

# **Online Materials**

**Annexe I.** Total C, total N, C/N,  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  of fungal sporophores collected in the natural stand, Breuil forest. (EMF) ectomycorrhizal fungi, (ASF) saprotrophic fungi living on A horizon, (FHSF) litter decaying fungi living on F and H layers, (TSF) wood decaying fungi living on small twigs on the ground, (DWSF) wood decaying fungi living on dead branches, stumps or trunks and (DLWSF) fungi living on dead or living wood.

Genus	Species	Authors	Synonyms	n	Ecological group	C %	N %	$\delta^{13}\text{C}$ ‰	$\delta^{15}\text{N}$ ‰
<i>Amanita</i>	<i>citrina</i>	(Sch.: Fr.) S.F. Gray		3	EMF	42.2 ± 3.8	5.7 ± 0.4	-26.7 ± 0.6	1.7 ± 0.4
<i>Amanita</i>	<i>muscaria</i>	(L.: Fr.) Hooker		4	EMF	39.5 ± 1.4	2.4 ± 0.3	-25.5 ± 0.4	1.2 ± 0.2
<i>Amanita</i>	<i>rubescens</i>	(Pers.: Fr.) S.F. Gray		4	EMF	40.9 ± 1.1	4.0 ± 0.5	-26.2 ± 0.2	1.0 ± 0.6
<i>Armillaria</i>	<i>gallica</i> ("Type E")	Marxmüller & Romagnesi	<i>A. bulbosa</i>	4	DLWSF	39.2 ± 1.6	4.5 ± 0.5	-20.2 ± 0.3	-0.9 ± 0.4
<i>Ascocoryne</i>	<i>sarcoides</i>	(Jacquin ex. S. F. Gray) Groves & Wilson	<i>C. sarcoides</i>	1	TSF	41.4	2.3	-22.8	-5.2
<i>Boletus</i>	<i>edulis</i>	Bull.: Fr.		4	EMF	42.8 ± 1.2	4.7 ± 1.7	-27.0 ± 0.3	3.8 ± 0.7
<i>Cantharellus</i>	<i>cibarius</i>	(Fr.: Fr.) Fr.		3	EMF	44.9 ± 2.7	3.4 ± 0.5	-26.6 ± 0.1	0.7 ± 0.5
<i>Cantharellus</i>	<i>tubiformis</i>	Fr.: Fr.		4	EMF	45.1 ± 3.0	3.6 ± 0.5	-25.9 ± 0.5	0.9 ± 1.3
<i>Cortinarius</i>	<i>alboviolaceus</i>	(Pers.: Fr.) Fr.		4	EMF	41.5 ± 1.2	3.3 ± 0.5	-28.1 ± 0.4	10.4 ± 1.5
<i>Cortinarius</i>	<i>anomalous</i>	(Fr.: Fr.) Fr.		2	EMF	42.9 ± 1.2	5.2 ± 0.6	-26.8 ± 0.6	7.4 ± 0.8
<i>Cortinarius</i>	<i>bolaris</i>	(Pers.: Fr.) Fr.		3	EMF	45.1 ± 0.2	5.1 ± 0.2	-25.9 ± 0.4	6.3 ± 0.4
<i>Cortinarius</i>	<i>delibutus</i>	Fr.		4	EMF	41.1 ± 4.1	4.0 ± 1.0	-26.2 ± 1.0	7.5 ± 0.5
<i>Cortinarius</i>	<i>malicorius</i>	Fr.		3	EMF	41.7 ± 0.5	3.7 ± 0.2	-26.0 ± 0.3	9.4 ± 0.1
<i>Cortinarius</i>	<i>paleaceus</i>	(Weimm.) Fr.		4	EMF	43.3 ± 1.7	4.1 ± 0.3	-25.0 ± 3.0	2.6 ± 0.3
<i>Cortinarius</i>	<i>sanguineus</i>	(Wülf.: Fr.) S.F. Gray		2	EMF	41.0 ± 0.3	3.3 ± 0.4	-26.3 ± 0.1	5.8 ± 0.1
<i>Cortinarius</i>	<i>subortus</i>	(Pers.: Fr.) Fr.		4	EMF	48.7 ± 0.4	4.4 ± 0.4	-25.7 ± 0.4	10.6 ± 0.9
<i>Crepidotus</i>	<i>cesatii</i> var. <i>cesatii</i>	(Rabh.) Sacc.		1	DWSF	40.1	6.7	-22.7	-5.4
<i>Fomitopsis</i>	<i>pinicola</i>	(Swartz: Fr.) Karsten	<i>U. marginata</i>	2	DLWSF	45.7 ± 0.1	2.4 ± 0.1	-21.6 ± 0.1	-3.1 ± 0.4
<i>Hydnum</i>	<i>rufescens</i>	Sch.: Fr.		4	EMF	44.0 ± 3.3	3.1 ± 0.5	-26.0 ± 0.6	7.0 ± 1.1
<i>Hygrophorus</i>	<i>lindneri</i>	Moser		1	EMF	39.5	2.5	-28.6	-6.6
<i>Hypoholoma</i>	<i>fasciculare</i>	(Huds.: Fr.) Kummer		1	DWSF	41.6	5.3	-23.4	-0.9
<i>Laccaria</i>	<i>amethystina</i>	(Huds. —>) Cooke	<i>L. amethystea</i>	3	EMF	45.5 ± 0.8	5.7 ± 0.5	-26.3 ± 0.2	-3.6 ± 0.3
<i>Laccaria</i>	<i>laccata</i>	(Scop.: Fr.) Cooke		3	EMF	43.9 ± 0.9	4.3 ± 0.6	-25.4 ± 0.3	-3.3 ± 0.2
<i>Lactarius</i>	<i>chrysoorheus</i>	Fr.		3	EMF	35.4 ± 2.0	3.8 ± 0.1	-24.3 ± 2.5	-0.5 ± 3.0
<i>Lactarius</i>	<i>quietus</i>	(Fr.: Fr.) Fr.		4	EMF	45.4 ± 5.7	6.4 ± 1.2	-24.3 ± 0.9	3.5 ± 1.8
<i>Lactarius</i>	<i>subdulcis</i>	(Pers.: Fr.) S.F. Gray		2	EMF	45.1 ± 1.4	4.9 ± 0.2	-26.7 ± 1.3	-1.0 ± 0.6
<i>Lactarius</i>	<i>theiogalus</i>	(Bull.: Fr.) S.F. Gray		4	EMF	41.0 ± 0.9	5.5 ± 0.2	-25.0 ± 0.7	-0.6 ± 2.2
<i>Leotia</i>	<i>lubrica</i>	(Scop.: Fr.) Pers.		3	ASF	42.6 ± 2.1	3.1 ± 0.1	-25.7 ± 0.1	3.0 ± 2.3
<i>Mycena</i>	<i>galericulata</i>	(Scop.: Fr.) S.F. Gray		4	DWSF	43.5 ± 1.5	4.2 ± 0.5	-22.1 ± 0.2	-3.3 ± 0.4
<i>Mycena</i>	<i>galopus</i>	(Pers.: Fr.) Kummer	<i>M. galopoda</i>	2	FHSF	41.5 ± 7.8	5.2 ± 1.2	-22.7 ± 0.1	-3.6 ± 0.1

## Annexe I. (cont.)

Genus	Species	Authors	Synonyms	n	Ecological group	C %	N %	$\delta^{13}\text{C} \text{‰}$	$\delta^{15}\text{N} \text{‰}$
<i>Mycena</i>	<i>inclinata</i>			3	FHSF	41.5 ± 2.7	4.2 ± 0.7	-22.3 ± 0.3	-1.7 ± 0.7
<i>Oudemansiella</i>	<i>mucida</i>	(Schrad.: Fr.) v. Höhnelt	<i>M. mucida</i>	3	DWSF	40.8 ± 1.8	3.6 ± 1.2	-22.1 ± 0.8	-3.4 ± 0.3
<i>Phallus</i>	<i>impudicus</i>	L.: Pers.		3	FHSF	41.5 ± 1.4	4.8 ± 2.0	-22.7 ± 0.3	-2.8 ± 0.9
<i>Pholiota</i>	<i>lenta</i>	(Pers.: Fr.) Singer		4	TSF	40.0 ± 3.2	4.7 ± 1.9	-23.5 ± 1.5	-4.0 ± 1.6
<i>Piptoporus</i>	<i>betulinus</i>	(Bull.: Fr.) Jül.	<i>F. Betulina</i>	4	DWSF	43.2 ± 1.6	2.0 ± 0.2	-23.1 ± 0.6	-4.6 ± 0.8
<i>Psathyrella</i>	<i>piluliformis</i>	(Bull.: Fr.) Orton	<i>H. hydrophila P. appendiculata</i>	3	DWSF	38.1 ± 1.7	4.7 ± 0.8	-23.7 ± 0.6	-3.3 ± 0.3
<i>Russula</i>	<i>fellea</i>	(Fr.: Fr.) Fr.		3	EMF	49.3 ± 3.4	4.0 ± 0.2	-26.2 ± 0.7	-0.4 ± 0.9
<i>Russula</i>	<i>fragilis</i>	(Pers.: Fr.) Fr.		2	EMF	42.4 ± 1.9	4.4 ± 0.5	-25.7 ± 0.5	0.9 ± 0.1
<i>Russula</i>	<i>mairii</i>	Singer	<i>R. mairii</i> var. <i>frageticola</i>	4	EMF	47.8 ± 3.1	4.3 ± 0.5	-27.4 ± 0.4	-2.2 ± 0.4
<i>Russula</i>	<i>ochroleuca</i>	(Hall.) Pers.		2	EMF	45.2 ± 1.4	4.5 ± 0.5	-26.7 ± 0.6	2.4 ± 1.3
<i>Russula</i>	<i>puellaris</i>	Fr.		1	EMF	40.8	5.0	-26.7	1.0
<i>Scleroderma</i>	<i>citrinum</i>	Pers.: Pers		2	EMF	46.3 ± 5.1	4.9 ± 1.1	-25.4 ± 0.2	2.6 ± 1.1
<i>Tricholoma</i>	<i>columbetta</i>	(Fr.: Fr.) Kummer	<i>S. vulgare</i>	3	EMF	39.9 ± 0.6	4.4 ± 0.7	-27.1 ± 0.9	10.2 ± 1.9
<i>Tricholoma</i>	<i>sciodes</i>	(Pers.) C. Martin		4	EMF	45.8 ± 2.0	4.6 ± 0.3	-26.9 ± 0.1	8.9 ± 0.4
<i>Tricholoma</i>	<i>ustale</i>	(Fr.: Fr.) Kummer		3	EMF	43.7 ± 3.0	3.5 ± 0.8	-27.1 ± 1.2	9.6 ± 1.2
<i>Xerocomus</i>	<i>badius</i>	(Fr.: Fr.) Fr.		3	EMF	41.3 ± 3.0	5.6 ± 1.4	-25.8 ± 0.1	2.1 ± 0.2
<i>Xerocomus</i>	<i>chrysenteron</i>	(Bull.) Quélet		2	EMF	39.3 ± 1.6	5.7 ± 0.5	-26.4 ± 0.5	4.2 ± 0.6

**Annexe II.** Total C, total N, C/N,  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  of fungal sporophores collected in the Norway spruce plantation, Breuil forest. (EMF) ectomycorrhizal fungi, (ASF) saprotrophic fungi living on A<sub>1</sub> horizon, (NSF) saprotrophic fungi living on decaying needles, (SSF) saprotrophic fungi living on decaying strobiles, (FHSF) litter decaying fungi living on F and H layers, (TSF) wood decaying fungi living on small twigs on the ground, (DWSF) wood decaying fungi living on dead branches, stumps or trunks and (DLWSF) fungi living on dead or living wood.

Genus	Species	Authors	Synonyms	n	Ecological group	C %	N %	$\delta^{13}\text{C}$ ‰	$\delta^{15}\text{N}$ ‰
<i>Amanita</i>	<i>citrina</i>	(Sch. : Fr.) S.F. Gray		4	EMF	44.3 ± 1.5	5.6 ± 0.7	-23.1 ± 0.8	1.3 ± 1.0
<i>Amanita</i>	<i>muscaria</i>	(L.:Fr.) Hooker		3	EMF	44.0 ± 1.2	5.7 ± 0.8	-24.6 ± 0.3	3.5 ± 1.2
<i>Amanita</i>	<i>porphyria</i>	(Alb. & Schw. : Fr.) Mladý		2	EMF	43.7 ± 2.4	5.1 ± 0.6	-23.3 ± 0.2	2.3 ± 0.8
<i>Amanita</i>	<i>rubescens</i>	(Pers. : Fr.) S.F. Gray		2	EMF	43.5 ± 1.0	6.9 ± 0.1	-22.9 ± 1.5	2.5 ± 0.7
<i>Armillaria</i>	<i>gallica</i> ("Type E")	Marxmüller & Romagnesi	<i>A. bulbosa</i>	3	DLWSF	42.6 ± 0.7	4.2 ± 0.3	-20.9 ± 0.5	0.6 ± 0.9
<i>Baeospora</i>	<i>myosura</i>	(Fr. : Fr.) Singer		4	SSF	43.2 ± 0.6	5.2 ± 0.7	-21.0 ± 1.1	-1.9 ± 0.5
<i>Boletus</i>	<i>aestivalis</i>	(Paulet) Fr.		1	EMF	36.9	5.3	-23.9	5.7
<i>Boletus</i>	<i>edulis</i>	Bull. : Fr.		1	EMF	43.0	5.6	-23.8	3.7
<i>Catocera</i>	<i>viscosa</i>	(Pers. : Fr.) Fr.		4	DWSF	43.3 ± 2.4	1.6 ± 0.4	-21.5 ± 0.3	-2.3 ± 0.3
<i>Chalciporus</i>	<i>piperatus</i>	(Bul. : Fr.) Bataille		4	EMF	44.2 ± 0.1	6.8 ± 0.5	-22.2 ± 0.1	7.9 ± 0.6
<i>Clavulina</i>	<i>cristata</i>	(L. : Fr.) Schroeter		4	EMF	44.6 ± 0.7	6.2 ± 1.1	-24.3 ± 0.7	2.0 ± 2.5
<i>Clitopilus</i>	<i>prunulus</i>	(Scop. : Fr.) Quélet		3	FHSF	42.6 ± 0.1	9.6 ± 0.4	-22.4 ± 0.7	3.8 ± 0.7
<i>Clytocybe</i>	<i>clavipes</i>	(Pers. : Fr.) Kummer		4	FHSF	43.4 ± 0.9	7.9 ± 0.4	-23.0 ± 0.2	0.3 ± 0.9
<i>Clytocybe</i>	<i>vibecina</i>	Fr.		4	FHSF	42.8 ± 0.3	8.3 ± 0.3	-23.1 ± 0.6	0.8 ± 0.8
<i>Collybia</i>	<i>butyracea</i>	Fr.		4	FHSF	44.6 ± 0.4	6.3 ± 1.4	-22.9 ± 0.2	-0.5 ± 0.7
<i>Cortinarius</i>	<i>torvus</i>	(Pers. : Fr.) Fr.		4	EMF	42.9 ± 0.3	4.6 ± 1.0	-24.3 ± 0.4	5.8 ± 0.6
<i>Cystoderma</i>	<i>amiantinum</i>	(Scop.) Fayod		4	TSF	41.4 ± 1.0	9.0 ± 0.7	-22.2 ± 0.3	0.6 ± 1.2
<i>Gomphidius</i>	<i>glutinosus</i>	(Sch.:Fr.) Fr.		4	EMF	43.2 ± 1.0	2.7 ± 0.8	-24.6 ± 0.1	5.6 ± 1.6
<i>Hygrophoropsis</i>	<i>aurantiaca</i>	(Wulf.:Fr.) Maire		4	DWSF	41.5 ± 2.1	4.9 ± 1.6	-20.3 ± 1.0	-1.2 ± 0.1
<i>Hypoholoma</i>	<i>fasciculare</i>	(Huds.:Fr.) Kummer		4	DWSF	46.4 ± 0.4	5.0 ± 0.2	-23.8 ± 0.2	0.4 ± 0.3
<i>Laccaria</i>	<i>amethystina</i>	(Huds. —>) Cooke	<i>L. amethystea</i>	4	EMF	44.6 ± 1.0	4.5 ± 0.6	-24.1 ± 0.5	-0.5 ± 1.4
<i>Lactarius</i>	<i>theiogalus</i>	(Bull. : Fr.) S.F. Gray		4	EMF	44.8 ± 0.9	5.5 ± 0.7	-24.6 ± 0.4	2.6 ± 2.0
<i>Megacollybia</i>	<i>platyphylla</i>	(Pers.:Fr.) Kotlaba & Pouzar		3	TSF	46.1 ± 0.7	4.8 ± 0.5	-23.0 ± 0.3	-0.9
<i>Micromphale</i>	<i>perforans</i>	(Hoffm.:Fr.) Sing.		4	NSF	43.3 ± 1.8	4.0 ± 0.5	-25.0 ± 0.2	-3.4 ± 0.5
<i>Mycena</i>	<i>leptophylla</i>	(Peck) Saccardo		4	TSF	43.3 ± 0.2	8.8 ± 0.4	-23.3 ± 0.2	-0.4 ± 0.4
<i>Mycena</i>	<i>rosella</i>	(Fr. : Fr.) Kummer		4	FHSF	41.3 ± 3.0	6.2 ± 0.5	-23.9 ± 0.2	-2.9 ± 0.3
<i>Oudemansiella</i>	<i>radicata</i>	(Rehl.: Fr.) Singer		4	ASF	44.0	2.6	-23.2	-0.6

Annexe II. (cont.)

Genus	Species	Authors	Synonyms	n	Ecological group	C %	N %	$\delta^{13}\text{C}$ ‰	$\delta^{15}\text{N}$ ‰
<i>Paxillus</i>	<i>involutus</i>	(Fr.:Fr.) Fr.		4	EMF	44.9 ± 1.6	4.5 ± 1.3	-24.6 ± 0.3	6.6 ± 1.3
<i>Ramaria</i>	<i>abietina</i>	(Jungb.) Donk		4	FHSF	44.4 ± 0.4	5.8 ± 0.4	-23.0 ± 0.2	-0.5 ± 0.8
<i>Russula</i>	<i>betularum</i>	Hora		4	EMF	44.7 ± 0.7	4.4 ± 0.2	-25.5 ± 0.1	0.6 ± 0.4
<i>Russula</i>	<i>fellea</i>	(Fr.:Fr.) Fr.		4	EMF	46.7 ± 0.7	4.2 ± 0.6	-24.6 ± 0.1	2.4 ± 0.3
<i>Russula</i>	<i>ochroleuca</i>	(Hall.) Pers.		4	EMF	44.0 ± 0.2	4.2 ± 0.3	-24.2 ± 0.3	5.2 ± 2.0
<i>Russula</i>	<i>puellaris</i>	(Fr.:Fr.) Kummer		4	EMF	43.3 ± 0.3	3.9 ± 0.4	-24.1 ± 0.6	3.1 ± 1.3
<i>Scleroderma</i>	<i>citrinum</i>	(Pers.) C. Martin		2	EMF	44.4 ± 0.3	5.0 ± 0.1	-24.7 ± 0.3	5.7 ± 0.2
<i>Strobilurium</i>	<i>esculentum</i>	(Fr.:Fr.) Kummer		4	SSF	43.5 ± 0.3	5.3 ± 0.3	-21.9 ± 0.5	-2.3 ± 0.8
<i>Xerocomus</i>	<i>badius</i>	(Fr.:Fr.) Fr.		4	EMF	42.9 ± 0.2	5.9 ± 0.4	-23.7 ± 0.6	3.7 ± 1.0
<i>Xerocomus</i>	<i>subtomentosus</i>	(Bull.) Quélet		3	EMF	43.9 ± 1.3	7.7 ± 1.6	-24.1 ± 0.1	3.4 ± 1.7