**Supplementary Table S1**. Growth parameters at mid-tillering and panicle initiation stages in irrigated regime in the wet season of 2016.

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| Planting treatment | Nutrient management | 21 DAT  (mid-tillering) | | | |  | 35 DAT  (panicle initiation) | | | |
| NDVI | Leaf color score | Tillers (m-2) | Plant height (cm) |  | NDVI | Leaf color score | Tillers (m-2) | Plant height (cm) |
| HD-MS | FM | 0.68 a | 2.98 b | 624 a | 55 a |  | 0.68 a | 3.77 a | 637 a | 73 a |
| LD-YS | FM | 0.65 a | 3.21 a | 373 b | 57 a |  | 0.66 a | 3.67 a | 414 b | 72 a |
|  | Mean | 0.66 | 3.10 | 499 | 56 |  | 0.67 | 3.72 | 526 | 73 |
|  |  |  |  |  |  |  |  |  |  |  |
| HD-MS | RM | 0.55 a | 2.71 a | 619 a | 49 a |  | 0.56 a | 3.69 a | 678 a | 64 a |
| LD-YS | RM | 0.56 a | 2.71 a | 379 b | 49 a |  | 0.56 a | 3.69 a | 491 b | 67 a |
|  | Mean | 0.55 | 2.71 | 499 | 49 |  | 0.56 | 3.69 | 585 | 66 |
| LSD (0.05) | |  |  |  |  |  |  |  |  |  |
| Nutrient management (NM) | | 0.04 | 0.17 | ns | 1.56 |  | 0.04 | ns | ns | 1.9 |
| Planting treatment (PT) | | ns | 0.14 | 56 | ns |  | ns | ns | 61 | ns |
| PT × NM | | ns | ns | ns | ns |  | ns | ns | ns | ns |
| FM; farmer management, RM; researcher management, DAT; days after transplanting, HD; high planting density (15 cm × 15 cm), LD; low planting density (20 cm × 20 cm), YS; use of young seedlings (18-day-old), MS; use of mature seedlings (30-day-old), NDVI; normalized difference vegetation index. LSD; least-significant difference. Means followed by different letters are significantly different at *P* < 0.05. | | | | | | | | | | |

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| **Supplementary Table S2.**  Yield components in different nutrient management regimes and planting treatments in the wet season of 2014. | | | | | | | | | | |
| Planting treatment | Nutrient Management | | Panicles  (m-2) | | Spikelets  (panicle-1) | | Filled grains (%) | | Grain weight  (mg) | |
| *Irrigated lowland* | | | | | | | | | | |
| HD-YS | | FM | | 438 a | | 60 a | | 81 a | | 23.4 a |
| HD-MS | | FM | | 404 ab | | 79 a | | 81 a | | 24.7 a |
| LD-YS | | FM | | 330 c | | 75 a | | 75 a | | 24.2 a |
| LD-MS | | FM | | 345 bc | | 85 a | | 78 a | | 24.1 a |
|  | | Mean | | 379 | | 75 | | 79 | | 24.1 |
|  | |  | |  | |  | |  | |  |
| HD-YS | | RM | | 437 a | | 61 b | | 81 a | | 24.7 a |
| HD-MS | | RM | | 398 ab | | 71 b | | 83 a | | 24.9 a |
| LD-YS | | RM | | 384 ab | | 68 b | | 84 a | | 24.5 a |
| LD-MS | | RM | | 338 b | | 88 a | | 82 a | | 24.3 a |
|  | | Mean | | 389 | | 72 | | 82 | | 24.6 |
| LSD (0.05) | | | |  | |  | |  | |  |
| Nutrient management (NM) | | | | ns | | ns | | 4 | | 0.4 |
| Planting treatment (PT) | | | | 40 | | 9 | | ns | | ns |
| NM × PT | | | | ns | | ns | | ns | | ns |
| *Rainfed lowland* | | | | | | | | | | |
| HD-YS | | FM | | 667 a | | 56 b | | 78 a | | 23.8 a |
| HD-MS | | FM | | 580 a | | 60 b | | 82 a | | 23.6 a |
| LD-YS | | FM | | 422 b | | 73 a | | 77 a | | 23.2 a |
| LD-MS | | FM | | 328 b | | 85 a | | 77 a | | 23.8 a |
|  | | Mean | | 499 | | 68 | | 78 | | 23.6 |
|  | |  | |  | |  | |  | |  |
| HD-YS | | RM | | 455 a | | 54 b | | 89 a | | 24.2 a |
| HD-MS | | RM | | 480 a | | 69 a | | 85 a | | 24.0 a |
| LD-YS | | RM | | 340 b | | 60 ab | | 85 a | | 25.0 a |
| LD-MS | | RM | | 312 b | | 65 a | | 87 a | | 23.6 a |
|  | | Mean | | 397 | | 62 | | 87 | | 24.2 |
| LSD (0.05) | | | |  | |  | |  | |  |
| Nutrient management (NM) | | | | 98 | | ns | | 3 | | ns |
| Planting treatment (PT) | | | | 91 | | 11 | | ns | | ns |
| NM × PT | | | | 64 | | 11 | | ns | | ns |
| FM; farmer management, RM; researcher management, HD; high planting density (15 cm × 15 cm), LD; low planting density (20 cm × 20 cm), YS; use of young seedlings (18-day-old), MS; use of mature seedlings (30-day-old). LSD; least-significant difference. Means followed by different letters are significantly different at *P* < 0.05. | | | | | | | | | | |

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| **Supplementary Table S3.**  Yield components in different nutrient management regimes and planting treatments in the wet season of 2016. | | | | | | | | | | |
| Planting treatment | Nutrient Management | | Panicles  (m-2) | | Spikelets  (panicle-1) | | Filled grains (%) | | Grain weight  (mg) | |
| *Irrigated lowland* | | | | | | | | | | |
| HD-MS | | FM | | 483 a | | 71 a | | 80 a | | 26.4 a |
| LD-YS | | FM | | 304 b | | 88 b | | 81 a | | 25.8 b |
|  | | Mean | | 394 | | 80 | | 81 | | 26.1 |
|  | |  | |  | |  | |  | |  |
| HD-MS | | RM | | 450 a | | 79 a | | 81 a | | 26.2 a |
| LD-YS | | RM | | 306 b | | 88 a | | 74 b | | 26.0 a |
|  | | Mean | | 378 | | 83 | | 78 | | 26.1 |
| LSD (0.05) | | | |  | |  | |  | |  |
| Nutrient management (NM) | | | | ns | | ns | | 4 | | ns |
| Planting treatment (PT) | | | | 41 | | 9 | | ns | | 0.4 |
| NM × PT | | | | ns | | ns | | ns | | ns |
| FM; farmer management, RM; researcher management, HD; high planting density (15 cm × 15 cm), LD; low planting density (20 cm × 20 cm), YS; use of young seedlings (18-day-old), MS; use of mature seedlings (30-day-old). LSD; least-significant difference. Means followed by different letters are significantly different at *P* < 0.05. | | | | | | | | | | |