

Comparison of the growth of the provenances of silver fir (*Abies alba* Mill.) on research plots in the regions Novohradské hory and Českomoravská vrchovina at the age of 50 years

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Electronic Supplementary Material (ESM)

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Table S1. Site characteristics of locality research plots No. 67 – Černovice and No. 77 – Konratice, including parent stands of planted provenances

Provenance code	Provenance name	European forest zoning*	Altitude (m a.s.l.)	Latitude (N)	Longitude (E)	Average year temperature (°C)	Average year rainfall (mm)	RP 67	RP 77
CZ 1–15	Kamenice nad Lipou, Losy	3.13.0	600	49°21'	15°14'	5.4	729	x	x
CZ 16–30	Jihlava, Popice	3.13.0	600	49°21'	15°31'	7.5	603	x	–
CZ 32	Nýrsko, Dešenice	3.05.4	500	49°17'	13°13'	7.4	650	x	x
CZ 33	VLS Horní Planá, Drhovice	3.05.4	400	49°17'	14°00'	7.6	531	–	x
CZ 34	VLS Horní Planá, Želnavá	3.05.4	820	48°47'	13°55'	5.5	800	x	x
CZ 35	Petrohrad, Oráčov	3.05.4	400	50°08'	13°28'	7.2	526	x	x
CZ 36	Červené Poříčí, Kaliště	3.06.0	500	49°32'	13°27'	6.8	583	–	x
CZ 37	Rychnov nad Kněžnou, Skuhrov	3.05.1	440–600 (520)	50°17'	16°18'	6.2	1 002	x	–
CZ 38	Rychnov nad Kněžnou, Javornice	3.05.1	420	50°09'	16°33'	7.0	750	–	x
CZ 39	Červené Poříčí, Dolce	3.06.0	500	50°54'	13°27'	6.5	650	x	–
CZ 40	Frýdlant v Čechách, Nové Město pod Smrkem	3.05.1	600	50°55'	15°40'	6.5	800	x	–
CZ 42	Lukov, Lukov	6.07.0	450	49°19'	17°44'	7.2	830	–	x
CZ 43	Vsetín, Hošťálková	6.07.0	490–530	49°21'	17°57'	7.0	833	–	x
CZ 47	Požořice, Olšany	3.14.0	400	49°14'	16°52'	8.0	650	–	x
CZ 49	Přibyslav, Hamry	3.13.0	590	49°33'	15°54'	6.1	744	x	x
CZ 50	Vlašim, Smilkov	3.07.0	570	49°36'	14°37'	6.5	600	x	–
CZ 51	VLS Lipník nad Bečvou, Podhoří	3.05.1	600	49°35'	17°25'	6.0	811	x	x
H 52	Sopron, školní polesí	6.10.0	450	47°41'	16°37'	9.8	760	–	x
CZ 53	Opočno, Bolehošť	3.11.0	385	50°12'	16°08'	7.1	734	x	x
CZ 55	Kašperské Hory, Klatovy	3.05.4	500	49°14'	13°33'	5.5	830	–	x
CZ 56	Kašperské Hory, Rejštejn – Losenický potok	3.05.4	680	49°08'	13°32'	5.5	700	–	x
CZ 57	Kašperské Hory, Sedlo	3.05.4	500	49°12'	13°34'	5.5	832	–	x
CZ 58	Vimperk, Podhorský, Javorník	3.05.4	680	49°09'	13°37'	6.8	718	x	x
CZ 59	Velké Karlovice, Vranča	6.07.0	590–680	49°12'	18°13'	6.5	1 045	–	x
CZ 61	Velké Karlovice, Dinotice	6.07.0	600	49°06'	18°19'	6.5	1 045	x	–
CZ 62	Nové Hradky, Hojná Voda	3.05.4	750	48°43'	14°38'	6.5	680	–	x
CZ 63	Český Krumlov, Chvalšiny	3.05.4	820	48°53'	14°13'	5.5	550	x	x
CZ 64	Dobříš, Chouzavá	3.07.0	420	49°50'	14°12'	7.3	605	–	x
CZ 66	Nýrsko, Liščí	3.05.4	600	49°19'	13°02'	6.8	824	x	x
CZ 68	Vyšší Brod, Běleň	3.05.4	680	48°38'	14°20'	6.2	810	x	x
CZ 70	Ždírec nad Doubravou, Maleč	3.13.0	399	49°47'	15°42'	7.3	789	x	–
CZ 71	Plumlov, Ruprechtov	3.14.0	450–510	49°20'	16°58'	7.0	655	x	x
CZ 74	Milevsko, Klučenice	3.12.0	380	49°34'	14°14'	7.8	577	x	–
CZ 75	Rájec-Jestřebí, Černá Hora	3.14.0	350	49°18'	16°39'	7.7	612	x	x
CZ 76	Nýrsko, Suchý Kámen	3.05.4	620	49°16'	13°06'	6.7	751	–	x
CZ 80	Trhové Sviny	3.05.4	550	48°52'	14°38'	0.5	650	–	x
CZ 81	Vyšší Brod, Vítkův Kámen	3.05.4	800–900	48°37'	14°15'	5.4	1 063	x	x
CZ 82	Vizovice, Bratřejov	6.07.0	550	49°13'	17°56'	6.6	946	x	x

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Table S1. To be continued

Provenance code	Provenance name	European forest zoning*	Altitude (m a.s.l.)	Latitude (N)	Longitude (E)	Average year temperature (°C)	Average year rainfall (mm)	RP 67	RP 77
CZ 83	Kašperské Hory, Rejštejn	3.05.4	860	49°08'	13°32'	5.5	854	x	x
CZ 84	Kašperské Hory, Bílý potok	3.05.4	760–800 (780)	49°08'	13°32'	5.5	854	–	x
CZ 85	Kašperské Hory	3.05.4	800	49°10'	13°34'	5.5	854	–	x
CZ 86	VLS Hořovice, Strašice	3.07.0	650 (530)	49°44'	13°48'	6.1	789	x	–
CZ 87	VLS Hořovice, Jince	3.07.0	520–540	49°46'	13°58'	6.9	556	–	x
CZ 88	VLS Hořovice, Mirošov	3.05.4	620	49°42'	13°42'	6.3	783	x	x
CZ 90	Prachatice, Včelná	3.05.4	750–1 020	49°01'	13°51'	5.0	790	–	x
A 93	Wörschachwald, Steiermark	5.04.3	1 100–1 200	47°34'	14°06'	5.3	1 600	x	x
A 94	Schneegattern, Kobernsusserwald	5.01.3	550–750	48°00'	13°23'	7.0	1 200	x	–
A 95	Gröbming, Steiermark	5.04.3	850	47°27'	13°53'	6.5	1 350	x	x
A 96	Thal	5.03.0	550	47°36'	16°11'	8.5	850	–	x
CZ 102	Velké Karlovice, Malé Karlovice	6.07.0	600–700	49°21'	18°21'	5.9	779	x	x
F 103	Gérardmer, Longemer	4.07.0	870	48°04'	6°55'	6.0	808	x	–
F 104	Departement de l'Aude, Espezel	4.05.0	800–1 040	42°50'	2°00'	6.0	808	–	x
CZ 130	Nasavrky, Podhůra	9.18.2	1 300	49°51'	15°48'	7.6	711	x	x
BG 131	Pirin, Razlog	3.13.0	370	41°49'	23°24'	4.7	1 549	x	x
BG 132	Rila, Borovets	6.26.0	1 600	42°14'	23°36'	5.1	988	x	x
BG 133	Rila, Borovets	6.26.0	1 600	42°14'	23°36'	5.1	988	–	x
A 143	Laterns, Vararlberg	6.26.0	1 200	47°16'	9°42'	6.1	1 728	x	x
D 146	Schwarzwald mit Baar, Schönmünzach	5.01.3	1 000	48°35'	7°59'	5.8	1 833	x	–
D 147	Gschwend	3.32.0	530–650	48°57'	9°45'	7.2	1 000	x	x
D 148	Schwarzwald mit Baar, Gengenbach	3.21.0	480–530	48°24'	8°01'	6.0	1 707	–	x
D 149	Ostbayer, Mittelgebirge-Viechtach	3.32.0	465–740	49°05'	12°55'	6.5	1 364	–	x
D 150	Schwarzwald mit Baar, Enzklösterle	3.05.4	700–780	49°00'	9°00'	6.1	1 450	–	x
D 151	Ostbayer, Zwiesel West	3.32.0	750	49°02'	13°08'	6.5	1 364	x	x
CZ 190	Frenštát pod Radhoštěm, Mořkov	3.05.4	700–780	49°32'	17°58'	7.5	1 150	x	–
CZ 193	Zábřeh, Jedlí	6.07.0	490	50°06'	17°25'	5.5	974	x	–
CZ 194	Karlovice, Karlovice sever	3.05.1	450	49°50'	17°38'	6.0	754	–	x
CZ 198	Vítkov, Budišov nad Budišovkou	3.05.1	720	49°54'	16°58'	7.7	630	x	–
CZ 200	Zábřeh, Brníčko	3.05.1	500–570	50°29'	23°19'	–	–	–	x
PL 201	Tomaszów Lubelski, Ulów	3.05.1	450	49°33'	20°36'	7.8	725	x	–
PL 203	Stary Sacz	6.05.0	330	50°26'	23°11'	–	–	x	x
PL 204	Tomaszów Lubelski, Susiec	6.06.3	300	50°15'	16°39'	–	–	–	x
PL 206	Bystrzyca Kłodzka, Długopole	6.05.0	260	49°58'	16°06'	5.2	760	–	x
CZ 208	Nové Město na Moravě, Maršovice	3.05.1	400	49°36'	16°12'	5.2	724	–	x
CZ 209	Nové Město na Moravě, Lísek	3.13.0	600	49°39'	15°59'	5.4	882	x	–
CZ 210	Nové Město na Moravě, Cikháj	3.13.0	680	49°40'	15°55'	5.5	852	–	x
CZ 211	Nové Město na Moravě, Vojnův Městec	3.13.0	690	50°50'	21°12'	6.6	661	x	x
PL 212	Nieskurzów	3.13.0	660	47°37'	24°10'	8.0	730	–	x
RO 213	Maramures, Strimbu – Baiut	6.05.0	480	45°20'	23°50'	9.0	800	x	x
RO 215	Vilcea, Voineasa	6.19.0	870	46°15'	23°10'	7.2	780	–	x

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Provenance code	Provenance name	European forest zoning*	Altitude (m a.s.l.)	Latitude (N)	Longitude (E)	Average year temperature (°C)	Average year rainfall (mm)	RP 67	RP 77
RO 216	Alba, Cimpeni	6.19.0	800	46°45'	26°10'	8.1	710	–	x
RO 217	Neamt, Gircina	6.19.0	1 000	49°08'	22°29'	–	–	–	x
PL 220	Wetlina	6.19.0	950	50°02'	17°16'	3.0	1 200	x	x
CZ 221	Janovice u Rýmařova, Malá Morávka	6.19.0	600	44°35'	16°35'	–	–	–	x
BIH 223	Sanski Most, Grmečka, Mijačica	6.06.1	840	44°05'	18°41'	7.6	820	x	–
BIH 224	Sokolac, Kaljina Bioštica	3.05.1	720–730	44°12'	10°69'	7.0	2 524	–	x
I 226	Abetone Cutigliano, Fontana Vaccaia	6.22.0	1 050	43°47'	11°52'	8.0	2 000	–	x
I 227	Popi e Bibbiena, Arezzo	6.22.0	1 060	43°43'	11°37'	9.8	1 386	x	x
I 228	Vallombrosa	9.12.0	1 360	41°34'	14°40'	10.2	570	–	x
I 229	Campobasso, S. Angelo del Pesco	9.12.0	1 000–1 100	38°32'	16°22'	9.6	1 636	x	x
I 230	Catanzaro, Spadola, Serra San Bruno	9.12.0	900–1 120	49°20'	22°17'	6.5	945	x	x
PL 231	Lesko, Baligród	9.13.0	1 100–1 300	48°42'	19°02'	5.2	700	x	x
S 1	Banská Bystrica, Badín	9.14.0	1 100	48°43'	19°02'	5.3	700	–	x
S 2	Banská Bystrica, Radvaň	6.06.1	550	48°54'	19°16'	5.6	925	x	x
S 5	Ružomberok, Korytnica	6.07.0	800	49°00'	19°56'	4.8	925	–	x
S 6	Čierný Váh, Ipoltica	6.07.0	780	49°11'	20°18'	4.9	825	x	x
S 7	TANAP, Kežmarské Žľaby	6.06.4	750	48°36'	19°33'	6.0	925	x	x
S 9	Kriváň, Snohy	6.06.4	850	48°47'	20°49'	5.3	700	–	x
S 12	Mníšek nad Hnilcom, Smolnická Osada	6.06.4	900	48°36'	19°33'	6.0	925	x	x
S 14	Svidník – Gíraltovec, Vyšný Komárnik	6.07.0	630	48°36'	19°33'	6.0	925	x	x
Plot No. 67	LČR Pelhřimov, Černovice	3.13.0	670	49°23'	15°00'	6.5	750	56	–
Plot No. 77	LČR Nové Hradky, Konratice	3.05.4	650	48°44'	14°41'	6.5	700	–	81

* According to Rubner and Reinhold (1953); VLS – Vojenské lesy a statky, s.p.; TANAP – Tatra National Park; LČR – Forest of the Czech Republic; RP – research plot; bold – geographical location and natural conditions of the monitored research areas

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Table S2. Tukey-Kramer multiple-comparison test showing EFZ vs. stem volume at site No. 67 – Černovice

Group	Mean	Different from groups
3.11.0	0.895	3.05.4, 3.13.0, 4.07.0, 5.01.3, 5.04.3, 6.05.0, 6.06.1, 6.06.3, 6.22.0, 6.26.0, 9.12.0
9.14.0	0.875	4.07.0, 5.04.3, 6.05.0, 6.06.3, 6.22.0, 6.26.0, 9.12.0
3.32.0	0.841	4.07.0, 5.04.3, 6.05.0, 6.06.3, 6.22.0, 6.26.0, 9.12.0
3.12.0	0.728	–
6.07.0	0.713	5.04.3, 6.05.0, 9.12.0
3.07.0	0.707	5.04.3
3.14.0	0.706	5.04.3
3.05.1	0.699	5.04.3, 9.12.0
6.06.4	0.680	–
3.05.4	0.679	3.11.0, 5.04.3
3.13.0	0.672	3.11.0, 5.04.3
3.06.0	0.667	–
5.01.3	0.634	3.11.0
3.21.0	0.628	–
6.06.1	0.589	3.11.0
6.26.0	0.587	3.11.0, 3.32.0, 9.14.0
6.05.0	0.575	3.11.0, 3.32.0, 6.07.0, 9.14.0
6.22.0	0.553	3.11.0, 3.32.0, 9.14.0
4.07.0	0.550	3.11.0, 3.32.0, 9.14.0
6.06.3	0.534	3.11.0, 3.32.0, 9.14.0
5.04.3	0.505	3.05.1, 3.05.4, 3.07.0, 3.11.0, 3.13.0, 3.14.0, 3.32.0, 6.07.0, 9.14.0
9.12.0	0.440	3.05.1, 3.11.0, 3.32.0, 6.07.0, 9.14.0

This report provides multiple comparison tests for all pairwise differences between the means; EFZ – European forest zonity

Table S3. Results of biometric and phenotypic data from trial

Provenance code	Provenance name	European forest zoning*	Research plot No. 67 – Černovice					Research plot No. 77 – Nové Hradky				
			No. of individuals	median tree height (m)	median DBH (cm)	median stem volume (m³)	growing stock (m³·ha ⁻¹)	No. of individuals	median tree height (m)	median DBH (cm)	median stem volume (m³)	growing stock (m³·ha ⁻¹)
CZ 1–15	Kamenice nad Lipou, Losy	3.13.0	62	23.80	25.08	0.590	992.69	33	26.60	28.65	0.867	727.32
CZ 16–30	Jihlava, Popice	3.13.0	62	24.95	27.73	0.790	1 248.19	–	–	–	–	–
CZ 32	Nýrsko, Dešenice	3.05.4	50	23.95	28.20	0.745	919.31	39	25.80	26.40	0.704	760.94
CZ 33	VLS Horní Planá, Drhovice	3.05.4	–	–	–	–	–	46	25.90	28.15	0.792	933.32
CZ 34	VLS Horní Planá, Želnavá	3.05.4	52	23.35	26.95	0.673	852.32	35	26.30	27.20	0.708	739.27
CZ 35	Petrohrad, Oráčov	3.05.4	46	23.70	29.25	0.811	927.14	31	25.80	28.35	0.794	634.80
CZ 36	Červené Poříčí, Kaliště	3.06.0	–	–	–	–	–	36	26.40	27.55	0.784	798.66
CZ 37	Rychnov nad Kněžnou, Skuhrov	3.05.1	50	24.50	27.55	0.748	945.60	–	–	–	–	–
CZ 38	Rychnov nad Kněžnou, Javornice	3.05.1	–	–	–	–	–	37	26.50	28.55	0.833	819.85
CZ 39	Červené Poříčí, Dolce	3.06.0	53	23.80	26.50	0.661	884.04	–	–	–	–	–
CZ 40	Frydlant v Čechách, Nové Město pod Smrkem	3.05.1	47	24.10	26.10	0.624	789.17	–	–	–	–	–
CZ 42	Lukov, Lukov	6.07.0	–	–	–	–	–	44	27.00 ^A	29.05	0.899	1 037.66
CZ 43	Vsetín, Hošťálková	6.07.0	–	–	–	–	–	41	26.60	29.25	0.866	958.27
CZ 47	Pozorice, Olšany	3.14.0	–	–	–	–	–	38	26.25	28.98	0.856	815.44
CZ 49	Příbyslav, Hamry	3.13.0	57	24.60	24.95	0.605	939.29	51	26.20	28.00	0.803	1 028.69
CZ 50	Vlašim, Smilkov	3.07.0	54	23.40	23.60	0.522	819.36	–	–	–	–	–
CZ 51	VLS Lipník nad Bečvou, Podhoří	3.05.1	51	22.80	25.90	0.596	792.57	35	25.80	26.65	0.710	680.65
H 52	Sopron, školní poleší	6.10.0	–	–	–	–	–	30	25.30	29.33	0.846	668.11
CZ 53	Opočno, Bolehošť	3.11.0	41	25.40 ^A	29.85 ^A	0.878 ^A	917.36	37	26.30	28.45	0.823	897.51
CZ 55	Kašperské Hory, Klatovy	3.05.4	–	–	–	–	–	44	25.25	25.58	0.645	835.16
CZ 56	Kašperské Hory, Rejstejn – Losenický potok	3.05.4	–	–	–	–	–	40	25.30	27.08	0.704	728.19
CZ 57	Kašperské Hory, Sedlo	3.05.4	–	–	–	–	–	39	26.10	28.30	0.802	846.03
CZ 58	Vimperk, Podhorský, Javorník	3.05.4	51	24.10	26.60	0.689	892.58	43	25.80	27.40	0.751	884.09
CZ 59	Velké Karlovice, Vranča	6.07.0	–	–	–	–	–	44	25.30	27.25	0.749	853.36
CZ 61	Velké Karlovice, Dinotice	6.07.0	52	24.95	29.53	0.843	1 011.72	–	–	–	–	–
CZ 62	Nové Hradky, Hojná Voda	3.05.4	–	–	–	–	–	45	26.50	27.90	0.809	1 011.79

Table S3. To be continued

Provenance code	Provenance name	European forest zoning*	Research plot No. 67 – Černovice					Research plot No. 77 – Nové Hradky				
			No. of indi- viduals	median tree height (m)	median DBH (cm)	median stem vol- ume (m ³)	growing stock (m ³ ·ha ⁻¹)	No. of indi- viduals	median tree height (m)	median DBH (cm)	median stem vol- ume (m ³)	growing stock (m ³ ·ha ⁻¹)
CZ 63	Český Krumlov, Chvalšiny	3.05.4	48	24.50	27.45	0.729	921.61	44	26.65	28.10	0.810	950.86
CZ 64	Dobříš, Chouzavá	3.07.0	–	–	–	–	–	40	26.60	26.68	0.739	790.92
CZ 66	Nýrsko, Liščí	3.05.4	53	24.30	25.85	0.619	961.31	45	26.30	27.25	0.773	1 023.50
CZ 68	Vyšší Brod, Běleň	3.05.4	46	23.35	23.80	0.498	638.17	49	26.40	27.15	0.741	969.45
CZ 70	Ždírec nad Doubravou, Maleč	3.13.0	53	25.20 ^A	25.95	0.678	929.85	–	–	–	–	–
CZ 71	Plumlov, Ruprechtov	3.14.0	47	23.80	25.90	0.617	718.98	48	25.80	26.58	0.715	901.83
CZ 74	Milevsko, Klučenice	3.12.0	44	24.75	28.30	0.794	800.92	–	–	–	–	–
CZ 75	Rájec-Jestřebí, Černá Hora	3.14.0	46	24.40	30.13 ^A	0.847 ^A	923.42	41	26.50	26.90	0.732	940.70
CZ 76	Nýrsko, Suchý Kámen	3.05.4	–	–	–	–	–	41	27.50 ^A	30.75 ^A	1.037 ^A	1 075.34
CZ 80	Trhové Sviny	3.05.4	–	–	–	–	–	19	26.10	30.55	0.945	458.29
CZ 81	Vyšší Brod, Vítkův Kámen	3.05.4	42	24.50	26.53	0.673	743.01	39	26.80	27.30	0.784	810.93
CZ 82	Vizovice, Bratřejov	6.07.0	51	24.10	27.30	0.707	923.72	38	25.20	26.43	0.712	705.86
CZ 83	Kašperské Hory, Rejštejn	3.05.4	34	25.00 ^A	28.30	0.796	693.61	44	25.90	26.05	0.666	908.24
CZ 84	Kašperské Hory, Bílý potok	3.05.4	–	–	–	–	–	34	26.55	29.90	0.897	775.97
CZ 85	Kašperské Hory	3.05.4	–	–	–	–	–	40	26.35	27.20	0.733	779.16
CZ 86	VLS Hořovice, Strašice	3.07.0	51	24.80	28.20	0.796	1 036.74	–	–	–	–	–
CZ 87	VLS Hořovice, Jince	3.07.0	–	–	–	–	–	37	26.70	29.10	0.907	873.18
CZ 88	VLS Hořovice, Mirošov	3.05.4	60	22.85	23.93	0.529	807.02	49	25.90	27.90	0.809	963.57
CZ 90	Prachatice, Včelná	3.05.4	–	–	–	–	–	35	26.70	27.70	0.780	687.84
A 93	Wörschachwald, Steiermark	5.04.3	46	19.75 ^B	20.98 ^B	0.353 ^B	471.65	33	25.60	28.70	0.833	648.44
A 94	Schneegattern, Kobernsusserwald	5.01.3	57	22.70	25.35	0.579	932.86	–	–	–	–	–
A 95	Gröbming, Steiermark	5.04.3	47	23.40	24.00	0.543	702.18	44	25.10	26.43	0.696	802.76
A 96	Thal	5.03.0	–	–	–	–	–	39	25.10	24.85 ^B	0.617 ^B	757.01
CZ 102	Velké Karlovice, Malé Karlovice	6.07.0	60	23.80	26.40	0.670	1 041.70	39	26.70	30.75 ^A	0.967	993.41
F 103	Gérardmer, Longemer	4.07.0	62	22.10	24.53	0.516	852.08	–	–	–	–	–
F 104	Département de l'Aude, Espezel	4.05.0	–	–	–	–	–	36	24.10 ^B	23.40 ^B	0.511 ^B	521.04
CZ 130	Nasavrky, Podhůra	3.13.0	64	23.05	25.80	0.615	1 017.33	52	26.30	27.93	0.797	1 132.57
BG 131	Pirin, Razlog	6.26.0	56	22.90	25.75	0.610	911.16	50	26.20	29.75	0.887	1 112.20

Table S3. To be continued

Provenance code	Provenance name	European forest zoning*	Research plot No. 67 – Černovice					Research plot No. 77 – Nové Hradky				
			No. of indi-viduals	median tree height (m)	median DBH (cm)	median stem volume (m ³)	growing stock (m ³ ·ha ⁻¹)	No. of indi-viduals	median tree height (m)	median DBH (cm)	median stem volume (m ³)	growing stock (m ³ ·ha ⁻¹)
BG 132	Rila, Borovets	6.26.0	58	22.30	22.83 ^B	0.480	762.63	49	24.20 ^B	25.05 ^B	0.597 ^B	806.29
BG 133	Rila, Borovets	6.26.0	–	–	–	–	–	41	24.60	26.60	0.656	776.80
A 143	Latarns, Varalberg	5.01.3	50	22.55	25.23	0.599	763.54	42	24.35	26.45	0.674	718.12
D 146	Schwarzwald mit Baar, Schönmünzach	3.32.0	49	24.50	30.40 ^A	0.846 ^A	1 030.24	–	–	–	–	–
D 147	Gschwend	3.21.0	53	23.40	25.90	0.619	831.60	34	26.15	30.03	0.906	809.59
D 148	Schwarzwald mit Baar, Gengenbach	3.32.0	–	–	–	–	–	40	26.80	27.73	0.816	952.11
D 149	Ostbayer, Mittelgebirge-Viechtach	3.05.4	–	–	–	–	–	43	25.80	28.20	0.786	854.79
D 150	Schwarzwald mit Baar, Enzklosterle	3.32.0	–	–	–	–	–	37	25.60	27.10	0.745	731.92
D 151	Ostbayer, Zwiesel West	3.05.4	54	23.00	24.33	0.553	815.39	37	25.90	27.75	0.764	735.79
CZ 190	Frenštát pod Radhoštěm, Mořkov	6.07.0	54	23.95	26.78	0.690	914.94	–	–	–	–	–
CZ 193	Zábřeh, Jedlí	3.05.1	–	–	–	–	–	33	26.30	26.30	0.699	659.73
CZ 194	Karlovice, Karlovice sever	3.05.1	36	24.20	27.20	0.725	665.47	–	–	–	–	–
CZ 198	Vítkov, Budišov nad Budišovkou	3.05.1	–	–	–	–	–	47	25.80	27.25	0.766	932.14
CZ 200	Zábřeh, Brničko	3.05.1	38	23.90	26.75	0.688	625.18	–	–	–	–	–
PL 201	Tomaszów Lubelski, Ulów	6.05.0	–	–	–	–	–	35	26.10	27.40	0.789	761.43
PL 203	Stary Sacz	6.06.3	39	22.30	23.25	0.491	520.50	–	–	–	–	–
PL 204	Tomaszów Lubelski, Susiec	6.05.0	65	22.20	25.10	0.523	914.03	40	25.50	31.60	0.994	1 037.72
PL 206	Bystrzyca Kłodzka, Długopole	3.05.1	–	–	–	–	–	35	25.30	29.95	0.889	754.06
CZ 208	Nové Město na Moravě, Maršovice	3.13.0	–	–	–	–	–	17	25.90	27.30	0.790	397.85
CZ 209	Nové Město na Moravě, Lísek	3.13.0	–	–	–	–	–	15	25.80	29.00	0.867	374.86
CZ 210	Nové Město na Moravě, Cikláj	3.13.0	30	21.80 ^B	23.00	0.473 ^B	385.65	–	–	–	–	–
CZ 211	Nové Město na Moravě, Vojnův Městec	3.13.0	–	–	–	–	–	11	24.90	34.00 ^A	1.115	307.44
PL 212	Nieskurzów	6.05.0	42	23.40	26.63	0.632	707.96	35	25.60	30.05	0.884	775.35
RO 213	Maramures, Strimbu – Baiut	6.19.0	–	–	–	–	–	24	26.70	31.95	1.039	682.82
RO 215	Vilcea, Voineasa	6.19.0	47	22.10	21.85 ^B	0.414 ^B	591.12	35	25.40	28.45	0.845	736.81
RO 216	Alba, Cîmpeni	6.19.0	–	–	–	–	–	24	26.20	32.08	1.043	694.42
RO 217	Neamt, Gîrcina	6.19.0	–	–	–	–	–	39	25.60	28.30	0.777	900.45
PL 220	Wetlina	6.06.1	–	–	–	–	–	34	25.55	26.25	0.683	632.15

Table S3. To be continued

Provenance code	Provenance name	European forest zoning*	Research plot No. 67 – Černovice					Research plot No. 77 – Nové Hradky				
			No. of indi- viduals	median tree height (m)	median DBH (cm)	median stem vol- ume (m ³)	growing stock (m ³ ·ha ⁻¹)	No. of indi- viduals	median tree height (m)	median DBH (cm)	median stem vol- ume (m ³)	growing stock (m ³ ·ha ⁻¹)
CZ 221	Janovice u Rýmařova, Malá Morávka	3.05.1	41	23.40	25.50	0.591	681.85	21	25.20	28.60	0.782	476.42
BIH 223	Sanski Most, Grmečka, Mijačica	6.22.0	–	–	–	–	–	38	24.35 ^B	29.30	0.816	839.44
BIH 224	Sokolac, Kaljina Bioštica	6.22.0	43	21.90	23.30	0.496	594.40	–	–	–	–	–
I 226	Abetone Cutigliano, Fontana Vaccaia	9.12.0	–	–	–	–	–	12	25.70	33.85	1.156 ^A	327.78
I 227	Popi e Bibbiena, Arezzo	9.12.0	–	–	–	–	–	14	25.95	29.60	0.868	319.45
I 228	Vallombrosa	9.12.0	28	18.70 ^B	19.88 ^B	0.284 ^B	307.97	6	25.90	35.38 ^A	1.282 ^A	182.44
I 229	Campobasso, S. Angelo del Pesco	9.13.0	–	–	–	–	–	11	24.90	29.50	0.844	249.04
I 230	Catanzaro, Spadola, Serra San Bruno	9.14.0	30	23.15	31.20 ^A	0.907 ^A	656.22	13	26.50	39.20 ^A	1.599 ^A	548.85
PPL 231	Lesko, Baligród	6.06.1	39	22.80	24.00	0.587	574.00	39	25.80	27.50	0.760	826.04
SK S 1	Banská Bystrica, Badín	6.07.0	53	24.10	26.70	0.679	1 000.32	43	26.30	28.20	0.845	943.43
SK S 2	Banská Bystrica, Radvaň	6.07.0	–	–	–	–	–	46	25.90	27.25	0.774	1 128.15
SK S 5	Ružomberok, Korytnica	6.06.4	48	24.20	27.18	0.727	939.77	41	26.70	29.35	0.866	816.11
SK S 6	Čierný Váh, Ipoltica	6.06.4	–	–	–	–	–	53	27.20 ^A	30.30	0.963	938.15
SK S 7	TANAP, Kežmarské Žľaby	6.06.4	54	22.70	24.75	0.533	794.98	40	26.65	27.50	0.788	1 013.54
SK S 9	Kriváň, Snohy	6.07.0	48	23.00	27.08	0.703	826.89	38	27.25 ^A	30.23	0.955	1 315.81
SK S 12	Mníšek nad Hnilcom, Smolnická Osada	6.07.0	–	–	–	–	–	46	26.70	30.68	0.976	874.33
SK S 14	Svidník – Gíraltovec, Vyšný Komárník	6.07.0	68	24.10	27.03	0.699	1 162.92	37	26.70	29.30	0.873	946.61
Plot No. 67	LČR Pelhřimov, Černovice	3.13.0	2 762	–	–	–	–	–	–	–	–	–
Plot No. 77	LČR Nové Hradky, Konratice	3.05.4	2 969	–	–	–	–	–	–	–	–	–

* According to Rubner and Reinhold (1953); ^A the highest detected values; ^B the lowest detected values; DBH – diameter at breast height; VLS – Vojenské lesy a statky, s.p.; TANAP – Tatra National Park; LČR – Forest of the Czech Republic; RP – research plot; bold – localisation of research plots according to EFZ; EFZ – European forest zoning

Table S4. Key of codes – European forest zonity (Rubner, Reinhold 1953)

Regions

3. Central European region with beech-oak forest

3.05.1 – Hercynian-Sudeten area of mixed mountainous forest – Sudeten subarea

3.05.4 – Hercynian-Sudeten area of mixed mountainous forest – South Hercynian subarea

3.06.0 – Pilsen basin

3.07.0 – Central Bohemian highland

3.11.0 – Bohemian Polabí region

3.12.0 – Internal Bohemian landscape

3.13.0 – Czech-Moravian range with southern foothills

3.14.0 – Drahan highland with northern foothills

3.21.0 – Swabian-Frankisch-Jurassic

3.32.0 – Schwarzwald with foothills and Baar

4. Western European region with deciduous forest

4.05.0 – Vosges

4.07.0 – French-Swiss Jurassic

5. Alpine region

5.01.3 – Beech-fir-spruce forests of western and northern Alpine region – subregion of northern border of Alps

5.03.0 – Eastern Alps foothills

5.04.3 – Area of internal Alps – eastern subarea

6. Eastern and southern European oak-beech region

6.05.0 – Oak-beech-fir area of the Polish Carpathian foothills

6.06.1 – Beech-fir-spruce area of the northern Carpathians – eastern subarea

6.06.3 – Beech-fir-spruce area of the northern Carpathians – western Beskydy

6.06.4 – Beech-fir-spruce area of the northern Carpathians – Tatra Mountains

6.07.0 – The Slovak Carpathians

6.10.0 – Eastern Austrian-Burgenland region

6.19.0 – Beech-fir-spruce area of the Romanian Carpathians and Bihar Mts.

6.22.0 – Mountain mixed forest of the Dinaric Alps area

6.26.0 – Central Bulgarian highland

9. Southern European region with chestnut and hard deciduous tree species

9.12.0 – Mountainous forest of north Apennines

9.13.0 – Mountainous forest of central Apennines

9.14.0 – Highland of south Apennines

1st No. – region (originally indicated by a Roman numeral); 2nd No. – area; 3rd No. – subarea (originally indicated by a lower-case letter)

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Table S5. Tukey-Kramer multiple-comparison test showing EFZ vs. stem volume at site No. 77 – Konratice

Group	Mean	Different from groups
9.14.0	1.689	3.05.1, 3.05.4, 3.06.0, 3.07.0, 3.11.0, 3.13.0, 3.14.0, 3.21.0, 3.32.0, 4.05.0, 5.01.3, 5.03.0, 5.04.3, 6.05.0, 6.06.1, 6.06.4, 6.07.0, 6.10.0, 6.19.0, 6.22.0, 6.26.0, 9.12.0, 9.13.0
9.12.0	1.037	4.05.0, 9.14.0
6.19.0	0.988	4.05.0, 5.01.3, 6.26.0, 9.14.0
3.11.0	0.970	4.05.0, 9.14.0
6.06.4	0.965	4.05.0, 6.26.0, 9.14.0
3.21.0	0.952	9.14.0
6.05.0	0.936	4.05.0, 9.14.0
9.13.0	0.906	9.14.0
6.10.0	0.891	9.14.0
3.06.0	0.887	9.14.0
3.13.0	0.887	4.05.0, 9.14.0
6.07.0	0.886	4.05.0, 9.14.0
6.22.0	0.884	9.14.0
3.07.0	0.864	9.14.0
3.32.0	0.849	9.14.0
3.14.0	0.837	9.14.0
3.05.4	0.836	9.14.0
3.05.1	0.831	9.14.0
6.06.1	0.799	9.14.0
5.03.0	0.776	9.14.0
6.26.0	0.770	6.06.4, 6.19.0, 9.14.0
5.04.3	0.754	9.14.0
5.01.3	0.684	6.19.0, 9.14.0
4.05.0	0.579	3.11.0, 3.13.0, 6.05.0, 6.06.4, 6.07.0, 6.19.0, 9.12.0, 9.14.0

EFZ – European forest zonity

Table S6. Median heights, *DBH*, and stem volume of silver fir

European forest zoning*	Research plot No. 67 – Černovice				Research plot No. 77 – Nové Hradý			
	No. of individuals	median tree height (m)	median <i>DBH</i> (cm)	median stem volume (m ³)	No. of individuals	median tree height (m)	median <i>DBH</i> (cm)	median stem volume (m ³)
3.05.1	212	24.00	26.33	0.666	208	25.90	27.55	0.778
3.05.4	587	23.80	26.10	0.643	844	26.20	27.50	0.770
3.06.0	53	23.80	26.50	0.661	36	26.40	27.55	0.784
3.07.0	105	24.10	26.60	0.655	77	26.60 ^A	27.70	0.805
3.11.0	41	25.40 ^A	29.85 ^A	0.878 ^A	37	26.30	28.45	0.822
3.12.0	44	24.75 ^A	28.30	0.793	–	–	–	–
3.13.0	328	24.05	25.70	0.623	179	26.20	28.40	0.845
3.14.0	93	24.00	27.15	0.689	127	26.40	27.20	0.740
3.21.0	53	23.40	25.90	0.619	34	26.15	30.03	0.905
3.32.0	49	24.50 ^A	30.40 ^A	0.846 ^A	114	25.90	27.73	0.771
4.05.0	–	–	–	–	36	24.10 ^B	23.40 ^B	0.511 ^B
4.07.0	62	22.10 ^B	24.53	0.516	–	–	–	–
5.01.3	107	22.70	25.25	0.595	42	24.35 ^B	26.45 ^B	0.674
5.03.0	–	–	–	–	39	25.10	24.85 ^B	0.616 ^B
5.04.3	93	22.20	22.85 ^B	0.493 ^B	77	25.40	26.65	0.730
6.05.0	154	22.40	24.30	0.531	110	25.65	29.53	0.871
6.06.1	39	22.80	24.00	0.587	73	25.80	27.25	0.748
6.06.3	39	22.30	23.25 ^B	0.491 ^B	–	–	–	–
6.06.4	102	23.60	25.10	0.595	172	27.00 ^A	29.10	0.884
6.07.0	386	24.10	27.15	0.703	378	26.30	28.43	0.827
6.10.0	–	–	–	–	30	25.30	29.33	0.845
6.19.0	–	–	–	–	122	25.90	30.40 ^A	0.962 ^A
6.22.0	43	21.90 ^B	23.30	0.496	38	24.35 ^B	29.30	0.815
6.26.0	114	22.70	24.95	0.539	140	24.90	26.65	0.665 ^B
9.12.0	28	18.70 ^B	19.88 ^B	0.284 ^B	32	25.95	32.10 ^A	1.054 ^A
9.13.0	–	–	–	–	11	24.90	29.50	0.843
9.14.0	30	23.15	31.20 ^A	0.907 ^A	13	26.50 ^A	39.20 ^A	1.598 ^A

* According to Rubner and Reinhold (1953); ^A the highest detected values; ^B the lowest detected values; *DBH* – diameter at breast height