

## Supplementary Tables

Supplemental Table 1: Relative concentrations of fusel alcohols and fusel acetates produced by isolates of species of the family Ceratocystidaceae.

Species	Isolate ID	Host	Country	Isoamyl alcohol	Isobutyl acetate	Isoamyl acetate	Phenyl-ethanol	Phenylethyl acetate	NCBI accession numbers
<b>Bretziella spp.</b>									
<i>B. fagacearum</i>	CMW 2656	<i>Quercus rubra</i>	USA	73.59	18.21	31.02	-	-	MKGJ01000000 (whole genome)
<b>Berkeleyomyces spp.</b>									
<i>Be. bassicola</i>	CMW 26479	<i>Styrax sp.</i>	Indonesia	261.56	398.22	283.9	2.33	0.69	-
<i>Be. bassicola</i>	CMW 7065		Netherlands	93.37	2.17	-	1.07	-	-
<i>Be. bassicola</i>	CMW 14219	<i>Eucalyptus regnans</i>	Chile	-	2.18	229.95	1.25	8.12	-
<b>Ceratocystis spp.</b>									
<i>C. albifundus</i>	CMW 43584	<i>Acacia mearnsii</i>	SA	-	434.51	681.41	-	0.69	-
<i>C. albifundus</i>	CMW 18784	<i>Protea cynaroides</i>	SA	-	261.08	514.74	-	0.53	-
<i>C. albifundus</i>	CMW 24887			-	169.02	498.66	-	0.34	-
<i>C. albifundus</i>	CMW 42433	<i>Protea cynaroides</i>	SA	-	148.12	302.64	-	1.03	-
<i>C. eucalypticola</i>	CMW 15054	<i>Eucalyptus grandis</i>	SA	-	293.26	278.12	-	-	FJ236725.1 (ITS)
<i>C. eucalypticola</i>	CMW 43694	<i>Eucalyptus grandis</i>	Uruguay	-	94.51	41.79	-	-	-
<i>C. eucalypticola</i>	CMW 4799	<i>Eucalyptus sp.</i>	Congo	14.61	173.19	272.08	-	-	FJ236734.1 (ITS)
<i>C. eucalypticola</i>	CMW 9998	<i>Eucalyptus grandis</i>	SA	-	126.44	74.37	-	-	-
<i>C. fimbriata</i>	CMW 46145	<i>Ipomoea batatas</i>	China	15.86	446.81	659.61	-	0.56	-
<i>C. fimbriata</i>	CMW 46120	<i>Ipomoea batatas</i>	China	-	161.41	240.97	-	-	-
<i>C. fimbriata</i>	CMW 4265			-	1265.77	1541.2	4.32	2.13	-
<i>C. fimbriata</i>	CMW 14799	<i>Ipomoea batatas</i>	USA	143.22	141.15	38.84	-	-	-
<i>C. harringtonii</i>	CMW 14789	<i>Populus sp.</i>	Netherlands	-	4.87	376.79	-	-	EF070418.1 (ITS)
<i>C. manginecans</i>	CMW 15315	<i>Mangifera indica</i>	Oman	-	2351.88	606.24	-	-	-

<i>C. manginecans</i>	CMW 23640	<i>Mangifera indica</i>	Pakistan	-	481.8	53.1	-	-	-
<i>C. manginecans</i>	CMW 17567	<i>Mangifera indica</i>	Pakistan	-	256.3	155.75	-	-	-
<i>C. manginecans</i>	CMW 17570	<i>Prosopis cineraria</i>	Oman	3.47	37.3	23.26	-	-	-
<i>C. manginecans</i>	CMW 28232	<i>Acacia mangium</i>	Oman	-	116.03	138.67	-	-	-
<i>C. manginecans</i>	CMW 46461	<i>Acacia mangium</i>	Malaysia	-	995.01	74.08	-	-	-
<b>Davidsoniella spp.</b>									
<i>D. virescens</i>	CMW 17339	<i>Acer saccharum</i>	USA	54.41	-	31.83	-	1.58	LJZU00000000 (whole genome)
<b>Endoconidiophora spp.</b>									
<i>E. laricicola</i>	CMW 20928	<i>Larix sp.</i>	Scotland	-	-	25.76	-	7.29	-
<i>E. laricicola</i>	CMW 23746	<i>Larix sp.</i>	SA	-	-	365.42	-	12.3	-
<i>E. laricicola</i>	CMW 26374	<i>Larix pinaceae</i>	Japan	-	-	31.2	-	1.12	-
<i>E. polonica</i>	CMW 20930	<i>Picea abies</i>	Norway	-	-	12.82	-	0.76	-
<b>Huntliella spp.</b>									
<i>H. bhutanensis</i>	CMW 8215	<i>Picea pinulosa</i>	Bhutan	44.81	4	-	0.67	-	-
<i>H. decipiens</i>	CMW 30859	<i>Eucalyptus saligna</i>	SA	-	71.51	331.71	0.46	0.7	-
<i>H. moniliformis</i>	CMW 10134	<i>Eucalyptus grandis</i>	SA	-	65.07	289	-	0.38	KM495355.1 (ITS) JSUI000000000 (whole genome)
<i>H. omanensis</i>	CMW 11056	<i>Mangifera indica</i>	Oman	-	30.89	62.74	-	0.77	-
<b>Thielaviopsis spp.</b>									
<i>T. punctulata</i>	CMW 26389	<i>Lawsonia inermis</i>	Mauritania	116.01	-	8.86	0.77	-	FJ411338.1 (ITS)

\*All isolates are from culture collection of Forestry and Agriculture Biotechnology Institute (FABI), University of Pretoria South Africa. Whole cultures of different isolates in the Ceratocystidaceae were grown for 7 days at 22 °C on half-strength PDA. Volatiles were sampled by exposing a SPME fibre to the headspace of a 5 mm diameter mycelial plug in a 1.5 mL glass vial and were analysed by direct injection into a GC-MS. Reported volatile concentrations are relative to peak areas.

Supplemental Table 2: Relative concentrations of fusel alcohols and acetates produced by isolates of *Ceratocystis albifundus*.

Name	Host	Country	Province	Ethyl Acetate	Isobutyl Acetate	Isoamyl Acetate	Phenylethyl Alcohol	Phenylethyl Acetate
CMW 42416	<i>P. cynaroides</i>	South Africa	Western Cape	0	4,3	3,3	0,6	2
CMW 42417	<i>P. cynaroides</i>	South Africa	Western Cape	0	11,4	5,7	0	0,7
CMW 42423	<i>P. cynaroides</i>	South Africa	Western Cape	12,8	9,6	5,7	0	1,3
CMW 42435	<i>P. cynaroides</i>	South Africa	Western Cape	13,7	13,4	17,1	2,4	2,6
CMW 42450	<i>P. cynaroides</i>	South Africa	Western Cape	0	2,5	0,8	1,1	0,2
CMW 42474	<i>P. cynaroides</i>	South Africa	Western Cape	0	10,8	12,2	0,5	1,3
CMW 42477	<i>P. cynaroides</i>	South Africa	Western Cape	54,2	27,7	25,4	0	0
CMW 42478	<i>P. cynaroides</i>	South Africa	Western Cape	0	3,5	1,8	0	0
CMW 43681	<i>P. cynaroides</i>	South Africa	Western Cape	12,9	7,7	7,3	0	3,5
CMW 42434	<i>P. cynaroides</i>	South Africa	Western Cape	47,7	14,4	16,7	0	0
CMW 40625	<i>P. cynaroides</i>	South Africa	Western Cape	7,2	13,4	5,9	0,1	0,3
CMW 42408	<i>P. cynaroides</i>	South Africa	Western Cape	7,8	10,2	5,6	0,6	0,6
CMW 43682	<i>P. cynaroides</i>	South Africa	Western Cape	11,6	7,7	5,1	0	2,3
CMW 42429	<i>P. cynaroides</i>	South Africa	Western Cape	10,2	5,5	13,9	2,2	9,5
CMW 17620	<i>T. sericea</i>	South Africa	Limpopo	0	0,7	0,3	0,9	0
CMW 23839	<i>T. sericea</i>	South Africa	Limpopo	0,4	1,3	0,7	0,8	0,3
CMW 41580	<i>T. sericea</i>	South Africa	Mpumalanga	90	55	50	0	0
CMW 41600	<i>T. sericea</i>	South Africa	Mpumalanga	0	1,8	1,7	0,3	0,5
CMW 41601	<i>T. sericea</i>	South Africa	Mpumalanga	18	14	10,8	1,2	2,1

CMW 42118	<i>T. sericea</i>	South Africa	Mpumalanga	6.8	19.2	7.4	0	0
CMW 42119	<i>T. sericea</i>	South Africa	Mpumalanga	6.5	8.1	7.1	1.1	1.7
CMW 42120	<i>T. sericea</i>	South Africa	Mpumalanga	1.7	10.4	5.5	0.1	0
CMW 42123	<i>T. sericea</i>	South Africa	Mpumalanga	0	1,4	1,7	4	1,2

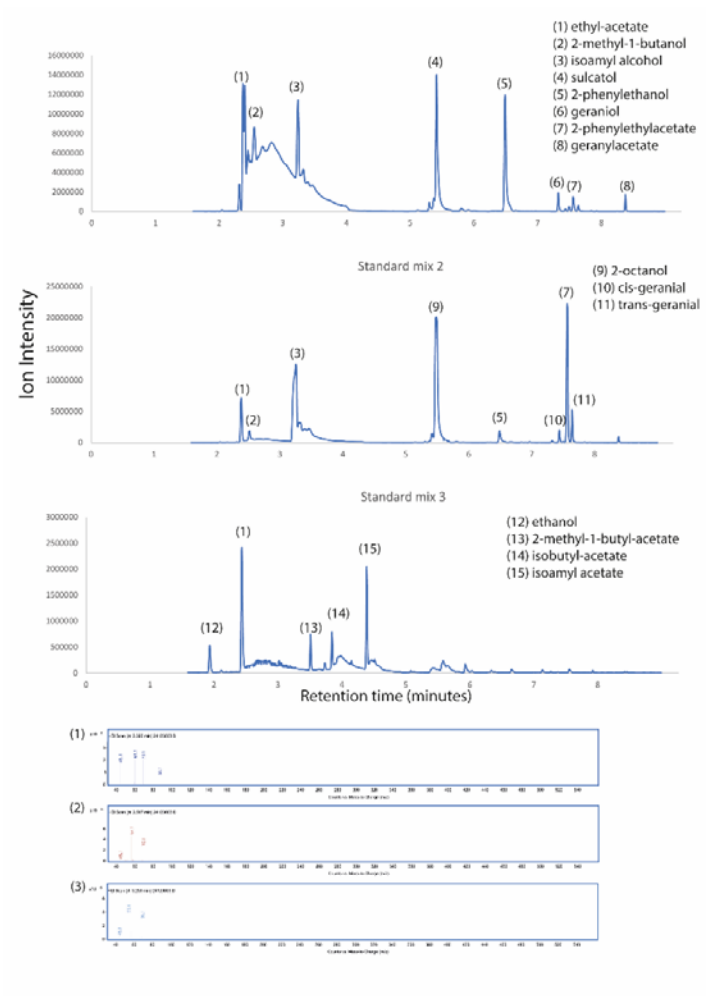
Supplemental Table 3: Relative concentrations of monoterpenes and aliphatics produced by some species in the Ceratocystidaceae

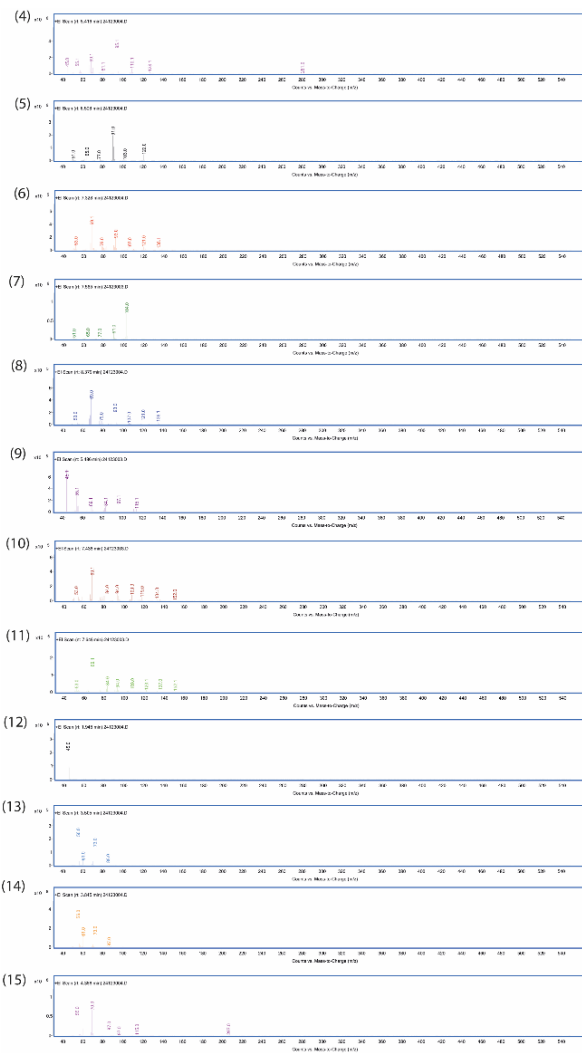
Fungal species	Sulcatone	1-octen-3-ol	Sulcatol	Geranial	Geraniol	Geraniol acetate	Citronellol
<i>B. bassicola</i>	0	845461.59	0	0	0	0	0
<i>B. bassicola</i>	0	1248274.9	0	0	0	0	0
<i>B. bassicola</i>	0	604939.99	0	0	0	0	0
<i>B. rouxiae</i>	0	500642.08	0	0	0	0	0
<i>B. rouxiae</i>	0	0	0	0	0	0	0
<i>B. rouxiae</i>	0	591114.88	0	0	0	0	0
<i>C. albifundus</i>	0	0	0	3429381.05	5795290	737253.6	12599266.73
<i>C. albifundus</i>	0	0	0	3490068.55	6915476.38	882802.63	9657668.91
<i>C. albifundus</i>	0	0	0	4591159.83	4181262.04	490952.16	9051830.52
<i>C. eucalypticola</i>	0	175743.4	0	0	0	0	0
<i>C. eucalypticola</i>	0	124579.61	0	0	0	0	0
<i>C. eucalypticola</i>	0	164588.22	0	0	0	0	0
<i>C. manginecans</i>	0	0	0	0	0	0	0
<i>C. manginecans</i>	0	0	0	0	0	0	0
<i>C. manginecans</i>	0	0	0	0	0	0	0
<i>E. laricicola</i>	0	159301.99	0	616847.46	0	1086895.49	0
<i>E. laricicola</i>	0	86083	0	362458.09	0	758091.63	0
<i>E. laricicola</i>	0	100501.99	0	419919.87	0	461356.62	0
<i>E. polonica</i>	0	0	0	0	0	0	0

<i>E. polonica</i>	0	0	0	0	0	0	0
<i>E. polonica</i>	0	0	0	0	0	0	0
<i>H. bhutanensis</i>	36355697.4	0	7897482.3	0	0	0	0
<i>H. bhutanensis</i>	18854563.6	0	8433106.7	0	0	0	0
<i>H. bhutanensis</i>	37865040.6	0	10441004	0	0	0	0
<i>H. moniliformis</i>	510332.51	660028.16	0	0	0	0	0
<i>H. moniliformis</i>	372131.87	141693.77	0	0	0	0	0
<i>H. moniliformis</i>	364330.15	231274.23	0	0	0	0	0

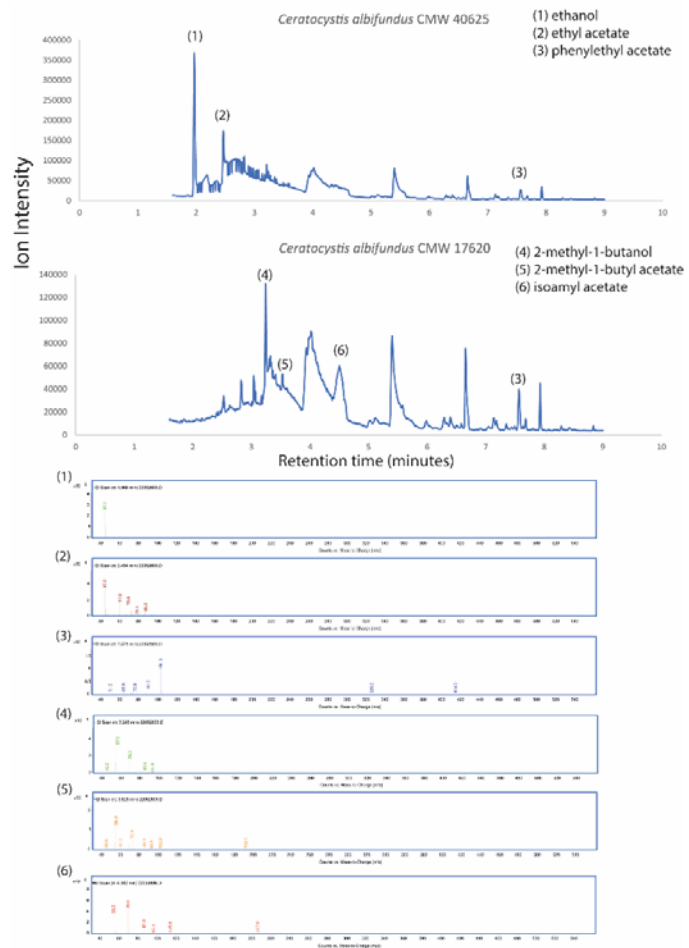
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Supplemental figures:

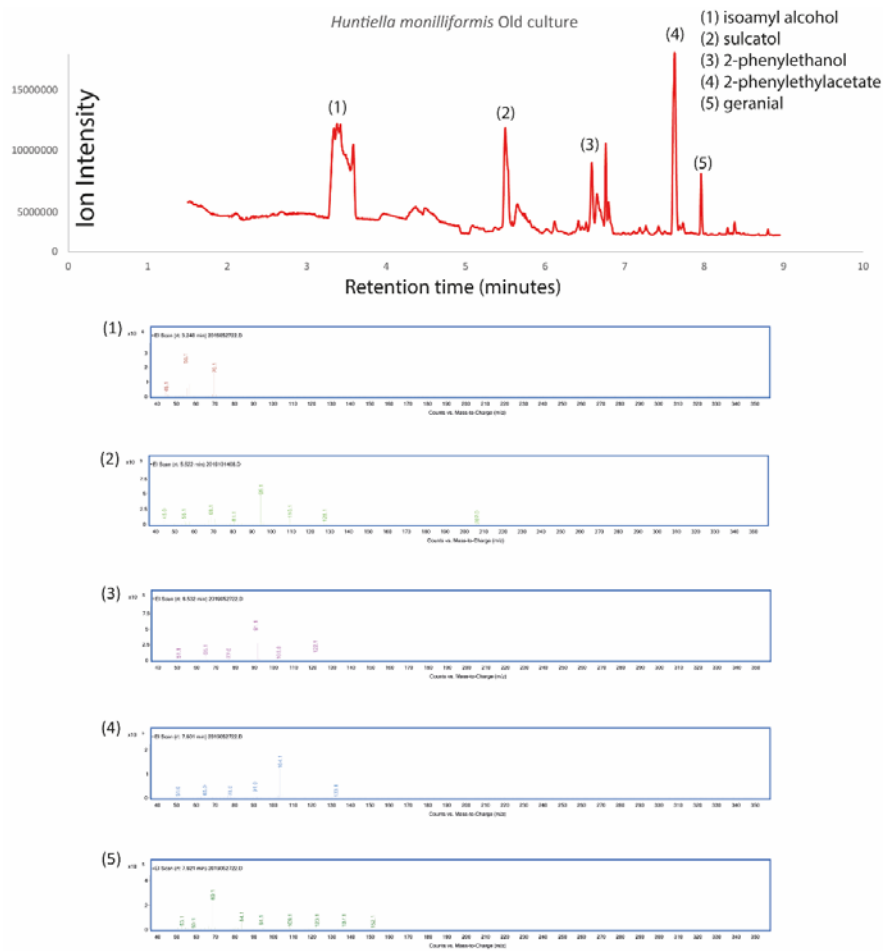




Supplemental figure 1: Chromatograms and mass spectra of pure standards of fusel alcohols and acetates.



Supplemental figure 2: Chromatogram and mass spectra of fusel alcohols and acetates produced by two strains of *Ceratocystis albifundus*



Supplemental figure 3: Chromatogram and mass spectra of fusel alcohols and acetates produced by old culture of *Huntia moniliformis*