J. Agric. Sci. Mansoura Univ., 32 (11): 8873 - 8884, 2007

MORPHOLOGICAL IDENTIFICATION OF SOME OIL CROP VARIETIS

Kandil, A.A.; M.S. Sultan; A.E. Sharief and Walaa EL-Batrawy
Agron. Dept ., Fac. of Agric., Mansoura Univ.

ABSTRACT

Two field experiments were carried out at the Experimental Station, Faculty of Agriculture, Mansoura University, Dakhlia Governorate during the two summer seasons of 2006 and 2007. The main objectives of these experiments were identified some morphological of five soybean (Glycine max, L.)varieties i.e. Giza 21 , Giza 22 , Giza 35 , Giza 111 and Crawford, three peanut (Arachis hypogaea, L.) varieties i.e. Giza 4, Giza 5 and Giza 6, three sesame (Sesamum indicum, L.) varieties i.e. Giza 32, Shandwell 3 and Taka 2 and two sunflower (Helianthus annuus, L.) varieties i.e. Genotype102 and Genotype 53 are used in this experiments. Complete Block Design in four replications was used. The results obtained can be summarized as follows:

1- Soybean varieties indicated that Giza 21 variety was identified by tallest plants, highest number of branches/plant and pod length compared with other verities. Giza 22 variety was characterized with heaviest seed weight. Giza 35 variety was identified by higher number of internodes/stem, number of leaves/plant, number of days to 50% flowering and number of pods/plant compared with other soybean varieties. Giza 111 variety was characterized with heighest number of seeds/pod, stem diameter and seed length. In addition, Crawford variety was identified by more seed width only compared with other varieties.
2- Peanut varieties indicated that Giza 4 variety was identified by tallest plants, more in seed length, leave width, leave length, pod length, highest number of branches/plant, number of days to 50% flowering and heaviest seed weight compared with other studied varieties. In addition, Giza 6 variety characterized with more seed width only compared with other varieties.
3- Sesame varieties indicated that Taka 2 variety was identified by more in seed length, seed width, number of days to 50% flowering and Shedding percentage compared with other studied varieties. Giza 32 variety characterized with heaviest seed weight, tallest plants, highest number of branches/plant, number of flowers/ plant, number of capsules/ main stem and number of seeds/ capsule compared with other varieties. In addition, Shandwell 3 variety was identified by mor height of capsule length only compared with other studied varieties.
4- Sunflower varieties indicated that Genotype102 variety was identified by tallest seed and more in seed width, leaf shape, number of bracts on the back head, anthocynin coloration of bracts, color of ray flower, disk flower color, number of days to 50% flowering, number of seeds/head, head diameter and heaviest seed weight compared with Genotype53. In addition, Genotype 53 variety characterized with tallest plants, stem diameter, stem harness at the top, number of internodes/stem, internodes length/ stem, number of leaves/plant, leaf hight of the tip of tabled to insertion of petiole, bract shape, number of ray flower and head attitude (at maturity) only compared with Genotype 102.

It could be summarized that morphological identification of Soybean, Peanut, Sesame and Sunflower varieties are very important in breeding program of new varieties production for keeping varieties for higher production of these crops per unit area.

Keywords: Soybean, Peanut, Sesame, Sunflower, Varieties, Identification, Morphological characteristics.

INTRODUCTION

Soybean, peanut, sesame and sunflower varieties differed widely in productivity and response to management practices. Characterization of morphological variability will allow breeders to identify accessions with desirable characterization such as earliness and improved morphological characters. Characterization and grouping of germplasm will allow breeders to avoid duplication in sampling populations.

Soybean genotypes differed greatly in their maturity therefore many investigators studied this phenomeng. Scott and Aldrich (1970) reported that there are ten maturity classes of soybean varieties from 00 up to VIII. Fontes and Ohlrogge(1972) concluded that where separated large (220mg/seed and small (140 mg/seed) seeds from a lot of "Amsoy" and found that large seeds represented 22% of the total number of seeds in the lot versus 34% for small seeds. Burris *et al.* (1973) separated seeds for a seed four varieties into four size classes, with sizes ranging from approximately 80 to 210 mg/seed. Similar variations in seed size within a seed lot have been reported by Johnson and leudders (1974), Hopper *et al.*, (1979). Payne and kozykowski (1979 and Inouye and Jin (1981). El-Emery *et al.* (1998) investigated soybean plant parameters which could be used to differentiate between cultivars. Plant height and stem determinations were useful tools for identifying soybean genotypes. Abd-Alla *et al.*(2004) evaluated some morphological and biochemical characteristics of commercially released soyabean cultivars, namely Giza/21, Giza/35, Giza/111 and Crawford, and some promising genotypes, namely Hybrid 1/10, Hybrid 1/12, Hybrid/85, Hybrid 88/1, Hybrid 88/3, Hybrid 93, Giza/30 and Giza/32. Twelve soyabean(Glycine max L. Merr) genotypes were identified based on morphological differences in seed, agronomic characters such as days from planting to flowering and maturity, yield and its components, and seed chemical composition and biochemical variability. Field observations indicated that some genotypes were indistinguishable from each other by using phenotypic and agronomic characteristics.

Peanut genotypes differed greatly in their maturity, so many investigators studied in this respect. Salma (1985) she observed that pod length was considered the most useful diagnostic character in cultivars identification in conjunction with the other morphological characters. Knauft *et al.* (1991) studied the variation in seed size uniformity among peanut genotypes. EL-Mandoh *et al* (1996) studied the behavior and yield potentiality of 25 peanut varieties /plant , number of pods/plant and 100-seed weight. Nemat Naguib (2000) found that the genotype Giza 5 surpassed the other two genotypes for plant height, number of branches per plant, seed length, pod length, 100- seed weight and seed width. Abd-Alla and Sorour. (2004) found that. M.15, M.17 and M.25 had the highest values for seed length, thickness, size and weight, while M.30 recorded the highest values for seed width. Certain superior genotypes, such as M.32 and M.15, gave relatively positive results for most of the tests. Thus, they may be useful for plant breeders.

Yadava *et al,* (1980) found significant differences for the number of primary braches, number of capsules on the main shoot of sesame plants, total number of capsules as well as 1000-seed weight, plant height and days to first flowering and 50% flowering. Mahdy *et al.* (1988) reported that the differences among 25 cultivars and strains of sesame were significant for number of branches/ plant and capsule length, but differences were not significant for number of capsules/plant. EL-Serogy (1992) found significant differences in plant height and 1000-seed weight among different varieties in both seasons. Guirguis *et al.* (1996) noticed significant differences among genotypes in number of capsules/plant, 1000-seed weight, plant height, number of branches/plant, first capsule height and fruiting zone length. EL-Serogy *et al.* (1997) showed significant differences between Giza 32 and Giza 35 varieties in seed yield/plant in both seasons. The differences between the two sesame varieties may be attributed to the differences in their genetically constitution for these traits and interaction between the genetically constitution for these traits and interaction between the genetically make- up and the environmental conditions prevailing during the experimentation period. EL-Serogy *et al.* (1998) found significant differences in number of capsules/plant and weight of 1000-seed in the first seasons only. Giza 32 and hybrid 117 surpassed New arrival 652 and b 51 in the above mentioned characters except number of capsules/plant and seed yield which showed a reverse trend. Nemat Naguip (2000) found that genotype Giza 32 surpassed the other three genotypes for plant height and days to 50% flowering, to maturity, height of the first capsule and number of capsules per plant. While the genotype Hybrid 55 had the lowest values.

Sunflower genotypes differed greatly in their maturity, so many investigators studied in this respect. Sharief and Said (1993) found that Majak cultivar significantly surpassed the other cultivars in plant height, stem diameter, and head diameter. Concerning 1000-seed weight, it was found that Roadio cultivar was the best among other cultivars under test. El-Kalla *et al.* (1998) reported that sunflower hybrids markedly varied in most estimated characteristics. Vidoc cultivar markedly exceeded both Pioneer and G 101 cultivars in plant height, weight of 1000-seed and head diameter. Ali *et al.* (2000) found that Hysun-33 performed better for all parameters such as leaf area per plant and number of leaves per plant. Esmail (2000) found that Maijak cultivar significantly surpassed Elya, Euroflor and Pioneer 6480 cultivars in the vegetative growth and LAI at all sampling dates. Monotti *et al.* (2001) showed that plant height was affected by adverse weather conditions. There is no differences in 1000-seed weight, while seed production varied between sites. The aim of this research to identify of some soybean, peanut, sesame and sunflower verities in morphological.

The objectives of this research was to idntify morphological characters of some oil crop i.e. Soybean, Peanut. Sesame and Sunflower varities.

MATERIALS AND METHODS

Two field experiments were carried out at the Experimental Station, Faculty of Agriculture, Mansoura University, Dakhlia Governorate during the summer seasons of 2006 and 2007. The main objectives of these experiments was to determine morphological identifying of five of soybean varieties (Glycine max (Merr.) L.) at different growth stages. Five soybean varieties i.e.GIZA 21 , GIZA 22 , GIZA 35 , GIZA 111 and Crawford, three peanut (Arachis hypogaea, L.) varieties i.e. GIZA 4, GIZA 5 and GIZA6, three sesame (Sesamum indicm, L.) varieties i.e. GIZA 32, Shandwell 3 and Taka 2 and two sunflower (Helianthus annuus, L.) varieties i.e. Genotype102 and Genotype 53 are used in this experiments. In both seasons, soybean, peanut, sesame and sunflower were preceded by Egyptian clover(Trifolium alexandrinum, L.). Plots were arranged in a randomized complete block design in four replications. The experimental unit area occopieded an area of $10.5m^2$ consisted of five rows each of 3.5 meters in length and 60 cm in width. Seeds of studied soybean, peanut, sesame and sunflower varieties were grown on April 1^{st} and June 5^{th} in 2006 and 2007 seasons, respectively. Plants were thinned after 21 days from sowing to one plant per hill and 10cm apart in soybean . Hills were spaced at 20 cm apart within the row spaced at 60 cm between rows and plants were thinned to one plant per hill before the first irrigation. Other cultural practices were followed as recommendation of Ministry of Agriculture and Land Reclamtion in peanut. One plant per hill was left at thinning when the plant was arrived the height 15-20cm or when the plant was carried 4-6 leaf stage in sesame. The distance between hills was 20cm and plants were thinned before the first watering to secure one plant per hill. Sunflower plants were hoed twice, the first was practiced before the second irrigation and the second one was performed before the third irrigation in sunflower. The morphological identification was conducted usually using the descriptors is sued by International Union for the Protection of New Varieties of Plants (UPOV,1994). All data were statistically analyzed according to the technique of analysis of variance (ANOVA) for the randomized complete block design. Least significant differences (LSD) method was used to test the differences between treatment means at 5% (in case of significant differences(*) and 1% in case of highly significant differences (**) level of probability. While, in case of no significant differences (N.S.) there is no LSD as published by Gomez and Gomes (1984). All statistical analysis were carried out using analysis of variance technique (ANOVA) by means of "MSTAT – C " Computer software package.

RESULTS AND DISCUSSION

1- Soybean morphological characters.

Results in Tables 1 clearly indicated that studied soybean varieties significutly differed in booth 2006 and 2007 season. It could be stated that Giza 21 variety had tallest plants, pod length and higher number of branches

per plant. Giza 22 variety had significant increases in 100 seed weight compared with other studied varieties in both seasons. Giza 35 variety had more number of internodes per stem, number of pods per plant, number of leaves per plant and number of days to 50% flowering. Giza 111 variety had more in seed length, number of seeds per pod and stem diameter. In addition, Crawford variety had more seed width compared with other studied varieties in both seasons compared with other studied varieties in both seasons. The differences between soybean genotypes in all presented results might be reflect to the genetical factors and maturity group varieties. Similar results were reported by Scott and Aldrich (1970), Fontes and Ohlrogge(1972), Burris *et al.* (1973), Johnson and leudders (1974), Hopper *et al.*, (1979). Payne and kozykowski (1979 and Inouye and Jin (1981), Elemery *et al.* (1998) and Abd-Alla *et al.*(2004).

2- Peanut morphological characters.

Results in Table 2 clearly indicated that studied peanut varieties significutly differed in booth 2006 and 2007 season. It could be noticed that Giza 4 variety had more seed length, plant height, number of branches, leave width, leave length, number of days to 50% flowering, pod length and 100 seed weight compared with other studied varieties in both seasons . Giza 6 variety had more seed width compared with other studied varieties in both seasons. While, Giza5 variety had the lowest values of all studied traits. The differences between peanut genotypes in all presented results might be reflect to the genetical factors. Similar results were reported by Salma (1985), Knauft *et al.* (1991), EL-Mandoh *et al* (1996), Nemat Naguib (2000) and Abd-Alla and Sorour (2004).

3- Sesame morphological characters.

Results in Table 3 clearly indicated that studied soybean varieties significutly differed in booth 2006 and 2007 season. It could be showed that Taka 2variety had more seed length, seed width, shedding percentage and number of days to 50% flowering compared with other studied varieties in both seasons . Giza 32 variety had tallest plants and more in number of branches per plant, number of leaves per branch, number of flowers per plant, number of capsules per main stem, number of seeds per capsule and 100 seed weight compared with other studied varieties in both seasons. Shandwell 3 variety had more significant increases in the capsule length compared with other studied varieties in both seasons. The differences between the two sesame varieties may be attributed to the differences in their genetically constitution for these traits and interaction between the genetically constitution for these traits and interaction between the genetically make- up and the environmental conditions prevailing during the experimentation period. Similar results were reported by Yadava *et al,* (1980), Mahdy *et al.* (1988), EL-Serogy (1992), Guirguis *et al.* (1996), EL- Serogy *et al.* (1997), EL-Serogy *et al.* (1998) and Nemat Naguip (2000).

Table 3 : Means of seed length (mm), seed width (mm), plant height (cm), number of branches/ plant, number of leaves/branch, number of days to 50% flowering, number of flowers/ plant, number of capsules/ main stem, hedding percentage, capsule length (cm), number of seeds/ capsule and100 seed weight (g) as affected by sesame varieties in 2006 and 2007 seasons.

Characters	Seed Length (mm)		Seed width (mm)		Plant height (cm)		Number of branches/ plant		Number of leaves/branch		Number of days to 50% flowering		Number of flowers/ plant		Number of capsules/ main stem		Shedding %		Capsule lenght (cm)		Number of seeds/ capsule		100 Seed Weight (g)	
Varieties	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
GIZA 32	3.5	3.6	2.1	2.3	129.0	132.3	7.8	7.6	47.5	48.8	51.8	52.0	61.5	63.5	45.3	45.8	26.2	26.6	3.38	3.51	52.6	53.3	0.41	0.45
Shandwell3	3.4	3.5	2.9	3.0	120.3	123.1	5.6	7.6	31.1	32.1	48.6	48.5	51.3	53.1	34.8	35.5	32.1	34.8	4.95	5.00	37.0	37.0	0.46	0.39
Taka 2	4.1	4.1	2.9	3.0	99.0	101.3	5.0	5.3	39.8	41.0	54.8	54.8	49.3	50.0	25.0	25.6	49.3	50.0	2.38	2.50	31.0	32.1	0.40	0.42
F .test	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	ns	**
LSD 5%	0.1	0.1	0.1	0.1	0.9	1.7	0.2	0.4	0.5	0.6	0.9	0.7	0.7	0.9	0.5	0.7	2.4	1.0	0.06	0.09	1.0	0.9	----	0.02
LSD 1%	0.7	1.1	0.2	0.2	1.3	2.5	0.4	0.6	0.7	0.9	1.2	1.1	1.0	0.1	0.8	1.1	3.4	1.4	0.09	0.14	1.4	1.3	----	0.03

Table 4 : Means of seed length (mm), seed width (mm), plant height (cm), stem diameter (cm), stem harness at the top, number of internodes/stem, internodes length / Stem (cm), number of leaves/plant, leaf shape, bract shape and number of bracts on the back head as affected by Sunflower varieties in 2006 and 2007 seasons.

Characters	Seed Length (cm)		Seed width (mm)		Plant height (cm)		Stem diameter (cm)		Stem harness at the top		Number of internodes/stem		Internodes length/ stem (cm)		Number of leaves/plan		Leaf shape		bract shape		umber of bracts on the back head	
Genotypes	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
102	1.4	1.6	4.6	4.9	147.5	.149	2.4	2.6	5.0	5.0	16.0	16.8	6.3	6.0	20.8	22.1	4.0	4.0	1.0	1.0	66.6	68.1
53	1.3	1.3	4.1	4.3	158.1	159.5	2.9	3.1	7.0	7.0	18.1	18.6	8.0	8.1	24.8	25.8	3.0	3.0	2.0	2.0	60.3	61.5
F .test	ns	*	*	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**

Table 5 : Means of anthocynin coloration of bracts, number of ray flower, color of ray flower, head attitude (at maturity), disk flower color, number of days to 50% flowering, head diameter (cm), number of seeds/head, 100 seed weight (g) and Leaf height of the tip of blade compared to insertion of petiole(cm) as affected by sunflower varieties in 2006 and 2007 seasons.

Characters	100 Seed Weight (g)		Anthocyanin coloration of bracts		Number of ray flower		Color of ray flower		Head attitude (at maturity)		Disk flower color		Number of days to 50% flowering		Head diameter (cm)		Number of seeds/head		Leaf height of the tip of blade compared to insertion of petiole(cm)	
Genotypes	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
102	7.4	7.6	9.0	9.0	3.0	2.6	3.0	3.0	1.0	1.0	5.0	5.0	51.0	50.0	20.1	21.8	1008.3	1025.1	3.0	3.0
53	6.7	6.7	1.0	1.0	6.0	6.6	2.0	2.0	3.0	3.0	3.0	3.0	46.1	45.3	18.8	19.3	1003.3	1011.1	5.0	.5
F .test	**	**	**	**	*	**	**	**	**	**	**	**	**	**	*	*	ns	**	**	**

4- Sunflower morphological characters.

Results in Table 4 and 5 clearly indicated that studied sunflower varieties significantly differed in booth 2006 and 2007 season. It could be noticed Genotyp102 variety had more seed length, seed width, number of bracts on the back head, disk flower color, number of days to 50% flowering, number of seeds per head, head diameter and 100 seed weight compared Genotype 53 in both seasons. Genotyp53 variety had more plant height, stem diameter, stem harness at the top, number of internodes per stem, internodes length per stem, number of leaves per plant, leaf height of the tip of tabled to insertion of petiole, bract shape, number of ray flowers compared with Genotyp102 in both seasons. The differences between soybean genotypes in all presented results might be reflect to the genetical factors. Similar results were reported by Sharief and Said (1993), El-Kalla *et al.* (1998), Ali *et al.* (2000), Esmail (2000) and Monotti *et al.* (2001).

REFERENCES

Abd-Alla,M.M.S and W.A.I Sorour, (2004). Seed characteristics as indicators of peanut seed quality. Annals of Agricultural Sc Moshtohor, 42(3): 989-1000.

Abd-Alla, S.T; N.A; Naguib, A.H Selim, and M.S.A Mohamed, 2004). orpholo -gical and biochemical identification of some soybean genotypes. Egyptian Journal of Agricultural. Research, 82(4): 1627: 1639.

Ali, M.; S.K. Khalil and K. Nawab (2000). Response of sunflower hybrids to various levels of nitrogen and phosphorus. Sarhad J. Agric., 16(5): 477-483.

Burris; J.S., O.T. Edje and A.H. Wahab (1973). Effect of seed size on seedling performance in soybeans : II. Seedling growth and photosynthesis and field performance. Crop Sci., 13:207-210.

El-Emery, M.I; N.A; Nourel. Din, M.S; El-Habbal, A.H Selim, (1998). Identification of some soybean genotypes grown in Egypt through growth, seed and seedling characters. Annals of Agric Sci Cairo, 43(1): 159-171 .

El-Kalla, S.E.; A.E. Sharief; M.H.Ghoenema and A. Amal El-Saidy (1998). Response of some sunflower hybrids to NPK fertilizer and yield analysis. Proc. 8th Conf. Agron., Suez canal Univ., Ismailia, EGPT., 28-29 Nov.,PP: 535-543.

El-Mandoh, M.E; B.A. El-Ahmer and N.R Girguis, (1996). Evaluation of some exotic lines and two local varieties of groundnut in Egypt, Annals of Agric. Sci. Moshtohor,34(1):25-36.

El-Serogy.S.T (1992).Some sesame varieties and their response to planting methods and hand weeding. Assiut J.of Agric.Sci., 23(2):151-164.

El-Serogy.S.T; A. El-Emam, and W.A.I. Sorour, (1997). The performance of two sesame varieties under different sowing methods in two location. Annals Agric.Sci.Ain Shams Univ, Cairo,42(2):355-364.

El-Serogy.S.T; S.A.A. Attaallah and A.R. Nagwa, (1988).Optimal time of terminal irrigation and harvesting date of some sesame varieties.Egypt.J. Agric. Res,76(3):1063-1075.

Esmail, S.E. (2000). Performance of some sunflower cultivars as affected by water irrigation regimes. J. Agric. Sci., Mansoura Univ., 25(2):675-697

Fontes, L.A.N. and A.J. Ohlrogge, (1972). Influence of seed size and population on yield and other characteristics of soybean [Glycine max (L.) Merr.]. Agron .J., 64:833-836.

Gomez,K.N. and A.A.Gomes, (1984). Statical procedures for agricultural research. John Wiley and Sons, New York, 2nd ed.,PP: 68P.

Guirguis,N.R; M.E.M. El-Mandoh, and M.A. Madko, (1996). Evaluation of some different genotypes of sesame (Sesamum indicum L.) Annlas of Agric.Sci.Moshtohor,34(1):53-68.

Hopper, N.W.; J. R., Overholt and J. R. Martin (1979). Effect of cultivars, temperature and seed size on the germination and emergence of soybeans [Glycine max (L.) Merr]. Ann. Bot.,44:301-308.

Inouye, J.and Jin, I.D. (1981).Studies on the seedling emergence in crops-seed size and elongation force of soybean seedlings. Crop Sci., 50:344-350.

Johnson; D.R. and V.D., Leudders (1974). Effects of planted seed size on emergence and yield in soybean [Glycine max (Merr.)L.]. Agron. J. 66:117-118.

Knauft, D.A; D.W. Gorbet, and F.G. Martin, (1991). Variation in seed size uniformity among peanut genotyes. Crop Sc, 31 (5): 1324-1327.

Mahdy, E.E; R.B; Baby, M.Z. El-Hifny, and A. El-Shimy, (1988). Genotypic stability analysis of yield and serveral traits of sesame (Sesamum indicum L.).Assiut, J. Of Agricultural Sci., 19(4): 19-33.

Monotti, M; D; Laureti Conti, A.M.D; Pino, S; Pieri, and G.M. Ridoni, (2001).Comparing high oil and conventional sunflowers.Informatore Agrario.27(11):59-64.(C.F.CD ROM Computer System).

Nemat, A. Naguib (2000). Morphological and chemical identification of new varieties of some field crops. Ph. D. Thesis Fac. of Agric. Ain Shams University.

Payne, R.C. and T.J. Koszykowski, (1979). The effect of seed size on hypocotyl length of soybean cultivars. Seed Sci. Technol.

Salma, I (1985). Identification of fifteen grundnut cultivars based on their morphological traits. MARDI. Research Bulletin., 13: 285-289.

Scott, W.O. and S.R. Aldrich, (1970). "Modern Soybean production " 4th ed. Printing USA, PP.1.

Sharief, A.E. and E.M. Said (1993). The contribution of sowing dates, Plant density on the productivity of some oil seed sunflower cultivars. J.Agric. Sci., Mansoura Univ., 18(4):959-967.

Shinde, Y.M; P.L; Badhe, D.M. Patel and A.B.Deokar, (1991).Genetic evaluation of some lines in sesame. J. of Maharashtra Agric. Univ., 16 (1): 22-24.

UPOV (1994). The International Union for the Protection of New Varieties of plants.

Yadava, T.P; K. Parkash, and A.K. Yadav, (1980). Association of yield and its components in sesame. Indian. J. Agric. Sci., 50(4): 317-319.

التمييز المورفولوجي لبعض أصناف محاصيل الزيت

أحمد أبو النجا قنديل ومحمود سليمان سلطان وعلى السعيد شريف و ولاء البطراوي
قسم المحاصيل – كلية الزراعة – جامعة المنصورة.

أقيمت تجربتان حقليتان خلال الموسمين الصيفيين ٢٠٠٦و٢٠٠٧ بمزرعة كلية الزراعة جامعة المنصورة بمحافظة الدقهلية لتمييز الصفات المورفولوجيه لخمسة أصناف فول صويا هي جيزة ٢١ ،جيزة ٢٢ ،جيزة ٣٥ ،جيزة ١١١ ،كراو فورد وثلاثة أصناف فول سوداني وهى جيزة ٤ ،جيزة ٥ ،جيزة ٦ وثلاثة أصناف سمسم وهى طاقة ٢ ،جيزة ٣٢ شندويل ٣ وصنفين عبا الشمس هما السلالة ١٠٢ والسلالة ٥٣ . أستخدم تصميم القطاعات الكاملة العشوائية في أربعة مكررات في هذه الدراسة. وتم إجراء التمييز المورفولوجي بالحقل باستخدام توصيف UPOV (الاتحاد الدولي لحماية الأصناف النباتية الجديدة) لسنة ١٩٩٤ وكانت أهم النتائج المتحصل عليها كما يلي:

١- أظهرت النتائج أنة يمكن تمييز الصنف جيزة٢١ بزيادة كل من طول القرن وطول النبات وعدد الفروع على النبات. أشارت النتائج أنة يمكن تمييز الصنف جيزة ٢٢ بزيادة وزن ال١٠٠ بذرة. ويمكن تمييز الصنف جيزة٣٥ بزيادة كل من عدد قرون النبات وعدد سلاميات الساق و عدد أوراق النبات وعدد الأيام حتى ظهور ٥٠% أزهار. يمكن تمييز الصنف جيزة ١١١ بزيادة عدد بذور القرن وطول البذرة وقطر الساق. يمكن تمييز الصنف كراو فورد بزيادة عرض البذرة.

٢- أوضحت النتائج أنة يمكن تمييز الصنف جيزة ٤ بزيادة كل من طول النبات و طول البذرة وعدد أفرع النبات وعرض الورقة وطول الورقة وطول القرن ووزن ال١٠٠ بذرة و عدد الأيام حتى ظهور ٥٠% أزهار. أوضحت النتائج أنة يمكن تمييز الصنف جيزة ٦ بزيادة عرض البذرة.

٣- أشارت النتائج أنة يمكن تمييز الصنف طاقة ٢ بزيادة كل من طول البذرة وعرض البذرة وعدد أيام ظهور ٥٠% أزهار و النسبة المئوية لتساقط الأزهار. ويمكن تمييز الصنف جيزة ٣٢ بزيادة كل من طول النبات وعدد أفرع النبات وعدد الأزهار وعدد كبسولات النبات وعدد بذور الكبسولة و وزن ال١٠٠ بذرة. أظهرت النتائج أنة يمكن تمييز الصنف شندويل ٣ بزيادة طول الكبسولة.

٤- أوضحت النتائج أنة يمكن تمييز السلالة ١٠٢ بزيادة كل من طول البذرة وعرض البذرة و عدد الأيام حتى ظهور ٥٠% أزهار و عدد الأوراق النقابية وقطر القرص و وزن ال١٠٠ بذرة وجود صبغة الأنثوثيانين في أطراف الأوراق النقابية وتلون الأزهار الشعاعية باللون القشى وتلون القرص باللون الأرجوانى والشكل القلبي للورقة. ويمكن تمييز السلالة ٥٣ بزيادة كل من طول النبات وقطر الساق وجود الشعيرات على الساق وعدد سلاميات الساق وطول السلامية وعدد أوراق النبات وعدد الأزهار الشعاعية وعدد بذور القرص وارتفاع حاقة الورقة و الشكل الطولي للأوراق النقابية والوضع المائل للقرص.

توصى هذه الدراسة بأنة يمكن الاستفادة من تمييز أصناف كل من فول الصويا والفول السوداني والسمسم وعباد الشمس مورفولوجيا و استخدامها خلال برامج التربية وانتاج الأصناف الجديدة بغية المحافظة عليها من التدهور وزراعة الأصناف عالية الإنتاجية المميزة لزيادة إنتاجية وحدة المساحة.