Additional file 1

**An *in situ* approach to characterizing photosynthetic gas exchange of rice panicle**

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**Additional file: Figure S1.** Measurements for areas of spikelets, panicle branches and flag leaves 5 days after heading. **a**, A scan photo of spikelets on a panicle. **b**, A scan photo of panicle branches. **c**, A scan photo of a flag leaf.

**Additional file: Table S1.** Heading date and harvest date of main stems for rice cultivars grown in 2015 and 2016.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Heading date (2015)** | **Harvest date (2015)** | **Heading date (2016)** | **Harvest date (2016)** |
| YLY900 | 2 Sep. | 25 Oct. | 4 Sep. | 28 Oct. |
| CY1000 | 2 Sep. | 25 Oct. | 4 Sep. | 28 Oct. |
| SY63 | 27 Aug. | 25 Oct. | 29 Aug. | 28 Oct. |
| 9311 | 27 Aug. | 25 Oct. | 29 Aug. | 28 Oct. |
| XS134 | 6 Sep. | 5 Nov. | 7 Sep. | 8 Nov. |
| YY538 | - | - | 7 Sep. | 8 Nov. |
| YY17 | - | - | 15 Sep. | 8 Nov. |

**Additional file: Table S2.** Ambient air temperature (oC) during each panicle gas exchange measurement in 2015.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Date | YLY900 | CY1000 | SY63 | 9311 | XS134 |
| 1 Sep. |  |  | 29.8-31.2 | 29.8-31.2 |  |
| 7 Sep. | 27.9-30.7 | 27.9-30.7 |  |  |  |
| 11 Sep. |  |  |  |  | 27.7-29.3 |

**Additional file: Table S3.** Ambient air temperature (oC) during each panicle gas exchange measurement in 2016.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Date | YLY900 | CY1000 | SY63 | 9311 | XS134 | YY538 | YY17 |
| 3 Sep. |  |  | 34.8-35.5 | 34.8-35.5 |  |  |  |
| 9 Sep. | 32.9-34.0 | 32.9-34.0 |  | 32.9-34.0 |  |  |  |
| 12 Sep. |  |  | 29.8-30.9 |  | 29.8-30.9 | 29.8-30.9 |  |
| 20 Sep. |  |  |  |  |  |  | 27.7-28.6 |
| 21 Sep. | 28.0-28.6 | 28.0-28.6 |  |  |  |  |  |
| 22 Sep. |  |  |  |  | 27.8-29.1 | 27.8-29.1 |  |
| 24 Sep. |  |  | 28.0-29.0 | 28.0-29.0 |  |  | 28.0-29.0 |
| 6 Oct. | 28.6-32.6 |  |  |  | 28.6-32.6 |  |  |
| 7 Oct. |  | 28.4-29.3 |  | 28.4-29.3 |  |  |  |
| 8 Oct. |  |  |  |  |  |  | 28.3-29.2 |
| 9 Oct. |  |  | 24.5-28.9 |  |  | 24.5-28.9 |  |
| 17 Oct. | 26.6-33.2 | 26.6-33.2 |  |  |  |  |  |
| 18 Oct. |  |  |  |  | 25.9-32.9 | 25.9-32.9 | 25.9-32.9 |
| 1 Nov. |  |  |  |  | 18.3-24.3 | 18.3-24.3 | 18.3-24.3 |