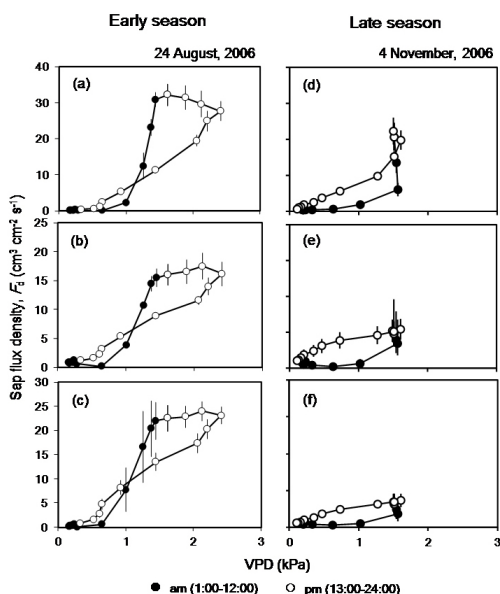


**Figure 3** Representative diurnal trends of vapor pressure deficit (VPD, broken line), solar radiation ( $R_s$ , solid line), and sap flux density ( $F_d$ ) of small (S), medium (M), and large (L) stands in the (a-d) early and (e-h) late seasons. The figure presents data from 24 August 2006 for the early season and 4 November 2006 for the late season.



**Figure 4** Relationships between sap flux density ( $F_d$ ) and vapor pressure deficit (VPD) for sample trees of small (S), medium (M), and large (L) stands in the (a-c) early and (d-f) late seasons. The figure presents data from 24 August 2006 for the early season and 4 November 2006 for the late season. Closed and open circles represent the data for periods from 1:00 to 12:00 and from 13:00 to 24:00, respectively. Error bars show the standard error.

**Table 2** Summary for cross-correlation analysis between vapor pressure deficit (VPD), solar radiation ( $R_s$ ), and sap flux density ( $F_d$ ) for wet and dry soil conditions. A time lag ( $\Delta T$ ) between  $F_d$  and VPD or  $R_s$  that was observed to have the highest cross-correlation coefficient (R) in each condition was listed. Data of four days for the  $F_d$ -VPD pair and three days for the  $F_d$ - $R_s$  pair in each season were used for this calculation

Tree No.	VPD				$R_s$			
	Wet		Dry		Wet		Dry	
	$\Delta T$ (h)	R	$\Delta T$ (h)	R	$\Delta T$ (h)	R	$\Delta T$ (h)	R
S1	0	0.94	1	0.97	1	0.97	2	0.98
S2	0	0.93	1	0.95	1	0.98	2	0.97
S3	0	0.94	0	0.96	2	0.98	2	0.97
M1	-1	0.92	2	0.97	2	0.96	3	0.96
M2	1	0.98	2	0.97	2	0.95	3	0.93
M3	1	0.98	1	0.99	2	0.95	2	0.94
L1	0	0.98	1	0.97	1	0.94	2	0.97
L2	1	0.97	3	0.67	2	0.97	3	0.83
L3	0	0.97	1	0.98	2	0.96	3	0.96















tration of 10 cm ( $N$ ) in small, medium, and large stands

**Fig. S2** Relationship between daily sap flux density ( $F_d$ ) measured at north and south sides for small, medium, and large stands for the early and late seasons.

**Fig. S3** Relationship between daytime mean vapor pressure deficit (VPD) and daily sap flux density ( $F_d$ ) for the early and late seasons in the small stand.

**Fig. S4** Relationship between daytime mean vapor pressure deficit (VPD) and daily sap flux density ( $F_d$ ) for the early and late seasons in the medium stand.

**Fig. S5** Relationship between daytime mean vapor pressure deficit (VPD) and daily sap flux density ( $F_d$ ) for the early and late seasons in the large stand.