



Supplement of

Impact of chemical treatments on the molecular and stable carbon isotopic composition of sporomorphs

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Supplement

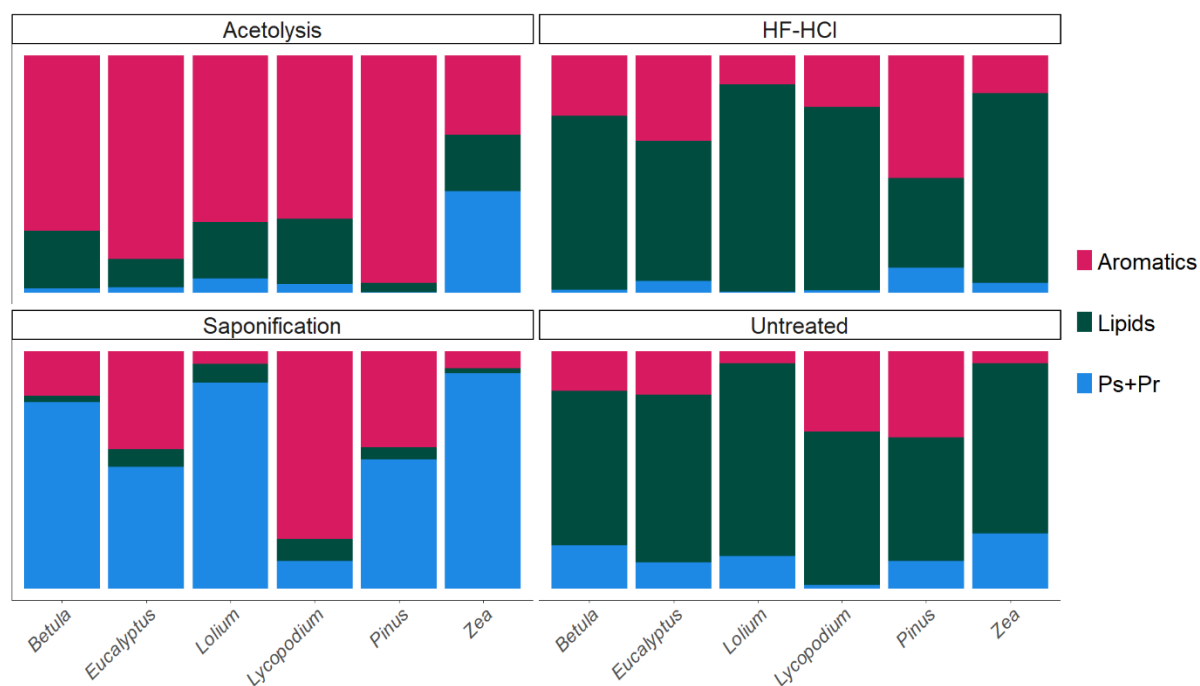


Figure S1. The composition of aromatic (red), polysaccharide- and protein-derived (Ps+Pr; blue) and lipid (green) pyrolysis products for each species-treatment combination.

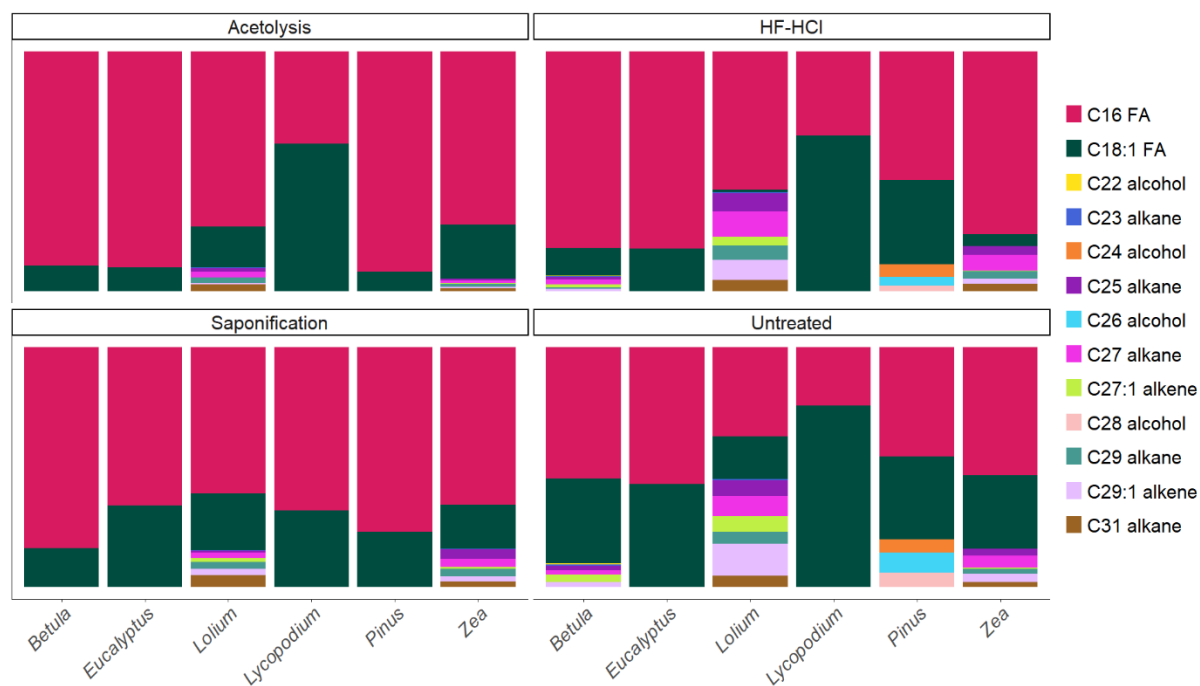


Figure S2. The composition of the various lipid pyrolysis products for each species-treatment combination. FA stands for fatty acid.

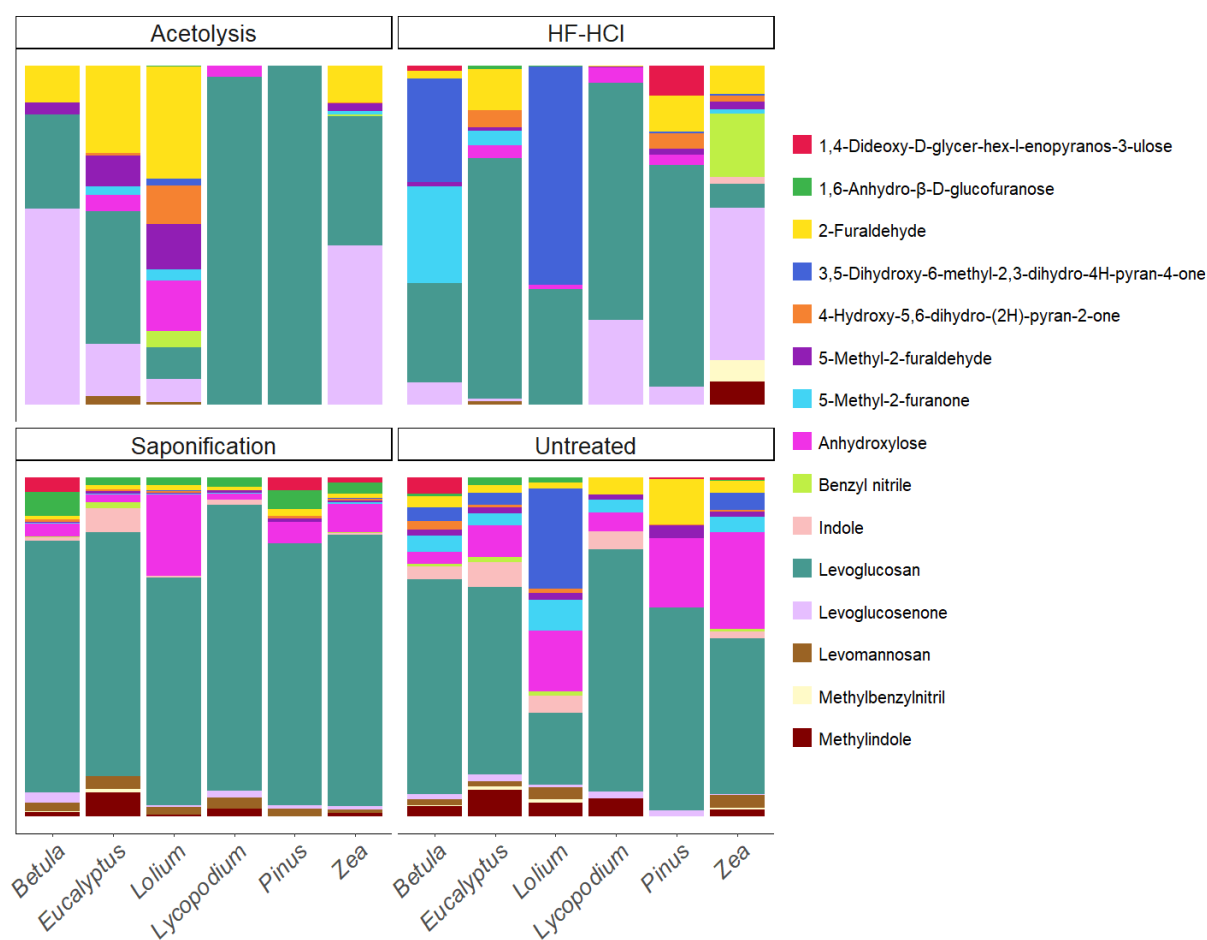


Figure S3. The composition of the various polysaccharide- and protein-derived pyrolysis products for each species-treatment combination.

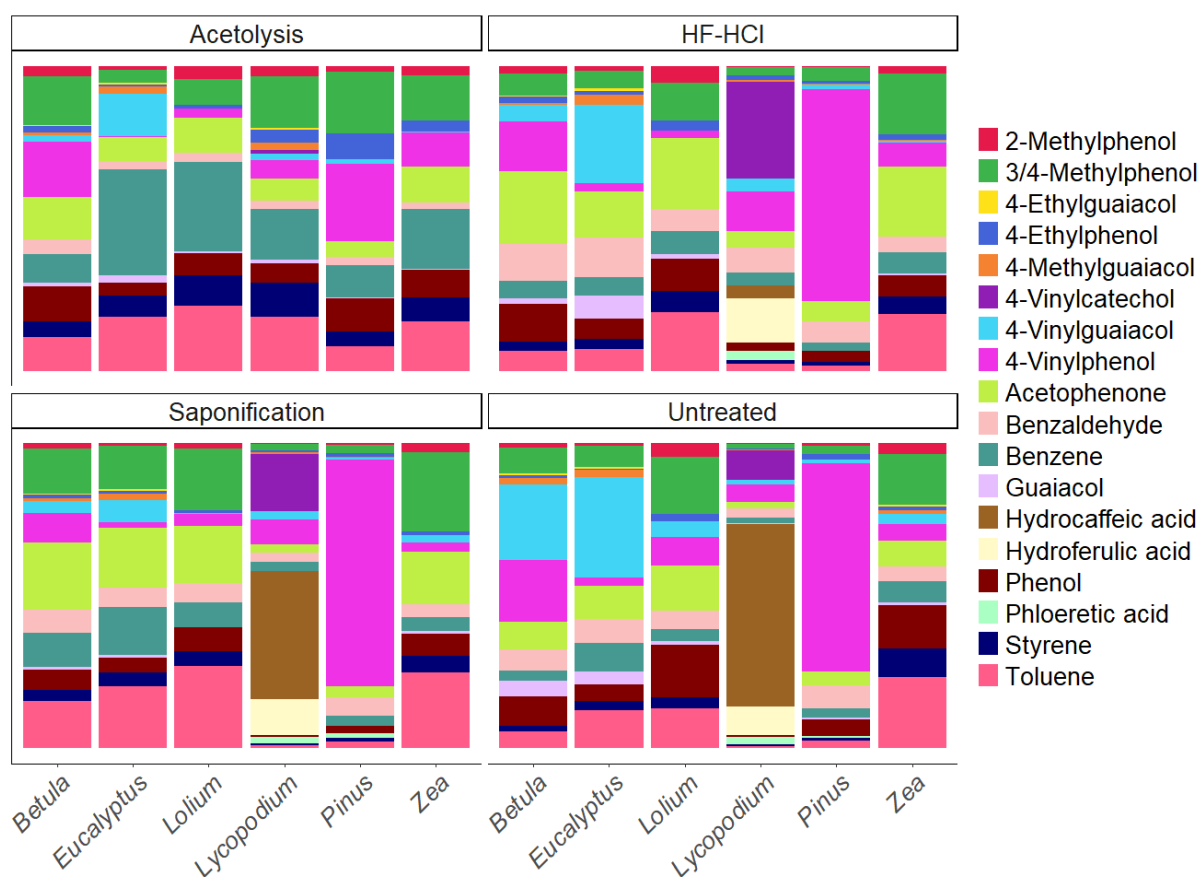


Figure S4. The composition of the various aromatic pyrolysis products for each species-treatment combination.

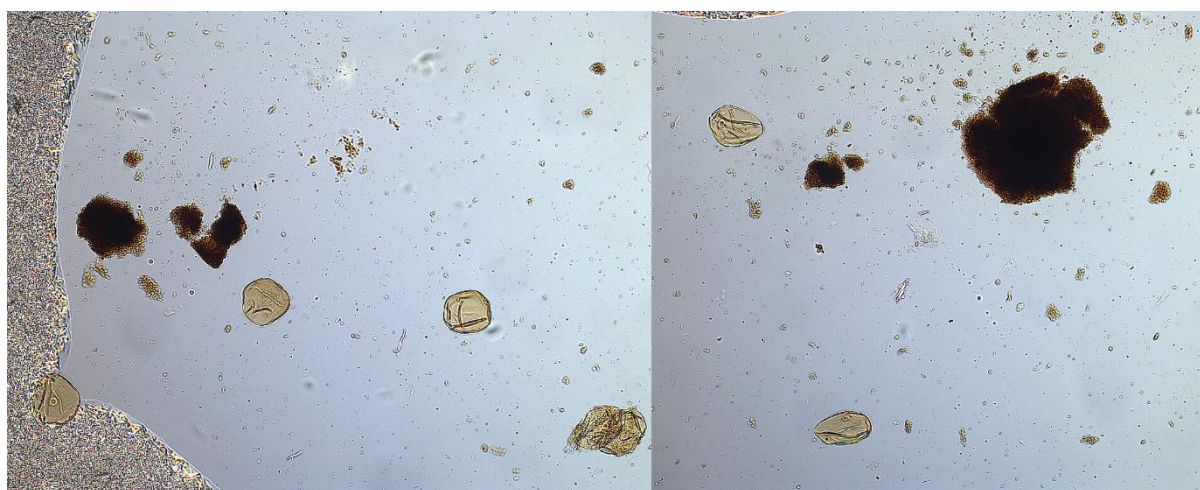


Figure S5. Light microscopy photo of acetolyzed Zea pollen.

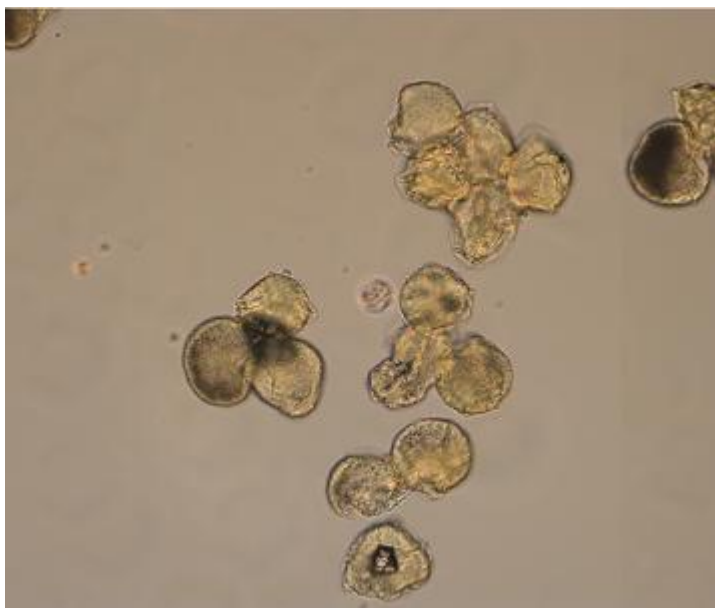


Figure S6. Light microscopy photo of saponified *Zea* pollen.

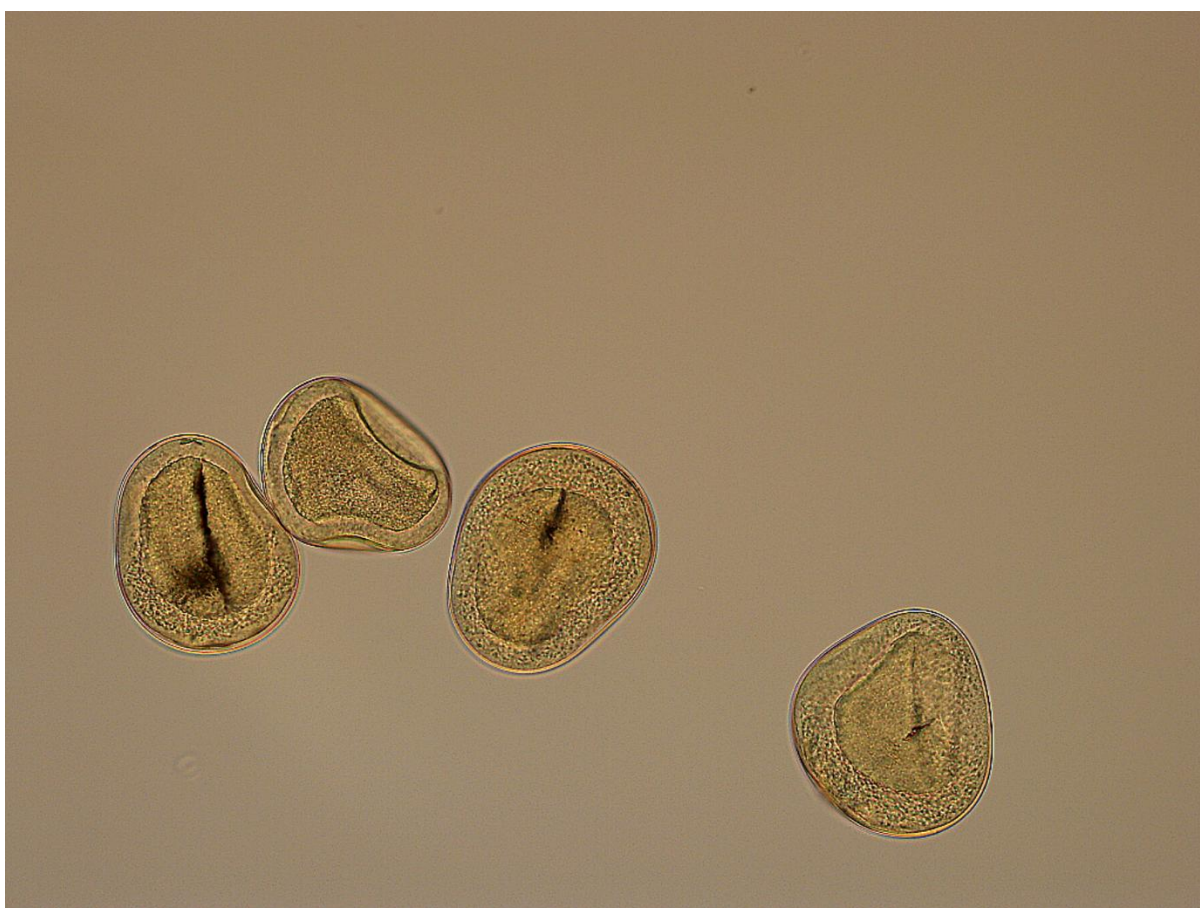


Figure S7. Light microscopy photo of untreated *Zea* pollen.

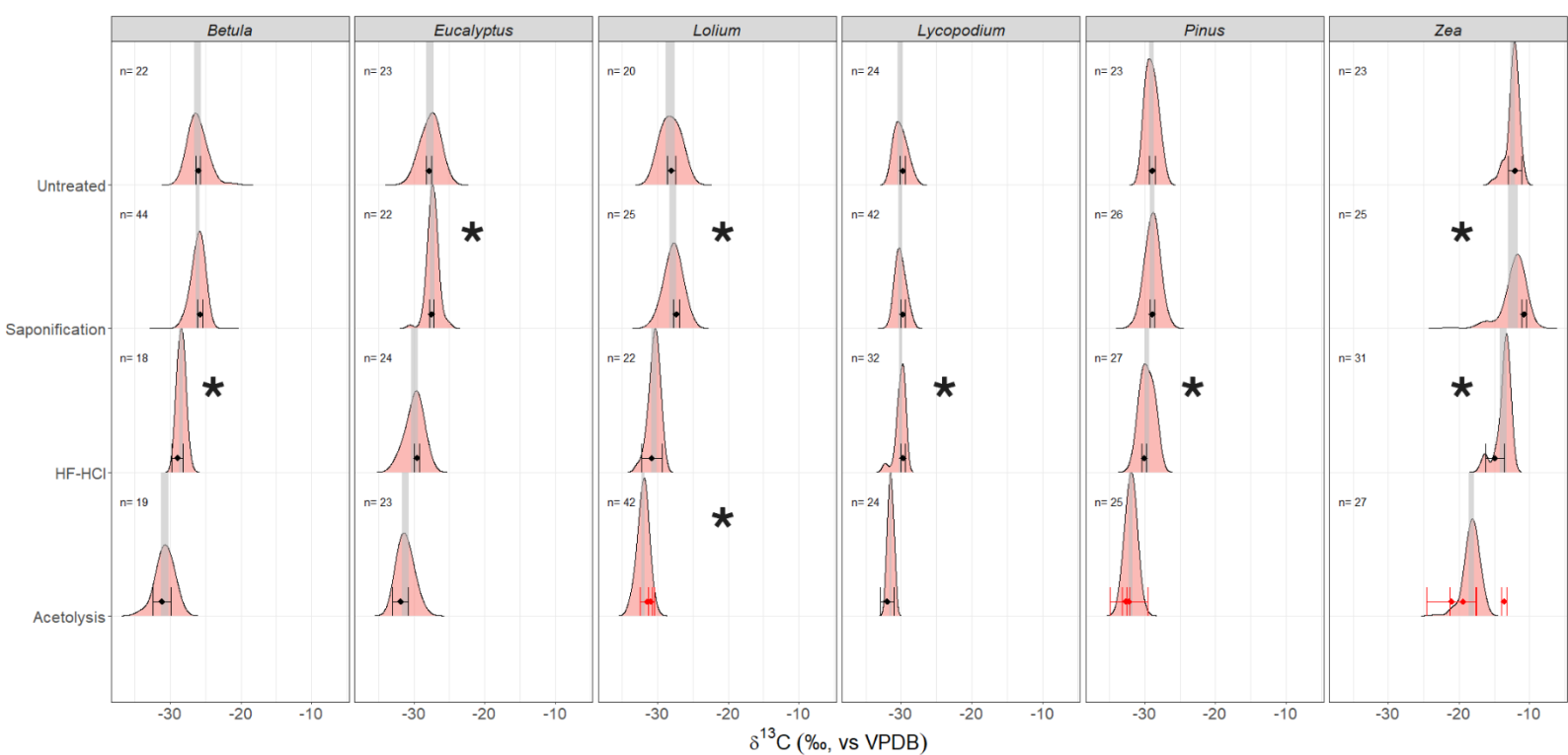


Figure S8. As Figure 3, but with PLA+PE corrected samples (*)

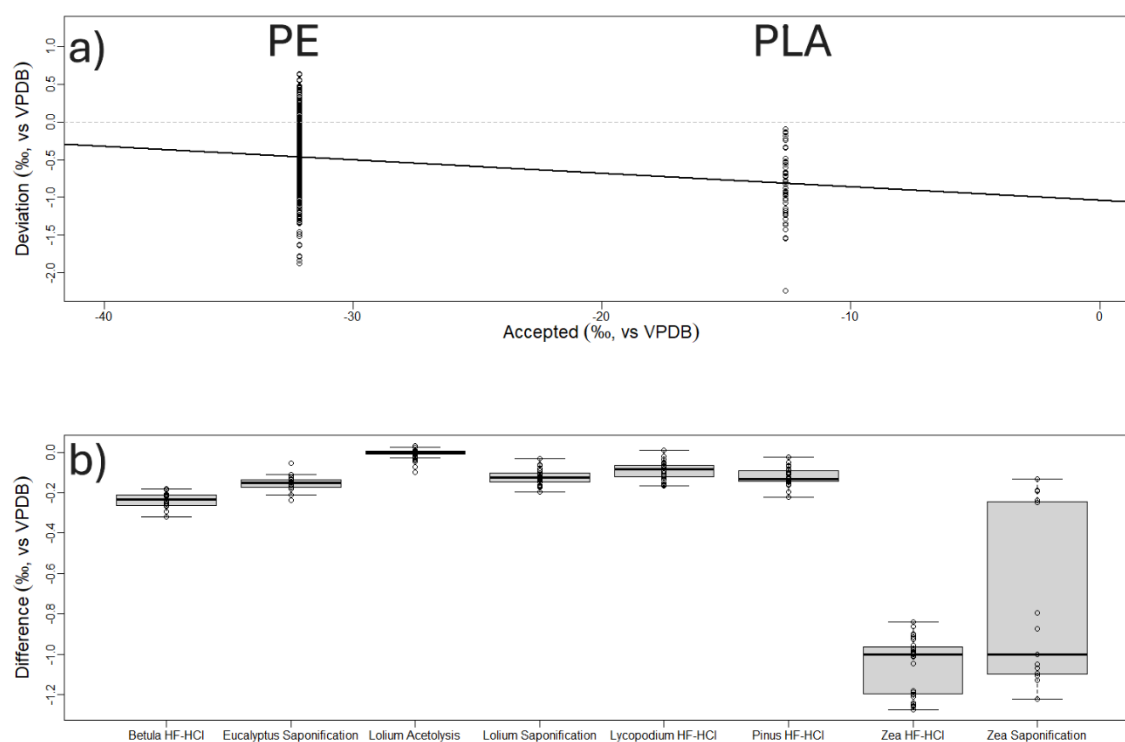


Figure S9. a) Deviation of the measured from accepted $\delta^{13}\text{C}$ values of the PE and PLA standards. A linear regression is shown ($y = -0.02x - 1.04$), with the accepted $\delta^{13}\text{C}$ value as the explanatory variable and the deviation as the response variable. b) LA-IRMS samples and the difference between PE and PE+PLA corrected data.

Table S1. The fraction of identified pyrolysis products for each species-treatment combination. FA stands for fatty acid.

	Betula	Betula	Betula	Betula	Eucalyptus	Eucalyptus	Eucalyptus	Eucalyptus	Lycopodium	Lycopodium	Lycopodium	Lycopodium	Lolium	Lolium	Lolium	Lolium	Pinus	Pinus	Pinus	Pinus	Zea	Zea	Zea	Zea
	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	Saponification	HF-HCl	Untreated
Pyrolysis product																								
Benzene	6.87	1.45	2.13	0.59	29.67	2.24	6.52	1.75	11.55	0.88	2.53	0.64	20.52	0.95	0.29	0.18	10.04	1.36	1.40	1.12	6.54	0.32	1.16	0.34
Toluene	8.23	1.65	2.94	0.93	15.31	2.62	8.43	2.32	12.30	0.48	0.78	0.29	15.06	2.36	0.96	0.65	7.61	0.94	0.91	0.93	5.47	1.79	2.96	1.18
Styrene	3.77	0.81	0.69	0.29	5.84	1.20	1.78	0.54	7.60	0.29	0.47	0.16	6.89	0.89	0.17	0.19	4.82	0.56	0.46	0.34	2.63	0.40	0.93	0.48
Benzaldehyde	3.76	3.10	1.43	1.15	2.48	4.67	2.54	1.44	1.83	1.75	2.21	1.00	2.16	0.87	0.23	0.31	2.61	3.52	2.35	2.68	0.73	0.31	0.81	0.25
Acetophenone	10.18	6.10	4.15	1.52	6.70	5.46	8.16	1.97	4.95	1.22	2.16	0.77	8.07	2.90	0.66	0.73	5.02	3.47	1.56	1.65	3.95	1.25	3.68	0.42
Phenol	8.44	3.16	1.28	1.63	3.64	2.35	2.00	0.98	4.30	0.54	0.67	0.28	5.17	1.28	0.28	0.86	10.38	1.81	0.97	2.00	3.03	0.53	1.12	0.71
2-Methylphenol	2.53	0.62	0.30	0.23	1.11	0.58	0.31	0.15	2.30	0.10	0.13	0.06	2.97	0.68	0.06	0.21	1.88	0.21	0.16	0.23	1.07	0.22	0.38	0.18
3/4-Methylphenol	11.89	1.85	2.81	1.40	3.55	2.03	5.92	1.26	11.77	0.55	1.64	0.47	6.01	1.55	0.72	0.95	19.24	2.27	1.11	0.98	4.96	1.88	3.19	0.84
4-Ethylphenol	1.69	0.59	0.23	0.16	0.35	0.44	0.38	0.09	2.82	0.32	0.45	0.15	0.77	0.41	0.03	0.11	8.28	0.55	0.53	0.66	1.17	0.07	0.31	0.07
Guaiacol	0.90	0.45	0.15	0.85	2.23	2.72	0.46	0.77	0.88	0.05	0.09	0.05	0.35	0.19	0.00	0.07	0.34	0.11	0.05	0.20	0.10	0.07	0.08	0.05
4-Methylguaiacol	0.63	0.11	0.19	0.32	2.18	1.16	0.90	0.40	1.61	0.14	0.34	0.11	0.90	0.00	0.00	0.00	0.00	0.10	0.05	0.03	0.00	0.00	0.06	0.06
4-Ethylguaiacol	0.15	0.07	0.04	0.13	0.70	0.36	0.15	0.10	0.46	0.05	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.02
4-Vinylphenol	13.44	4.19	1.86	3.41	0.37	0.95	0.71	0.53	4.24	2.79	6.49	1.86	1.99	0.28	0.14	0.47	24.37	35.87	30.08	24.81	3.74	0.21	1.23	0.28
4-Vinylguaiacol	1.46	1.42	0.74	4.16	11.80	9.29	3.01	6.07	1.45	0.91	2.14	0.59	0.13	0.00	0.02	0.26	1.33	0.89	0.35	0.46	0.13	0.19	0.10	0.16
4-Vinylcatechol	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	6.88	15.05	3.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phloeretic acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	1.65	0.79	0.00	0.00	0.00	0.00	0.00	0.61	0.16	0.00	0.00	0.00	0.00
Hydroferulic acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.20	9.29	3.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hydrocaffeic acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	33.17	20.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C22 alcohol	0.00	0.16	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C24 alcohol	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.99	0.00	2.86	0.00	0.00	0.00	0.00
C26 alcohol	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	0.00	4.39	0.00	0.00	0.00	0.00
C28 alcohol	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.00	3.22	0.00	0.00	0.00	0.00
C27:1 alkene	0.00	0.94	0.00	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	3.25	0.14	5.26	0.00	0.00	0.00	0.00	0.04	0.02	0.27	0.38
C29:1 alkene	0.00	0.92	0.00	1.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	7.35	0.21	10.88	0.00	0.00	0.00	0.00	0.15	0.04	1.57	2.55
C23 alkane	0.00	0.18	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.40	0.02	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.08
C25 alkane	0.00	0.84	0.00	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	6.57	0.05	5.41	0.00	0.00	0.00	0.00	0.21	0.08	2.84	2.10
C27 alkane	0.05	1.52	0.00	1.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	9.08	0.20	6.83	0.00	0.00	0.00	0.00	0.24	0.07	5.23	3.43
C29 alkane	0.00	0.34	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	5.16	0.24	3.97	0.00	0.00	0.00	0.00	0.30	0.07	2.47	1.48
C31 alkane	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	4.18	0.42	3.96	0.00	0.00	0.00	0.00	0.32	0.05	2.62	1.53
C16 FA	21.71	60.04	2.13	35.47	10.54	48.44	5.01	40.27	10.61	27.04	6.13	15.82	17.45	50.09	5.09	30.27	3.65	20.34	3.92	23.83	17.06	1.37	60.83	38.36
C18:1 FA	2.58	8.38	0.41	23.08	1.17	10.62	2.58	30.28	16.94	50.30	2.88	48.94	4.04	1.04	1.97	14.50	0.32	13.38	1.18	17.89	5.35	0.39	3.86	21.94
Benzyl nitrile	0.00	0.00	0.21	0.13	0.00	0.00	0.87	0.16	0.00	0.00	0.00	0.00	0.87	0.00	0.09	0.16	0.00	0.00	0.00	0.00	0.16	0.32	0.78	0.19
Methylbenzyl nitril	0.00	0.00	0.19	0.06	0.00	0.00	0.53	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.15	0.00	0.00	0.00	0.00	0.00	0.10	0.26	0.10
Indole	0.00	0.00	0.83	0.67	0.00	0.00	3.61	0.81	0.00	0.00	0.18	0.07	0.00	0.00	0.34	0.69	0.00	0.00	0.00	0.00	0.00	0.52	0.08	0.47
Methylindole	0.00	0.00	1.10	0.55	0.00	0.00	3.63	0.86	0.00	0.00	0.28	0.08	0.00	0.00	0.48	0.55	0.00	0.00	0.00	0.00	0.00	0.85	0.29	0.50
2-Furaldehyde	0.19	0.03	0.64	0.59	0.62	0.59	0.61	0.25	0.00	0.00	0.10	0.07	1.98	0.00	1.50	0.27	0.00	1.02	1.17	1.36	4.70	1.31	0.35	0.82
5-Methyl-2-furanone	0.00	0.32	0.19	0.85	0.06	0.20	0.08	0.39	0.00	0.00	0.06	0.05	0.19	0.00	0.18	1.25	0.00	0.00	0.00	0.00	0.43	0.33	0.05	1.03
5-Methyl-2-furaldehyde	0.06	0.01	0.20	0.35	0.22	0.05	0.45	0.21	0.00	0.00	0.09	0.02	0.81	0.00	0.22	0.26	0.00	0.19	0.51	0.40	1.02	0.41	0.10	0.37
4-Hydroxy-5,6-dihydro-(2H)-pyran-2-one	0.00	0.00	0.48	0.45	0.01	0.24	0.24	0.08	0.00	0.00	0.00	0.00	0.68	0.00	0.59	0.18	0.00	0.44	0.44	0.03	0.04	0.52	0.07	0.13
3,5-Dihydroxy-6-methyl-2,3-dihydro-4H-pyran-4-one	0.00	0.34	0.14	0.72	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.13	0.33	0.09	4.03	0.00	0.04	0.00	0.00	0.00	0.13	0.02	1.14
Levogluconenone	1.00	0.07	2.30	0.28	0.36	0.04	0.10	0.22	0.00	0.24	0.21	0.03	0.40	0.00	0.40	0.11	0.00	0.52	0.55	0.17	20.09	1.00	1.90	0.06
Anhydroxylose	0.00	0.00	2.96	0.68	0.12	0.19	1.23	1.03	0.11	0.04	0.19	0.08	0.90	0.01	21.09	2.46	0.00	0.30	3.35	2.10	0.00	7.62	0.00	6.61
1,4-Dideoxy-D-glycero-hex-1-enopyranos-3-ulose	0.00	0.02	3.28	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	2.06	0.06	0.00	1.26	0.00	0.17
Levomannosan	0.00	0.00	1.92	0.32	0.06	0.04	1.89	0.17	0.00	0.00	0.38	0.00	0.05	0.00	1.94	0.47	0.00	0.00	1.19	0.00	0.00	0.86	0.00	0.88
Levogluconan	0.48	0.33	58.38	11.56	0.93	3.46	36.76	6.13	3.41	0.68	9.84	1.00	0.56	0.18	59.29	2.90	0.11	6.37	41.64	6.17	16.39	72.46	0.30	10.58
1,6-Anhydro-β-D-glucofuranose	0.00	0.00	5.70	0.16	0.00	0.05	1.15	0.25	0.00	0.00	0.32	0.00	0.01	0.00	1.85	0.18	0.00	0.00	2.88	0.00	0.00	3.00	0.00	0.04

Table S2. The fraction of the sum of various lipid pyrolysis products for each species-treatment combination. FA stands for fatty acid.

Lipid pyrolysis product	Betula	Betula	Betula	Betula	Eucalyptus	Eucalyptus	Eucalyptus	Eucalyptus	Lycopodium	Lycopodium	Lycopodium	Lycopodium	Lolium	Lolium	Lolium	Lolium	Pinus	Pinus HF-	Pinus	Pinus	Pinus	Zea	Zea	Zea	Zea
	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	HCl	Saponification	Untreated	Acetolysis	Saponification	HF- HCl	Untreated	
C22 alcohol	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	
C24 alcohol	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05		0.00	0.05		0.00	0.00	
C26 alcohol	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04		0.00	0.08		0.00	0.00	
C28 alcohol	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02		0.00	0.06		0.00	0.00	
C27:1 alkene	0.00	0.01		0.00	0.03	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.04		0.02	0.06	0.00	0.00		0.00	0.00		0.01	
C29:1 alkene	0.00	0.01		0.00	0.02	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.08		0.03	0.13	0.00	0.00		0.00	0.00		0.02	
C23 alkane	0.00	0.00		0.00	0.01	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	
C25 alkane	0.00	0.01		0.00	0.02	0.00		0.00	0.00	0.00	0.00	0.00	0.02	0.08		0.01	0.07	0.00	0.00		0.00	0.00		0.04	
C27 alkane	0.00	0.02		0.00	0.02	0.00		0.00	0.00	0.00	0.00	0.00	0.02	0.10		0.02	0.08	0.00	0.00		0.00	0.01		0.03	
C29 alkane	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.02	0.06		0.03	0.05	0.00	0.00		0.00	0.01		0.03	
C31 alkane	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.03	0.05		0.05	0.05	0.00	0.00		0.00	0.01		0.03	
C16 FA	0.89	0.82		0.84	0.55	0.90		0.66	0.57	0.39	0.35	0.68	0.24	0.73	0.57	0.61	0.37	0.92	0.54	0.77	0.46	0.72	0.66	0.76	
C18:1 FA	0.11	0.11		0.16	0.36	0.10		0.34	0.43	0.61	0.65	0.32	0.76	0.17	0.01	0.24	0.18	0.08	0.35	0.23	0.34	0.23	0.18	0.05	

Table S3. The fraction of the sum of various polysaccharide- and protein-derived pyrolysis products for each species-treatment combination.

Polysaccharide and protein	Betula	Betula	Betula	Betula	Eucalyptus	Eucalyptus	Eucalyptus	Eucalyptus	Lycopodium	Lycopodium	Lycopodium	Lycopodium	Lolium	Lolium	Lolium	Lolium	Pinus	Pinus	Pinus	Pinus	Zea	Zea	Zea	Zea
pyrolysis product	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	Saponification	HF-HCl	Untreated
Benzyl nitrile	0.00	0.00		0.00	0.01	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.05	0.00		0.00	0.01	0.00	0.00	0.00	0.00		0.00	0.01
Methylbenzylnitritl	0.00	0.00		0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00		0.00	0.01	0.00	0.00	0.00	0.00		0.00	0.06
Indole	0.00	0.00		0.01	0.04	0.00	0.00	0.07	0.07	0.00	0.00	0.02	0.05	0.00	0.00		0.00	0.05	0.00	0.00	0.00		0.01	0.02
Methylindole	0.00	0.00		0.01	0.03	0.00	0.00	0.07	0.08	0.00	0.00	0.02	0.05	0.00	0.00		0.01	0.04	0.00	0.00	0.00		0.01	0.07
2-Furaldehyde	0.11	0.02		0.01	0.03	0.26	0.12	0.01	0.02	0.00	0.00	0.01	0.05	0.33	0.00		0.02	0.02	0.00	0.10	0.02	0.13	0.11	0.01
5-Methyl-2-furanone	0.00	0.29		0.00	0.05	0.02	0.04	0.00	0.04	0.00	0.00	0.00	0.04	0.03	0.00		0.00	0.09	0.00	0.00	0.00	0.01	0.00	0.01
5-Methyl-2-furaldehyde	0.03	0.01		0.00	0.02	0.09	0.01	0.01	0.02	0.00	0.00	0.01	0.01	0.13	0.00		0.00	0.02	0.00	0.02	0.01	0.04	0.02	0.00
4-Hydroxy-5,6-dihydro-(2H)-pyran-2-one	0.00	0.00		0.01	0.02	0.01	0.05	0.00	0.01	0.00	0.00	0.00	0.00	0.11	0.00		0.01	0.01	0.00	0.05	0.01	0.00	0.00	0.01
3,5-Dihydroxy-6-methyl-2,3-dihydro-4H-pyran-4-one	0.00	0.30		0.00	0.04	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.02	0.65		0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Levogluconone	0.58	0.07		0.03	0.02	0.15	0.01	0.00	0.02	0.00	0.25	0.02	0.02	0.07	0.00		0.00	0.01	0.00	0.05	0.01	0.02	0.47	0.01
Anhydroxylose	0.00	0.00		0.04	0.04	0.05	0.04	0.02	0.09	0.03	0.05	0.02	0.06	0.15	0.01		0.24	0.18	0.00	0.03	0.06	0.20	0.00	0.08
1,4-Dideoxy-D-glycer-hex-l-enopyranos-3-ulose	0.00	0.01		0.04	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.09	0.04	0.01	0.00	0.01
Levomannosan	0.00	0.00		0.02	0.02	0.03	0.01	0.04	0.02	0.00	0.00	0.03	0.00	0.01	0.00		0.02	0.03	0.00	0.00	0.02	0.00	0.00	0.01
Levoglucon	0.28	0.29		0.74	0.63	0.39	0.71	0.72	0.55	0.97	0.70	0.84	0.72	0.09	0.34		0.67	0.21	1.00	0.65	0.77	0.60	0.38	0.80
1,6-Anhydro-β-D-glucofuranose	0.00	0.00		0.07	0.01	0.00	0.01	0.02	0.02	0.00	0.00	0.03	0.00	0.00	0.00		0.02	0.01	0.00	0.00	0.05	0.00	0.00	0.03

Table S4. The fraction of the sum of various aromatic pyrolysis products for each species-treatment combination.

Aromatic pyrolysis products	Betula	Betula	Betula	Betula	Eucalyptus	Eucalyptus	Eucalyptus	Eucalyptus	Lycopodium	Lycopodium	Lycopodium	Lycopodium	Lolium	Lolium	Lolium	Lolium	Pinus	Pinus	Pinus	Pinus	Zea	Zea	Zea	Zea
	Acetolysis	HF- HCl	Saponification	Untreated	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	HF-HCl	Saponification	Untreated	Acetolysis	HF- HCl	Saponification	Untreated	Acetolysis	Saponification	HF-HCl	Untreated
Benzene	0.09	0.06	0.11	0.04	0.35	0.06	0.16	0.10	0.17	0.04	0.03	0.02	0.29	0.08	0.08	0.04	0.10	0.03	0.03	0.03	0.20	0.04	0.07	0.07
Toluene	0.11	0.06	0.16	0.06	0.18	0.07	0.20	0.13	0.18	0.02	0.01	0.01	0.21	0.19	0.27	0.13	0.08	0.02	0.02	0.03	0.16	0.25	0.19	0.23
Styrene	0.05	0.03	0.04	0.02	0.07	0.03	0.04	0.03	0.11	0.01	0.01	0.00	0.10	0.07	0.05	0.04	0.05	0.01	0.01	0.01	0.08	0.06	0.06	0.10
Benzaldehyde	0.05	0.12	0.08	0.07	0.03	0.13	0.06	0.08	0.03	0.08	0.03	0.03	0.03	0.07	0.06	0.06	0.03	0.07	0.06	0.07	0.02	0.04	0.05	0.05
Acetophenone	0.14	0.24	0.22	0.09	0.08	0.15	0.20	0.11	0.07	0.06	0.03	0.02	0.12	0.23	0.19	0.15	0.05	0.07	0.04	0.05	0.12	0.17	0.23	0.08
Phenol	0.11	0.12	0.07	0.10	0.04	0.07	0.05	0.05	0.06	0.02	0.01	0.01	0.07	0.10	0.08	0.17	0.11	0.03	0.02	0.06	0.09	0.07	0.07	0.14
2-Methylphenol	0.03	0.02	0.02	0.01	0.01	0.02	0.01	0.01	0.03	0.00	0.00	0.00	0.04	0.05	0.02	0.04	0.02	0.00	0.00	0.01	0.03	0.03	0.02	0.04
3/4-Methylphenol	0.16	0.07	0.15	0.08	0.04	0.06	0.14	0.07	0.17	0.03	0.02	0.01	0.09	0.13	0.20	0.19	0.20	0.04	0.03	0.03	0.15	0.26	0.20	0.17
4-Ethylphenol	0.02	0.02	0.01	0.01	0.00	0.01	0.01	0.00	0.04	0.01	0.01	0.00	0.01	0.03	0.01	0.02	0.09	0.01	0.01	0.02	0.03	0.01	0.02	0.01
Guaiacol	0.01	0.02	0.01	0.05	0.03	0.08	0.01	0.04	0.01	0.00	0.00	0.00	0.01	0.02	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01
4-Methylguaiacol	0.01	0.00	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
4-Ethylguaiacol	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4-Vinylphenol	0.18	0.16	0.10	0.20	0.00	0.03	0.02	0.03	0.06	0.13	0.08	0.06	0.03	0.02	0.04	0.09	0.25	0.69	0.74	0.68	0.11	0.03	0.08	0.06
4-Vinylguaiacol	0.02	0.06	0.04	0.25	0.14	0.26	0.07	0.33	0.02	0.04	0.03	0.02	0.00	0.00	0.00	0.05	0.01	0.02	0.01	0.01	0.00	0.03	0.01	0.03
4-Vinylcatechol	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.32	0.19	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phloeretic acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Hydroferulic acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.12	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hydrocaffeic acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.42	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table S5. Matrix with the results of student's *t*-tests between all untreated EA-IRMS stable carbon isotope samples. * = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$.

	<i>Zea</i>	<i>Lycopodium</i>	<i>Pinus</i>	<i>Betula</i>	<i>Lolium</i>	<i>Eucalyptus</i>
<i>Zea</i>						
<i>Lycopodium</i>	$t = -75.1$ $df = 4$ $p = 2e-07$ ***					
<i>Pinus</i>	$t = -69.3$ $df = 4$ $p = 3e-07$ ***	$t = 6.9$ $df = 4$ $p = 0.002$ **				
<i>Betula</i>	$t = -59.8$ $df = 4$ $p = 5e-07$ ***	$t = 34.6$ $df = 4$ $p = 4e-06$ ***	$t = 23.4$ $df = 4$ $p = 2e-05$ ***			
<i>Lolium</i>	$t = -62.1$ $df = 4$ $p = 4e-07$ ***	$t = 11.4$ $df = 4$ $p = 3e-04$ ***	$t = 5.3$ $df = 4$ $p = 0.006$ **	$t = -13.5$ $df = 4$ $p = 2e-04$ ***		
<i>Eucalyptus</i>	$t = -65.7$ $df = 4$ $p = 3e-07$ ***	$t = 15.8$ $df = 4$ $p = 9e-05$ ***	$t = 7.8$ $df = 4$ $p = 0.001$ ***	$t = -15.6$ $df = 4$ $p = 1e-04$ ***	$t = 1.2$ $df = 4$ $p = 0.3$	

Table S6. Overview of samples (species and treatment) and laser used.

COMPex 102	COMPexPro 102
<i>Pinus</i> untreated	<i>Betula</i> HF-HCl
<i>Betula</i> untreated	<i>Lycopodium</i> HF-HCl
<i>Eucalyptus</i> untreated	<i>Zea</i> HF-HCl
<i>Zea</i> untreated	<i>Pinus</i> HF-HCl
<i>Lolium</i> untreated	<i>Betula</i> saponification
<i>Lycopodium</i> untreated	<i>Eucalyptus</i> saponification
<i>Pinus</i> saponified	<i>Lolium</i> saponification
<i>Zea</i> saponified	<i>Lycopodium</i> saponification
<i>Eucalyptus</i> HF-HCl	<i>Zea</i> saponification
<i>Lolium</i> HF-HCl	<i>Betula</i> acetolysis
<i>Betula</i> acetolysis	<i>Lolium</i> acetolysis
<i>Pinus</i> acetolysis	<i>Zea</i> acetolysis
<i>Lycopodium</i> acetolysis	
<i>Eucalyptus</i> acetolysis	