

Supplementary Material for

Klusek, M., and M. Grabner, 2016. X-ray densitometry of Norway spruce subfossil wood from Austrian Alps. *Tree-Ring Research* 72(1):23-34.

Table 1. The mean, minimum and maximum ring density, earlywood density, and latewood density calculated for a particular sample before any extraction as well as after hot water, acetone and acetic acid preparation. The numbers in parentheses refer to standard deviation values.

Sample	Dating	Without extraction	Hot water	Acetone	Acetic acid
Maximum density					
15A	1311-1399	776.70 (153.59)	820.62 (183.93)	750.54 (140.65)	710.39 (143.52)
43A	1037-1361	834.51 (171.77)	742.16 (125.09)	820.58 (160.05)	775.77 (147.79)
45A	902-1144	794.38 (142.25)	760.44 (127.77)	768.76 (165.65)	701.14 (109.46)
57B	631-834	815.59 (166.42)	669.85 (200.16)	677.06 (187.09)	693.78 (150.93)
110A	920-1006	859.55 (141.70)	843.63 (144.80)	910.70 (146.52)	772.83 (153.47)
117A	1547-1674	887.74 (126.14)	824.93 (119.91)	680.31 (108.07)	770.95 (98.04)
136A	1501-1565	852.05 (189.84)	803.25 (193.67)	802.75 (196.54)	699.43 (187.59)
194A	1733-2003	876.16 (144.05)	904.51 (155.37)	905.12 (158.23)	896.92 (161.74)
197A	1781-2003	848.26 (141.02)	816.11 (141.60)	819.91 (144.30)	807.53 (140.69)
199A	1833-2003	803.55 (139.35)	803.73 (145.41)	807.84 (142.84)	783.63 (150.26)
Mean density					
15A	1311-1399	299.51 (41.21)	345.98 (57.96)	294.40 (45.33)	305.07 (40.48)

43A	1037-1361	337.62 (46.51)	312.22 (44.08)	335.54 (53.75)	334.41 (53.02)
45A	902-1144	388.82 (67.67)	393.35 (57.06)	395.07 (75.75)	358.38 (61.02)
57B	631-834	302.71 (34.96)	266.15 (34.17)	234.46 (40.90)	286.76 (26.45)
110A	920-1006	352.40 (44.66)	380.60 (38.21)	416.61 (60.98)	327.63 (56.17)
117A	1547-1674	429.59 (76.27)	381.89 (58.09)	290.93 (46.13)	373.41 (52.24)
136A	1501-1565	299.57 (34.02)	292.22 (40.81)	308.32 (38.96)	247.26 (38.48)
194A	1733-2003	265.42 (19.93)	281.31 (25.34)	280.40 (22.17)	279.10 (25.50)
197A	1781-2003	287.56 (25.98)	268.60 (22.75)	275.55 (26.94)	271.04 (24.41)
199A	1833-2003	251.06 (15.13)	249.93 (22.17)	260.43 (21.78)	241.57 (21.96)
Minimum density					
15A	1311-1399	168.88 (19.74)	205.43 (26.68)	170.06 (23.28)	188.57 (20.59)
43A	1037-1361	193.41 (26.03)	170.85 (24.53)	187.16 (31.07)	202.34 (34.72)
45A	902-1144	205.82 (32.33)	212.90 (29.26)	205.59 (35.44)	192.50 (36.34)
57B	631-834	172.04 (19.26)	160.72 (16.22)	124.30 (13.98)	178.49 (22.16)
110A	920-1006	180.14 (20.97)	212.13 (24.57)	229.71 (28.69)	168.60 (21.38)
117A	1547-1674	235.63 (59.82)	218.91 (35.98)	156.06 (25.85)	220.23 (39.33)
136A	1501-1565	181.83 (18.27)	182.03 (22.36)	191.63 (23.66)	147.98 (20.03)
194A	1733-2003	221.68 (20.05)	229.17 (21.30)	230.16 (17.76)	229.34 (20.55)
197A	1781-2003	224.45 (21.87)	205.53 (18.75)	210.79 (22.79)	210.01 (21.14)
199A	1833-2003	198.43 (12.23)	197.67 (17.86)	209.30 (19.14)	191.67 (16.87)
Mean density of earlywood					
15A	1311-1399	260.87 (34.37)	304.06 (45.75)	255.06 (34.96)	271.17 (31.41)
43A	1037-1361	285.30 (36.42)	267.75 (37.75)	285.89 (46.42)	288.48 (46.27)
45A	902-1144	300.95 (46.14)	315.69 (40.11)	315.86 (54.75)	289.23 (47.57)

57B	631-834	247.00 (23.23)	221.85 (19.51)	189.47 (27.14)	240.57 (18.86)
110A	920-1006	282.47 (30.72)	313.99 (25.15)	347.09 (44.72)	266.02 (40.37)
117A	1547-1674	356.47 (75.66)	314.20 (53.24)	230.27 (37.89)	308.89 (42.27)
136A	1501-1565	261.08 (25.94)	256.14 (30.52)	274.32 (29.37)	215.17 (27.50)
194A	1733-2003	239.57 (18.87)	249.04 (22.53)	247.93 (18.11)	246.19 (21.52)
197A	1781-2003	245.69 (21.38)	226.78 (18.50)	230.08 (22.28)	229.90 (21.45)
199A	1833-2003	222.13 (11.24)	220.82 (18.79)	231.32 (18.97)	212.90 (18.08)
Mean density of latewood					
15A	1311-1399	614.24 (126.02)	648.82 (144.87)	591.51 (108.98)	568.72 (109.96)
43A	1037-1361	678.26 (139.23)	603.02 (105.74)	660.65 (134.11)	633.89 (122.96)
45A	902-1144	645.62 (114.02)	612.57 (100.24)	603.49 (121.23)	556.30 (84.68)
57B	631-834	641.05 (133.85)	527.86 (148.60)	513.42 (135.82)	552.54 (115.79)
110A	920-1006	678.38 (105.60)	692.13 (114.31)	736.40 (121.17)	615.80 (121.62)
117A	1547-1674	704.77 (105.49)	669.24 (102.23)	536.86 (91.22)	623.77 (78.84)
136A	1501-1565	671.52 (544.21)	643.23 (159.42)	639.75 (156.26)	544.26 (147.85)
194A	1733-2003	637.82 (134.71)	664.93 (144.51)	658.48 (148.00)	654.07 (149.42)
197A	1781-2003	694.22 (136.12)	670.73 (136.15)	668.00 (137.51)	661.86 (134.28)
199A	1833-2003	655.10 (133.71)	654.94 (140.59)	659.08 (138.05)	638.95 (143.88)

Table 2. The mean, minimum and maximum ring density, earlywood density, and latewood density calculated for unprepared and cold water prepared samples. The numbers in parentheses refer to standard deviation values.

Sample	Dating	Maximum	Mean	Minimum	Mean	Mean
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		density	density	density	density of earlywood	density of latewood
13A	1481 1616	806.85	358.71	207.18	301.86	647.45
unprepared		(154.76)	(65.863)	(41.08)	(51.62)	(134.26)
13A cold water		791.05 (166.58)	372.38 (68.58)	226.77 (52.35)	311.75 (52.59)	653.94 (139.08)
18B	1472 1649	738.61	341.18	214.11	282.61	603.30
unprepared		(159.06)	(40.56)	(32.35)	(32.03)	(122.38)
18B cold water		790.40 (169.43)	361.80 (42.90)	222.64 (31.33)	298.02 (32.16)	644.07 (128.10)
21A	984 1134	810.48	353.00	199.17	304.53	650.87
unprepared		(172.30)	(75.03)	(35.46)	(55.90)	(141.57)
21A cold water		709.84 (146.29)	325.20 (61.50)	189.74 (35.67)	276.09 (45.09)	571.58 (124.11)
21B	962 1024	811.83	377.16	244.83	328.05	665.52
unprepared		(110.68)	(28.32)	(20.53)	(21.29)	(95.42)
21B cold water		890.11 (115.12)	424.35 (30.84)	272.13 (18.17)	371.63 (21.47)	731.71 (103.89)
26A	1023 1211	936.80	392.27	198.01	317.81	754.98
unprepared		(96.80)	(47.45)	(24.03)	(32.02)	(85.62)
26A cold water		993.87 (69.20)	424.01 (48.83)	203.46 (24.33)	344.82 (36.20)	790.47 (80.01)
26B	1017 1175	837.56	373.55	211.97	293.35	691.04

unprepared		(129.25)	(88.44)	(57.69)	(68.52)	(118.81)
26B		855.64	379.21	214.80	294.72	701.46
cold water		(102.78)	(92.97)	(63.34)	(72.00)	(94.84)
27A		829.79	330.47	179.92	265.93	647.41
unprepared	1799 1873	(120.08)	(37.22)	(23.76)	(28.39)	(113.67)
27A		858.99	349.68	194.32	281.64	684.87
cold water		(132.56)	(41.16)	(24.61)	(25.72)	(117.43)
34A		806.87	331.82	194.39	288.82	635.14
unprepared	813 935	(141.49)	(42.21)	(25.82)	(32.49)	(101.57)
34A		817.14	317.98	172.59	270.88	603.54
cold water		(129.64)	(36.69)	(31.39)	(28.81)	(90.89)
46A		893.82	411.88	251.45	355.70	735.98
unprepared	1022 1260	(109.35)	(50.33)	(40.89)	(39.92)	(98.93)
46A		955.80	423.72	239.34	360.32	772.54
cold water		(90.66)	(54.34)	(41.99)	(40.92)	(91.96)
52A		908.54	389.13	212.91	328.37	727.39
unprepared	1005 1256	(114.70)	(52.53)	(39.10)	(43.10)	(109.04)
52A		881.49	364.90	181.30	303.16	694.81
cold water		(112.04)	(45.64)	(33.57)	(41.52)	(99.75)
53B		792.39	325.04	191.90	283.78	605.44
unprepared	845 1022	(128.99)	(33.28)	(22.25)	(25.49)	(104.86)
53B		841.93	324.60	169.69	279.40	600.90
cold water		(126.89)	(31.88)	(21.48)	(23.57)	(100.46)

60A		896.01	397.72	220.89	336.43	728.65
unprepared	1006 1260	(138.23)	(75.75)	(42.48)	(56.92)	(119.75)
60A		920.16)	402.04	217.08	336.88	750.26
cold water		(133.45)	(87.46)	(57.22)	(70.16)	(127.09)
61A		940.99	489.63	285.36	403.45	773.33
unprepared	1041 1120	(97.43)	(49.23)	(34.33)	(42.38)	(85.61)
61A		977.29	502.33	252.70	398.86	774.43
cold water		(99.56)	(69.57)	(42.96)	(60.80)	(109.08)
143B		931.41	472.26	288.16	396.68	744.42
unprepared	988 1169	(121.48)	(43.70)	(33.41)	(35.42)	(98.41)
143B		812.38	392.43	246.60	324.59	640.95
cold water		(110.04)	(40.16)	(33.13)	(32.76)	(84.48)