**Table S1:** Weather data during the growing seasons at the experimental site

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Months** | **Maximum air temp. (°C)** | **Minimum air temp. (°C)** | **Mean air temp. (°C)** | **Air relative humidity (%)** | **Total rainfall (mm)** | **Sunshine hours** |
| 2014–15 |  |  |  |  |  |  |
| November | 26.3 | 11.5 | 18.9 | 61.7 | 10 | 7.6 |
| December | 18.5 | 5.9 | 12.2 | 75.0 | 0.0 | 4.7 |
| January | 16.6 | 6.9 | 11.7 | 75.3 | 12.2 | 5.0 |
| February | 22 | 11.1 | 16.5 | 66.0 | 20.5 | 5.6 |
| March | 24.5 | 13.6 | 19.1 | 64.0 | 67.9 | 4.9 |
| April | 33.2 | 20.7 | 27 | 43.9 | 32.8 | 9.1 |
| 2015–16 |  |  |  |  |  |  |
| November | 27.1 | 12.1 | 19.6 | 61.5 | 8.8 | 6.6 |
| December | 21.8 | 7.2 | 14.5 | 62.6 | 0.0 | 7.0 |
| January | 17.3 | 7.7 | 12.5 | 74.4 | 13.1 | 3.5 |
| February | 23.3 | 9.3 | 16.3 | 58.1 | 7.8 | 8.5 |
| March | 26.8 | 15.6 | 21.2 | 59.7 | 66.7 | 6.6 |
| April | 34.3 | 20.2 | 27.2 | 34.2 | 5.6 | 8.3 |

**Source**: Agricultural Meteorology Cell, Department of Agronomy, University of Agriculture, Faisalabad, Pakistan

**Table S2:** Fixed and variable cost during the growing seasons at the experimental site for wheat and chickpea [DSR-ZT = direct-seeded rice followed by zero tillage wheat or chickpea; DSR-CT = direct-seeded rice followed by conventional tillage wheat or chickpea; DSR-ZT+CR = direct-seeded rice followed by zero tillage wheat or chickpea with residue mulch from previous rice crop; DSR-CT+CR = direct-seeded rice followed by conventional tillage wheat or chickpea with residue mulch from previous rice crop; PuTR-ZT = puddled transplanted rice followed by zero tillage wheat or chickpea; PuTR-CT = puddled transplanted rice followed by conventional tillage wheat or chickpea; DSR+SBM-ZT = sesbania incorporation in direct-seeded rice followed by zero tillage wheat or chickpea; DSR+SBM-CT = sesbania incorporation in direct-seeded rice followed by conventional tillage wheat or chickpea]

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Treatments** | **Fixed cost** | | | | **Variable cost** | | | **Total cost ($ ha–1)** |
| **Land rent ($ ha–1)** | **Seed cost ($ ha–1)** | **Plant protection cost ($ ha–1)** | **Fertilizer cost ($ ha–1)** | **Irrigation cost ($ ha–1)** | **Cost of tillage/seedbed preparation ($ ha–1)** | **Harvesting/threshing cost ($ ha–1)** |
|  | ***Wheat*** |  |  |  |  |  |  |  |
| DSR-ZT | 595 | 48 | 24 | 164 | 13 | 31 | 108 | 983 |
| DSR-CT | 595 | 48 | 24 | 164 | 13 | 71 | 95 | 1011 |
| DSR-ZT+CR | 595 | 48 | 24 | 164 | 13 | 31 | 123 | 998 |
| DSR-CT+CR | 595 | 48 | 24 | 164 | 13 | 71 | 113 | 1029 |
| PuTR-ZT | 595 | 48 | 24 | 164 | 13 | 31 | 82 | 957 |
| PuTR-CT | 595 | 48 | 24 | 164 | 13 | 152 | 96 | 1093 |
| DSR+SBM-ZT | 595 | 48 | 24 | 164 | 13 | 31 | 136 | 1011 |
| DSR+SBM-CT | 595 | 48 | 24 | 164 | 13 | 45 | 121 | 1010 |
|  | ***Chickpea*** |  |  |  |  |  |  |  |
| DSR-ZT | 595 | 64 | 24 | 78 | 7 | 31 | 65 | 863 |
| DSR-CT | 595 | 64 | 24 | 78 | 7 | 71 | 61 | 900 |
| DSR-ZT+CR | 595 | 64 | 24 | 78 | 7 | 31 | 68 | 866 |
| DSR-CT+CR | 595 | 64 | 24 | 78 | 7 | 71 | 66 | 905 |
| PuTR-ZT | 595 | 64 | 24 | 78 | 7 | 31 | 54 | 853 |
| PuTR-CT | 595 | 64 | 24 | 78 | 7 | 152 | 53 | 974 |
| DSR+SBM-ZT | 595 | 64 | 24 | 78 | 7 | 31 | 76 | 875 |
| DSR+SBM-CT | 595 | 64 | 24 | 78 | 7 | 45 | 71 | 884 |