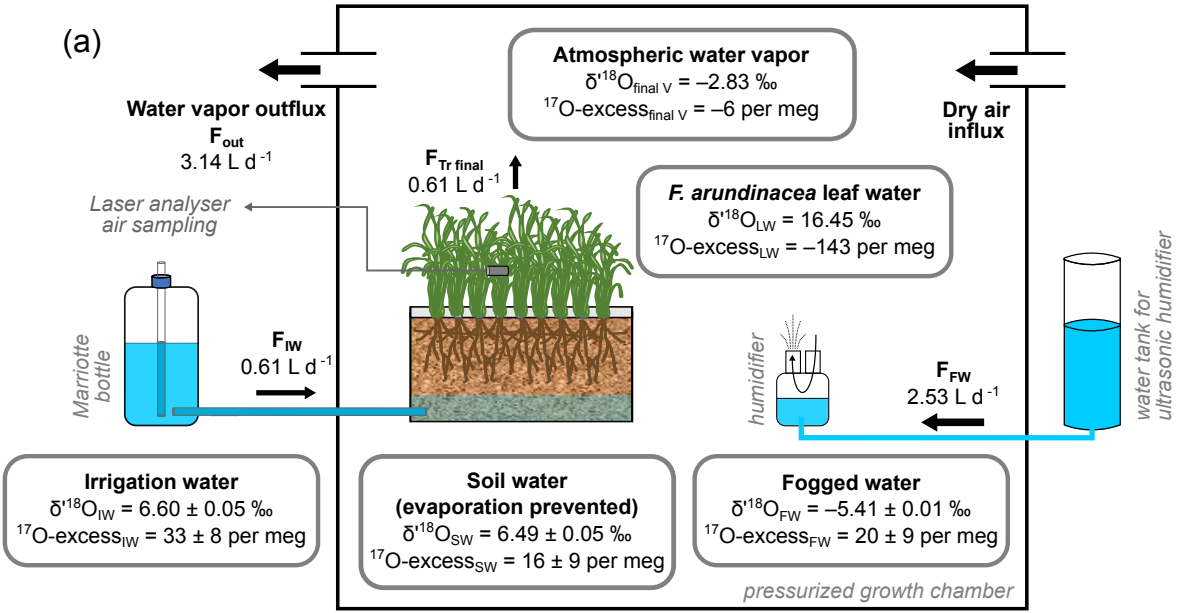
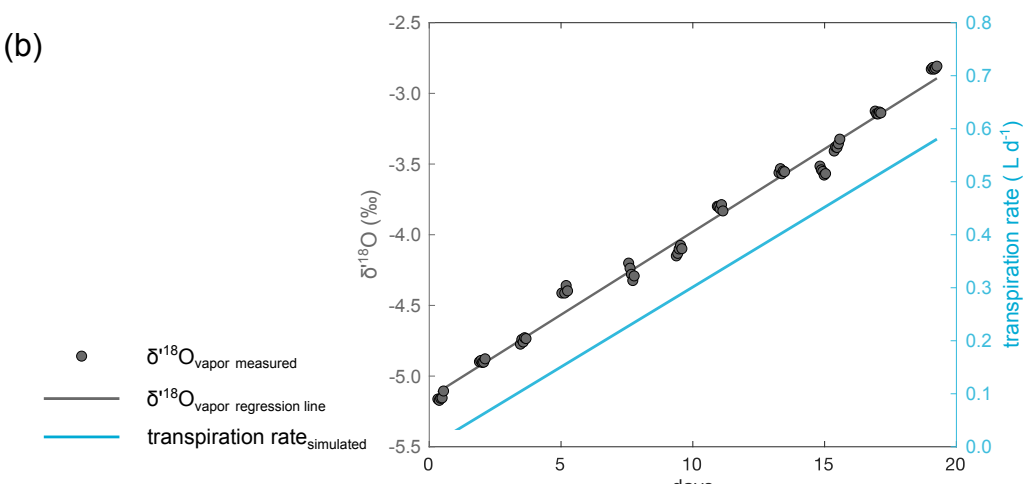

(a)
Atmospheric water vapor
δ'18O final V = –2.83 ‰
17O-excess final V = –6 per meg
Water vapor outflux
Fout
3.14 L d-1
Dry air
influx
FTr final
0.61 L d-1
Laser analyser
air sampling
F. arundinacea leaf water
δ'18OLW = 16.45 ‰
17O-excessLW = –143 per meg
Marriotte
bottle
FIW
0.61 L d-1
humidifier
FFW
2.53 L d-1
water tank for
ultrasonic humidifier
Irrigation water
δ'18OIW = 6.60 ± 0.05 ‰
17O-excessIW = 33 ± 8 per meg
Soil water
(evaporation prevented)
δ'18OSW = 6.49 ± 0.05 ‰
17O-excessSW = 16 ± 9 per meg
Fogged water
δ'18OFW = –5.41 ± 0.01 ‰
17O-excessFW = 20 ± 9 per meg
pressurized growth chamber


(b)
δ'18Ovapor measured
δ'18Ovapor regression line
transpiration rateSimulated
δ'18O (‰)
transpiration rate (L d-1)
days
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
-5.5
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0
5
10
15
20