

Table S1. Details about the tested Norway spruce provenances

Number of provenance	Name of provenance	Country	Group	Lat. N	Long. E	Altit.
1	Senum	Norway	Northern	58.67	7.75	390
2	Branstad	Norway	Northern	58.47	8.70	45
3	Sandar	Norway	Northern	59.20	10.18	50
4	Bagstad	Norway	Northern	59.97	10.63	160
5	Seljord	Norway	Northern	59.45	8.73	120
6	Straiture I	France	French	48.12	6.93	650
7	Straiture II	France	French	48.12	6.93	650
8	La Ganne	France	Western Alps	45.73	6.33	900
9	Mignovillard III	France	French	46.75	6.20	1000
10	Plan de Cosaques	France	French	46.48	6.10	1170
11	Morzine	France	Western Alps	46.20	6.80	1750
12	Lantosque	France	Western Alps	43.95	7.40	1500
13	Saint Laurent II	France	French	46.57	6.03	960
14	Plan Bois	France	Western Alps	46.32	6.45	500
15	Gerardmer I	France	French	48.18	6.90	650
18	Eptingen	Switzerland	Central Alps	46.78	8.58	1040
19	Kerns	Switzerland	Central Alps	46.42	8.67	1460
20	Le Brassus	Switzerland	Central Alps	46.50	9.17	1310
21	Lukmenier	Switzerland	Central Alps	46.33	9.33	1500
23	Stampa	Switzerland	Central Alps	46.25	7.67	1600
24	Tagevillen	Switzerland	Central Alps	47.50	8.83	520
25	Wassen	Switzerland	Central Alps	46.70	8.58	1160
26	Winterthur	Switzerland	Central Alps	47.50	8.75	545
27	Bodenseichen	Germany	NE Germany	52.78	14.00	80
30	Kiekindermarx	Germany	NE Germany	53.42	11.75	86
31	Brmenhagen	Germany	NE Germany	54.33	12.58	20
32	Gandenitz	Germany	NE Germany	53.17	13.42	25
33	Wigry	Poland	NE Poland	53.92	23.00	130
34	Borki	Poland	NE Poland	54.08	22.08	160
35	Bialowieza	Poland	NE Poland	52.67	23.83	150

36	Brajes	Italy	Eastern Alps	46.25	12.00	1425
37	Latemar	Italy	Central Alps	46.17	11.00	1700
38	Val Di Fiemme	Italy	Central Alps	46.03	10.00	1350
39	Klaunz Bannwald	Austria	Eastern Alps	47.00	12.57	1750
40	Wietersdf	Austria	Eastern Alps	47.25	14.53	800
41	Eppenstein	Austria	Eastern Alps	47.15	14.73	965
42	Rotlgut Liezen	Austria	Eastern Alps	47.53	14.25	800
45	Hollenburg	Austria	Eastern Alps	46.32	14.13	1125
48	Strabwalchen	Austria	Eastern Alps	47.63	13.25	650
49	Redl-Zipf- Fuchsberg	Austria	Eastern Alps	48.02	13.45	550
50	Hoyos-Ernest- reith	Austria	Eastern Alps	46.67	15.65	530
51	Herfenberg	Austria	Bohemian	48.53	14.18	750
52	Sandl-bei- Freistadt	Austria	Bohemian	48.53	14.67	975
53	Neustift	Austria	Eastern Alps	47.63	16.45	620
54	Kolarp	Sweden	Northern	57.55	13.12	160
55	Munkahus	Sweden	Northern	58.20	11.88	20
56	Anfasterod	Sweden	Northern	58.20	11.88	50
57	Mossebo	Sweden	Northern	57.45	13.45	260
58	Aspas	Sweden	Northern	58.27	13.45	170
59	Nytthan	Sweden	Northern	59.68	15.08	115
60	Keletbukki Allami	Hungary	Western Carpathians	48.50	20.37	300
61	Nyugatbukki Allami	Hungary	Western Carpathians	48.50	20.37	300
63	Nyugatbukki Allami	Hungary	Western Carpathians	48.50	20.37	300
64	Gheorghieni	Romania	Eastern (Romanian) Carpathians	46.62	25.75	1000
66	Marginea	Romania	Eastern (Romanian) Carpathians	47.77	25.83	670
67	Frasin	Romania	Eastern (Romanian) Carpathians	47.47	25.80	760
68	Breaza	Romania	Eastern (Romanian) Carpathians	47.53	25.33	1250
70	Coşna	Romania	Eastern (Romanian) Carpathians	47.30	25.17	1025

71	Moldovița	Romania	Eastern (Romanian) Carpathians	47.37	25.57	980
72	Dorna Candrenilor	Romania	Eastern (Romanian) Carpathians	47.28	25.25	1000
73	Stulpicani	Romania	Eastern (Romanian) Carpathians	47.42	25.75	980
74	Galu	Romania	Eastern (Romanian) Carpathians	47.25	25.42	650
75	Broșteni	Romania	Eastern (Romanian) Carpathians	47.15	25.72	940
82	Sund	Finland	Northern	60.00	20.50	20
83	Bramarv	Finland	Northern	60.22	23.33	20
84	Pihtipudas	Finland	Northern	63.28	25.45	165
85	Heinola	Finland	Northern	63.15	26.00	275
87	Kourevesi	Finland	Northern	61.17	24.83	100
88	Pualanka	Finland	Northern	62.00	28.17	140
89	Pielisjarvi	Finland	Northern	60.42	22.83	50
90	Mantta	Finland	Northern	62.02	24.67	120
91	Jokioinen	Finland	Northern	62.00	23.33	190
92	Padasjoki	Finland	Northern	60.85	25.33	85
93	Urjala	Finland	Northern	60.92	23.50	130
94	Janakkala	Finland	Northern	61.33	24.67	100
95	Tuusula	Finland	Northern	61.03	24.90	120
96	Rila	Bulgaria	Bulgarian	42.20	23.63	1300
98	Rodopi Smolian	Bulgaria	Bulgarian	41.60	24.62	2000
99	Zelesna Ruda	Czech Republic	Bohemian	49.17	13.25	850
100	Kasperske Hory	Czech Republic	Bohemian	49.63	13.58	650
101	Valke Karlovice	Czech Republic	Western Carpathians	49.35	18.32	780

Details about the Norway spruce provenance trials

County Forest Administration	Forest district	Area (ha)	Latitude N	Longitude E	Altitude (m.a.s.l)
Suceava	Dorna Candreni	3.40	47°12'	25°20'	1000
Brasov	Zarnesti	2.67	45°30'	25°20'	1025
Cluj	Turda	3.43	46°30'	23°45'	1250