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EFFECT OF PLANTING SEASON AND CULTIVAR ON SOME CHARACTERS OF SUMMER SQUASH PLANTS

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ABSTRACT

This work was carried out to evaluate four summer squash cultivars, namely El-Eskandarani, Balady, Gabla, and Halap, at the Experimental Farm of the Faculty of Agriculture Ain Shams University at Barrage in the fall and early summer plantings during 2002/ 2003 and 2003/ 2004 seasons. Results showed great variations in plant vigor, fruit characters and productivity among the four summer squash cultivars. The vegetative growth and number of staminate flowers were larger in fall planting than those of summer planting in all cultivars, while the number of pistillate flowers and yield were higher in summer planting than those of the fall planting .Balady cultivar recorded the highest vegetative growth, while Gabla and Halap cultivars recorded the earliest and the highest yields.
Keywords: *Cucurbita pepo L*., cultivars, planting season, vegetative growth, yield.

INTRODUCTION

Summer squash (*Cucurbita pepo. L*.) is one of the most popular vegetable crops in Egypt. It is known as a vegetable marrow, and is called also (Kosa) by the Egyptians.

Elgouhary (1977), comparing seven summer squash cultivars with the local cultivar EL-Eskandarani, found that the Zucchini Grey cultivar had the largest leaf area and the Early White Bush Scallop cultivar had the highest fruit size and the largest fruit diameter, while EL-Eskandarani cultivar was the earliest compared to Cocoozelle, Black Zucchini and White Bush cultivars. Respecting season variations, Metwally (1980) recorded that the May planting significantly surpassed the March one, as to stem length and leaf number, while leaf area and plant dry weight were not affected by planting date. It was added that the March planting out yielded that of May one by 94-96 %, also number of fruits per plant was higher in March plantings than in May one. Youssef *et al. (*1984) found that EL-Eskandarani cultivar showed the highest fruit length, as well as length/diameter ratio during two summer seasons. NeSmith and Hoogenboom (1994) on summer squash, reported that the staminate and pistillate flower counts were considerably depending on cultivar and time of planting, but non consistent pattern was emerged. The production of staminate flowers was generally more variable than the pistillate flowers. Production of Senator and Elite cultivars was restricted during hot weather. Aldiab and Kasrawi (1996) indicated that bush habit was complete dominance over vine habit in early stage and incomplete dominance in late stage. Anido *et al.* (2003) reported that the fruit characters are controlled by one or more gene. Raju *et al*. (1998) reported that varietal differences in summer squash were highly significant for length of vine and dry mater content. Clear variation was observed for the investigated morphological characters. Stapleton (2000) indicated that climatic conditions appeared to be secondary physiological factors affecting flowering and fruit set during all seasons. Yilmaz *et al*. (2002) reported that the highest yield of

squash, as second crop, in Turkey was obtained on the 25 Th of June sowing period than the 10 Th of July.

The purpose of this experiment was to evaluate the vegetative growth and yield component of some squash cultivars under field conditions in order to introduce the promising ones for the inbreeding programs.

MATERIALS AND METHODS

This work was carried out at the Experimental Farm of the Faculty of Agriculture, Ain Shams University, at Barrage in the fall and early summer plantings during 2002/ 2003, and 2003 /2004 seasons.

Four cultivars of summer squash, i.e., EL-Eskandarani, Balady, Gabla and Halap (local Syrian cultivars), were used in this experiment. The seeds were sown on February 15 for early summer season and on September 1 for fall season. The experimental design was a split-plot in complete blocks with four replications. The planting time was distributed in the main plots and the cultivars were randomly assigned in the sub plots. The plot area was 24.5 m^2 and contained 7 ridges of 5 meter length and 0.7 meter wide. The seeds were drenched in the water for 12 hours before planting, after drying three wet seeds were planted in each hill. The distance between hills was 50cm and the field was then irrigated. The plants were thinned to a single seedling per hill two weeks after sowing. All replicates received similar treatments as regards to cultivation, manuring, irrigation, pests and disease control and other agricultural practices as commonly followed in the district. The soil texture was clay with pH of 7.8 and EC of 2.81 mmohs/cm at 25C°.

Data recorded:

1-Vegetative traits: Five plants were randomly chosen from each plot and the stem length and number of leaves at the end of season, area of the fifth leaf using direct reading automatic leaf area meter (LI-COR-Portable area meter model LI – 3000) as well as dry weight per plant after 60 days of sowing were recorded. Average weight of stem and leaves were determined by keeping the samples in an oven at 70c° till constant weight

2- Flowering: Five plants from each plot were randomly labelled and the total numbers of staminate and pistillate flowers were counted at 3- day intervals and the number of days for opening of the first pistillate flower, total number of staminate flowers, total number of pistillate flowers and sex ratio were recorded.

3- Fruit characteristics: Ten fruits in the marketable stage were picked from each plot in the seventh harvest (mid season) and length, diameter, length/diameter ratio and average weight of fruits were recorded.

4- Fruit yield: Fruits were harvested at two-day intervals and early and total yield were calculated as fruit weight per plot and number of fruits per plant. Fruits harvested during 15 days from the beginning of harvest were considered as early yield.

The variation among the treatments were tested according the method of Duncan (1965).Temperature records are presented in Table (A).

Table (A): Monthly average of daily temperature during 2002-2003 and 2003- 2004 seasons.

	2002		2003		2004	
	Max	Min	Max	Min	Max	Min
Feb	20	10	22	10	19	9
Mar	22	13	22	10	21	11
Apr	28	13	27	14	26	12
May	33	17	33	18	32	17
Sept	37	23	34	21	-	-
Oct	28	17	31	20	-	-
Nov	29	15	28	15	-	-
Dec	24	13	23	14	-	-

Data were obtained from Barrage meteorological weather station.

RESULTS AND DISCUSSION

1- Vegetative growth:

1-1 Effect of season:

Data in Table (1) show that plants grown in fall planting had significant increments in stem length, number of leaves per plant, leaf area and plant dry weight than those of summer planting. The increase in vegetative growth traits in fall planting than the summer planting may be due to the effect of the suitability of the prevailing photoperiod and (or) temperature (Table A) as mentioned by Metwally (1980) and Elgouhary (1977).These satisfactory photoperiod and temperature conditions might enabled the plants to accumulate more carbohydrates and foods which might be resulted in the ideal growth for fall season plants.

Table 1. Effect of season on vegetative growth traits of summer squash during 2002–2003 and 2003–2004 seasons.

Season	2002-2003				2003-2004			
	Stem length (cm)	No. of leaves / plant	Leaf area / plant (cm2)	Plant dry weight (g)	Stem length (cm)	No. of leaves / plant	Leaf area / plant (cm2)	Plant dry weight (g)
Fall	102.75 a	34.58 a	678.85 a	24.95 a	114.05 a	37.82 a	691.37a	25.55a
Summer	96.65 b	31.17 b	560.60 b	22.61 b	104.34 b	34.70 b	560.08 b	24.41 b

Any means within the same column followed by the same letter are not statistically different at the 5% level (Duncan's multiple range test).

1.2 Effect of cultivar:

Data In Table (2) clearly reveal that Balady cultivar plants showed the highest significant values in stem length, number of leaves, leaf area and plant dry weight compared with other cultivars. The lowest values were obtained from Gabla and Halap cultivars, while EL-Eskandarani showed medium values. The results of Balady cultivar may be attributed to that this cultivar has bush habit in early stage and become vine in late season. This result agree with those of Elgouhary (1977)Raju *et al*. (1998) and Aldiab and Kasrawi (1996).

Table 2. Effect of cultivar on vegetative growth traits of summer squash during 2002–2003 and 2003–2004 seasons.

Cultivar	2002-2003				2003-2004			
	Stem length (cm)	No. of leaves/ plant	Leaf area /plant (cm2)	Plant dry weight (g)	Stem length (cm)	No. of leaves / plant	Leaf area /plant (cm2)	Plant dry weight (g)
El-Eskandarani	78.52 b	30.92 b	687.20 b	20.65 b	94.52 b	34.52 b	701.10 b	22.60 b
Balady	147.60 a	46.12 a	818.30 a	36.60 a	159.28 a	52.12 a	813.60 a	35.90 a
Gabla	75.33 c	27.67 c	495.00 c	19.40 bc	84.22 c	30.02 c	496.20 c	21.07 bc
Halap	88.39 b	26.81 c	496.50 c	18.46 bc	100.04 b	28.73 c	492.80 c	20.37 c

Any means within the same column followed by the same letter are not statistically different at the 5% level (Duncan's multiple range test).

1.3 Effect of interaction between season and cultivar:

Data in Table (3) indicated that plant of Balady cultivar grown in the fall plantation had in general, the highest stem length, leaf number, leaf area and dry weight per plant, whereas those of Gabla and Halap grown in the summer planting had, in general, the lowest values.

Table 3. Effect of interaction between season and cultivar on vegetative growth traits of summer squash during 2002–2003 and 2003–2004 seasons.

Season	Cultivar	2003-2003				2003-2004			
		Stem length (cm)	No .of leaves /plant	Leaf area/ plant (cm2)	Plant dry weight (g)	Stem length (cm)	No .of leaves /plant	Leaf area/ plant (cm2)	Plant dry weight (g)
Fall	EL-Eskandarani	89.39 c	32.75 b	753.10 b	22.15 c	95.82 cd	36.29 b	774.9 b	24.5 c
	Balady	153.6 a	47.01 a	879.3 a	37.95 a	171.82 a	53.43 a	878.3 a	34.57 b
	Gabla	77.87 de	29.58 c	560.00 d	20.40 bc	87.04 de	31.45 cd	561.5 d	22.05 cd
	Halap	90.20 c	29.01 c	434.00 e	19.30 bc	102.27 cd	30.01 cd	522.4 d	21.35 d
Summer	EL-Eskandarani	85.66 cd	29.10 c	621.30 c	19.58 bc	94.06 cd	32.74 c	627.3 c	20.96 d
	Balady	141.6 b	45.23 a	757.20 b	35.25 a	146.74 a	49.75 a	749.1 b	37.22 a
	Gabla	72.79 e	25.75 d	559.00 d	18.40 c	87.04 de	28.58 de	430.8 e	20.09 d
	Halap	86.57 c	24.6 d	430.00 e	17.63 c	97.84 c	27.33 e	433.2 e	19.40 d

Any means within the same column followed by the same letter are not statistically different at the 5% level (Duncan's multiple range test).

2- Flowering:

2.1 Effect of season:

Results in Table (4) show significant decrements in number of days to the opening of the first pistillate flower and number of pistillate flowers in fall season plants as compared with those of summer ones in the two tested years. On other hand, significant increments were found in number of staminate flowers and sex ratio in the fall season plants as compared with those of the summer ones in the two tested years. These results might be attributed to the high temperature and relatively longer photoperiod in fall planting as found by Metwaly (1980), NeSmith and Hoogenboom (1994) and Stapleton (2000).

Table 4. Effect of season on some flowering characters of summer squash during 2002–2003 and 2003–2004 seasons.

Season	2002 – 2003				2003 – 2004			
	Days to first pistillate flower	No. of staminate flowers/ plant	No. of pistillate flowers/ plant	Sex ratio	Days to first pistillate flowers	No. of staminate flowers/ plant	No. of pistillate flower/ plant	Sex ratio
Fall	28.45 b	34.44 a	19.62 b	1.75 a	29.78 b	31.20 a	17.43 b	1.79 a
Summer	48.33 a	29.19 b	21.21 a	1.37 b	47.48 a	26.79 b	20.26 a	1.32 b

Any means within the same column followed by the same letter are not statistically different at the 5% level (Duncan's multiple range test).

2.2 Effect of cultivar:

Gabla and Halap cultivars recorded significant decrements in number of days to the opening of the first pistillate flower, number of staminate flowers and sex ratio, the highest values were obtained by Balady cultivar in the two tested years (Table 5). On the other hand, Gabla and Halap cultivars had significant increments in number of pistillate flowers. The lowest values were obtained from Balady cultivar, while EL-Eskandarani showed medium values in the two tested years. The differences among cultivars in some flowering characters may be attributed to differences in genetic structure for these cultivars.Such results agree with those of Elgouhary (1977) and NeSmith and Hoogenboom (1994).

Table 5. Effect of cultivar on some flowering characters of summer squash during 2002–2003 and 2003–2004 seasons.

Cultivar	2002 – 2003				2003 – 2004			
	Days to first pistillate flower	No. of staminate flowers/ plant	No. of pistillate flowers/ plant	Sex ratio	Days to first pistillate flowers	No. of staminate flowers/ plant	No. of pistillate flower/ plant	Sex ratio
EL-Eskandarani	37.65 b	28.80 b	20.65 b	1.39 b	39.02 b	26.20 b	18.62 b	1.40 b
Balady	44.72 a	46.88 a	13.92 c	3.38 a	45.16 a	42.36 a	13.31c	3.18 a
Gabla	36.48 bc	24.86 c	24.15 a	1.02 c	36.29 c	24.12 b	21.74a	1.09 b
Halap	34.71 c	26.73bc	23.32 ab	1.14 bc	34.78 c	23.33 b	21.84 a	1.06 b

Any means within the same column followed by the same letter are not statistically different at the 5% level (Duncan's multiple range test).

2.3 Effect of interaction between season and cultivar:-

The highest values of number of days to the opening of the first pistillate flower were recorded by Balady cultivar in summer planting, while the lowest ones were recorded by Gabla and Halap in the fall season (Table 6). Gabla and Halap cultivars had the highest number of pistillate flowers in summer planting and the lowest value of this character was obtained by Balady cultivar in fall planting, also Gabla and Halap cultivars recorded significant decrements in number of staminate flowers and sex ratio in summer planting and the lowest values were obtained by Balady cultivar in fall planting.

Table 6. Effect of interaction between season and cultivar on some flowering characters of summer squash during 2002–2003 and 2003–2004 seasons.

Season	Cultivar	2002-2003				2003-2004			
		Days to first pistillate flower	No. of staminate flowers/ plant	No. of pistillate flowers/ plant	Sex ratio	Days to first pistillate flower	No. of staminate flowers/ plant	No. of pistillate flowers/ plant	Sex ratio
Fall	EL-Eskandarani	27.31 e	32.34 c	20.09 b	1.60 c	30.30 de	29.17 c	17.86 bc	1.63 c
	Balady	30.95 d	49.69 a	12.59 c	3.94 a	32.71 d	44.90 a	11.48 d	3.91 a
	Gabla	28.85 de	26.85 de	22.86 ab	1.17 cd	29.25 de	25.15 cd	20.25 ab	1.24 cd
	Halap	26.70 e	28.71 cd	22.93 ab	1.25cd	26.86 e	25.60 cd	20.17 ab	1.26 cd
Summer	EL-Eskandarani	48.00 b	25.27 de	21.20 ab	1.19 cd	47.74 b	23.24 d	19.37 b	1.20 cd
	Balady	58.50 a	44.60 B	15.14 c	2.95 b	57.61 a	39.81 b	15.14 c	2.63 b
	Gabla	44.11 c	22.88 e	22.58 a	1.01 d	43.34 c	21.50 d	23.23 a	0.93 d
	Halap	42.59 c	24.20 de	23.71 ab	1.02 cd	42.69 c	22.64 d	23.31 a	0.97 d

Any means within the same column followed by the same letter are not statistically different at the 5% level (Duncan's multiple range test)

3. Fruit characters:-

3.1 Effect of season:

Data presented in Table (7) show that no significant differences in fruit charecters were detected between fall and summer plantings in the two experimental years.This result agree with that of Elgouhary (1977), but does not agree with those of Metwally (1980), who found that the length, diameter and average weight of fruit had been affected by the planting date and Anido *et al*. (2003).

Table 7. Effect of season on some fruit characters of summer squash during 2002–2003 and 2003–2004 seasons.

Season	2002-2003				2003-2004			
	Fruit length (cm)	Fruit diameter (cm)	Shape index	Fruit weight (g)	Fruit length (cm)	Fruit diameter (cm)	Shape index	Fruit weight (g)
Fall	9.23 a	3.34 a	2.76 a	71.73 a	9.2 1 a	3.31 a	2.78 a	72.36 a
Summer	9.43 a	3.21 a	2.94 a	71.42 a	9.58 a	3.20 a	2.99 a	72.09 a

Any means within the same column followed by the same letter are not statistically different at the 5% level (Duncan's multiple range test).

3.2 Effect of cultivar:

Among the tested cultivars, EL-Eskandarani showed significant increments in fruit length, shape index and weight (Table 8).On the other side, Gabla recorded the lowest values, while Balady recorded medium values in the two experimental years. Balady cultivar had the highest fruit diameter values in both years, while EL-Eskandarani recorded the lowest value and Gabla and Halap recorded medium one. These results agree with those of Elgouhary (1977), Youssef *et al*. (1984) and Anido *et al*. (2003). The differences in fruit characters might be attributed to the differences in

genetical constitution among cultivars and many workers reported that fruit characters are controlled by one or more gene (Andio *et al.,* 2003).

Table 8. Effect of cultivar on some fruit characters of summer squash during 2002–2003 and 2003–2004 seasons.

Cultivar	2002-2003				2003-2004			
	Fruit length (cm)	Fruit diameter (cm)	Shape index	Fruit weight (gm)	Fruit length (cm)	Fruit diameter (cm)	Shape index	Fruit weight (gm)
EL-Eskandarani	13.73 a	2.55 c	5.83 a	84.39 a	13.56 a	2.61 c	5.20 a	84.26 a
Balady	6.39 c	4.03 a	1.58 c	74.11 b	6.75 c	3.96 a	1.70 c	74.49 b
Gabla	8.40 b	3.25 b	2.58 b	66.53 c	8.37 b	3.23 b	2.59 b	65.08 c
Halap	8.82 b	3.27 b	2.69 b	64.30 c	8.91 b	3.22 b	2.77 b	65.09 c

Any means within the same column followed by the same letter are not statistically different at the 5% level (Duncan's multiple range test)

3.3. Effect of interaction between season and cultivar:

It is clear from Table (9) that EL-Eskandarani cultivar showed the highest significant increments in fruit length, shape index and weight as compared with all tested cultivars in the two seasons in the two years. On the other side, Gabla recorded the lowest values, while Balady recorded medium values in the two experimental years in the two seasons. Balady cultivar had the highest fruit diameter values, while EL-Eskandarani recorded the lowest value and Gabla and Halap recorded medium values in the both seasons.

Table 9. Effect of interaction between season and cultivar on some fruit characters of summer squash during 2002–2003 and 2003–2004 seasons.

Season	Cultivar	2002-2003				2003-2004			
		Fruit length (cm)	Fruit diameter (cm)	Shape index	Fruit weight (g)	Fruit length (cm)	Fruit diameter (cm)	Shape index	Fruit weight (g)
Fall	EL-Eskandarani	13.57 a	2.55 c	5.32 a	82.64 a	13.63 a	2.65 c	5.14 a	85.67 a
	Balady	6.16 c	4.10 a	1.50 c	73.19 b	6.62 d	4.07 a	1.62 d	73.43 b
	Gabla	8.3 b	3.35 b	2.47 b	63.35 c	7.87 bc	3.25 b	2.42 c	65.43 c
	Halap	8.9 b	3.37 b	2.64 b	65.86 c	8.75 b	3.3 b	2.65 bc	64.94 c
Summer	Eskandarani	13.88 a	2.55 c	5.44 a	81.39 a	13.50 a	2.61 c	5.17 a	82.86 a
	Balady	6.62 c	3.97 a	1.66 c	74.11 b	6.87 cd	3.96 a	1.73 c	75.55 b
	Gabla	8.5 b	3.15 b	2.69 b	66.53 c	8.87 b	3.23 b	2.74 bc	64.73 c
	Halap	8.75 b	3.17 b	2.76 b	64.30 c	9.07 b	3.15 b	2.87 b	65.24 c

Any means within the column followed by the same letter are not statistically different at the 5% level (Duncan's multiple range test).

4. Fruit yield:

4.1 Effect of planting date:

The highest early and total yield, either as fruit number per plant or as fruit yield per plot, were recorded in the summer season plants. While, the lower values were obtained in the fall season, as show in Table (10). This result might be due to the high number of pistillate flowers produced by plants in the summer planting than in the fall one. Thus environmental conditions in summer planting favor the production of higher yield than that of fall one. This result is confirmed by those of Metwally (1980) and Yilmaz *et al.* (2002).

Table 10. Effect of season on yield of summer squash during 2002–2003 and 2003–2004 seasons.

Season	2002-2003				2003-2004			
	Early yield/ plant (fruit number)	Early yield / plot (kg)	Total yield/ plant (fruit number)	Total yield/ plot (kg)	Early yield/ plant (fruit number)	Early yield / plot (kg)	Total yield/ plant (fruit number)	Total yield/ plot (kg)
Fall	6.69 a	36.26 b	15.07 b	81.06 b	6.49 b	35.42 b	16.16 b	77.84 b
Summer	6.87 a	38.78 a	17.03 a	93.45 a	7.70 a	38.01 a	17.58 a	96.11 a

Any means within the same column followed by the same letter are not statistically different at the 5% level (Duncan's multiple range test).

4.2 Effect of cultivar:

In the two tested years, Gabla cultivar recorded the highest values of early and total yields either, as fruit number or weight, while, Balady cultivar produced the lowest values (Table 11).On the other hand, EL-Eskandarani and Halap cultivars recorded medium values. This result may be attributed to the increments in number of pistillate flowers in Gabla and Halap cultivars.

Table 11. Effect of cultivar on yield of summer squash during 2002–2003 and 2003–2004 seasons.

Cultivar	2002-2003				2003-2004			
	Early yield/ plant (fruit number)	Early yield / plot (kg)	Total yield/ plant (fruit number)	Total yield/ plot (kg)	Early yield/ plant (fruit number)	Early yield / plot (kg)	Total yield/ plant (fruit number)	Total yield/ plot (kg)
EL-Eskandarani	7.62 c	40.04 b	15.56 b	92.86 a	6.79 c	39.55 b	15.74 b	92.54 a
Balady	3.40 d	16.52 c	9.75 c	56.14 b	3.63 d	18.90 c	10.62 c	52.85 b
Gabla	9.03 a	49.35 a	19.28 a	98.91 a	9.46 a	45.85 a	20.66 a	99.12 a
Halap	8.01 b	42.21 b	19.63 a	101.43 a	8.50 b	42.49 ab	20.48 a	102.13 a

Any means within the column followed by the same letter are not statistically different at the 5% level (Duncan's multiple range test).

4.3 Effect of interaction between season and cultivar:

Data in Table (12) show that Gabla and Halap cultivars recorded the highest early and total yields, either as number or weight, in summer planting in both years while Balady cultivar gave the lowest values.

Table 12. Effect of interaction between season and cultivar on yield of summer squash during 2002–2003 and 2003–2004 seasons.

Season	Cultivar	2002-2003				2003-2004			
		Early yield/ plant (fruit number)	Early yield/ plot (kg)	Total yield/ plant (fruit number)	Total yield/ plot (kg)	Early yield/ plant (fruit number)	Early yield/ plot (kg)	Total yield/ plant (fruit number)	Total yield/ plot (kg)
Fall	EL-Eskandarani	5.96 c	35.2 c	14.64 c	85.12 b	5.76 c	35.63 c	14.57 bc	77.91 bc
	Balady	3.28 d	18.48 d	8.39 d	46.83 d	3.24 d	20.51 d	8.98 d	44.38 d
	Gabla	9.53 a	50.26 a	18.18 ab	93.73 ab	9.23 a	44.80 ab	20.40 a	92.05 ab
	Halap	8.00 b	40.95 bc	19.27 ab	98.49 ab	7.74 b	40.74 b	20.71 a	95.83 ab
Summer	EL-Eskandarani	7.47 b	44.80 ab	16.65 bc	93.94 ab	7.82 b	43.47 ab	16.91 b	105.80 a
	Balady	3.50 d	18.41 d	11.11 d	65.54 c	4.03 d	19.88 d	12.26 cd	64.19 c
	Gabla	8.52 ab	46.84 a	20.39 a	104.0 a	9.70 a	46.90 a	20.91 a	106.20 a
	Halap	8.01 b	43.40 ab	19.98 a	104.3 a	9.26 a	44.24 ab	20.25 a	111.70 a

Any means within the column followed by the same letter are not statistically different at the 5% level (Duncan's multiple range test).

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تأثير موسم الزراعة والصنف على بعض صفات نباتات الكوسة

صلاح الدين محمود المنياوي، محمد إمام رجب، خليفة عطية عكاشةو أيهم محفوض أصبح

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أجريت هذه الدراسة في وحدة البحوث والتجارب الزراعية - كلية الزراعة – جامعة عين شمس (شلقان) في أربع عروات من العروة الخريفية ٢٠٠٢ حتى العروة الصيفية ٢٠٠٤ بهدف دراسة تأثير كل من موسم الزراعة والصنف على بعض مواصفات النمو الخضري والإزهار والثمار والمحصول في أربعة أصناف من قرع الكوسة وهي الاسكندراني ، البلدي ، جبلة ، حلب وقد صممت التجربة في نظام القطع المنشقة مرة واحدة في قطع كاملة العشوائية حيث كان موسم الزراعة في القطع الرئيسية ووزعت الأصناف عشوائياً في القطع الفرعية وقد: سجل الصنف البلدي أعلى القيم في صفات طول الساق وعدد الاوراق و مساحة الورقة والوزن الجاف للنبات في العروة الخريفية أما الصنف جبلة فقد سجل أدنى القيم. وجد أكبر عدد للأزهار المؤنثة في الصنف جبلة في العروة الصيفية وكان أقل عدد في الصنف البلدي في العروة الخريفية و سجل الصنف البلدي أعلى عدد للأزهار المذكرة وأعلى نسبة جنسية في العروة الخريفية بينما الصنف جبلة أعطى اقل قيم في العروة الصيفية. تشير نتائج المحصول إلى أن الصنف الاسكندراني حقق أعلى القيم لطول وقطر ووزن الثمرة في كلا العروتين أما الصنفين جبلة وحلب فقد سجلا أدنى القيم . بالنسبة للمحصول المبكر والكلي كان أعلى محصول في الصنف جبلة في العروة الصيفية أما أدنى محصول كان في الصنف البلدي في العروة الخريفية.