Growth and yield Performance of maize (*Zea mays* L.) and groundnut (*Arachis hypogaea* L.) to Stage of Supplementary Weeding inAbraka Delta State,Nigeria

[1]Egboduku, T. and Oroka, F.O
Department of Agronomy, Faculty of Agriculture, Delta State University, Abraka,Nigeria
[1]Corresponding author email: ughwumiakportracy@gmail.com

ABSTRACT
The field experiment was carried out in Agricultural Teaching and Research Farm in Delta State University, Abraka. The aim of the study was to evaluate the effects stage of supplementary weeding on the growth and yield of maize and groundnut. Experimental design used was measure 5 x 4 factorial in a Randomized complete. Black Design (RCBD). Each plot was measure 1mx1.5m and each block was separated by 0.5 from each other, respectively. An improved maize and groundnut was planted in April-June and July-September in the 2023 early and late planting seasons, respectively. Data were randomly collected for growth parameter such as plant height, number of leavers, leaf area, number of leaves, number of branches and plant height. While the yield parameters such as maize and groundnut (M/G), Cobs per treatment, yield of cobs per treatment, yield of plant and fresh and dry weight of leavers, data collected were subjected to analysis of variance (ANOVA) procedures described for factorial design in a RCBD putter, separation of treatment was determine using the least significant difference (LSD) at 0.05 level of probability. Result from the study shows that number of leaves at 3 weeks after planting was highest at the combined M/G, (1:3) frequent weeding (FW), which was statistically the same with the FW M/G (1:1) FW M/G (1:2) FW but differs from other treatment combinations. Yield parameters result recorded also show that Cob yield per plant and yield of plant performed highest at combination. Hence, growth and yield of maize and groundnut can be achieved by weeding crops frequently at a duration of 3 to 6 weeks from the planting date to get an improved yield.
Keywords: Growth, yield response, *Zea mays,Arachis hypogaea*, weeding

INTRODUCTION
Maize (*Zea mays* L.) ranks second to wheat among the world's cereal crops and first in Africa (IITA, 2009). It is one of the most important cereal crops in Nigeria. Nigeria is the largest producer of maize in Africa (IITA, 2009). The total land area planted to maize in Nigeria is about 3.3 million hectares with an estimated yield of about 2.2 tonnes per hectare. Maize can be baked, roasted or boiled for consumption. It is used as adjunct in brewery industries and in compounding livestock feeds (IITA, 2009). Maize is an important food crop not only because it is consumed worldwide, but also due to its nutritive value. Maize provides more carbohydrates than wheat and sorghum, and it is a good source of phosphorus and it also contains small amounts of calcium, iron, thiamine, niacin and fat(FAO, 2008; Letourneau *et al.*, 2011; Tilman, 2020;Yu *et al*., 2015).Groundnut (*Arachis hypogaea* L.) also known as peanut is a legume, and widely cultivated in Nigeria. Nutritionally, groundnut kernel contains appreciable amount of essential oil, protein, essential amino acids, fatty acids and micronutrients (Adlak *et al*., 2021; Asibuo *et al*., 2008; Ijarotimi, 2022). Groundnut kernel is usually consumed as snacks or used in food preparation to increase protein content, and flavour enhancer (Rossi-Márquez *et al*., 2021).

Uncontrolled weeds have been reported to course yield reduction in cereals, legumes, oil fibre crops, root and tuber crops. An estimate of total annual crop loss due to *Striga* spp. alone in Africa was found to be 7 billion US dollars (Yahaya *et al.*, 2008). Frequent weeding or intercropping with a cover crop is known to increase yield of crops (Feng *et al*. 2021; Oroka, and Enujeke, 2016; Xu*et al*., 2020). In modern farming, the weeds may be controlled chemically by use of herbicides. Although traditional farming methods are still regarded as safe method of weed control (Li *et al*., 2020a; Martin-Guay *et al*., 2018 ;Li *et al*., 2020b; Yahaya *et al*., 2008; Zhang *et al*., 2019). Therefore, this study addressed the following objectives:

(i) effects of frequent weeding on the growth and yield of maize
(ii) effects of frequent weeding on the growth and yield of groundnut.
(iii)

MATERIALS AND METHODS
Experimental Site
The research was carried out in Agriculture Teaching and Research Farm, Delta State University, Abraka. Abraka lies within Latitude: N5º 45' 40.87188 and Longitude: E 6º 7' 37.89336 with an Elevation of 8m a.s.l of the equator.
This was a one year experiment with two seasonal cropping
Cropping Patterns
The following cropping patterns were examined:

Sole maize 90 x 30 cm
Sole groundnut 30 x 30 cm

Weeding frequency

No weeding
Frequent weeding
Weeding at 3 WAP
Weeding at 6 WAP

Experimental Design

The experiment design was a 5 x 4 factorial experiment set up in randomized complete block design with three replicates. Each of the plot was measured 1m x 0.5m. Each plot was separated by a distance of 1.5m from each other while each of the blocks was also separated from each other by 0.5m. The total land area of the experimental plot is 45m x 13m.

Measurement of Plant Parameters

Plant height, number of leaves per plant leaf area: = 0.75 (L x W) where L= leaf length and W= maximum leaf width, and weeds were properly identified.

Statistical Analysis

Data obtained were subjected to analysis of variance (ANOVA) procedures described for factorial design in an RCBD pattern. Separation of treatments mean was determine using the least significant difference (LSD) at 0.05 level of probability. Data were also analysed with Genstat software

RESULTS AND DISCUSSION

Effect of weeding on growth qualities of maize

The plots with frequent [FW] weeding had the highest performance in all the growth qualities.

[Table 1a]. The number of leaves and plant height was Fw >3WAP = 6WAP > NW at $P < 0.05$. While leaf area at 3WAP was statistically the same across all the weeding frequency except weeding at 3 and 6WAP and lowest at NW at $P < 0.05$.

Effect of Weeding on the Yield Qualities of Maize

Dry weight of leaves was highest at plots with frequent weed (FW) at 3WAP and FW for plots with 3WAP and no weeding (NW) had the lowest at 3 and 6 WAP.[Table 1b] however at 9 and 12WAP, the highest dry weight was observed in plots treated with FW. Fresh weight of leaves was highest at plots treated with weeding at 6WAP [2.44] and lowest at plots with weeding at 3WAP and NO weeding [0.00].

The number of cobs per treatment was statically the same across all the weeding frequency with plots weeded at 6WAP having the highest [2.83] and plots with no weeding having lowest [2.67] at $P < 0.05$ [Table 1c].

Cob yield per plant and yield of plant performed highest at plot with frequent weeding and lowest at plots with no weeding.

Effect of weeding on the growth qualities of groundnut

Generally frequent weeding [FW] performed highest in all the growth qualities throughout the study. Frequent weeding also had the highest number of branches at 6WAP [3.92] and 9WAP [4.83]. These were statistically the same with weeding frequency except in plots with FW which has highest at 6WAP which has statistically the same as plots with weeding at 3WAP and then no weeding (NW) at $P < 0.05$.

Effect of weeding on yield parameters of groundnut

Frequent weeding [FW] gave the best performance for all yield qualities of groundnut with exceptions of number of pods. Weight of pods and height of plants of which weeding at 3WAP did best [Table 2a]. Plot with FW had the highest weight of pods per treatment, dry weight of leaves and fresh weight of leaves followed by plots with weeding at 3WAP[Table 2b]. Yield of plant per treatment performed high at plots with FW, plots with weeding at 3 and 6WAP and list at plots with no weeding. Weeding at 3WAP gave the highest number of pods, weight of pods and weight of pods among other weeding frequencies. NW has the least weight of pods and weight of pods and weight of plants while weeding at 6WAP has the least number of pods.

Table 1: Effect of weeding on growth qualities of maize

CP	WF	NUMBER OF LEAVES				PLANT HEIGHT				LEAF AREA			
		3WAP	6WAP	9WAP	12WAP	3WAP	6WAP	9WAP	12WAP	3WAP	6WAP	9WAP	12WAP
	3WAP	12.17 b	9.13 b	14.71 b	25.87 b	5.8 b	39.92 b	69.63 b	92.43 b	19.08 b	42.06 b	66.83 b	74.24b
	6WAP	11.75 b	9.00 b	15.18 b	26.18 b	5.5 b	39.25 b	67.82 b	88.47 c	19.31 b	37.98 b	64.20 b	70.02b
	FW	14.92 a	14.91 a	22.33 a	60.92 a	7.1 a	55.15 a	91.77 a	123.75 a	36.50 a	57.40 a	95.41 a	101.03a
	NW	9.67 c	5.88 c	9.75 c	12.5 c	4.6 c	27.37 c	49.68 c	61.69 d	16.88 b	21.19 c	36.94 c	48.16c
Control	3WAP	11.00cd	3.53 fh	4.73 gh	5.90 f	6.10 bc	46.57 b	71.83cd	93.07 b	17.50 c	46.75cd	129.83a	116.33c
Control	6WAP	10.67 d	3.00 h	4.40 gh	5.80 f	5.67 c	45.67 b	70.57 d	88.33 b	18.00 c	46.67cd	124.9 a	149.75a
Control	FW	14.67 a	5.30fgh	5.77fgh	7.67 f	7.33 a	66.40 a	94.23 a	118.77 a	32.83 b	57.00ab	141.00a	168.50a
Control	NW	9.67 d	3.00 h	4.00 h	5.00 f	5.00 cd	37.67 c	52.77 e	60.23 c	16.00 c	31.50 ef	62.00cde	86.00c
M/G(1.1)	3WAP	12.33bc	8.33def	10.67ef	33.67 d	5.67 c	22.83ef	44.10 f	92.20 b	19.33 c	32.25 ef	37.49 fg	49.50f
M/G(1.1)	6WAP	12.0 bc	8.33efg	10.00fg	29.67 d	5.67 c	21.5 ef	39.93 f	89.43 b	19.33 c	27.50 f	36.00efg	70.00de
M/G(1.1)	FW	14.67 a	12.33bc	11.23 ef	88.87 a	7.33 a	30.67 d	83.33 b	124.43 a	30.75 b	50.25bc	66.00bcd	77.33de
M/G(1.1)	NW	9.67 d	7.20fgh	7.00fgh	15.00 e	4.57d	18.83 g	32.83 g	62.33 c	17.00 c	17.00 g	23.00 g	58.00e
M/G(1.2)	3WAP	12.67 b	10.67de	18.43cd	30.23 d	5.10 cd	45.13 b	79.00 b	92.10 b	21.00 c	41.00de	47.00defg	68.00de
M/G(1.2)	6WAP	11.67bc	11.67cd	22.00bc	36.57 d	5.00 cd	44.57 b	77.77bc	87.33 b	21.42 c	38.25de	42.92 fg	63.67de
M/G(1.2)	FW	14.67 a	19.33 a	36.67 a	78.57 b	6.67 ab	61.10a	95.00 a	126.23 a	32.17 b	57.33ab	89.33 b	104.17b
M/G(1.2)	NW	9.67 d	6.00fgh	14.00de	15.00 e	4.23 d	26.43de	53.57 e	61.10 c	17.50 c	18.17 g	31.33 fg	74.00de
M/G(1.3)	3WAP	12.67 b	14.00 b	25.0 b	33.67 d	6.33 bc	45.17 b	83.60 b	92.33 b	18.50 c	48.25cd	53.00def	75.33de
M/G(1.3)	6WAP	12.67 b	13.00bc	24.33 b	32.67 d	5.67 c	45.27 b	83.00 b	88.77 b	18.50 c	39.50de	53.00 def	79.53de
M/G(1.3)	FW	15.67 a	22.67 a	35.67 a	68.57 c	7.00 ab	62.43 a	94.50 a	125.57 a	50.25 a	65.00 a	85.32 bc	101.02b
M/G(1.3)	NW	9.67 d	7.33fgh	14.00de	15.00 e	4.67 d	26.53de	59.57 e	63.10c	17.00 c	18.08 g	31.43 fg	46.02f
LSD	**WF**	**0.76**	**2.12**	**2.57**	**3.44**	**0.46**	**3.36**	**3.28**	**3.49**	**2.83**	**4.48**	**12.12**	**20.02**
LSD	**CP*WF**	**1.52**	**4.24**	**5.13**	**6.87**	**0.91**	**6.71**	**6.57**	**5.66**	**5.43**	**8.95**	**24.27**	**38.12**

WF: weeding frequency; WAP: weeks after planting; NL: number of leaves; PH, plant height; LA: leaf area; NW: no weeding, FW: frequent weeding; M/G:Maize/groundnut; WF: weeding frequentcy, CP: cropping pattern

Table 1b: Effect of weeding on the yield qualities of maize

CP	WF	DRY WEIGHT OF LEAVES				FRESH WEIGHT OF LEAVES			
		3WAP	6WAP	9WAP	12WAP	3WAP	6WAP	9WAP	12 WAP
	3WAP	0.60 a	0.00	0.66b	0.79b	0.64	0.00	1.06a	1.31a
	6WAP	0.00	1.77 a	0.00	0.00	0.00	2.44 a	0.00	0.00
	FW	0.22 b	0.00	0.75a	1.31a	1.21a	0.00	0.75b	0.82b
	NW	0.00	0.22 b	0.00	0.00	0.00	0.44 b	0.00	0.00
Control	3WAP	0.60 ab	0.00	1.03a	1.03a	1.03a	0.00	1.03a	1.03a
Control	6WAP	0.00	1.77 a	0.00	0.00	0.00	2.50 a	0.00	0.00
Control	FW	0.23 c	0.00	0.45b	0.48c	0.23	0.00	0.53c	0.75b
Control	NW	0.00	0.23 b	0.00	0.00	0.00	0.47 b	0.00	0.00
M/G (1.1)	3WAP	0.60 ab	0.00	0.45b	0.63b	0.13d	0.00	0.75b	0.50c
M/G (1.1)	6WAP	0.00	1.33 a	0.00	0.00	0.00	2.67 a	0.00	0.00
M/G (1.1)	FW	0.27 c	0.00	0.45	0.98a	0.13d	0.00	0.45c	0.75b
M/G (1.1)	NW	0.00	0.22 b	0.00	0.00	0.00	0.43 b	0.00	0.00
M/G (1.2)	3WAP	0.50 c	0.00	0.56b	0.98a	0.75b	0.00	0.56b	0.50c
M/G (1.2)	6WAP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M/G (1.2)	FW	0.22 c	0.00	1.16a	1.13a	0.15d	0.00	0.50b	0.75b
M/G (1.2)	NW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M/G (1.3)	3WAP	0.70 a	0.00	0.45b	0.48c	0.32c	0.00	0.45c	1.03a
M/G (1.3)	6WAP	0.00	1.00 a	0.00	0.00	0.00	2.17 a	0.00	0.00
M/G (1.3)	FW	0.15 c	0.00	0.56b	0.48c	0.38c	0.00	0.56b	0.38d
M/G (1.3)	NW	0.00	0.20 b	0.00	0.00	0.00	0.43 b	0.00	0.00
LSD	**WF**	**0.08**	**0.23**	**0.12**	**0.15**	**0.14**	**0.26**	**0.26**	**0.24**
LSD	**CP*WF**	**0.15**	**0.33**	**0.28**	**0.36**	**0.33**	**0.52**	**0.33**	**0.42**

WF: weeding frequency; WAP: weeks after planting; NW: no weeding, FW: frequent weeding; M/G: Maize/groundnut; DWL: dry weight of leaves; WF: weeding frequentcy, CP: cropping pattern, DWFL:dry weight of leaves; FWL: fresh weight of leaves]

Table 1c: Effect of weeding on the yield qualities of maize

CP	WF	No Cob pit	Yield Cob pit	Yield Plant
	3WAP	2.83 a	1.92 b	0.80 b
	6WAP	2.92 a	1.96 b	0.80 b
	FW	2.83 a	2.46 a	1.07 a
	NW	2.67 a	1.58 c	0.47 c
Control	3WAP	3.00 cd	2.30 ab	0.77 cd
Control	6WAP	3.00 cd	2.30 ab	0.77 cd
Control	FW	3.30 bc	2.50 a	0.97 abc
Control	NW	2.00 f	1.70 c	0.57 de
M/G (1.1)	3WAP	2.70 de	1.80 bc	0.67 de
M/G (1.1)	6WAP	3.00 cd	2.00 abc	0.83 bc
M/G (1.1)	FW	3.70 ab	2.30 ab	1.13 a
M/G (1.1)	NW	2.30 ef	1.70 c	0.47 e
M/G (1.2)	3WAP	3.00 cd	1.80 bc	0.87 bc
M/G (1.2)	6WAP	2.30 ef	1.70 c	0.77 cd
M/G (1.2)	FW	4.00 a	2.50 a	1.00 ab
M/G (1.2)	NW	2.00 f	1.50 c	0.43 e
M/G (1.3)	3WAP	2.30 ef	1.70 c	0.90 bc
M/G (1.3)	6WAP	2.70 de	1.80 bc	0.83 bc
M/G (1.3)	FW	3.70 ab	2.50 a	1.17 a
M/G (1.3)	NW	2.00 f	1.50 c	0.40 e
LSD	**WF**	**0.32**	**0.29**	**0.11**
LSD	**CP*WF**	**0.64**	**0.58**	**0.23**

WF: weeding frequency; WAP: weeks after planting; NW: no weeding, FW: frequent weeding; M/G: Maize/groundnut

Table 1d: Effect of weeding on the yield qualities of maize

CP	TRT	No Cob pit	Yield Cob pit	Yield Plant
	Control	2.83 a	2.21 b	0.77 a
	M/G (1:1)	2.92 a	1.96 ab	0.78 a
	M/G (1:2)	2.83 a	1.88 b	0.77 a
	M/G (1:3)	2.67 a	1.88 b	0.83 a
Control	3WAP	3.00 cd	2.30 ab	0.77 cd
Control	6WAP	3.00 cd	2.30 ab	0.77 cd
Control	FW	3.30 bc	2.50 a	0.97 abc
Control	NW	2.00 f	1.70 c	0.57 de
M/G (1.1)	3WAP	2.70 de	1.80 bc	0.67 de
M/G (1.1)	6WAP	3.00 cd	2.00 abc	0.83 bc
M/G (1.1)	FW	3.70 ab	2.30 ab	1.13 a
M/G (1.1)	NW	2.30 ef	1.70 c	0.47 e
M/G (1.2)	3WAP	3.00 cd	1.80 bc	0.87 bc
M/G (1.2)	6WAP	2.30 ef	1.70 c	0.77 cd
M/G (1.2)	FW	4.00 a	2.50 a	1.00 ab
M/G (1.2)	NW	2.00 f	1.50 c	0.43 e
M/G (1.3)	3WAP	2.30 ef	1.70 c	0.90 bc
M/G (1.3)	6WAP	2.70 de	1.80 bc	0.83 bc
M/G (1.3)	FW	3.70 ab	2.50 a	1.17 a
M/G (1.3)	NW	2.00 f	1.50 c	0.40 e
LSD	**WF**	**0.32**	**0.29**	**0.11**
LSD	**CP*WF**	**0.64**	**0.58**	**0.23**

WF: weeding frequency; WAP: weeks after planting; NW: no weeding, FW: frequent weeding; M/G: Maize/groundnut

Table 2a: Effect of weeding on growth parameters of groundnut

CP	WF	NUMBER OF BRANCHES				LEAF AREA			
		3WAP	6WAP	9WAP	12WAP	3WAP	6WAP	9WAP	12WAP
	FW	3.00 a	3.92 a	4.83 a	5.22a	36.50 a	49.12 a	97. 00 a	101.30a
	6WAP	2.92 a	3.00 b	3.92b	4.92a	19.31 b	29.62 b	47.40 b	68.94b
	3WAP	2.58 b	2.83 b	3.67 b	4.82b	19.08 b	27.79 b	46.25 b	54.62c
	NW	2.00 c	2.25 c	3.00 c	4.02c	16.88 b	17.88 c	29. 00 c	40.02 c
Control	FW	3.00 a	4.00 a	4.67 ab	4.12c	32.83 b	35.25 cd	55.25 cd	55.24cd
Control	6WAP	2.00 c	3.00 b	3.00 d	3.02e	18.00 c	19.00 e	33.00 de	33.02de
Control	3WAP	3.00 a	3.00 b	3.67 cd	3.78d	17.50 c	19.00 e	33.00 de	33.00de
Control	NW	2.67 ab	2.00 g	3.33 cd	3.63d	16.00 c	17.00 e	19.00 e	24.04e
M/G(1.1)	FW	3.00 a	3.67 a	5.00 a	6.00	30.75 b	42.75 c	84.08 bc	94.80bc
M/G(1.1)	6WAP	3.00 a	3.00 bc	4.67 ab	5.12a	19.33 c	27.50 d	43.50 de	46.46de
M/G(1.1)	3WAP	2.67 ab	3.00 bcd	4.00 bc	4.68b	19.33 c	18.67 e	42.08 de	42.12de
M/G(1.1)	NW	2.00 c	2.33 bfg	3.00 d	3.42d	17.00 c	17.00 e	30.50 de	33.02de
M/G(1.2)	FW	3.00 a	4.00 a	4.67 ab	5.24a	32.17 b	66.00 a	139.67 a	142.18a
M/G(1.2)	6WAP	2.67 ab	3.00 bcde	3.67 cd	4.18c	21.42 c	37.50 c	62.00 cd	68.72cd
M/G(1.2)	3WAP	2.33 bc	2.67 bcdef	3.33 cd	4.12c	21.00 c	36.75 c	53.25 cd	56.34cd
M/G(1.2)	NW	2.00 c	2.33 bcfg	3.00 d	4.02cd	17.50 c	19.00 e	36.00 de	40.00de
M/G(1.3)	FW	3.00 a	4.00 a	5.00 a	4.78b	50.25 a	52.50 b	109.00 b	110.24b
M/G(1.3)	3WAP	3.00 a	3.00 bcde	4.00 bc	4.64b	18.50 c	36.00 c	55.25 cd	60.25cd
M/G(1.3)	6WAP	2.67 ab	2.67 bcdef	3.67 cd	5.00a	18.50 c	35.25 cd	52.50 cde	52.80cde
M/G(1.3)	NW	2.00 c	2.33 bcdfg	3.00 d	4.02cd	17.00 c	18.50e	30.50 de	32.12de
LSD	**WF**	**0.27**	**0.29**	**0.35**	**0.28**	**5.84**	**3.86**	**14.53**	**10.24**
LSD	**CP*WF**	**0.54**	**0.58**	**0.70**	**0.54**	**5.64**	**7.72**	**29.06**	**28.02**

WF: weeding frequency; WAP: weeks after planting; NOB: Number of branches; LA: leaf area; NW: no weeding, FW: frequent weeding; M/G: Maize/groundnut; WF: weeding frequency; CP: cropping pattern

Table 2b: Effect of weeding on the yield parameters of groundnut

CP	WF	WPDplt	Yplt	NoPods	WtPods	Wtplant
	FW	0.13 a	1.07 a	6.08 b	0.09 b	0.12 b
	6WAP	0.09 b	0.80 b	5.58 c	0.09 b	0.12 b
	3WAP	0.09 b	0.80 b	7.46 a	0.13 a	0.18 a
	NW	0.07 c	0.47 c	4.25 d	0.07 c	0.09 c
Control	FW	0.12 bc	0.97 abc	5.67 bc	0.09 c	0.12 c
Control	6WAP	0.07 ef	0.57 efg	6.00 bc	0.09 cd	0.11 cd
Control	3WAP	0.09 de	0.77 cde	7.17 a	0.12 b	0.17 ab
Control	NW	0.09 def	0.77 cde	4.67 cd	0.07 cd	0.09 d
M/G(1.1)	FW	0.1 cd	1.13 ab	6.33 b	0.09 cd	0.12 c
M/G(1.1)	6WAP	0.09 def	0.83 cd	5.67 bc	0.08 cd	0.10 cd
M/G(1.1)	3WAP	0.08 def	0.67 def	7.83 a	0.10 c	0.18 ab
M/G(1.1)	NW	0.07 f	0.47 fg	4.00 d	0.07 d	0.10 d
M/G(1.2)	FW	0.13 ab	1.00 abc	6.00 bc	0.09 cd	0.13 bc
M/G(1.2)	6WAP	0.09 def	0.87 cd	5.33 c	0.09 cd	0.13 bc
M/G(1.2)	3WAP	0.09 def	0.77 cde	7.17 a	0.13 ab	0.18 ab
M/G(1.2)	NW	0.07 ef	0.43 fg	4.33 cd	0.07 cd	0.09 d
M/G(1.3)	FW	0.15 a	1.17 a	6.33 b	0.09 c	0.12 c
M/G(1.3)	3WAP	0.09 de	0.90 bcd	5.33 c	0.09 cd	0.13 bc
M/G(1.3)	6WAP	0.09 def	0.83 cd	7.67 a	0.15 a	0.20 a
M/G(1.3)	NW	0.07 ef	0.40 g	4.00 d	0.07 cd	0.09 d
LSD	**WF**	**0.01**	**0.11**	**0.38**	**0.01**	**0.02**
LSD	**CP*WP**	**0.02**	**0.23**	**0.76**	**0.41**	**0.23**

WAP: weeks after planting; NOPods: Number of pods; DWL: dry weight of leaves; FWL: fresh weight of leaves; Wtpods: weight of pods; Wtplant: weight of plants; Yplt: yeild of plant per treatment; WPDplt: weight of pods per treatment; NW: no weeding, FW: frequent weeding; M/G: Maize/groundnut; WF: weeding frequency; CP: cropping pattern

Table 2c: Effect of weeding on yield parameters of groundnut

CP	**WF**	**DRY WEIGHT OF LEAVES**				**FRESH WEIGHT OF LEAVES**			
		3WAP	6WAP	9WAP	12WAP	3WAP	6WAP	9WAP	12WAP
	FW	0.46 a	0.46a	1.13 a	1.72a	0.92 a	0.92a	2.50 a	3.14a
	3WAP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6WAP	0.00	0.19	0.00	0.00	0.00	0.39b	0.00	0.00
	NW	0.19 b	0.00	0.21 b	0.98b	0.39 b	0.00	0.42 b	0.80b
Control	FW	0.43 a	0.43a	1.17 a	1.52a	0.87 a	0.40c	2.33 a	2.74a
Control	NW	0.20 b	0.43 a	0.22 b	0.34b	0.40 b	0.87b	0.43 b	0.72b
M/G(1.1)	FW	0.47 a	0.20b	1.17 a	1.62 a	0.93 a	1.40a	2.50 a	2.98a
M/G(1.1)	NW	0.18 b	0.47a	0.23 b	0.32b	0.40 b	0.93b	0.47 b	0.78b
M/G(1.2)	FW	0.47 a	0.18b	1.00 a	1.03a	0.93 a	1.40a	2.67 a	3.00a
M/G(1.2)	NW	0.20 b	0.20b	0.17 b	0.21b	0.43 b	0.92b	0.33 b	0.46b
M/G(1.3)	FW	0.47 a	0.47a	1.17 a	1.52a	0.93 a	1.40a	2.50 a	3.00a
M/G(1.3)	NW	0.17 b	0.18a	0.22 b	0.34	0.33 b	0.78b	0.43 b	0.72b
LSD	**WF**	**0.05**	**0.04**	**0.15**	**0.17**	**0.13**	**0.09**	**0.34**	**0.33**
LSD	**CP*WF**	**0.09**	**0.20**	**0.30**	**0.34**	**0.18**	**0.76**	**0.67**	**0.64**

WAP: weeks after planting; DWL: dry weight of leaves; FWL: fresh weight of leaves; NW: no weeding, FW: frequent weeding; M/G: Maize/groundnut; WF: weeding frequency; CP: cropping pattern

CONCLUSION AND RECOMMENDATIONS

The study was on the effects of weeding on the yield qualities of maize and groundnut and also weeding on growth parameters of maize and groundnut in both planting season. Growth parameters result recorded shows that plots with frequent weeding (FW) had the highest performance in all the growth qualities. Yield parameter result recorded also shows cob yield per plant and yield of plant performed highest at plots with control. The result also shows that plots with no weeding (NW) had the lowest performance. Since frequent weeding is very expensive and tasking, this study recommend wedding at a range of 3 to 6 weeks will better increase crop yield and also to manage weed infestation.

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