Lovaglio T, D'Auria M, Rita A, Todaro L (2017).
Compositions of compounds extracted from thermo-treated wood using solvents of different polarities
iForest – Biogeosciences and Forestry – doi: 10.3832/ifor2360-010

Supplementary Material

Tab. S1 - Fraction A (Area %) of extracts and other compounds assessed by GC-MS analysis of samples of untreated (C) and thermo-treated (TH) alder.

Fraction A (Area %)										Compounds
Autoclave		**Soxhlet ex.**								
Water		Hexane		Dichloromethane		Methanol		Benzene/ Ethanol		
C	TH	C	TH	C	TH	C	TH	C	TH	
										ACID and ESTER
	11.2									*1,2-Benzenedicarboxylic acid*
									33.3	*Bis(2-ethylhexyl)ester- hexanedioic acid*
				3.6	1.0					*Bis(2-methylpropyl) 1,2-benzenedicarboxylate*
		0.9								*Butyl-decyl 1,2-benzenedicarboxylate*
						1.0				*Butyl-2-ethylcyclohexyl phthalate*
						0.7				*Butyl-hexyl phthalate*
		3.3								*Dibutyl phthalate*
	16.6									*Diisooctyl phthalate*
									4.8	*3,5-Dimethoxy-4-hydroxyphenylacetic acid*
		62.2	62.2						6.4	*Isobutyl-octyl phthalate*
								3.1		*Isobutyl-trans-hex-3-enyl phthalate*
						2.9				*Methyl 3,5-bis(1,1-dimethylethyl)-4-hydroxybenzenenepropanoate*
11.2										*Phthalic acid, isobutyl 4-octyl ester*
						10.2				*Octadecyl 3,5-bis(1,1-dimethylethyl)-4-hydroxybenzenepropanoate*
11.2	**27.8**	**66.4**	**62.2**	**3.6**	**1.0**	**14.8**		**3.1**	**45.5**	**TOT % RELATIVE**
										ALKYL COMPOUNDS
						0.8				*1,2-Diethyl-cyclohexadecane*
						0.8				*(Z)-3-Hexadecene*
						6.0				*(Z)-7-Hexadecene*
						1.4				*1-Nonadecene*
						1.0				*1-Octadecene*
								2.6		*2-Methyloctacosane*
						2.8				*Cycloeicosane*
								2.6		*Eicosane*
	10.3									*Exadecane*
	11.4							2.0		*Heptacosane*
	9.3							2.6		*Octacosane* *Triacontane*
	31					**12.8**		**9.8**		**TOT % RELATIVE**
										AROMATIC
								6.9		*1-Methyldodecylbenzene*
						0.5				*Phenanthrene*
						0.5		**6.9**		**TOT % RELATIVE**
										CARBONYL COMPOUNDS
12.1										*1-(9-anthracenyl) Ethanone*
						8.5				*(E)-15-Heptadecenal*
					17.8				12.5	*4-Hydroxy-3,5-dimethoxybenzaldehyde*
		0.7								*7,9-Di-t-butyl-1-oxaspiro[4,5]deca-6,9-diene-2,8-dione*
	10.1									*4-Hydroxy-3,5-dimethoxybenzaldehyde*
				16.0		10.0		0.8	0.7	*Benzophenone*
									2.8	*Vanillin*
12.1	**10.1**	**0.7**		**16.0**	**17.8**	**18.5**		**0.8**	**16**	**TOT % RELATIVE**
										FATTY ACID AND CONJUGATES
		16.1				3.0				*(Z)-9-Octadecenamide*
		0.9	0.9						1.5	*1-Methylethyl dodecanoate*
		8.1								*9,12-Octadecadienoic acid*
						2.5			1.1	*Glycerol 1,2-diacetate*
		0.9								*Hexadecanamide*
	12.7									*Octadecanoic acid*
	12.7	**26**	**0.9**			**5.5**			**2.6**	**TOT % RELATIVE**

Fraction A (Area %)										Compounds
Autoclave		**Soxhlet ex.**								
Water		Hexane		Dichloromethane		Methanol		Benzene/ Ethanol		
C	TH	C	TH	C	TH	C	TH	C	TH	
										ORGANIC BUILDING BLOCKS / CARBONYL COMPOUNDS
									2.2	*3-Hydroxy-4-methoxybenzaldehyde*
	11.8									*3,5-Dimethoxy-4-hydroxycinnamaldehyde*
					38.5					*3,5-Dimethoxy-4-hydroxycinnamaldehyde*
	12.1									*2,5-di-tert-Butyl-1,4-benzoquinone*
					16.1					*3-(4-Hydroxy-3-methoxyphenyl)-2-propenal*
									15.6	*4-Hydroxy-2-methoxycinnamaldehyde*
						2.4				*Diphenyldisulfide*
	23.9				**54.6**	**2.4**			**17.8**	**TOT % RELATIVE**
										PHENOL
						4.0				*2,4-Bis(1,1-dimethylethyl)phenol*
									1.3	*2,6-Dimethoxyphenol*
									5.9	*Butylated Hydroxytoluene*
						4.0			**7.2**	**TOT % RELATIVE**

Tab. S2 - Fraction A (Area %) of extracts and other compounds assessed by GC-MS analysis of samples of untreated (C) and thermo-treated (TH) cedar.

Fraction A (Area %)										Compounds
Autoclave		**Soxhlet ex.**								
Water		Hexane		Dichloromethane		Methanol		Benzene/ Ethanol		
C	TH	C	TH	C	TH	C	TH	C	TH	
										ACID and ESTER
						3.0				Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, methyl ester
		1.1								Bis(2-ethylhexyl) phthalate
									15	Hept-4-yl-isobutyl phthalate
			3.8							Isobutyl-2-methylpent-3-yl phthalate
		2.5								Isobutyl-octyl phthalate
11.8										Phenylbenzeneacetic acid, methyl ester
	15.2									Phospohoric acid
	11.2									Phthalyc acid
11.8	**26.4**	**3.6**	**3.8**			**3.0**			**15**	**TOT % RELATIVE**
										ACID/ORGANIC BUILDING BLOCKS
						2.2				Benzophenone
						2.2				**TOT % RELATIVE**
										ALKYL COMPOUNDS
						0.4				7-Hexadecene, (Z)
		0.8	2.1					2.3	1.5	*Cis* (-)-2,4a,5,6,9a-Hexahydro-3,5,5,9-tetramethyl-1*H*-benzocycloheptene
						0.8			5.6	(*R*)-2,4a,5,6,7,8-Hexahydro-3,5,5,9-tetramethyl-1*H*-benzocycloheptene,
		1.1	6.9	1.3	9.0			7.5		2,4a,5,6,7,8-Hexahydro-3,5,5,9-tetramethyl-, (*R*)-1*H*-benzocycloheptene
		0.8	1.7					2.7	0.8	2,4a,5,6,7,8,9,9a-Octahydro-3,5,5-trimethyl-9-methylene- (4a*S*-*cis*)-1*H*-benzocycloheptene
						1.5				Cetene
	24.7									Eicosane
	24.7	**2.7**	**10.7**	**1.3**	**9.0**	**2.7**		**12.5**	**7.9**	**TOT % RELATIVE**
										CARBONYL COMPOUNDS
	8.5									4-(methylthion)-vanillin benzaldehyde,
	10.6									2-Propenal, 3-(4-hydroxy-3-methoxyphenyl)
	10.1									4-hydroxy-3,5-dimethoxy benzaldehyde,
	29.2									**TOT % RELATIVE**
										FATTY ACID AND CONJUGATES
	11.6									n-Hexadecanoic acid
12.7										Octadecanoic acid
12.7	**11.6**									**TOT % RELATIVE**
										AROMATIC
			0.7							1-(1,5-Dimethylhexyl)-4-methylbenzene
					21.7					1,3-Bis(3-phenoxyphenoxy)benzene,
12.1										Acetylphenanthrene
12.1			**0.7**		**21.7**					**TOT % RELATIVE**
										TERPENE
			8.2		8.4					Artumerone
			8.2		**8.4**					**TOT % RELATIVE**
										ORGANIC BUILBING BLOCKS
			0.4							1,2,3,4-Tetrahydro-1,6-dimethylnaphthalene
11.8	11.8									3,5-Dimethoxy-4-hydroxycinnamaldehyde
					2.3					Alloaromadendrene
	13.5									Butyl citrate
					4.3					Cadina-1(10),6,8-triene
						3.2				Diphenyldisulfide
	9.7									3,4,5-trimethoxyphenol, -
11.8	**35**		**0.4**		**6.6**	**3.2**				**TOT % RELATIVE**
										SILAN
			3.9					0.7		1,1,2,2,3-Hexamethyllindane
			3.9					**0.7**		**TOT % RELATIVE**