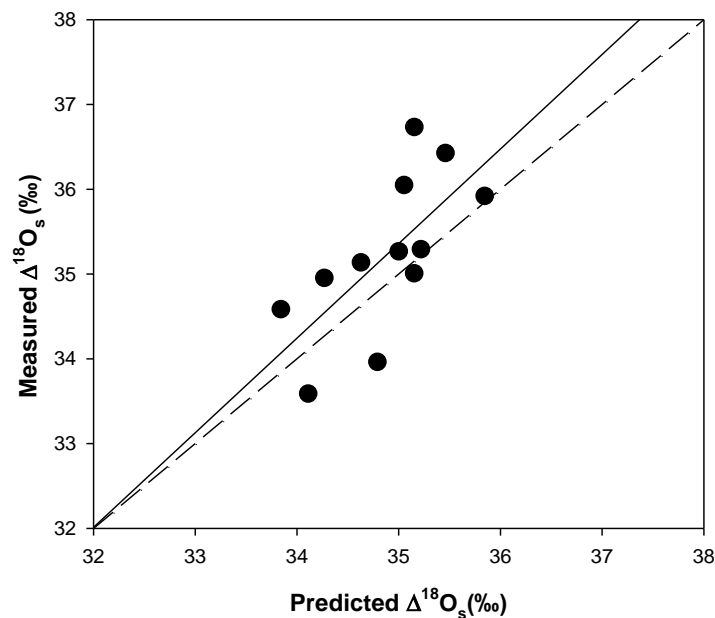


1 **Water and nitrogen conditions affect the relationships of $\Delta^{13}\text{C}$ and $\Delta^{18}\text{O}$ with gas**
2 **exchange and growth in durum wheat**

3 *Llorenç Cabrera-Bosquet, Gemma Molero, Salvador Nogués, and Jose Luis Araus*

4
5 **Supplementary Material**

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8 **Figure S1.** Relationship between measured and predicted $\Delta^{18}\text{O}_s$ values in plants grown
9 under high N. A simplified Péclet model developed by Barbour and coworkers
10 (<http://www.ecophys.biology.utah.edu/>) was used to predict $\Delta^{18}\text{O}_s$ values. Several
11 parameters such as the diffusion fractionation through stomata (32‰) and the boundary
12 layer (21‰), the equilibrium fractionation between C=O and water for carbonyl
13 exchange (27‰) and for the whole leaf biomass (8‰), $p_{ex}:p_x = 0.38$ and the effective
14 length for Péclet effect (8mm) were assumed (Barbour and Farquhar, 2000; Barbour *et*
15 *al.*, 2000a). The $\delta^{18}\text{O}$ of source water, the RH, and the leaf and air temperatures,
16 stomatal and boundary layer conductance and E rates measured in our experiment were
17 entered to the model and used for the calculation. Each point represents the high N
18 treatment means for each genotype and water conditions. Each value is the mean of four
19 replicates. The dashed line represents a slope of 1. Measured $\Delta^{18}\text{O}_s = -3.6 + 1.1\text{predicted}$
20 $\Delta^{18}\text{O}_s$; $R=0.69$.



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