

**Table S1.** Synoptic table of all the measurements carried out on the samples investigated in this study. LOD: Limit of Detection.

Analysis	Method	LOD		olive pomace (bulk) #1	olive pomace (bulk) #2	wood sawdust #3	wood sawdust #4	wood chips (pruning and wood waste) #5	logs (wood briquettes) #A	briquettes (wood briquettes) #B	briquettes (wood briquettes) #C	briquettes (wood briquettes) #D	Canadian pellets #E	Romanian pellets #F	pellets #G	pomace peanuts #H	briquettes (pomace briquettes) #I	Romanian pellet #L	Romanian pellet #M	pellet #N	pellet #O
Physical state	visual	-	-	solid	solid	solid	solid	solid	solid	solid	solid	solid	solid	solid	solid	solid	solid	solid	solid	solid	solid
Color	visual	-	-	dark brown	dark brown	light brown	light brown	dark brown	light brown	light brown	light brown	brown	brown	brown	light brown	light brown	dark brown	light brown	brown	brown	light brown
Odor	olfactory	-	-	pomace	pomace	wood	wood	vegetable	wood	wood	wood	wood	pellet	pellet	pellet	pomace	pomace	pellet	pellet	pellet	pellet
pH	CNR IRSA 1 Q64 Vol. 3 1985	pH unit	-	3.7	4.1	4.2	5.2	7.8	4.8	5.5	5	4.7	4	5	4.4	3.9	4.6	4.1	5.2	4.1	5.6
Dry matter at 105 °C	CNR IRSA 2 Q64 Vol. 2 1984	% w/w	-	82.5	82.4	90.5	87.5	53.7	90.7	90.7	89.3	90	93.3	95.7	92.7	82.8	88.9	91.8	94	94.2	95.7
Humidity	CNR IRSA 2 Q64 Vol. 2 1984	% w/w	-	17.5	17.6	9.5	12.5	46.3	9.3	9.3	10.7	10	6.7	4.3	7.3	17.2	11.1	8.2	6	5.8	4.3
Dry matter at 600 °C	CNR IRSA 2 Q64 Vol. 2 1985	% w/w	-	0.79	0.87	0.33	1.1	4	1.1	2	1.2	2.4	0.36	0.97	0.32	0.81	3	0.39	0.92	0.38	0.95
Total Organic Compound (TOC)	UNI EN 13137:2002	% w/w	-	45.8	42.3	46.2	43.5	17.8	40.9	41.6	44.5	45.3	47.7	47.2	46.1	41.4	46.6	47.1	46.2	47.3	47.3

	CNR IRSA 12																				
Sulfur	Q64 Vol. 3 1986	mg/kg	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
	EPA 9013A 2004 + EPA																				
Total cyanides	9010C 2004 + EPA 9014 1996	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Metals																					
- Aluminum	UNI EN 13657:2004 + EPA 6010C 2007	mg/kg		21.2	19.8	2.5	35.5	2540	15.2	78.4	66.6	45.7	24.9	34.5	7.7	17.8	45	10.7	31.3	19.9	53.3
- Antimony	UNI EN 13657:2004 + EPA 6010C 2007	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	0.78	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
- Silver	UNI EN 13657:2004 + EPA 6010C 2007	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
- Arsenic	UNI EN 13657:2004 + EPA 6010C 2007	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	2.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
- Barium	UNI EN 13657:2004 + EPA 6010C 2007	mg/kg		1	1.2	3.8	15.6	55.6	3.7	22.4	34.4	7.1	5.8	29.7	10.1	0.86	5.4	12.4	30.1	5	31.1
- Beryllium	UNI EN 13657:2004 + EPA 6010C 2007	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
- Boron	UNI EN 13657:2004 + EPA 6010C 2007	mg/kg		5.7	5.8	6.1	5.9	64.7	4.6	4	9.7	8.3	1.6	3.1	7.5	5.2	8.4	1.7	2.3	1.7	3.6

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- Chlorpyrifos (Dursban)	EPA 3550C 2007 + EPA 8270D 2007	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
- Trichloronate	EPA 3550C 2007 + EPA 8270D 2007	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
- Merphos	EPA 3550C 2007 + EPA 8270D 2007	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
- Stirofos (Tet- rachlorvinphos)	EPA 3550C 2007 + EPA 8270D 2007	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
- Tokuthion (Prothiofos)	EPA 3550C 2007 + EPA 8270D 2007	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
- Bolstar (Sulprofos)	EPA 3550C 2007 + EPA 8270D 2007	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
- Azinphos-me- thyl (Guthion)	EPA 3550C 2007 + EPA 8270D 2007	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
- Coumaphos	EPA 3550C 2007 + EPA 8270D 2007	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Formaldehyde	EPA 8315A 1996	mg/kg	<0.50	3.50	<0,50	5.2	109	<0,50	45	480	218	47	13	236	15.2	<0,50	2.48	15.2	45	12.3	1.50
Acetone	EPA 8315A 1996	mg/kg	5	6	200	<5	<5	<5	<5	<5	<5	<5	65	8	14	23	<5	13	<5	42	<5

**Table S2.** Descriptive analytics of the measurements reported in Table S1. LOD: Limit of Detection.

<b>Determination</b>	<b>Min</b>	<b>Max</b>	<b>Average</b>	<b>Standard Deviation</b>	<b>RDS</b>
pH	3.7	7.8	4.77	15.2	318.8
Dry matter at 105 °C	53.7	95.7	88.1	1550.0	1758.7
Humidity	4.3	46.3	11.9	1550.0	13062.1
Dry matter at 600 °C	0.32	4.0	1.22	17.4	1427.8
Total Cyanides	< LOD	< LOD	-	-	-
Sulfur	< LOD	< LOD	-	-	-
Aluminum	2.5	2540	170.6	5951547	3489506
Antimony	0.78	0.78	0.78	0	0
Silver	< LOD	< LOD	-	-	-
Arsenic	2.3	2.3	2.30	0	0
Barium	0.86	55.6	15.3	3991.1	26098.9
Beryllium	< LOD	< LOD	-	-	-
Boron	1.6	64.7	8.33	3466.1	41620.9
Cadmium	0.34	0.34	0.34	0	0
Calcium	585	54960	4473.1	2.71E+09	60593533
Cobalt	2.7	2.7	2.70	0	0
Total Chromium	0.57	26.6	4.88	552.9	11327.1
Chromium VI	< LOD	< LOD	-	-	-
Iron	6.9	4655	385.6	20412041	5293045
Magnesium	95.2	4275	449.1	15682560	3492040
Manganese	3.2	260	50.4	63591.7	126160
Mercury	< LOD	< LOD	-	-	-
Molybdenum	0.94	0.94	0.94	0	0
Nickel	0.54	13.2	3.83	117.1	3056.2
Lead	0.67	11.5	3.74	115.8	3092.5
Potassium	152	4780	1188.2	19390559	1631973
Copper	0.53	24.9	3.30	525.0	15893.2
Selenium	< LOD	< LOD	-	-	-
Silicon	4.8	70	39.4	7626.4	19348.2
Sodium	8.8	1145	188.0	1561109	830274.1



Tin	0.69	0.69	0.69	0	0
Thallium	< LOD	< LOD	-	-	-
Tellurium	< LOD	< LOD	-	-	-
Titanium	0.67	50.3	7.38	2091.6	28329.4
Vanadium	0.6	8.9	1.24	63.0	5074.3
Zinc	1.3	58.2	9.10	2906.2	31935.8
Total Organic Compound (TOC)	17.8	47.7	43.6	790.2	1812.3
Aliphatic hydrocarbons (C5÷C8)	< LOD	< LOD	-	-	-
Aromatic hydrocarbons (C9÷C10)	< LOD	< LOD	-	-	-
Hydrocarbons (C10÷C40)	325	1770	818.4	2780186	339694.3
Benzene	< LOD	< LOD	-	-	-
Toluene	0.23	1.2	0.68	0.48	70.8
Ethylbenzene	< LOD	< LOD	-	-	-
o-Xylene	< LOD	< LOD	-	-	-
m-Xylene	< LOD	< LOD	-	-	-
p-Xylene	< LOD	< LOD	-	-	-
Styrene	0.57	0.57	0.57	0	0
Isopropylbenzene	< LOD	< LOD	-	-	-
1,2,4-Trimethylbenzene	< LOD	< LOD	-	-	-
1,3,5-Trimethylbenzene	< LOD	< LOD	-	-	-
Chloromethane	< LOD	< LOD	-	-	-
Vinyl Chloride	< LOD	< LOD	-	-	-
1,1-Dichloroethylene	< LOD	< LOD	-	-	-
Dichloromethane	< LOD	< LOD	-	-	-
trans-1,2-Dichloroethylene	< LOD	< LOD	-	-	-
1,1-Dichloroethane	< LOD	< LOD	-	-	-
Trichloromethane (Chloroform)	< LOD	< LOD	-	-	-
cis-1,2-Dichloroethylene	< LOD	< LOD	-	-	-
1,1,1-Trichloroethane	< LOD	< LOD	-	-	-
Carbon tetrachloride	< LOD	< LOD	-	-	-
1,1-Dichloropropene	< LOD	< LOD	-	-	-
Trichloroethylene	< LOD	< LOD	-	-	-
1,2-Dichloroethane	< LOD	< LOD	-	-	-
1,2-Dichloropropane	< LOD	< LOD	-	-	-

cis-1.3-Dichloropropene	< LOD	< LOD	-	-	-
Tetrachloroethylene (PCE)	< LOD	< LOD	-	-	-
1.1.2-Trichloroethane	< LOD	< LOD	-	-	-
trans-1.3-Dichloropropene	< LOD	< LOD	-	-	-
1.1.1.2-Tetrachloroethane	< LOD	< LOD	-	-	-
1.3-Dichloropropane	< LOD	< LOD	-	-	-
1.1.2.2-Tetrachloroethane	< LOD	< LOD	-	-	-
1.2.3-Trichloropropane	< LOD	< LOD	-	-	-
Hexachlorobutadiene	< LOD	< LOD	-	-	-
1.2-Dibromo-3-chloropropane	< LOD	< LOD	-	-	-
Bromochloromethane	< LOD	< LOD	-	-	-
Bromodichloromethane	< LOD	< LOD	-	-	-
Dibromochloromethane	< LOD	< LOD	-	-	-
1.2-Dibromoethane	< LOD	< LOD	-	-	-
Tribromomethane (Bromoform)	< LOD	< LOD	-	-	-
Naphthalene	< LOD	< LOD	-	-	-
Acenaphthylene	< LOD	< LOD	-	-	-
Acenaftene	< LOD	< LOD	-	-	-
Fluorenes	< LOD	< LOD	-	-	-
Fenanthrene	0.23	0.34	0.27	0.008	3.02
Anthracene	< LOD	< LOD	-	-	-
Fluorantene	0.16	0.25	0.20	0.004	2.00
Perylene	0.16	0.16	0.16	0	0
Pyrene	0.12	0.14	0.13	0.0002	0.154
Benzo(a)anthracene	< LOD	< LOD	-	-	-
Crysene	< LOD	< LOD	-	-	-
Benzo(b)fluorantenes	< LOD	< LOD	-	-	-
Benzo(k+j)fluorantenes	< LOD	< LOD	-	-	-
Benzo(e)pyrene	< LOD	< LOD	-	-	-
Benzo(a)pyrene	< LOD	< LOD	-	-	-
Indeno(1.2.3-cd)pyrenees	< LOD	< LOD	-	-	-
Dibenzo(ah)anthracene	< LOD	< LOD	-	-	-
Benzo(ghi)perilene	< LOD	< LOD	-	-	-
Dibenzo(al)pyrene	< LOD	< LOD	-	-	-

Dibenzo(ae)pyrene	< LOD	< LOD	-	-	-
Dibenzo(ai)pyrene	< LOD	< LOD	-	-	-
Dibenzo(ah)pyrene	< LOD	< LOD	-	-	-
Etridiazole	< LOD	< LOD	-	-	-
Chloroneb	< LOD	< LOD	-	-	-
alfa-BHC	< LOD	< LOD	-	-	-
Simazine	< LOD	< LOD	-	-	-
Atrazine	< LOD	< LOD	-	-	-
beta-BHC	< LOD	< LOD	-	-	-
gamma-BHC (Lindane)	< LOD	< LOD	-	-	-
delta-BHC	< LOD	< LOD	-	-	-
Chlorothalonil	< LOD	< LOD	-	-	-
Alachlor	< LOD	< LOD	-	-	-
Heptachlor	< LOD	< LOD	-	-	-
Aldrin	< LOD	< LOD	-	-	-
Chlorthal-dimethyl (DCPA)	< LOD	< LOD	-	-	-
Isodrin	< LOD	< LOD	-	-	-
Heptachlor epoxide b	< LOD	< LOD	-	-	-
trans-Chlordane	< LOD	< LOD	-	-	-
o.p'-DDE	< LOD	< LOD	-	-	-
Endosulfan I	< LOD	< LOD	-	-	-
cis-Chlordane	< LOD	< LOD	-	-	-
trans-Nonachlor	< LOD	< LOD	-	-	-
p.p'-DDE	< LOD	< LOD	-	-	-
Dieldrin	< LOD	< LOD	-	-	-
o.p'-DDD	< LOD	< LOD	-	-	-
Endrin	< LOD	< LOD	-	-	-
Endosulfan II	< LOD	< LOD	-	-	-
p.p'-DDD	< LOD	< LOD	-	-	-
o.p'-DDT	< LOD	< LOD	-	-	-
Endrin aldehyde	< LOD	< LOD	-	-	-
Kepone	< LOD	< LOD	-	-	-
Endosulfan sulfate	< LOD	< LOD	-	-	-
p.p'-DDT	< LOD	< LOD	-	-	-

Methoxychlor	< LOD	< LOD	-	-	-
Mirex	< LOD	< LOD	-	-	-
Permethrins-I	< LOD	< LOD	-	-	-
Permethrins-II	< LOD	< LOD	-	-	-
Diclorvos (DDVP)	< LOD	< LOD	-	-	-
Mevinphos (Phosdrin)	< LOD	< LOD	-	-	-
Demeton-S	< LOD	< LOD	-	-	-
Ethoprophos	< LOD	< LOD	-	-	-
Naled (Dibrom)	< LOD	< LOD	-	-	-
Phorate	< LOD	< LOD	-	-	-
Demeton-O	< LOD	< LOD	-	-	-
Diazinon	< LOD	< LOD	-	-	-
Disulfoton	< LOD	< LOD	-	-	-
methyl-Parathion	< LOD	< LOD	-	-	-
Fenchlorphos (Ronnel)	< LOD	< LOD	-	-	-
Fenthion	< LOD	< LOD	-	-	-
Chlorpyrifos (Dursban)	< LOD	< LOD	-	-	-
Trichloronate	< LOD	< LOD	-	-	-
Merphos	< LOD	< LOD	-	-	-
Stirofos (Tetrachlorvinphos)	< LOD	< LOD	-	-	-
Tokuthion (Prothiofos)	< LOD	< LOD	-	-	-
Bolstar (Sulprofos)	< LOD	< LOD	-	-	-
Azinphos-methyl (Guthion)	< LOD	< LOD	-	-	-
Coumaphos	< LOD	< LOD	-	-	-
Formaldehyde	2.48	480	89.06	241537.1151	271198.4803
Acetone	6	200	46.4	29777.9	64211.1