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Supplementary Material

Simultaneous recording of diurnal changes in leaf turgor pressure and stem water status of bread wheat reveal variation in hydraulic mechanisms in response to drought

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Table S1. Environmental conditions in the growth chamber during the growing period and experiment

Varying light intensity (PAR, photosynthetically active radiation) was achieved by programming different amounts of lights to switch on/off at the relevant times

Time of day (hours)	Temperature (°C)	Relative humidity[A] (%)	PAR (µmol s^{-1} m^{-2})
00:00 – 08:00	10	65	0
08:00 – 09:00	14	65	155
09:00 – 11:00	18	65	410
11:00 – 17:00	22	65	645
17:00 – 19:00	18	65	410
19:00 – 20:00	14	65	155
20:00 – 24:00	10	65	0

[A]Actual conditions ranged from 55% at midday to 70% at night.

Table S2. Experimental design showing when individual plants were watered, where watering was withheld (drought) and subsequent re-watering following an inverse in P_p (indicating turgor loss)

<table>
<tr><td colspan="14">Day of experiment</td></tr>
<tr><td>Day 0</td><td>Day 1</td><td>Day 2</td><td>Day 3</td><td>Day 4</td><td>Day 5</td><td>Day 6</td><td>Day 7</td><td>Day 8</td><td>Day 9</td><td>Day 10</td><td>Day 11</td><td>Day 12</td><td>Day 13</td></tr>
<tr><td colspan="6">Trial 1</td><td colspan="8">Trial 2</td></tr>
<tr><td colspan="14">Plant 1</td></tr>
<tr><td>Probe clamping</td><td colspan="5">Well watered</td><td colspan="5">Drought</td><td colspan="2">Well watered</td><td>Probe removal</td></tr>
<tr><td colspan="14">Plant 2</td></tr>
<tr><td>Probe clamping</td><td colspan="5">Well watered</td><td colspan="5">Drought</td><td colspan="2">Well watered</td><td>Probe removal</td></tr>
<tr><td colspan="14">Plant 3</td></tr>
<tr><td>Probe clamping</td><td>Well watered</td><td colspan="3">Drought</td><td colspan="7">Well watered</td><td>Probe removal</td><td></td></tr>
<tr><td colspan="14">Plant 4</td></tr>
<tr><td>Probe clamping</td><td>Well watered</td><td colspan="4">Drought</td><td colspan="7">Well watered</td><td>Probe removal</td><td></td></tr>
</table>

Table S3. Time of day when oscillations in P_p started and ended each day after droughted plants were re-watered

ND, oscillations not detected

			Days after re-watering							
			0		+1		+2		+3	
Plant	**Probe position**	**Time of re-watering**	**Start time**	**End time**	**Start time**	**End time**	**Start time**	**End time**	**Start time**	**End time**
1	Flag leaf	9:55	13:08	18:42	09:28	18:47				
	Pen leaf		13:12	18:51	09:39	18:52				
	Stem		13:16	18:56	09:55	18:22				
2	Flag leaf	9:55	ND	ND	ND	ND				
	Pen leaf		17:29	18:50	09:13	11:49				
	Stem		ND	ND	ND	ND				
3[A]	Flag leaf	10:10	13:43	18:36	11:21/17:29	12:38/18:34	9:22	18:46	17:30	18:47
	Pen leaf		13:43	18:36	11:19/17:28	12:38/18:34	9:17	18:47	17:32	18:48
	Stem		ND	ND	ND	ND	ND	ND	ND	ND
4	Flag leaf	10:40	13:48	18:32	11:43	14:52	09:23	15:21		
	Pen leaf		13:43	18:59	11:08	18:25	09:18	15:15		
	Stem		13:47	18:32	11:18	18:32	10:10	15:22		

[A]Plant 3 shows a pause of oscillations over midday on the day after re-watering. The time after the slash is the beginning and end time for the oscillations in the afternoon.

Table S4. Flow velocity (cm min^{-1}) between different organs on an individual plant

The flow velocity was calculated from the time delay in P_p oscillations between organs and the distance between the respective ZIM-probes

Plant	Flow velocity between organs	Time after re-watering (days)		
		0	+1	+2
1	Pen leaf -stem	7	3	
	Flag leaf-pen leaf	4	5	
	Flag leaf -stem	2	1	
3	Flag leaf- pen leaf	No delay time	28	No delay time
4	Pen leaf -stem	16	6	5
	Flag leaf-pen leaf	10	6	7
	Flag leaf -stem	16	No delay time	8