Table(1): Analysis of variance and mean squares of the F_1 hybrids and their parents for studied traits.

S.V	DF	1-D1st FF	2-SR (%)	3-PH (cm)	4-No. B/P	Early Yield			Total Yield	
						5-No. F/P	6-AFW/P (g)	7-AFW/F (ton)	8-No. TFY/P	9-ATFWY/F (ton)
Reps.	2	1.30	1.20	2.80	0.06	0.03	0.03	0.003	0.18	0.02
Geno.	9	7.78**	780.66**	209.50 **	1.87**	0.12**	51.24**	0.43**	29.81**	45.26**
Error	18	1.41	6.60	2.87	0.03	0.01	0.11	0.03	0.19	0.04

**Significant at 1% level of probability

Table (2): Estimates of heterosis over mid parents for all studied traits.

Genotypes	1-D1st FF	2-SR (%)	3-PH (cm)	4-No. .B/P	Early Yield			Total Yield	
					5-No. F/P	6-AFW/P (g)	7-AFW/F (ton)	8-No. TFY/P	9- ATFWY/F (ton)
P_1xP_2	-8.70**	47.03**	34.29**	42.86**	23.81**	186.61**	52.11**	32.73**	78.34**
P_1xP_3	-7.53**	107.52**	60.78**	168.18**	54.55**	141.71**	71.79**	236.36**	154.89**
P_1xP_4	-7.10**	38.90**	52.00**	58.56**	14.29**	157.14**	43.66**	216.13**	83.52**
P_2xP_3	-9.28**	27.17**	41.41**	50.00**	14.29**	180.65**	43.28**	67.31**	81.48**
P_2xP_4	-5.76**	73.77**	21.65**	21.50**	26.67**	806.67**	60.00**	125.29**	75.98**
P_3xP_4	-6.74**	65.35**	18.09**	54.22**	14.29**	170.97**	43.28**	41.38**	77.53**
LSD %5	1.76	3.81	2.52	0.26	0.14	0.51	0.26	0.63	0.26
%1	2.42	5.23	3.46	0.35	0.19	0.71	0.35	0.86	0.35

*,**Significant at 5% and 1% levels of probability, respectively.

Table (3): Estimates of heterosis over best parents for all studied traits.

Genotypes	1- D1st FF	2- SR (%)	3- PH (cm)	4- No. B/P	Early Yield			Total Yield	
					5- No. F/P	6- AFW/P (g)	7- AFW/F (ton)	8- No. TFY/P	9- ATFWY/F (ton)
P₁xP₂	-4.55**	30.77**	30.56**	37.93**	18.18**	65.46**	31.71**	25.86**	64.06**
P₁xP₃	-2.27*	86.82**	51.85**	103.45**	54.55**	118.04**	63.41**	218.97**	108.59**
P₁xP₄	-3.41**	21.42**	40.74**	51.72**	9.09**	48.45**	24.39**	153.45**	60.94**
P₂xP₃	-8.33**	25.45**	37.25**	16.67**	9.09**	67.31**	29.73**	67.31**	59.53**
P₂xP₄	-5.26**	70.38**	15.69**	20.37**	26.67**	806.67**	60.00**	88.46**	66.98**
P₃xP₄	-5.26**	59.97**	15.63**	20.75**	9.09**	61.54**	29.73**	18.27**	63.73**
LSD %5	2.04	4.40	2.91	0.30	0.16	0.59	0.30	0.73	0.30
%1	2.79	6.04	3.99	0.41	0.22	0.81	0.41	1.00	0.41

*,**Significant at 5% and 1% levels of probability, respectively

Table (4): Half diallel analysis of variance of the F_1 hybrid and their parents for all studied traits.

S.V	DF	1- D1st FF	2- SR (%)	3- PH (cm)	4- NO.B/P	Early Yield			Total Yield	
						5- No.F/P	6- AFW/P (g)	7- AFW/F (ton)	8- No.TFY/P	9- ATFWY/F (ton)
GCA	3	3.10**	48.22**	37.26**	0.36**	0.02**	12.97**	0.09**	3.87**	6.31**
SCA	6	2.34**	366.22**	86.12**	0.75**	0.05**	19.13**	0.17**	12.97**	19.48**
Error	18	0.47	2.20	0.96	0.01	0.003	0.04	0.01	0.06	0.01

**Significant at 1% levels of probability.

Table(5): Estimates of general combining ability effects (g$_i$) of each parent for all studied traits.

Genotypes	1- D1st FF	2- SR (%)	3- PH (cm)	4- No. B/P	Early Yield			Total Yield	
					5- No. F/P	6- AFW/P (g)	7- AFW/F (ton)	8- No. TFY/P	9- ATFWY/F (ton)
P$_1$	-1.06**	-3.67**	3.39**	0.36**	0.06 **	1.70**	0.15**	1.07**	1.51**
P$_2$	0.22	-0.76	-0.50	-0.11*	-0.04	-1.11**	-0.10*	-0.69**	-0.30**
P$_3$	0.56*	1.84**	-0.28	-0.17 **	0.04	0.75**	0.06	0.15	-0.48**
P$_4$	0.28	2.59**	-2.61**	-0.08	-0.06 **	-1.34**	-0.11*	-0.53**	-0.73**
SE(gi)	0.24	0.52	0.35	0.04	0.02	0.07	0.04	0.09	0.04

*,**Significant at 5% and 1% levels of probability, respectively**.**

Table(6): Estimates of Specific combining ability effects (S$_{ij}$) of each cross for all studied traits.

Genotypes	1- D1st FF	2- SR (%)	3- PH (cm)	4- NO.B/P	Early Yield			Total Yield	
					5- No. F/P	6- AFW/P (g)	7- AFW/F (ton)	8- No. TFY/P	9- ATFWY/F (ton)
P$_1$xP$_2$	-1.17	3.34*	-3.31**	0.17	0.08	2.68**	0.23*	-1.17**	2.08**
P$_1$xP$_3$	-0.83	25.63**	10.76**	1.50**	0.39**	4.23**	0.51**	5.45**	6.06**
P$_1$xP$_4$	-0.89	0.01	9.09**	0.40**	-0.01	1.82**	0.15	3.60**	2.25**
P$_2$xP$_3$	-1.44*	-2.55	6.64**	0.15	-0.01	1.64**	0.13	0.69**	1.51**
P$_2$xP$_4$	0.50-	19.97**	1.64	0.11	**0.17	4.09**	0.29**	2.10**	2.30**
P$_3$xP$_4$	0.83-	12.51**	0.91-	0.14	0.01	1.57**	0.14	-1.17**	1.05**
SE(Sij)	0.59	1.27	0.84	0.09	0.05	0,17	0,09	0,21	0.09

*,**Significant at 5% and 1% levels of probability, respectively**.**

Table(7): Estimates of genetic parameters and heritability in broad (H^2_b %) and narrow (H^2_n %) sense for all studied traits.

Genetic Parameter	1- D1st FF	2- SR (%)	3- PH (cm)	4- No. B/P	Early Yield			Total Yield	
					5- No.F/P	6- AFW/P (g)	7- AFW/F (ton)	8- No. TFY/P	9- ATFWY/F (ton)
O^2A	0,88	15,34	12,10	0,12	0,01	4,31	0,03	1,27	2,10
O^2D	1,87	364,02	85,16	0,74	0,047	19,09	0,16	12,91	19,47
O^2e	0,47	2,20	0,96	0,01	0,003	0,04	0,01	0,06	0,01
$(\sigma^2D/\sigma^2A)^{1/2}$	1,46	4,87	2,65	2,48	2,17	2,10	2,31	3,19	3,04
$h^2b\%$	85,39	99,42	99,02	98,85	94,61	99,83	94,92	99,58	99,95
$h^2n\%$	27,25	4,02	12,32	13,46	10,18	18,39	13,56	8,92	9,73