



**EFFECT OF SOWING DATES AND SPACINGS ON GROWTH AND YIELD OF EGUSI MELON
(*Cucumeropsis mannii* Naud) IN UYO, NIGERIA**

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Abstract: Field Studies were conducted at the National Cereals Research Institute, Uyo Out-station, Akwa Ibom State, during the early and late planting seasons of 2017. The aim of the study was to evaluate the effect of sowing dates and intra-row spacing on growth and yield of egusi melon during early and late planting seasons. The experiment was a 3 x 5 factorial combination laid out in a randomized complete block design with three replications. Factor A treatments were three sowing dates (1st April, 11th April and 21st April) while Factor B were five intra-row spacing (1 m x 1 m, 1 m x 1.2 m, 1 m x 1.6 m, 1 m x 2.0 m and 1 m x 2.4 m). In the late planting season, Factor A treatments were three sowing dates (1st September, 11th September and 21st September) while Factor B were the same intra row spacing as in early planting season. Data collected on growth and yield parameters were subjected to Analysis of variance and means were separated using least significant difference at 5% probability level. In the early planting season, egusi melon sown on the 11th April performed better than other sowing dates with 707.16 kg/ha seed yield while 1st and 21st April had 554.46 kg/ha and 665.69 kg/ha seed yields, respectively. During the late planting season, egusi melon sown on 1st September, produced significant seed yield of 733.40 kg/ha, while 681.70 kg/ha and 520.66 kg/ha were obtained for 11th and 21st September, respectively. There were also significant differences in the fruit and seed yields obtained from different intra-row spacings. The spacing of 1 m x 1 m produced significant seed yield of 840.09 kg/ha and 740.05 kg/ha in early and late planting seasons, respectively. The least seed yield (486.17 kg/ha and 459.18 kg/ha) were obtained from the spacing of 1 m x 2.4 m in both planting seasons. Egusi melon planted on the 2nd week of April or 1st week of September at row spacing of 1m x 1m could be recommended for high seed yield.

Keywords: Egusi melon, sowing dates, spacing, yield.

Introduction

Egusi melon is an important oil producing crop in the family Cucurbitaceae widely cultivated and consumed in West Africa (Bankole *et al.*, 2005). It is said to have originated from Africa (Okpala, 2016). There is confusion in the classification of the crop, for example, various authors call it different names such as *Citrullus vulgaris* (Philip, 1977), *Citrullus lanatus*, (Ogunremi, 1978) and *Colocynthis citrullus* (Oyolu, 1977). However, the true binomial name is *Cucumeropsis mannii* Naud. It is indigenous to West Africa with the Yoruba name 'egusi' popularly used in Nigeria (Nyananyo, 2009). The Ibibios and Efiks call it 'ikon'.

Egusi-melon requires fertile, well drained sandy loam soil with pH 6-7. Regular rainfall interspaced with abundant sunshine, supports high yield. It thrives under hot dry conditions, so long as soil moisture is adequate. It does not tolerate prolonged wetness due to rainfall or frost. The common variety requires an average annual rainfall of at least 700-1000 mm and the diurnal temperature of 28 - 35°C. It can also be grown under irrigation. Although irrigated dry season cropping produces higher yields, farmers prefer to cultivate during the rainy season, due to lack of adequate irrigation facilities. Excessive rainfall and high humidity give excessive vegetative growth and promotes disease infestation, mainly leaf and fruit rot, with consequent low yields (Okokon and Ndaeyo, 2013). Egusi melon is mostly grown for its seeds which contain about 53.1% oil and 33.8% protein (Ogbonna, 2013). Decorticated

seeds of egusi melon are usually ground and used for preparing assorted dishes such as egusi soup and stew. The seeds can be fermented and used for making a local spice known as "ogiri". (Okpala, 2016). The milled seed is also used as thickener in sauces, soups and stews. In the Abriba community in Ohafia Local Government Area of Abia State, large steamed balls of egusi melon locally called "ahu" are used as gift items during the traditional retirement ceremony known as 'imeuche' (Nwokocho and Opara, 2016). In Akwa Ibom (Annang speaking group) egusi melon is prepared into a traditional cake known as "Ikpan", which is usually served on special occasions like traditional marriages, coronation and festivals. Melon seed oil is becoming a popular ingredient in the manufacture of cosmetics. Domestic use of egusi melon oil include cooking and frying, which provides a good supply of unsaturated fatty acids that has protective effect against coronary heart diseases (Egbebi, 2014). Industrially, it can be used for the production of soap, pomades, metal polish, lubricants, adhesives, candles and animal feed. The oil has the potential to be processed into petrol and biodiesel for commercial use as it is lighter. The major problems limiting the productivity of egusi melon in Nigeria are poor cultural practices (especially intra and inter row spacing) as well as inadequate information on the appropriate sowing date (early and late planting season) suitable to each agro-ecology. Against this background, this study was carried out to provide information on appropriate sowing date and intra-row spacing for high

productivity of egusi melon in humid ecology of Uyo, south eastern Nigeria.

Materials and methods

The study was conducted at the National Cereals Research Institute (NCRI), Uyo Out-Station, Akwa Ibom state, during the early and late planting season of 2017 between the months of March and December. The experimental site is situated between latitude 04°58'N and longitude 07°56'E and about 67 m above sea level. The area which lies within the humid tropical rainforest zone of southeastern Nigeria has average annual rainfall of about 2500 mm and mean monthly sunshine of about 3.14 hours. The mean annual temperature range is 26 - 28°C. Uyo has an annual mean relative humidity of 79% and evaporation rate of 2.6cm² (Geographical Information System, 2017). The rainfall pattern of Uyo is bimodal. Rain usually starts in mid- March and ends in Mid-November, with a short period of relative moisture stress in August traditionally referred to as "August Break" (Peters *et al.*, 1989). Temperatures are generally highest in the months of February through April (Enwezor *et al.*, 1990). The experimental site was mechanically ploughed and harrowed in March, 2017 and August, 2017. After land preparation, the field was marked out with the aid of pegs, rope and tape. Before land preparation, composite soil samples were collected at two depths (0-15 cm and 15-30 cm) and analyzed for physico-chemical properties. The experiment was a 3 x 5 factorial combinations laid out in a randomized complete block design with three replications. Factor A treatments were three sowing dates (1st April, 11th April and 21st April 2017) while Factor B treatments were five intra-row spacings (1 m x 1 m; 1 m x 1.2 m; 1 m x 1.6 m; 1 m x 2.0 m and 1 m x 2.4 m). The same experiment was repeated during late planting season (1st September, 11th September and 21st September) of the same year. The entire experiment occupied a land area of 54 m x 15 m (810 m²). Each plot was 3 m x 2 m (6 m²) in size. The plots were separated by 1m wide paths while the replicates were separated by 3 m wide paths. Planting was done in April and September according to the treatments. Egusi melon seeds were obtained from local farmers in Uyo local government Area. Two melon seeds were planted per hole on seedbeds based on different spacings. Weeding was done manually at 3 and 8 weeks after planting (WAP). After land preparation, 4 t/ha of poultry manure was incorporated into the soil, two weeks before planting was done. At 3 weeks after planting, a blanket application of 400 kg/ha of N.P.K. 20:10:10 was done using the ring method. Insect pests were controlled by spraying Cypermethrin (50 ml in 15 litres of water) once a week from 3 - 5WAP. Harvesting was done at 13 - 15 weeks after planting (WAP). The pods were picked and packed on plot bases and according to the treatments. They were later processed appropriately to extract the seeds. Growth parameters studied were emergence percentage, Number of leaves

per plant, Vine length (cm), Leaf Area (cm²) and Number of lateral branches per vine. Phenological parameters were number of days to 50% flowering, number of days to 50% fruiting and number of days 50% senescence. Yield parameters were number of fruits per plant, weight of fruit per plant, and weight of seeds. All growth and yield data collected were subjected to analysis of variance using Genstat, 2012 version model. Significant means were separated with the least significant difference (LSD) at 5% probability level.

Results

The results of the soil analysis showed that the soil of the experimental site was texturally sandy loam (Table 1). Organic carbon was low, while available P (Cmolkg⁻¹) was high at 0-15 cm depth in both planting seasons. The weather records indicated low amount of rainfall from January - March which stabilized in subsequent months (April - July), rainfall peaked in the months of May and August. Annual mean relative humidity was 80%.

Emergence percentage as influenced by sowing dates and spacing during early and late planting season was not significantly different (Table 3). The same result was obtained for the interaction effect between sowing date and spacing on seed germination. Vine length increased significantly at 4, 6 and 8 WAS in both seasons. Increased vine length was recorded as the spacing increased. There was no significant difference in the interaction effect between sowing date and spacing on vine length in both seasons.

The result also indicated no significant difference in the number of lateral branches as affected by sowing dates and spacing during early season at 4, 6 and 8 WAS (Table 4). However, number of branches varied significantly during late season at 6 and 8 WAS. Egusi melon sown on 1st September produced the highest number of branches per vine while the least was obtained from egusi melon sown on 21st September. The interaction effect between sowing dates and spacing on number of lateral branches per vine was not significantly different in both seasons. The effect of sowing date on leaf area varied significantly at 4, 6 and 8 WAS in both seasons (Table 5). Similar trend was observed on the effect of spacing on leaf area during late season. However, there was significant difference in the effect of spacing on leaf area only at 8 WAS during early season. Number of leaves per plant as affected by sowing dates during the early season was significantly different ($P \leq 0.05$) at 4, 6 and 8 WAS (Table 6). Egusi melon sown on 11th April and 1st September, produced the highest number of leaves per plant while the least number was from sowing dates of 1st April and 21st September. Increased in row spacing increased the number of leaves per plant. Significant differences were recorded in the number of leaves per plant as affected by spacing during late season at 6 and 8 WAS. Delayed planting in the late season progressively decreased the number of days to

50% flowering, fruiting and senescence as compared to early season (Table 7). The longest number of days to 50% flowering, fruiting and senescence was observed from 1st September sowing. The sowing date of 21st September resulted in early 50% flowering, fruiting and senescence. Spacing had no significant effect on number of days to 50% flowering, fruiting and senescence in both seasons. Significant effect of time of planting was recorded in all yield components except in weight of 100 seeds (g) (Table 8). The highest number of fruits per plant was obtained from egusi melon sown on 11th April and 1st September. Effect of spacing on number of fruits per plant and weight of 100 seeds (g) of egusi melon indicated no significant difference ($P \geq 0.05$). The result also showed significant differences in the fruit and seed yield (kg/ha) as affected by sowing dates and spacing in both seasons. The interaction effect between sowing dates and spacing on fruit yield and seed yield was also significantly different ($P \leq 0.05$).

Discussion

The result of soil analysis before planting showed that the soil fertility of the experimental site was low. Generally, the soil was deficient in major elements as the values recorded fall below critical levels except phosphorus. The low fertility status of the soil could be due to exhaustive cultivation of the soil with little or no adequate soil conservation practice. For appreciable yield of egusi melon, the application of poultry manure (organic fertilizer) two weeks before planting and application of N.P.K. 20:10:10 (Inorganic fertilizer) was justified. It was believed that the addition of poultry manure and N.P.K. fertilizer had increased the amount of mineral nutrient and organic matter which improved the availability of both macro and micro nutrients in the soil, necessary for efficient growth and development of the crop as reported by Udom (2017). The effect of sowing dates influenced the performances of egusi melon in both early and late planting seasons. Sowing on 11th April performed best in both growth and yield parameters during early cropping season. Sowing on 1st September showed consistent significant increase in growth and yield components of egusi melon. The poor performance of the egusi melon sown on 1st April could be attributed to low soil moisture content in the previous months. In March, the quantity of rain received was very low and such rainfall could easily be lost through evaporation. The parameters recorded for 11th April were significantly different compared to 1st April planting, which could be attributed to favourable environmental conditions during 11th April sowing. However, sowing of melon on 21st April performed better than 1st April sowing date but significantly low compared to 11th April sowing. The deviation in performance of egusi melon between 11th April and 21st April sowing dates may be due to high rainfall and high relative humidity observed at 21st April which

adversely affected the growth and yield. This observation agrees with the reports by different authors for different crops. Ogbonna and Obi (2007), reported that low rainfall at the early season tends to cause retarded crop development. Similarly at a later planting date (May), growth parameters such as vine length, number of branches per plant and leaf area reduced, which they attributed to high rainfall and humidity. Jones (1976) attributed poor growth and yield of egusi melon to the delay in planting during which the crop suffers from inadequate solar radiation and high humidity. Fakorede (1985) reported that planting later in the year is often affected by heavy rainfall, high cloud cover, and lower solar radiation than in early planting and this brings about low rate of photosynthesis. Amanullah *et al.* (2002) reported that sowing date was one of the important factors determining cowpea production in all the agro ecological zones of Nigeria. Ichi and Muhammad (2012) reported that potential yield of legumes, egusi melon (*C. mannii*), okra (*Abelmoschus esculenta*) and other fruits and leaf vegetable crops can be achieved through optimum sowing using good agronomic practices. Decrease in yield as a result of delayed sowing was also reported for cowpea in Zaria in the northern Guinea savanna of Nigeria while cowpea sown in mid-June produced significant yield than that of late June at Kano (Ichi and Muhammad, 2012). In this study, the result indicated 11th April as the optimum sowing date for early planting, the reverse was the case for late planting where the growth and yield parameters recorded for 1st September planting performed better than other sowing dates. It was observed that delay in sowing date during late cropping season significantly reduced number of fruits per plant and seed yield. The significant higher growth and yield observed in egusi melon planted on 1st September compared to 21st September sowing could be due to optimum soil moisture, temperature and other environmental conditions. During the later part of September to December which coincides with peak period of egusi melon growth and development, drought may affect the physiological processes of the crop. This observation agrees with the reports of Ogbonna and Obi (2007) that the reduction in yield of egusi melon during late sowing date could be attributed to insufficient moisture and short dry spell. The period coincides with the reproductive and filling stages of the crop respectively and relatively high temperature that affects flowering and maturity.

Grant *et al.* (1989) reported that yield is highly influenced by changes that occurs during growth and maturity compared with the period from emergence to flowering. The effect of spacing on the growth and phenological characteristics of egusi melon were not significantly different ($P < 0.05$) during the early planting season. The spacing of 1 m x 2.4 m resulted in higher values in all the growth parameters, although it was not

statistically significantly different ($P < 0.05$). Increase in row spacing had no significant effect on number of days to 50% flowering, 50% fruiting and 50% senescence. Also, no significant difference was observed for weight of 100 seeds. The result also indicated no significant increase in number of fruits with increase in intra row spacing. Similar results were reported by Ball *et al.* (2000) and Lemma (2009) who found that growth and yield components among row spacing were not significantly different. Ahmed *et al.* (2010) reported that, increase in intra-row spacing had no significant effect on number of fruits per plant and weight of 100 seeds. Also, Mohammed (2002) and Adaji (2006) reported that 100 seeds weight was not affected by plant spacing and they noted that differences in yield components depend on plant response to the environmental conditions which may or may not permit the full expression of each component. In the late planting season, the effect of spacing indicated significant differences in vine length and leaf area. Higher growth parameters observed from the spacing of 1 m x 2.4 m compared to the spacing of

1m x1m could be due to higher competition for nutrient and space. The observation agrees with the report of Augustine *et al.* (2012) that optimum intra and inter-row spacing determine plant population per unit area which could enhance optimum utilization of growth factors (light interception, nutrient, moisture, space and carbon dioxide) to increase the crop productivity and reduce competition among the crop. In both early and late cropping seasons, the spacing of 1 m x 1 m produced significant fruit and seed yield. The result also indicated increase in row spacing with decrease in fruit and seed yield. The reason for significant yield from the spacing of 1m x 1 m could be attributed to higher plant population per unit area (20,000 plants/ha) compared to the lower plant population of 8333.33 plants/ha at 1 m x 2.4 m spacing. This observation was in line with the finding of Ayaz *et al.* (2001) that overall yield of some legumes (lentils, chickpeas and peas) increased due to more plants per unit area which shows the ability of more plants to compensate for loss in yield of individual plant.

Table 1: Soil Physico-chemical properties of the experimental site before planting in 2017

Soil Parameter	Soil Depths (cm)					
	Early season			Late season		
	0-15	15-30	Mean	0-15	15-30	Mean
Soil pH	5.10	5.20	5.15	5.05	5.10	5.8
Electrical Conductivity	0.30	0.22	0.26	0.24	0.23	0.24
Organic Matter (%)	1.55	1.48	1.52	1.42	1.33	1.38
Total Nitrogen (%)	0.07	0.06	0.07	0.06	0.06	0.06
Available P (Cmolkg ⁻¹)	59.60	58.25	58.93	54.70	53.40	54.05
Exchangeable Bases (Cmolkg ⁻¹)						
Exchangeable Ca	1.75	1.62	1.69	1.65	1.48	1.57
Exchangeable Mg	0.18	0.19	0.19	0.13	0.15	0.14
Exchangeable K	0.11	0.09	0.10	0.10	0.09	0.10
Exchangeable Na	0.09	0.08	0.09	0.07	0.06	0.07
ECEC (Cmolkg ⁻¹)	3.78	3.50	3.64	3.73	3.11	3.42
Base Saturation (%)	56.35	56.57	56.46	52.28	57.23	54.76
Particle Size Analysis (%)						
Sand	92.40	90.75	91.58	94.60	92.41	93.51
Clay	5.06	6.66	5.86	3.01	4.71	3.86
Silt	2.54	2.59	2.57	2.39	2.88	2.64
Textural Class	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam

Table 2: Weather Records for early and late growing season 2017

	Jan	Feb	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Rainfall (mm)	16.1	0	26.3	20.6	30.7	19.0	26.8	30.7	11.5	21.6	18.8	9.6
Rain days	2	0	6	12	14	15	13	17	12	11	3	5
Total rainfall (mm)	32.1	0	157.5	247	429.4	284.3	348	521.9	137.5	237.3	56.4	48.1
Relative Humidity (%)	79	72	82	79	78	83	85	83	79	83	85	74
Temperature (%)												
Minimum	21.0	22.0	22.0	22.5	23.3	22.7	4.7	21.9	4.6	21.6	23.1	23.0
Maximum	33.0	34.0	34.0	31.8	31.6	30.0	28.0	28.8	29.8	30.8	32.1	32.5

Source: University of Uyo Meteorological Station

Table 3: Effect of sowing dates and spacing on percentage emergence and vine length of egusi melon during early and late planting seasons of 2017

Sowing date	Early season					Sowing date	Late season				
	Percentage emergence	Weeks after sowing					Percentage emergence	Weeks after sowing			
		2	4	6	8			2	4	6	8
1st April	100.00	13.45	70.77	163.44	206.30	1st Sept	92.00	10.88	86.95	261.03	341.84
11th April	100.00	16.05	82.66	194.98	221.75	11th Sept	90.00	11.58	66.77	173.80	288.50
21st April	99.00	15.70	80.12	173.09	189.67	21st Sept	90.50	11.08	64.08	156.21	279.00
LSD(P≤0.05)	NS	NS	2.4	5.33	8.70		NS	NS	3.06	5.16	9.81
Spacing (m)						Spacing (m)					
1 x 1	100.00	14.30	70.40	159.40	213.44	1 x 1	95.00	11.29	50.33	160.80	239.06
1 x 1.2	99.00	15.01	71.75	175.11	239.75	1 x 1.2	95.50	1.00	62.16	180.54	287.37
1 x 1.6	100.00	14.75	70.99	195.14	255.13	1 x 1.6	94.50	11.20	70.01	198.59	308.99
1 x 2.0	99.50	15.18	72.45	199.40	269.12	1 x 2.0	96.50	11.19	76.80	198.75	310.15
1 x 2.4	100.00	15.70	72.95	199.75	269.50	1 x 2.4	96.00	11.22	84.36	200.01	310.33
LSD(P≤0.05)	NS	NS	NS	4.11	4.06		NS	NS	2.75	3.27	5.33

NS = Not significant

Table 4: Effect of sowing dates and spacing on number of lateral branches per vine of egusi melon during early and late planting seasons of 2017

Sowing date	Early season			Sowing date	Late season		
	Weeks after sowing				Weeks after sowing		
	4	6	8		4	6	8
1st April	2.33	8.50	10.22	1st Sept	2.55	10.63	13.10
11th April	2.11	10.45	12.47	11th Sept	2.27	6.41	10.38
21st April	3.03	9.70	10.11	21st Sept	2.33	5.57	8.13
LSD(P≤0.05)	NS	NS	NS		NS	2.44	2.95
Spacing (m)				Spacing (m)			
1 x 1	2.24	9.47	12.29	1 x 1	2.22	6.06	9.89
1 x 1.2	3.18	8.59	12.20	1 x 1.2	2.59	6.75	10.83
1 x 1.6	3.19	10.48	13.70	1 x 1.6	2.36	8.75	12.42
1 x 2.0	3.22	10.90	15.11	1 x 2.0	2.42	8.78	13.81
1 x 2.4	3.25	11.10	15.25	1 x 2.4	2.31	10.09	14.90
LSD(P≤0.05)	NS	NS	NS		NS	2.15	1.93

NS = Not significant

Table 5: Effect of sowing dates and spacing on leaf area (cm²) of egusi melon during early and late planting seasons of 2017

Sowing date	Early season				Sowing date	Late season			
	Weeks after sowing					Weeks after sowing			
	2	4	6	8		2	4	6	8
1st April	45.90	168.71	180.45	186.70	1st Sept	45.65	188.68	253.77	291.21
11th April	46.75	195.66	231.40	261.33	11th Sept	43.48	178.94	196.65	211.61
21st April	46.33	189.38	220.15	239.60	21st Sept	42.36	163.90	182.91	197.77
LSD(P≤0.05)	NS	5.06	8.16	12.67		NS	4.19	3.51	5.12
Spacing (m)					Spacing (m)				
1 x 1	45.10	155.11	212.71	225.60	1 x 1	43.31	145.94	178.13	183.48
1 x 1.2	46.25	158.60	213.08	239.10	1 x 1.2	41.38	172.40	212.80	238.13
1 x 1.6	46.01	160.01	215.92	249.75	1 x 1.6	41.68	176.56	217.35	246.60
1 x 2.0	46.20	160.11	215.95	258.11	1 x 2.0	42.11	176.75	219.85	249.33
1 x 2.4	45.90	162.11	219.40	258.81	1 x 2.4	42.34	176.92	227.41	250.11
LSD(P≤0.05)	NS	NS	NS	3.42		NS	6.30	3.01	7.93
Interaction	NS	NS	NS	NS		NS	NS	NS	2.20

NS = Not Significant

Table 6: Effect of sowing dates and spacing on number of leaves per plant of egusi melon during early and late planting seasons of 2017

Sowing date	Early season				Sowing date	Late season			
	Weeks after sowing					Weeks after sowing			
	2	4	6	8		2	4	6	8
1st April	4.33	11.78	20.13	28.60	1st Sept	4.25	11.75	34.75	37.12
11th April	4.40	18.40	31.40	40.70	11th Sept	4.20	12.43	22.70	30.18
21st April	4.36	18.30	29.40	37.45	21st Sept	3.75	13.15	21.33	29.20
LSD(P≤0.05)	NS	1.92	2.16	1.55		NS	NS	2.75	3.06
Spacing (m)					Spacing (m)				
1 x 1	4.31	12.68	28.55	37.13	1 x 1	4.30	12.33	25.40	27.40
1 x 1.2	4.33	13.40	29.70	39.20	1 x 1.2	4.35	12.40	29.13	33.70
1 x 1.6	4.35	13.45	30.12	40.44	1 x 1.6	4.31	13.25	35.91	41.18
1 x 2.0	4.36	13.47	30.70	41.70	1 x 2.0	4.25	13.17	41.60	46.12
1 x 2.4	4.37	13.55	31.18	41.76	1 x 2.4	4.32	13.35	42.75	49.06
LSD(P≤0.05)	NS	NS	NS	NS		NS	NS	2.21	4.30

NS = Not Significant

Table 7: Effect of sowing dates and spacings on number of days to 50% flowering, fruiting and senescence of egusi melon in early and late seasons

Sowing date	Early season			Sowing date	Late season		
	Days to 50% flowering	Days to 50% fruiting	Days to 50% senescence		Days to 50% flowering	Days to 50% fruiting	Days to 50% senescence
1st April	46.78	69.40	115.09	1st Sept	49.33	60.33	104.44
11th April	45.50	68.70	118.22	11th Sept	41.40	52.75	89.33
21st April	45.30	67.50	115.70	21st Sept	33.25	46.18	78.41
LSD(P≤0.05)	NS	NS	NS		3.49	2.71	4.08
Spacing (m)				Spacing (m)			
1 x 1	44.38	67.60	110.20	1 x 1	40.25	52.60	91.68
1 x 1.2	46.08	70.01	112.40	1 x 1.2	41.05	53.12	90.25
1 x 1.6	45.11	68.90	111.25	1 x 1.6	42.40	53.66	91.01
1 x 2.0	45.70	69.10	110.49	1 x 2.0	41.33	53.25	93.60
1 x 2.4	45.60	68.70	114.30	1 x 2.4	40.90	52.33	92.70
LSD(P≤0.05)	NS	NS	NS		NS	NS	NS

NS = Not significant

Table 8: Effect of sowing dates and spacing on yield and yield components of egusi melon in early and late sowing seasons

Sowing Dates	Early season				Sowing Dates	Late season			
	Number of fruits/plant	Weight of 100 seeds (g)	Seed yield (Kg/ha)	Fruit yield (t/ha)		Number of fruits/plant	Weight of 100 seeds (g)	Seed yield (Kg/ha)	Fruit yield (t/ha)
1st April	1.90	10.33	554.46	29.39	1st Sept	2.88	10.65	733.40	43.95
11th April	3.80	10.49	767.16	47.68	11th Sept	2.24	10.36	681.70	34.57
21st April	3.43	10.38	665.69	42.49	21st Sept	1.17	10.31	520.66	27.22
LSD(P≤0.05)	1.26	NS	5.78	3.35		1.01	NS	6.32	3.7
Spacing (m)					Spacing (m)				
1 x 1	2.87	10.40	840.09	50.25	1 x 1	2.56	10.41	740.05	46.12
1 x 1.2	2.96	10.38	755.45	46.20	1 x 1.2	2.35	10.51	711.70	36.92
1 x 1.6	2.88	10.41	629.06	40.51	1 x 1.6	2.36	10.49	625.41	35.66
1 x 2.0	3.01	10.35	501.42	32.19	1 x 2.0	2.45	10.52	489.75	30.41
1 x 2.4	3.03	10.40	486.17	30.14	1 x 2.4	2.38	10.51	459.18	25.13
LSD(P≤0.05)	NS	NS	4.96	4.25		NS	NS	4.18	2.11
Interaction	NS	NS	2.43	1.90		NS	NS	2.70	1.52

NS = Not significant

Conclusion

Egusi melon sown on 11th April performed better than other sowing dates in the early planting season. In late planting season, egusi melon sown on 1st September had significant seed yield compared to the yields

obtained from other sowing dates. The row spacing of 1m x 1m produced significant seed yields in both planting seasons. Planting in Uyo on the second week of April or first week of September at row spacing of 1m x 1m is recommended for optimum seed yield.

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