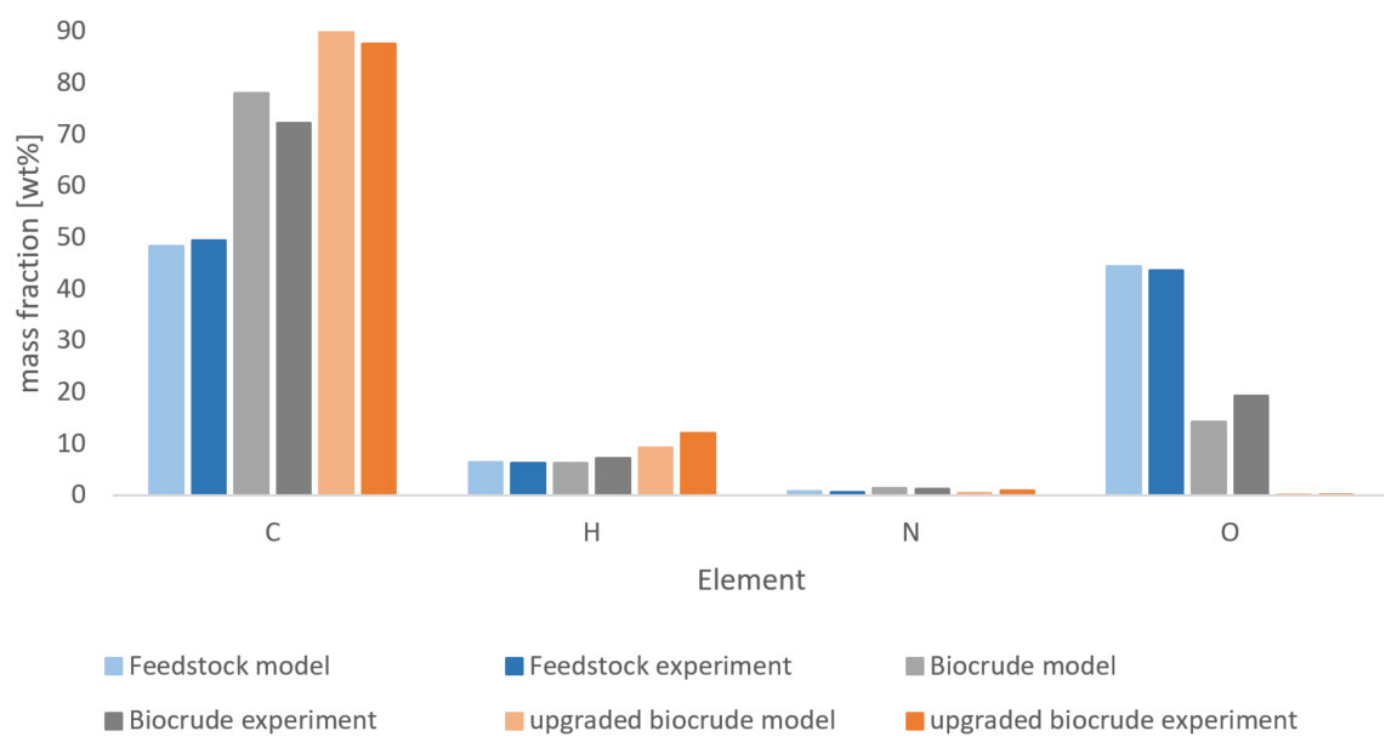


Figure S3. Elemental analysis of feedstock, biocrude and upgraded biocrude for wheat straw.