

**Supplementary Table 1. Interaction effect of fertilizers and tiger nut varieties on nut girth, fresh nut weight, harvest index, number of nuts per plant, and total nut yield**

Treatments	Nut girth (mm)			Fresh nut weight (g)			Harvest index		
	2019 MAS	2019 MIS	2020 MAS	2019 MAS	2019 MIS	2020 MAS	2019 MAS	2019 MIS	2020 MAS
CON BLK	1.50±0.10 <sup>cd</sup>	1.40±0.10 <sup>a</sup>	1.10±0.10 <sup>d</sup>	37.10±4.30 <sup>b</sup>	25.07±4.96 <sup>d</sup>	22.93±3.19 <sup>d</sup>	0.84±0.10 <sup>b</sup>	0.41±0.05 <sup>de</sup>	0.43±0.19 <sup>cd</sup>
CON BRN	1.37±0.15 <sup>d</sup>	1.33±0.21 <sup>a</sup>	1.27±0.06 <sup>c</sup>	37.40±8.82 <sup>b</sup>	24.13±0.84 <sup>d</sup>	23.67±5.89 <sup>cd</sup>	0.76±0.15 <sup>b</sup>	0.36±0.03 <sup>e</sup>	0.39±0.21 <sup>d</sup>
NPK BLK	1.73±0.06 <sup>ab</sup>	1.50±0.10 <sup>a</sup>	1.20±0.10 <sup>cd</sup>	41.63±2.67 <sup>b</sup>	28.83±2.93 <sup>bcd</sup>	26.87±0.15 <sup>abcd</sup>	0.86±0.07 <sup>ab</sup>	0.45±0.04 <sup>cde</sup>	0.52±0.15 <sup>abcd</sup>
NPK BRN	1.63±0.06 <sup>bc</sup>	1.53±0.12 <sup>a</sup>	1.30±0.10 <sup>c</sup>	42.17±3.21 <sup>b</sup>	27.47±1.63 <sup>cd</sup>	25.77±4.30 <sup>bcd</sup>	0.83±0.08 <sup>b</sup>	0.46±0.07 <sup>bcd</sup>	0.47±0.13 <sup>bcd</sup>
PM BLK	1.60±0.10 <sup>bc</sup>	1.47±0.06 <sup>a</sup>	1.43±0.06 <sup>b</sup>	48.67±0.45 <sup>ab</sup>	31.53±2.80 <sup>bcd</sup>	29.63±1.43 <sup>abcd</sup>	0.89±0.05 <sup>ab</sup>	0.48±0.04 <sup>bcd</sup>	0.60±0.13 <sup>ab</sup>
PM BRN	1.50±0.10 <sup>cd</sup>	1.50±0.20 <sup>a</sup>	1.53±0.12 <sup>b</sup>	48.63±2.32 <sup>ab</sup>	33.50±1.31 <sup>bc</sup>	30.17±4.48 <sup>abc</sup>	0.87±0.07 <sup>ab</sup>	0.52±0.03 <sup>bc</sup>	0.56±0.11 <sup>abc</sup>
PM+NPK BLK	1.87±0.06 <sup>a</sup>	1.63±0.06 <sup>a</sup>	1.67±0.15 <sup>a</sup>	60.23±10.59 <sup>a</sup>	35.27±3.45 <sup>ab</sup>	33.20±2.36 <sup>a</sup>	0.92±0.05 <sup>a</sup>	0.55±0.03 <sup>ab</sup>	0.66±0.14 <sup>a</sup>
PM+NPK BRN	1.70±0.10 <sup>abc</sup>	1.70±0.20 <sup>a</sup>	1.70±0.10 <sup>a</sup>	56.47±2.83 <sup>a</sup>	41.73±2.67 <sup>a</sup>	32.37±6.01 <sup>ab</sup>	0.91±0.05 <sup>a</sup>	0.64±0.03 <sup>a</sup>	0.60±0.10 <sup>ab</sup>
Treatments	Number of nuts per plant			Yield in ton ha <sup>-1</sup>					
	2019 MAS	2019 MIS	2020 MAS	2019 MAS	2019 MIS	2020 MAS			
CON BLK	41.00±15.46 <sup>cd</sup>	11.33±0.23 <sup>c</sup>	24.00±2.20 <sup>c</sup>	2.07±0.95 <sup>c</sup>	0.53±0.15 <sup>b</sup>	0.80±0.10 <sup>b</sup>			
CON BRN	38.00±13.08 <sup>d</sup>	11.40±2.09 <sup>c</sup>	22.73±2.05 <sup>c</sup>	2.27±1.10 <sup>bc</sup>	0.53±0.06 <sup>b</sup>	0.73±0.06 <sup>b</sup>			
NPK BLK	68.47±29.91 <sup>bc</sup>	21.40±1.59 <sup>b</sup>	37.73±4.31 <sup>b</sup>	3.57±1.76 <sup>bc</sup>	1.00±0.03 <sup>b</sup>	1.33±0.15 <sup>b</sup>			
NPK BRN	62.80±29.07 <sup>bcd</sup>	20.60±2.55 <sup>b</sup>	33.53±3.78 <sup>bc</sup>	3.70±1.90 <sup>bc</sup>	1.13±0.06 <sup>b</sup>	1.23±0.15 <sup>b</sup>			
PM BLK	72.33±25.56 <sup>b</sup>	21.13±2.20 <sup>b</sup>	38.67±6.65 <sup>b</sup>	4.00±1.40 <sup>bc</sup>	1.23±0.06 <sup>b</sup>	1.70±0.40 <sup>b</sup>			
PM BRN	66.40±25.79 <sup>bcd</sup>	19.80±1.00 <sup>b</sup>	31.53±5.22 <sup>bc</sup>	4.50±2.08 <sup>b</sup>	1.27±0.12 <sup>b</sup>	1.37±0.23 <sup>b</sup>			
PM+NPK BLK	106.00±8.89 <sup>a</sup>	45.40±2.65 <sup>a</sup>	77.40±3.94 <sup>a</sup>	7.17±1.29 <sup>a</sup>	2.73±0.50 <sup>a</sup>	3.70±0.46 <sup>a</sup>			
PM+NPK BRN	105.80±7.60 <sup>a</sup>	42.47±3.04 <sup>a</sup>	70.73±1.70 <sup>a</sup>	7.93±0.70 <sup>a</sup>	2.90±1.15 <sup>a</sup>	3.60±0.61 <sup>a</sup>			

Averages with the same alphabet within a column are not significantly distinct at a 5% probability measure as determined by Tukey's test. 2019 MAS = 2019 Major Season, 2019 MIS = 2019 Minor Season and 2020 MAS = 2020 Major Season, CON BLK = Control of black variety, CON BRN = Control of brown variety, NPK BLK = NPK 15:15:15 of black variety, NPK BRN = NPK 15:15:15 of brown variety, PM BLK = poultry manure of black variety, PM BRN = poultry manure of brown variety, PM+NPK BLK = combination of poultry manure and NPK 15:15:15 of black variety, PM+NPK BRN = combination of poultry manure and NPK 15:15:15 of brown variety.

**Supplementary Table 2. Interaction effect of fertilizers and tiger nut varieties on Exchangeable potassium, Exchangeable calcium, Exchangeable magnesium, Exchangeable sodium, Exchangeable hydrogen, and Exchangeable aluminum**

Treatments	Exchangeable potassium (cmol kg <sup>-1</sup> )			Exchangeable calcium (cmol kg <sup>-1</sup> )			Exchangeable magnesium (cmol kg <sup>-1</sup> )		
	2019 MAS	2019 MIS	2020 MAS	2019 MAS	2019 MIS	2020 MAS	2019 MAS	2019 MIS	2020 MAS
CON BLK	0.64±0.14 <sup>a</sup>	0.47±0.13 <sup>d</sup>	0.42±0.09 <sup>c</sup>	9.57±1.30 <sup>cd</sup>	5.81±1.11 <sup>e</sup>	8.49±0.05 <sup>cd</sup>	3.40±1.06 <sup>c</sup>	2.93±1.62 <sup>a</sup>	2.78±1.03 <sup>b</sup>
CON BRN	0.70±0.40 <sup>a</sup>	0.57±0.04 <sup>bcd</sup>	0.45±0.10 <sup>bc</sup>	9.38±1.54 <sup>d</sup>	6.73±0.42 <sup>de</sup>	7.93±1.68 <sup>d</sup>	2.60±2.03 <sup>c</sup>	3.34±1.88 <sup>a</sup>	2.66±1.94 <sup>b</sup>
NPK BLK	0.83±0.23 <sup>a</sup>	0.51±0.13 <sup>cd</sup>	0.45±0.09 <sup>bc</sup>	13.32±2.02 <sup>bcd</sup>	9.34±1.68 <sup>bcd</sup>	9.97±0.97 <sup>bcd</sup>	4.94±1.14 <sup>abc</sup>	2.73±1.21 <sup>a</sup>	4.97±1.12 <sup>ab</sup>
NPK BRN	0.79±0.12 <sup>a</sup>	0.62±0.07 <sup>abc</sup>	0.52±0.10 <sup>abc</sup>	12.61±2.22 <sup>bcd</sup>	7.83±1.41 <sup>cde</sup>	9.42±1.37 <sup>cd</sup>	3.65±2.80 <sup>bc</sup>	4.20±2.32 <sup>a</sup>	3.17±2.15 <sup>b</sup>
PM BLK	0.83±0.10 <sup>a</sup>	0.64±0.10 <sup>ab</sup>	0.53±0.10 <sup>abc</sup>	16.03±3.39 <sup>ab</sup>	9.64±1.97 <sup>abc</sup>	10.38±0.97 <sup>abc</sup>	5.04±2.03 <sup>abc</sup>	2.94±2.03 <sup>a</sup>	4.89±1.66 <sup>ab</sup>
PM BRN	0.81±0.16 <sup>a</sup>	0.65±0.08 <sup>ab</sup>	0.58±0.89 <sup>ab</sup>	14.07±1.53 <sup>bc</sup>	9.34±1.10 <sup>bcd</sup>	10.54±0.92 <sup>abc</sup>	4.40±2.41 <sup>bc</sup>	4.38±2.17 <sup>a</sup>	4.07±2.15 <sup>ab</sup>
PM+NPK BLK	0.97±0.11 <sup>a</sup>	0.70±0.08 <sup>a</sup>	0.62±0.10 <sup>a</sup>	19.22±1.97 <sup>a</sup>	12.28±2.31 <sup>a</sup>	12.37±0.47 <sup>ab</sup>	8.23±0.72 <sup>a</sup>	3.87±2.58 <sup>a</sup>	6.98±0.44 <sup>a</sup>
PM+NPK BRN	0.98±0.17 <sup>a</sup>	0.72±0.07 <sup>a</sup>	0.64±0.08 <sup>a</sup>	16.49±1.00 <sup>ab</sup>	11.37±0.86 <sup>ab</sup>	12.47±0.98 <sup>a</sup>	6.89±0.94 <sup>ab</sup>	5.12±2.54 <sup>a</sup>	6.78±0.74 <sup>a</sup>
Treatments	Exchangeable sodium (cmol kg <sup>-1</sup> )			Exchangeable hydrogen (cmol kg <sup>-1</sup> )			Exchangeable aluminum (cmol kg <sup>-1</sup> )		
	2019 MAS	2019 MIS	2020 MAS	2019 MAS	2019 MIS	2020 MAS	2019 MAS	2019 MIS	2020 MAS
CON BLK	0.21±0.02 <sup>d</sup>	0.18±0.03 <sup>de</sup>	0.15±0.01 <sup>de</sup>	0.33±0.02 <sup>d</sup>	0.44±0.02 <sup>bc</sup>	0.22±0.03 <sup>e</sup>	0.20±0.02 <sup>d</sup>	0.29±0.01 <sup>de</sup>	0.20±0.02 <sup>c</sup>
CON BRN	0.21±0.02 <sup>d</sup>	0.17±0.01 <sup>e</sup>	0.14±0.01 <sup>e</sup>	0.35±0.05 <sup>cd</sup>	0.40±0.02 <sup>c</sup>	0.22±0.03 <sup>e</sup>	0.21±0.02 <sup>d</sup>	0.25±0.01 <sup>e</sup>	0.20±0.01 <sup>c</sup>
NPK BLK	0.26±0.01 <sup>c</sup>	0.21±0.03 <sup>bcdde</sup>	0.17±0.02 <sup>c</sup>	0.87±0.03 <sup>bcd</sup>	0.47±0.04 <sup>bc</sup>	0.24±0.02 <sup>de</sup>	0.24±0.23 <sup>cd</sup>	0.32±0.05 <sup>bcdde</sup>	0.22±0.02 <sup>b</sup>
NPK BRN	0.26±0.01 <sup>c</sup>	0.19±0.10 <sup>cde</sup>	0.16±0.02 <sup>cd</sup>	0.38±0.05 <sup>bcd</sup>	0.46±0.02 <sup>bc</sup>	0.26±0.04 <sup>cde</sup>	0.26±0.04 <sup>bcd</sup>	0.29±0.01 <sup>cde</sup>	0.23±0.02 <sup>bc</sup>
PM BLK	0.31±0.03 <sup>b</sup>	0.23±0.03 <sup>abc</sup>	0.20±0.01 <sup>b</sup>	0.42±0.03 <sup>abc</sup>	0.53±0.03 <sup>ab</sup>	0.33±0.05 <sup>abc</sup>	0.29±0.01 <sup>abc</sup>	0.36±0.05 <sup>abc</sup>	0.25±0.00 <sup>b</sup>
PM BRN	0.34±0.05 <sup>b</sup>	0.22±0.01 <sup>abcd</sup>	0.21±0.12 <sup>b</sup>	0.43±0.05 <sup>ab</sup>	0.51±0.04 <sup>ab</sup>	0.32±0.05 <sup>bcd</sup>	0.30±0.02 <sup>ab</sup>	0.33±0.02 <sup>abcd</sup>	0.28±0.03 <sup>bc</sup>
PM+NPK BLK	0.39±0.01 <sup>a</sup>	0.27±0.05 <sup>a</sup>	0.24±0.01 <sup>a</sup>	0.49±0.02 <sup>a</sup>	0.57±0.07 <sup>a</sup>	0.39±0.04 <sup>ab</sup>	0.34±0.02 <sup>a</sup>	0.40±0.06 <sup>a</sup>	0.30±0.00 <sup>a</sup>
PM+NPK BRN	0.41±0.02 <sup>a</sup>	0.26±0.02 <sup>ab</sup>	0.24±0.01 <sup>a</sup>	0.48±0.04 <sup>a</sup>	0.58±0.06 <sup>a</sup>	0.41±0.03 <sup>a</sup>	0.33±0.03 <sup>a</sup>	0.38±0.03 <sup>ab</sup>	0.29±0.02 <sup>a</sup>

Averages with the same alphabet within a column are not significantly distinct at a 5% probability measure as determined by Tukey's test. 2019 MAS = 2019 Major Season, 2019 MIS = 2019 Minor Season and 2020 MAS = 2020 Major Season, CON BLK = Control of black variety, CON BRN = Control of brown variety, NPK BLK = NPK 15:15:15 of black variety, NPK BRN = NPK 15:15:15 of brown variety, PM BLK = poultry manure of black variety, PM BRN = poultry manure of brown variety, PM+NPK BLK = combination of poultry manure and NPK 15:15:15 of black variety, PM+NPK BRN = combination of poultry manure and NPK 15:15:15 of brown variety.

**Supplementary Table 3: Interaction effect of fertilizers and tiger nut varieties on phosphorus, potassium, calcium, magnesium, sodium, and iron contents of tiger nuts**

Treatments	Phosphorus content (%)			Potassium content (%)			Calcium content (%)		
	2019 MAS	2019 MIS	2020 MAS	2019 MAS	2019 MIS	2020 MAS	2019 MAS	2019 MIS	2020 MAS
CON BLK	0.13±0.02 <sup>d</sup>	0.16±0.13 <sup>c</sup>	0.12±0.09 <sup>c</sup>	0.89±0.15 <sup>cd</sup>	1.14±0.12 <sup>cd</sup>	0.81±0.09 <sup>bc</sup>	0.26±0.11 <sup>a</sup>	0.21±0.10 <sup>bc</sup>	0.24±0.12 <sup>a</sup>
CON BRN	0.13±0.01 <sup>d</sup>	0.14±0.04 <sup>c</sup>	0.11±0.10 <sup>bc</sup>	0.83±0.03 <sup>d</sup>	1.05±0.05 <sup>c</sup>	0.74±0.06 <sup>c</sup>	0.24±0.06 <sup>a</sup>	0.17±0.02 <sup>c</sup>	0.21±0.02 <sup>a</sup>
NPK BLK	0.14±0.03 <sup>cd</sup>	0.17±0.13 <sup>bc</sup>	0.14±0.03 <sup>bc</sup>	1.02±0.02 <sup>bcd</sup>	1.30±0.05 <sup>abc</sup>	1.01±0.03 <sup>abc</sup>	0.31±0.14 <sup>a</sup>	0.26±0.13 <sup>abc</sup>	0.28±0.14 <sup>a</sup>
NPK BRN	0.15±0.01 <sup>bcd</sup>	0.16±0.07 <sup>c</sup>	0.13±0.02 <sup>abc</sup>	0.88±0.06 <sup>cd</sup>	1.19±0.17 <sup>bc</sup>	0.86±0.06 <sup>bc</sup>	0.27±0.07 <sup>a</sup>	0.23±0.03 <sup>abc</sup>	0.24±0.03 <sup>a</sup>
PM BLK	0.19±0.02 <sup>ab</sup>	0.24±0.10 <sup>ab</sup>	0.19±0.02 <sup>abc</sup>	1.26±0.12 <sup>a</sup>	1.60±0.20 <sup>a</sup>	1.22±0.14 <sup>a</sup>	0.39±0.14 <sup>a</sup>	0.36±0.12 <sup>ab</sup>	0.37±0.14 <sup>a</sup>
PM BRN	0.20±0.02 <sup>a</sup>	0.21±0.08 <sup>abc</sup>	0.18±0.01 <sup>ab</sup>	1.08±0.06 <sup>abc</sup>	1.45±0.24 <sup>ab</sup>	1.17±0.18 <sup>a</sup>	0.37±0.02 <sup>a</sup>	0.31±0.04 <sup>abc</sup>	0.32±0.05 <sup>a</sup>
PM+NPK BLK	0.18±0.02 <sup>abc</sup>	0.26±0.08 <sup>a</sup>	0.19±0.01 <sup>a</sup>	1.22±0.06 <sup>ab</sup>	1.62±0.11 <sup>a</sup>	1.20±0.06 <sup>a</sup>	0.37±0.15 <sup>a</sup>	0.39±0.08 <sup>a</sup>	0.34±0.14 <sup>a</sup>
PM+NPK BRN	0.19±0.02 <sup>ab</sup>	0.18±0.07 <sup>ab</sup>	0.18±0.03 <sup>a</sup>	0.96±0.07 <sup>cd</sup>	1.33±0.20 <sup>a</sup>	1.08±0.28 <sup>ab</sup>	0.36±0.11 <sup>a</sup>	0.33±0.08 <sup>ab</sup>	0.31±0.06 <sup>a</sup>
Treatments	Magnesium content (%)			Sodium content (%)			Iron content (mg kg <sup>-1</sup> )		
2019 MAS	2019 MIS	2020 MAS	2019 MAS	2019 MIS	2020 MAS	2019 MAS	2019 MIS	2020 MAS	
CON BLK	0.09±0.07 <sup>a</sup>	0.10±0.03 <sup>a</sup>	0.07±0.05 <sup>a</sup>	0.02±0.00 <sup>b</sup>	0.03±0.01 <sup>a</sup>	0.02±0.00 <sup>b</sup>	174.03±28.40 <sup>bc</sup>	80.27±17.75 <sup>d</sup>	126.70±23.83 <sup>c</sup>
CON BRN	0.08±0.02 <sup>a</sup>	0.09±0.02 <sup>a</sup>	0.08±0.01 <sup>a</sup>	0.02±0.01 <sup>ab</sup>	0.02±0.00 <sup>a</sup>	0.02±0.01 <sup>ab</sup>	149.33±18.82 <sup>c</sup>	119.80±10.45 <sup>bcd</sup>	105.97±7.36 <sup>c</sup>
NPK BLK	0.16±0.16 <sup>a</sup>	0.14±0.03 <sup>a</sup>	0.13±0.12 <sup>a</sup>	0.04±0.01 <sup>ab</sup>	0.04±0.00 <sup>a</sup>	0.04±0.01 <sup>ab</sup>	178.67±57.12 <sup>bc</sup>	109.03±27.80 <sup>cd</sup>	145.33±34.54 <sup>bc</sup>
NPK BRN	0.14±0.06 <sup>a</sup>	0.14±0.04 <sup>a</sup>	0.15±0.03 <sup>a</sup>	0.03±0.01 <sup>ab</sup>	0.03±0.01 <sup>a</sup>	0.03±0.01 <sup>ab</sup>	175.13±18.96 <sup>bc</sup>	137.77±4.25 <sup>abc</sup>	125.07±18.94 <sup>c</sup>
PM BLK	0.15±0.10 <sup>a</sup>	0.14±0.03 <sup>a</sup>	0.13±0.08 <sup>a</sup>	0.03±0.01 <sup>ab</sup>	0.04±0.00 <sup>a</sup>	0.03±0.01 <sup>ab</sup>	224.50±36.32 <sup>abc</sup>	116.33±32.09 <sup>cd</sup>	174.50±36.32 <sup>abc</sup>
PM BRN	0.13±0.06 <sup>a</sup>	0.14±0.03 <sup>a</sup>	0.13±0.04 <sup>a</sup>	0.04±0.00 <sup>a</sup>	0.02±0.01 <sup>a</sup>	0.04±0.00 <sup>a</sup>	227.57±63.84 <sup>abc</sup>	155.90±10.36 <sup>abc</sup>	177.70±64.07 <sup>abc</sup>
PM+NPK BLK	0.14±0.09 <sup>a</sup>	0.14±0.04 <sup>a</sup>	0.13±0.07 <sup>a</sup>	0.04±0.00 <sup>a</sup>	0.04±0.00 <sup>a</sup>	0.04±0.00 <sup>a</sup>	344.30±79.81 <sup>ab</sup>	164.77±38.53 <sup>ab</sup>	257.63±53.87 <sup>a</sup>
PM+NPK BRN	0.13±0.05 <sup>a</sup>	0.14±0.02 <sup>a</sup>	0.13±0.02	0.04±0.00 <sup>a</sup>	0.04±0.00 <sup>a</sup>	0.04±0.00 <sup>a</sup>	365.17±99.85 <sup>a</sup>	171.10±11.08 <sup>a</sup>	225.37±61.04 <sup>ab</sup>

Averages with the same alphabet within a column are not significantly distinct at a 5% probability measure as determined by Tukey's test. 2019 MAS = 2019 Major Season, 2019 MIS = 2019 Minor Season and 2020 MAS = 2020 Major Season, CON BLK = Control of black variety, CON BRN = Control of brown variety, NPK BLK = NPK 15:15:15 of black variety, NPK BRN = NPK 15:15:15 of brown variety, PM BLK = poultry manure of black variety, PM BRN = poultry manure of brown variety, PM+NPK BLK = combination of poultry manure and NPK 15:15:15 of black variety, PM+NPK BRN = combination of poultry manure and NPK 15:15:15 of brown variety.

**Supplementary Table 4: Interaction effect of fertilizers and tiger nut varieties on manganese, copper, and zinc contents of tiger nut tubers**

Treatments	Manganese content (mg kg <sup>-1</sup> )			Copper content (mg kg <sup>-1</sup> )			Zinc content (mg kg <sup>-1</sup> )		
	2019 MAS	2019 MIS	2020 MAS	2019 MAS	2019 MIS	2020 MAS	2019 MAS	2019 MIS	2020 MAS
CON BLK	15.80±0.92 <sup>c</sup>	15.08±2.64 <sup>a</sup>	15.23±0.85 <sup>c</sup>	23.60±3.91 <sup>a</sup>	24.86±0.78 <sup>d</sup>	19.60±1.49 <sup>a</sup>	23.03±5.32 <sup>a</sup>	29.56±0.93 <sup>a</sup>	19.82±1.82 <sup>e</sup>
CON BRN	18.44±3.72 <sup>bc</sup>	19.08±4.64 <sup>a</sup>	16.04±1.94 <sup>bc</sup>	25.69±8.94 <sup>a</sup>	20.90±2.14 <sup>d</sup>	17.75±3.90 <sup>a</sup>	27.52±7.57 <sup>a</sup>	30.03±4.98 <sup>a</sup>	20.39±4.07 <sup>de</sup>
NPK BLK	20.46±1.01 <sup>bc</sup>	19.84±4.49 <sup>a</sup>	20.46±1.01 <sup>ab</sup>	29.12±6.15 <sup>a</sup>	34.23±0.99 <sup>c</sup>	25.85±6.25 <sup>a</sup>	30.22±3.99 <sup>a</sup>	32.67±0.98 <sup>a</sup>	25.28±2.03 <sup>abc</sup>
NPK BRN	21.75±4.12 <sup>bc</sup>	21.05±4.29 <sup>a</sup>	19.92±3.62 <sup>abc</sup>	29.32±10.86 <sup>a</sup>	32.98±4.28 <sup>c</sup>	23.36±7.02 <sup>a</sup>	32.90±3.95 <sup>a</sup>	30.71±7.42 <sup>a</sup>	25.80±2.26 <sup>abc</sup>
PM BLK	26.76±3.20 <sup>ab</sup>	21.21±4.21 <sup>a</sup>	20.19±1.15 <sup>abc</sup>	38.03±8.03 <sup>a</sup>	37.01±2.12 <sup>bc</sup>	25.60±5.51 <sup>a</sup>	28.41±4.26 <sup>a</sup>	32.86±1.55 <sup>a</sup>	23.83±2.51 <sup>cd</sup>
PM BRN	21.97±5.21 <sup>bc</sup>	28.61±5.54 <sup>a</sup>	19.48±3.91 <sup>abc</sup>	32.64±12.55 <sup>a</sup>	31.81±4.49 <sup>c</sup>	22.17±5.73 <sup>a</sup>	31.26±2.20 <sup>a</sup>	33.71±1.66 <sup>a</sup>	24.82±2.68 <sup>bc</sup>
PM+NPK BLK	31.79±1.25 <sup>a</sup>	30.35±5.88 <sup>a</sup>	22.22±0.61 <sup>a</sup>	48.08±9.97 <sup>a</sup>	41.66±0.27 <sup>ab</sup>	29.08±5.37 <sup>a</sup>	33.75±3.95 <sup>a</sup>	36.84±4.66 <sup>a</sup>	28.48±1.34 <sup>ab</sup>
PM+NPK BRN	25.50±2.45 <sup>ab</sup>	51.07±6.63 <sup>a</sup>	21.87±2.25 <sup>a</sup>	46.54±18.13 <sup>a</sup>	45.50±5.22 <sup>a</sup>	25.94±6.88 <sup>a</sup>	35.19±6.26 <sup>a</sup>	37.5±13.00 <sup>a</sup>	28.73±2.55 <sup>a</sup>

Averages with the same alphabet within a column are not significantly distinct at a 5% probability measure as determined by Tukey's test. 2019 MAS = 2019 Major Season, 2019 MIS = 2019 Minor Season and 2020 MAS = 2020 Major Season, CON BLK = Control of black variety, CON BRN = Control of brown variety, NPK BLK = NPK 15:15:15 of black variety, NPK BRN = NPK 15:15:15 of brown variety, PM BLK = poultry manure of black variety, PM BRN = poultry manure of brown variety, PM+NPK BLK = combination of poultry manure and NPK 15:15:15 of black variety, PM+NPK BRN = combination of poultry manure and NPK 15:15:15 of brown variety.