

Supplementary Table S1 Growth characteristics of the cultivar Giza179 as affected by different N treatments for the seasons 2017 and 2018.

N. Treatment	Leaf area index		Dry matter (g/m²)		Plant Height (cm)	
	2017	2018	2017	2018	2017	2018
T1	3.55cd	3.93c	400d	418d	90.0e	93.2e
T2	5.94a	6.32a	530a	550a	101.1a	103.1a
T3	4.84b	5.22b	480b	498b	100.2b	102.2b
T4	3.92c	4.72b	460c	478c	98.5c	100.1c
T5	3.79cd	4.17c	460c	478c	96.4d	98.4d
T6	3.34d	3.77c	360e	378e	89.0f	91.0f
T7	2.17e	2.97d	260f	278f	81.3g	83.4g

T₁: Recommended dose of N as urea (165 kg N/ha), T₂: Recommended dose of N as Anhydrous Ammonia (165 kg N/ha), T₃:3/4 dose of Anhydrous Ammonia +1/4 N as urea at panicle initiation., T₄:3/4 dose of Anhydrous Ammonia +1/4 dose of N as urea at late booting, T₅: 1/2 dose of N as Anhydrous Ammonia +1/2 N as urea at panicle initiation, T₆: 1/2 dose of N as Anhydrous Ammonia +1/2 N as urea at late booting, T₇: Control (Zero Fertilizer).

Supplementary Table S2 Number of tillers and panicles for the cultivar Giza179 as affected by the different N-treatments for the seasons 2017 and 2018.

N treatments	Number of tillers per m ²		Number of panicles per m ²	
	2017	2018	2017	2018
T₁	428.0e	443.3e	413.3e	398.0e
T₂	540.1a	555.4a	527.8a	512.5a
T₃	492.0b	507.3b	479.3b	464.0b
T₄	476.1c	491.3c	455.3c	440.1c
T₅	470.7d	485.3d	443.9d	428.7d
T₆	420.0f	435.3f	393.3f	378.0f
T₇	342.0g	357.2g	333.3g	318.0g

T₁: Recommended dose of N as urea (165 kg N/ha), T₂: Recommended dose of N as Anhydrous Ammonia (165 kg N/ha), T₃:3/4 dose of Anhydrous Ammonia +1/4 N as urea at panicle initiation., T₄:3/4 dose of Anhydrous Ammonia +1/4 dose of N as urea at late booting, T₅: 1/2 dose of N as Anhydrous Ammonia +1/2 N as urea at panicle initiation, T₆: 1/2 dose of N as Anhydrous Ammonia +1/2 N as urea at late booting, T₇: Control (Zero Fertilizer).

Supplementary Table S3 Performance of Giza179 cultivar for panicle weight (g), number of field grain per panicle, number of unfilled grains per panicle and 1000-grain weight (g) for the seasons 2017 and 2018.

N treatments	Panicle weight (g)		Filled grain per panicle		unfilled grain per panicle		1000-grain weight (g)	
	2017	2018	2017	2018	2017	2018	2017	2018
T₁	2.67b	2.75b	88.9d	95.6d	2.5e	4.5e	27.50b	28.50b
T₂	3.15a	3.23a	103.5a	110.2a	4.0b	6.0b	25.50c	26.50c
T₃	2.90ab	2.98ab	94.8c	100.5c	2.5e	4.5e	27.83ab	28.83b
T₄	2.88ab	2.96ab	100.5b	105.7b	3.5c	5.5c	27.00b	28.00b
T₅	2.49b	2.57b	99.0b	103.5b	3.0d	5.0d	27.50b	28.50b
T₆	1.99c	2.07c	82.5e	89.1e	6.0a	8.0a	29.00a	30.00a
T₇	1.72c	1.80c	78.5f	85.1f	1.6f	3.6f	29.00a	30.00a

T₁: Recommended dose of N as urea (165 kg N/ha), T₂: Recommended dose of N as Anhydrous Ammonia (165 kg N/ha), T₃:3/4 dose of Anhydrous Ammonia +1/4 N as urea at panicle initiation., T₄:3/4 dose of Anhydrous Ammonia +1/4 dose of N as urea at late booting, T₅: 1/2 dose of N as Anhydrous Ammonia +1/2 N as urea at panicle initiation, T₆: 1/2 dose of N as Anhydrous Ammonia +1/2 N as urea at late booting, T₇: Control (Zero Fertilizer).

Supplementary Table S4 Grain and straw yields for the cultivar Giza179 as affected by the different N-treatments for the seasons 2017 and 2018.

N treatments	Grain yield (t/ha)		Straw yield (t/ha)	
	2017	2018	2017	2018
T₁	7.76bc	8.32bc	9.08bc	9.97bc
T₂	9.44a	10.00a	10.44a	11.07a
T₃	9.26a	9.82a	9.97a	10.86a
T₄	8.58ab	9.14ab	9.32b	10.21b
T₅	8.10bc	8.66bc	9.23b	10.12b
T₆	7.30c	7.86c	8.63cd	9.52d
T₇	6.18d	6.74d	8.23d	9.12d

T₁: Recommended dose of N as urea (165 kg N/ha), T₂: Recommended dose of N as Anhydrous Ammonia (165 kg N/ha), T₃:3/4 dose of Anhydrous Ammonia +1/4 N as urea at panicle initiation., T₄:3/4 dose of Anhydrous Ammonia +1/4 dose of N as urea at late booting, T₅: 1/2 dose of N as Anhydrous Ammonia +1/2 N as urea at panicle initiation, T₆: 1/2 dose of N as Anhydrous Ammonia +1/2 N as urea at late booting, T₇: Control (Zero Fertilizer).