



Supplement of

The natural abundance of stable water isotopes method may overestimate deep-layer soil water use by trees

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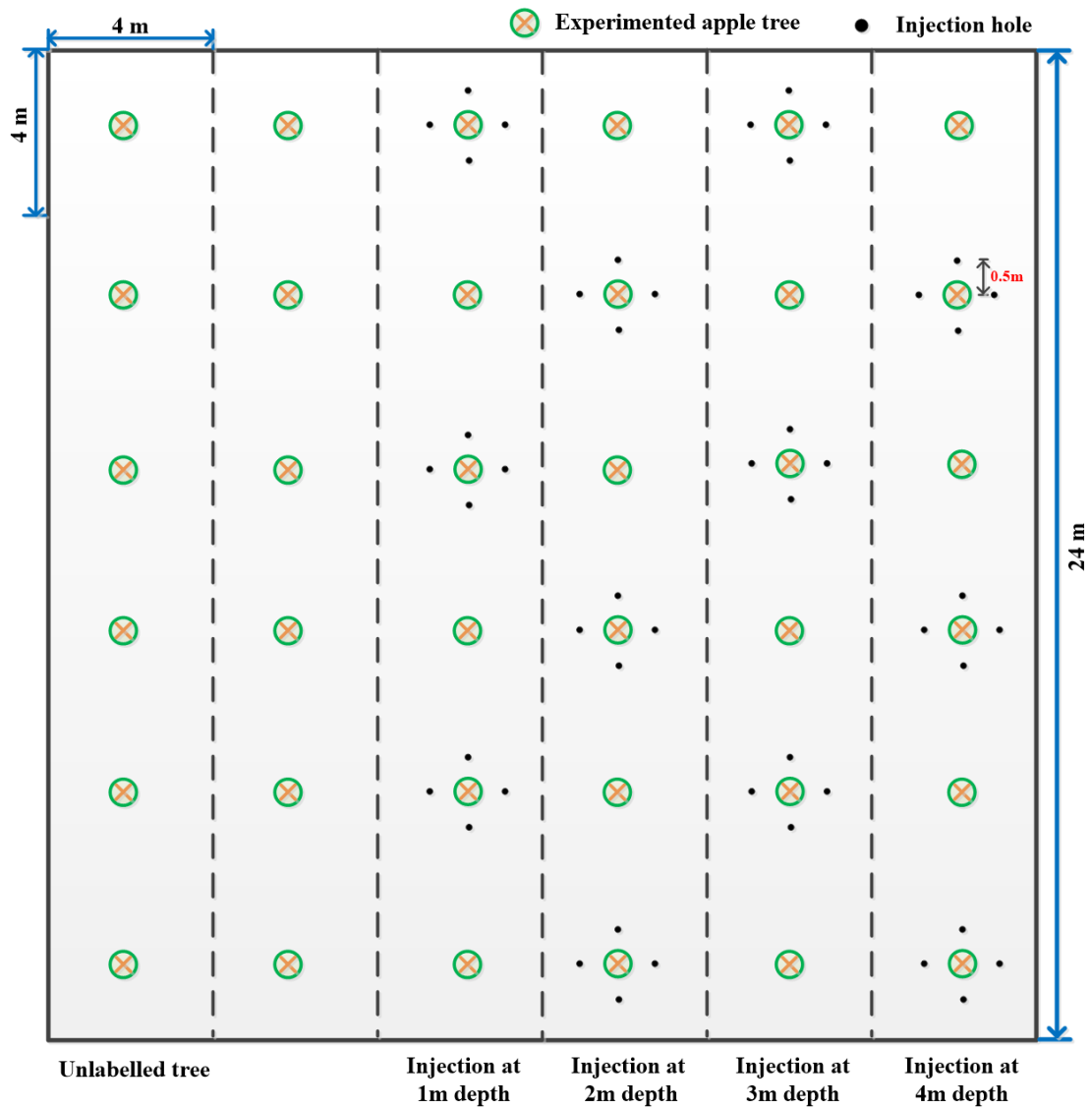


Figure S1 The layout of apple trees in experiment plot.

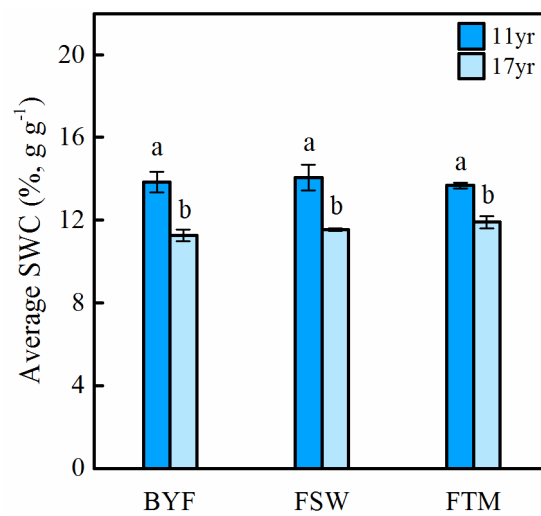


Figure S2 Average soil water content (SWC) in three apple orchards. Error bars indicate

standard errors of the means (N=3). Different lowercase letters indicate significant differences between different stand ages.

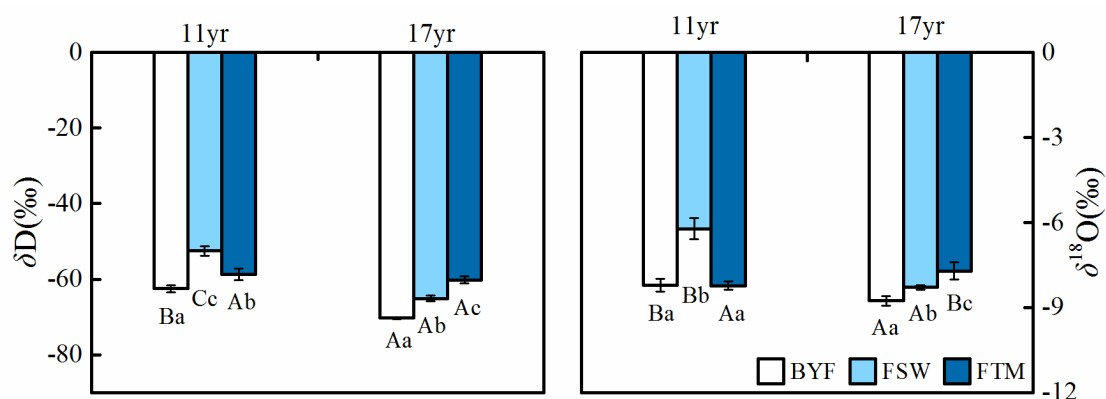


Figure S3 Mean δD and $\delta^{18}O$ values in xylem water of 11- and 17-year-old apple trees with \pm SD (N=6). Different uppercase and lowercase characters indicate significant differences between stand ages and growing seasons, respectively.

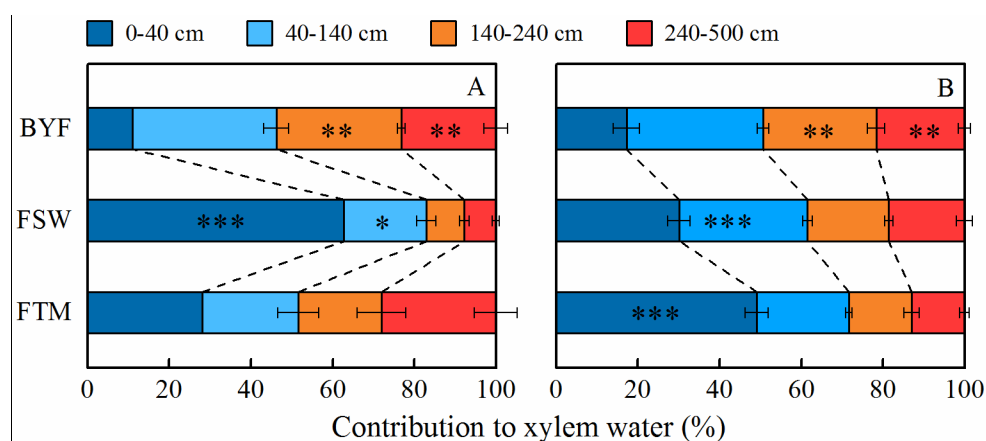


Figure S4 Seasonal patterns of contribution of four potential water sources (0–5 m) to xylem water of 11-year-old (A) and 17-year-old (B) apple trees. Error bars indicate standard errors of the mean (N=3). Asterisks represent significant differences between different growing stages (*, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$).

Table S1 The maximum and minimum values of the height (H), trunk diameter (TD) and crown size (CS) for apple trees in two orchards.

Stand age	H_{\max} (cm)	H_{\min} (cm)	TD_{\max} (cm)	TD_{\min} (cm)	CS_{\max} (cm)	CS_{\min} (cm)
(a)						
11	403	320	12.8	11.5	430 × 400	360 × 320
17	450	355	15.2	13.8	475 × 420	390 × 340

Table S2 Mean (\pm SD, n=6) soil water excess (SW-excess, %) for 11- and 17-year-old apple trees.

Stand age (a)	Growth stage		
	BYF	FSW	FTM
11	2.09 \pm 0.83	-6.80 \pm 3.56	4.78 \pm 1.85
17	-2.75 \pm 0.75	-2.57 \pm 0.29	-0.80 \pm 1.72