|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrogen Input and output  (kg ha-1) | 2014 | | | |  | 2016 | | | |
| 100%U | 100%M | 50%U+  50%M | CK |  | 100%U | 100%M | 50%U+  50%M | CK |
| N Iput |  |  |  |  |  |  |  |  |  |
| Fertilizer N | 200 | 200 | 200 | 0 |  | 200 | 200 | 200 | 0 |
| Irrigation N | 16.71 | 16.71 | 16.71 | 16.71 |  | 19.35 | 19.35 | 19.35 | 19.35 |
| Mineralization N | 136.26 | 136.26 | 136.26 | 136.26 |  | 166.77 | 166.77 | 166.77 | 166.77 |
| Initial N | 176.81b | 206.25a | 199.32ab | 132.45c |  | 175.95b | 225.37a | 220.36a | 133.1c |
| N Output |  |  |  |  |  |  |  |  |  |
| Crop uptake N | 268.96a | 214.41b | 267.64a | 93.26c |  | 241.43b | 227.41c | 260.72a | 148.99d |
| Leaching N | 21.99a | 4.02b | 5.36b | 1.95b |  | 57.93a | 17.16b | 18.63b | 9.31b |
| AV | 34.64a | 13.63c | 27.91b | 5.24d |  | 39.96a | 22.13c | 32.36b | 11.09d |
| Residual N | 198.45b | 230.97a | 207.39b | 184.97c |  | 199.50b | 244.27a | 222.51a | 149.83c |
| N balance | 11.65c | 120.24a | 22.85b | 0.00d |  | 24.65c | 100.52a | 50.86b | 0.00d |

Table S3. Nitrogen balance in 2014 and 2016 as affected by fertilization: 100% urea (100%U), 100%

manure (100%M), half manure and half urea (50%U+50%M), no nitrogen fertilizer (CK).

N input, total nitrogen input amount; Fertilizer N, nitrogen input by fertilizer; Mineralization N was estimated by the difference between N input and N output of the CK treatment; Initial N, nitrate nitrogen and ammonium nitrogen content in soil before sowing; N output, total nitrogen output; Crop uptake N, nitrogen uptake by plant; Leaching N, leaching nitrate content; AV, ammonia volatilization losses; Residual N, nitrate nitrogen and ammonium nitrogen content in soil after harvest; N balance, N balance was calculated by the difference of N input and N output of difference fertilizer treatment. Different letters represent significant differences (*p*≤0.05).