

**Table 5.8:** Length growth [ $\text{cm} (\text{m}^2 \text{ root window area})^{-1} \text{ yr}^{-1}$ ], calculated biomass production [ $\text{g dry weight m}^{-2} \text{ yr}^{-1}$ ], calculated carbon investment for biomass production [ $\text{g C m}^{-2} \text{ yr}^{-1}$ ], and turnover index [ $\text{root length yr}^{-1}$ ] of primary roots of different tree species at different European forest sites. Data are from root window observations, for calculations see text. Means and SE in parenthesis (n=5-16). Data within one row and tree species are not significantly different between sites when followed by the same letter (Tukey test). If necessary, data were  $\log_{10}$  or square root transformed before analysis to obtain normality.

	<i>Betula</i>		<i>Fagus sylvatica</i>		<i>Picea abies</i>				
	Åheden	Gribskov	Schacht	Aubure	Åheden	Skogaby	Klosterhede	Waldstein	Aubure
Length growth [ $\text{cm} (\text{m}^2 \text{ root window area})^{-1} \text{ yr}^{-1}$ ]									
1994	n.a. <sup>1</sup>	587.4 <sup>b</sup> (95.1)	87.4 <sup>a</sup> (27.5)	167.0 <sup>a</sup> (42.6)	128.9 <sup>a</sup> (36.5)	827.0 <sup>b</sup> (108.6)	847.3 <sup>b</sup> (59.5)	686.1 <sup>b</sup> (157.8)	253.0 <sup>a</sup> (66.8)
1995	291.1 (45.3)	73.6 <sup>a</sup> (12.6)	31.0 <sup>a</sup> (12.5)	131.0 <sup>a</sup> (53.3)	191.6 <sup>ab</sup> (23.3)	565.7 <sup>c</sup> (69.2)	518.5 <sup>c</sup> (70.0)	378.0 <sup>bc</sup> (80.0)	116.2 <sup>a</sup> (26.2)
1996	173.8 (73.0)	43.9 <sup>a</sup> (14.0)	50.3 <sup>ab</sup> (11.6)	137.9 <sup>b</sup> (44.7)	111.1 <sup>a</sup> (27.1)	189.6 <sup>a</sup> (24.9)	115.3 <sup>a</sup> (25.4)	407.8 <sup>b</sup> (59.2)	65.5 <sup>a</sup> (16.6)
Mean 1995-1996	232.4	58.8	40.6	134.4	151.4	377.6	316.9	392.9	90.8
Net primary production [ $\text{g dry weight m}^{-2} \text{ yr}^{-1}$ ]									
1994	n.a.	293.7 (47.5)	43.7 (13.8)	83.5 (21.3)	85.9 (24.3)	551.3 (72.4)	564.9 (39.6)	457.4 (105.2)	162.0 (44.6)
1995	145.5 (22.6)	36.8 (6.3)	15.5 (6.2)	65.5 (26.6)	127.7 (15.6)	377.1 (46.1)	345.7 (46.5)	252.0 (53.1)	77.5 (17.5)
1996	86.9 (36.5)	21.9 (7.0)	25.1 (5.8)	68.9 (22.3)	74.1 (18.1)	126.4 (16.6)	76.8 (16.9)	271.9 (39.5)	43.7 (11.1)
Mean 1995-1996	116.2	29.4	20.3	67.2	100.9	251.8	211.25	262.0	60.6
Carbon investment for biomass production [ $\text{g C m}^{-2} \text{ yr}^{-1}$ ]									
Mean 1995-1996	58.1	14.7	10.2	33.6	50.4	125.9	105.6	131.0	30.3
Turnover index[ $\text{root length}$ ] [ $\text{yr}^{-1}$ ]									
1994	n.a.	0.84 <sup>b</sup> (0.06)	0.37 <sup>a</sup> (0.07)	2.59 <sup>c</sup> (0.91)	1.31 <sup>a</sup> (0.30)	9.00 <sup>c</sup> (4.29)	5.17 <sup>bc</sup> (1.21)	4.25 <sup>abc</sup> (1.23)	2.36 <sup>ab</sup> (0.69)
1995	1.41 (0.44)	0.11 <sup>a</sup> (0.03)	0.29 <sup>ab</sup> (0.11)	0.77 <sup>b</sup> (0.27)	1.96 <sup>b</sup> (0.30)	0.70 <sup>a</sup> (0.10)	0.56 <sup>a</sup> (0.06)	0.83 <sup>a</sup> (0.13)	0.54 <sup>a</sup> (0.15)
1996	0.45 (0.18)	0.11 <sup>a</sup> (0.04)	0.61 <sup>ab</sup> (0.13)	0.72 <sup>b</sup> (0.17)	0.63 <sup>bc</sup> (0.18)	0.23 <sup>ab</sup> (0.08)	0.13 <sup>a</sup> (0.03)	1.14 <sup>c</sup> (0.28)	0.28 <sup>ab</sup> (0.07)
Mean 1995-1996	0.93	0.11	0.45	0.74	1.30	0.46	0.34	0.98	0.41

<sup>1</sup>Data not available (no root growth at window surface)