STUDY ON VARIABILITY AND GENETIC PARAMETERS IN ASH GOURD [*BENINCASA HISPIDA* (THUNB.) COGN] GENOTYPES

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ABSTRACT

Forty genotypes of ash gourd [*Benincasa hispida* (Thunb.) Cogn.] were evaluated to study their per se performance, genetic variability, heritability and genetic advance per cent of mean with the aim to screen potential genotypes for future improvement programmes. The genotypes were collected from various growing areas of India. Based on the per se performance, the non scented accessions viz., Coimbatore Local, IC 339164, KAG 15, PAG 72, IVAG 10, Indu, Chalkumar, KAU Local and Shadnagar Local and scented genotypes viz., IC 596991, IC 596992 and IC 596994 were identified as the best ones for yield and quality characters. The analysis of variance revealed significant variability among the genotypes for all the 18 traits during kharif, summer and pooled mean of both the seasons. Vine length, average fruit weight, flesh thickness, polar diameter of fruit, equatorial diameter of fruit, number of seeds per fruit, yield per vine, carbohydrate content and total soluble solids recorded high estimates of GCV, PCV, heritability and genetic advance as per cent of mean during both kharif and summer seasons and also in pooled analysis which indicate the probable likelihood of additive gene action. Thus, improving these characters should be effective and rewarding during selection.

KEYWORDS: Genetic Variability, Heritability, Genetic Advance as per Cent of Mean, Additive Gene Action, Selection Criteria

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INTRODUCTION

Ash gourd [*Benincasa hispida* (Thunb.) Cogn.] (Syn. *Benincasa cerifera*) is an important sub-tropical and tropical cucurbitaceous vegetable. The fruit is fuzzy when immature. By maturity, the fruit loses its hairs and develops a waxy coating, giving rise to the name 'wax gourd', and providing a long shelf life. Indo-China is the centre of diversity of ash gourd (Rubatazky and Yamaguchi, 1999). Its primary basic chromosome number is x=6. Ash gourd is extensively grown in India for its nutritional, medicinal as well as curative properties. The fruits are consumed in various ways, as fresh vegetables, candied, dried, pickled, and also used in ayurvedic medicine preparation. Fruit of this plant are traditionally used to treat a renal diseases, urinary infection and biliousness (Nayar and More, 1998). The methanolic extract of the fruit is reported to possess anti-ulcer (Grover *et al.*, 2001), anti-inflammatory (Chandrababu *et al.*, 2002), antihistaminic, and antidepressant activities (Anilkumar *et al.*, 2002). Fruits of *Benincasa hispida* are traditionally used for treatment of week nervousness and debility (Nadhiya *et al.*, 2014). It has also great demand in processing industries for preparation of a popular sweet called 'petha'.

The presence and magnitude of genetic variation in a given gene pool is pre-requisite for selection of genotypes (Tiwari *et al.*, 2011). Heritability of a trait is an important factor to be considered for genetic improvement of crops for

quantitative traits as it determines response of the trait to selection. Genetic advance further provides information on expected genetic gain in the progeny resulting from selection of superior individuals. Yield per vine is a complex trait controlled by poly genes interacting with the environment and is the effect of the many factors called yield components. Selection of superior genotypes exhibiting high heritability and genetic advance for various characters is essential for improving the yield traits.

MATERIALS AND METHODS

The field experiment of the present study on “Diversity analysis in scented and non-scented ash gourd [*Benincasa hispida*. (Thunb.) Cogn.] Genotypes” was carried out at the College Orchard, Department of Vegetable Crops, Horticultural College and Research Institute, Tamil Nadu Agricultural University, Coimbatore during 2013-2014. The experiment was conducted for two seasons viz., *kharif*, 2013 (June - December) and summer, 2014 (January - June). Forty genotypes collected from different sources are used as biological materials for this study are furnished in **Table 1**. All the genotypes were raised in randomized block design (RBD) with three replications. Pits of 60 cm diameter and 30 cm depth were taken at a spacing of 1.5 x 1.0 m². The forty genotypes (40 treatments) in each replication consist of ten pits and three seeds were sown in each pit. The cultural and management practices were adopted according to the package of practices recommended by Tamil Nadu Agricultural University.

Eighteen biometrical traits of ash gourd were recorded on five randomly selected plants in each of the accession per replication. The mean values were utilized for statistical analysis. ANOVA was worked out for all the characters by making use of means of replication, as suggested by **Goulden (1959)**. Standard statistical procedures were adopted for calculating the mean, range and various genetic parameters like phenotypic coefficient of variation (PCV), genotypic coefficient of variation (GCV), heritability (h^2) in broad sense and genetic advance as per cent of mean (GAM).

RESULTS AND DISCUSSIONS

The analysis of variance for 14 biometrical and four biochemical traits of ash gourd accessions raised during *kharif* and *summer* and their pooled variance are presented in **Tables 2**. The analysis of variance revealed significant differences among the genotypes for all the 18 traits during *kharif*, *summer* and pooled mean of both the seasons. The mean performance of the forty genotypes of ash gourd for all the characters studied is furnished in **Tables 4 -12**. Estimates on genotypic variance (GV), phenotypic variance (PV), Genotypic Co-efficient of variation (GCV), Phenotypic Co-efficient of variation (PCV), heritability (h^2) and genetic advance as per cent of mean (GAM) for eighteen different traits estimated during *kharif*, *summer* and pooled data are presented in **Table 3**.

Per Se Performance

Mean performance is the fundamental selection criterion for distinguishing superior and inferior performing genotypes. Based on the *per se* performance, the non scented accessions viz., Coimbatore Local, IC 339164, KAG 15, PAG 72, IVAG 10, Indu, Chalkumar, KAU Local and Shadnagar Local and scented genotypes viz., IC 596991, IC 596992 and IC 596994 were identified as the best ones for yield and quality characters.

Variability Parameters

Studies on genetic parameters such as PV, GV, PCV, GCV, heritability and GAM provide basic information regarding the genetic properties of the given gene pool, based on which breeding methods are to be formulated for further improvement of the crop.

In the present investigation, the genotypes exhibited considerable amount of variability for all the 18 traits studied. Numerically, the phenotypic coefficient of variation (PCV) was higher than the genotypic coefficient of variation (GCV) for most of the characters indicating that these are having an interaction with the environment to some extent (**Ram and Singh, 1993**). Differences between the phenotypic and genotypic coefficients of variations were observed to be narrow for all the characters indicating the least influence of environment on the expression of these characters.

Vine length, sex ratio, average fruit weight, flesh thickness, polar diameter of fruits, equatorial diameter of fruits, number of seeds per fruit, yield per vine, carbohydrate content and total soluble solids recorded high genotypic and phenotypic coefficients of variation during *Kharif* and *summer* season as well as in pooled analysis.

In both seasons of evaluation, moderate GCV and PCV were recorded by internodal length, number of primary branches, node at first female flower appeared, hundred-seed weight, number of fruits per vine, crude fibre content and protein content whereas, days to first female flower opening registered low genotypic and phenotypic coefficients of variation.

Genotypic coefficient of variation alone does not give an idea of total variation that is due to genotypes. Further, it may not be feasible to determine the amount of heritable variation and the relative degree to which a character is transmitted from parent to offspring, by the estimate of heritability (**Hanson, 1959**). Heritability estimate in broad sense alone, does not serve as the true indicator of genetic potentiality of the genotype since the scope is restricted by their interaction with environment. Hence, it is advisable to consider the predicted genetic advance as per cent of mean along with heritability estimate as a reliable tool in selection programme (**Johnson et al., 1955**). Hence, both heritability and genetic advance as per cent of mean were determined to get a clear picture of the scope of improvement in various characters through selection.

Node at first female flower appeared, vine length, internodal length, sex ratio, average fruit weight, flesh thickness, polar diameter of fruits, equatorial diameter of fruits, number of seeds per fruit, yield per vine, carbohydrate content, protein content and total soluble solids recorded high heritability coupled with genetic advance as per cent of mean during *kharif* and *summer* seasons as well as in pooled analysis. This indicated that the variation due to environment played relatively limited role in influencing the inheritance of these characters and the heritability was due to additive genetic effects suggesting the response to selection would be higher.

High heritability coupled with moderate genetic advance as per cent of mean were recorded for days to first female flower opening and hundred-seed weight in *kharif* and *summer* seasons whereas hundred-seed weight recorded higher heritability and genetic advance as per cent of mean for this trait in pooled analysis. It can be concluded that high heritability and moderate genetic advance are indication of higher additive genetic effects in governing the traits.

Number of fruits per vine in both *kharif* and *summer* season, crude fibre content in *kharif* and number of primary branches in *summer* season recorded low heritability coupled with low genetic advance as per cent of mean.

Low GCV and PCV and high heritability and moderate genetic advance as per cent of mean were observed for days to first female flower opening during both *kharif* and *summer* seasons and also in pooled analysis. These results are in conformity with the findings of **Sureja et al. (2010)**, **Lovely et al. (2010)** and **Resmi and Sreelathakumary (2011)** in ash gourd.

Gangopadhyaya et al. (2008) recorded moderate GCV and PCV and high heritability and genetic advance as per cent

of mean for node at first female flower appeared, Resmi and Sreelathakumary (2011) for internodal length, Gangopadhyaya *et al.* (2008), Lovely *et al.* (2010) and Resmi and Sreelathakumary (2011) for number of primary branches in ash gourd, Kumaran *et al.* (2000) in pumpkin and Resmi and Sreelathakumary (2011) in ash gourd for hundred-seed weight, Sureja *et al.* (2010) in ash gourd for crude fibre content, Sureja *et al.* (2010) in ash gourd and Kothainayagi (2013) in pumpkin for protein content.

In the present study, the heritability values were quite high for all the characters, indicating that the major part of the variability was due to genotypic causes. High heritability also indicated that there was more number of additive genes for these characters. The results are in line with the findings of Kumar *et al.* (2008) in cucumber and Hanchinamani *et al.* (2011) in cucumber.

Vine length, average fruit weight, flesh thickness, polar diameter of fruit, equatorial diameter of fruit, number of seeds per fruit, yield per vine, carbohydrate content and total soluble solids recorded high estimates of GCV, PCV, heritability and genetic advance as per cent of mean during both *kharif* and *summer* seasons and also in pooled analysis. Similar results were obtained by Kumaran *et al.* (2000) in pumpkin and Resmi and Sreelathakumary (2011) in ash gourd for vine length; Singh *et al.* (2002), Sureja *et al.* (2010), Lovely *et al.* (2010) and Resmi and Sreelathakumary (2011) for yield per vine in ash gourd; Tamilselvi (2010) in pumpkin for carbohydrate content and Kumaran *et al.* (2000) and Muralidhara (2009) in pumpkin for total soluble solids.

CONCLUSIONS

From the present investigation it is concluded that. The considerable genetic variability was observed among the forty ash gourd genotypes. High heritability coupled with high GAM was recorded for vine length, average fruit weight, flesh thickness, polar diameter of fruit, equatorial diameter of fruit, number of seeds per fruit, yield per vine, carbohydrate content and total soluble solids.

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APPENDICES

Table 1: List of Accessions Collected and Their Source

S. No.	Accession No.	Accession Name	Source	Scented / Non scented Type
1	Bh 1	BH 1	TNAU, Coimbatore	Non- scented
2	Bh 2	BH 2	TNAU, Coimbatore	Non- scented
3	Bh 3	BH 3	TNAU, Coimbatore	Non- scented
4	Bh 4	Chalkumar	TNAU, Coimbatore	Non- scented
5	Bh 5	Chityal Local	Chityal, Andhra Pradesh	Non- scented
6	Bh 6	CO 2	TNAU, Coimbatore	Non- scented
7	Bh 7	Coimbatore Local	TNAU, Coimbatore	Non- scented
8	Bh 8	DAG 6	IARI, New Delhi	Non- scented
9	Bh 9	Debpurna	BCKV, West Bengal	Non- scented
10	Bh 10	Haveri Local	Haveri, Karnataka	Non- scented
11	Bh 11	HYBH 25	TNAU, Coimbatore	Non- scented
12	Bh 12	IC 339164	NBPGR, New Delhi	Non- scented
13	Bh 13	IC 339178	NBPGR, New Delhi	Non- scented
14	Bh 14	IC 339180	NBPGR, New Delhi	Non- scented
15	Bh 15	IC 339195	NBPGR, New Delhi	Non- scented
16	Bh 16	Indu	KAU, Thrissur, Kerala	Non- scented
17	Bh 17	Indu-K	KAU, Thrissur, Kerala	Non- scented

18	Bh 18	IVAG 10	IIVR, Varanasi	Non- scented
19	Bh 19	IVAG 3	IIVR, Varanasi	Non- scented
20	Bh 20	IVAG 90	IIVR, Varanasi	Non- scented
21	Bh 21	KAG 1	KAU, Kerala	Non- scented
22	Bh 22	KAG 15	KAU, Kerala	Non- scented
23	Bh 23	KAG 3	KAU, Kerala	Non- scented
24	Bh 24	Kashi Surabhi	IIVR, Varanasi	Non- scented
25	Bh 25	Kashi Ujwal	IIVR, Varanasi	Non- scented
26	Bh 26	Kashi Dhawal	IIVR, Varanasi	Non- scented
27	Bh 27	KAU local	KAU, Thrissur, Kerala	Non- scented
28	Bh 28	Large fruited	KAU, Thrissur, Kerala	Non- scented
29	Bh 29	PAG 3	TNAU, Coimbatore	Non- scented
30	Bh 30	PAG 72	TNAU, Coimbatore	Non- scented
31	Bh 31	Pusa Ujwal	NBPGR, New Delhi	Non- scented
32	Bh 32	RCAG 15	ICAR Research complex for NEH region, Arunachal Pradesh	Non- scented
33	Bh 33	RCAG 28	ICAR Research complex for NEH region, Arunachal Pradesh	Non- scented
34	Bh 34	Shadnagar Local	Shadnagar, Andhra Pradesh	Non- scented
35	Bh 35	Vaidyakumbalam	KAU, Thrissur, Kerala	Non- scented
36	Bh 36	Varanasi Local	IIVR, Varanasi	Non- scented
37	Bh 37	IC 596991	NBPGR, New Delhi	Scented
38	Bh 38	IC 596992	NBPGR, New Delhi	Scented
39	Bh 39	IC 596993	NBPGR, New Delhi	Scented
40	Bh 40	IC 596994	NBPGR, New Delhi	Scented

Table 2: Analysis of Variance for Eighteen Characters in Ash Gourd During *kharif*, Summer Seasons and Pooled Data of Both the Seasons

Characters	<i>kharif</i> Season			Summer Season			Pooled Data of <i>Kharif</i> and Summer Seasons		
	Mean Sum of Squares			Mean Sum of Squares			Mean Sum of Squares		
	Replication	Treatment	Error	Replication	Treatment	Error	Replication	Treatment	Error
Vine length	96.97	542478.20**	1728.63	40061.9	496402.10**	70921.62	11005.2	516164.70**	20208.14
Inter nodal length	0.01	186.35**	27.57	26.13	206.97**	46.24	6.73	189.39**	22.52
Number of primary branches	0.01	10.55**	0.49	4.70	6.39**	2.37	1.19	7.90**	1.00
Days to first female flower opening	0.21	4118.64**	247.87	31.17	3571.48**	115.12	6.68	3827.08**	140.8
Node at first female flower appeared	0.5	1050.34**	204.78	0.22	1081.27**	110.48	0.34	1060.07**	145.99
Sex ratio	0.26	46.52**	3.74	1.74	101.53**	16.68	0.50	70.94**	3.19
Average fruit weight	0.06	190.95**	7.01	0.53	190.76**	9.42	0.14	190.33**	7.77
Flesh thickness	1.00	155.51**	10.75	0.41	154.85**	13.07	0.58	154.79**	11.27
Polar diameter of fruit	32.94	1828.24**	154.03	59.71	2006.54**	164.76	39.85	1914.68**	157.34
Equatorial diameter of fruit	16.64	1236.09**	83.15	17.85	1401.35**	123.03	2.36	1312.80**	93.29
Number of seeds per fruit	278.03	5065139.00**	9710.73	682.24	5860463.00**	46485.29	15.2	5453988.00**	18200.80
Hundred seed weight	0.23	127.38**	41.33	1.48	139.93**	49.16	0.69	133.13**	11.53
Number of fruits per vine	1.61	20.83**	9.38	0.81	36.00**	19.33	0.59	24.82**	6.65

Carbohydrate content	0.21	129.42**	8.23	0.22	137.41**	9.25	0.05	133.48*	8.73
Crude fibre content	0.01	0.54**	0.2	0.01	0.93**	0.13	0.01	0.65**	0.07
Protein content	3416.13	245094.70**	9356.3	3060.79	260630.30**	65758.62	3003.60	237844.70**	20836.73
Total Soluble Solids	0.77	213.19**	9.67	2.40	192.43**	13.68	1.11	201.41*	8.85
Yield per vine	0.18	1062.17**	10.1	0.14	1697.74**	7.08	0.12	1354.41**	5.08

*Significant at 5 % level **Significant at 1 % level

Table 3: Genetic Parameters for 18 Characters in Ash Gourd in During *kharif*, Summer Seasons and Pooled Data of Both the Seasons

Characters	<i>kharif</i> season						summer season						pooled data of <i>kharif</i> and summer seasons					
	GV	PV	GCV (%)	PCV (%)	h ² (%)	GAM	GV	PV	GCV (%)	PCV (%)	h ² (%)	GAM	GV	PV	GCV (%)	PCV (%)	h ² (%)	GAM
VL	4629.18	4651.34	22.3	22.35	99.52	45.82	3939.67	4848.92	20.77	23.05	81.20	38.58	4325.31	4584.38	21.66	22.30	94.35	43.35
INL	1.47	1.82	12.1	13.47	80.67	22.38	1.57	2.61	12.61	14.80	72.60	22.14	1.52	1.81	12.35	13.47	84.06	23.33
NPB	0.08	0.09	18.32	18.96	0.93	36.46	0.05	0.075	13.37	17.34	59.50	21.23	0.06	0.08	15.7	17.22	83.07	29.47
DFFO	34.14	37.32	8.79	9.19	91.49	17.32	30.03	31.51	8.10	8.29	95.30	16.29	32.11	33.91	8.45	8.68	94.68	16.94
NFFA	8.10	10.72	16.23	18.68	75.53	29.07	8.77	10.19	16.95	18.26	86.10	32.39	8.44	10.31	16.59	18.34	81.84	30.93
SR	0.38	0.42	23.38	24.81	88.84	45.40	0.80	1.01	22.54	25.38	78.80	41.22	0.59	0.63	23.31	24.1	93.54	46.43
AFW	1.60	1.69	46.35	47.63	94.69	92.92	1.59	1.71	44.75	46.42	92.90	88.88	1.59	1.69	45.51	46.91	94.11	90.94
FT	1.28	1.42	32.28	33.96	90.30	63.19	1.27	1.44	30.76	32.73	88.30	59.55	1.26	1.42	31.5	33.23	89.82	61.49
PD	14.96	16.94	21.08	22.42	88.34	40.81	16.45	18.56	21.42	22.76	88.60	41.50	15.69	17.71	21.25	22.57	88.61	41.21
ED	10.21	11.27	20.68	21.73	90.55	40.54	11.45	13.03	20.83	22.22	87.90	40.23	10.82	12.02	20.76	21.87	90.05	40.58
NSPF	43250.30	43374.80	42.2	42.26	99.71	86.81	49890.8	50486.7	42.31	42.56	98.86	86.64	46537.50	46770.84	42.27	42.38	99.5	86.86
HSW	0.91	1.44	11.59	14.57	63.25	18.98	0.99	1.62	11.42	14.62	61.00	18.37	1.09	1.24	12.32	13.13	88.04	23.81
NFPV	0.15	0.258	14.96	20.47	53.42	22.52	0.23	0.47	15.81	22.92	47.60	22.47	0.18	0.27	15.65	18.93	68.30	26.64
YPV	9.04	9.16	51.77	52.13	98.59	105.89	14.48	14.57	50.94	51.09	99.40	104.60	11.55	11.62	51.19	51.33	99.44	105.2
CHO	1.07	1.18	25.02	26.23	91.03	49.18	1.13	1.25	25.04	26.32	90.50	49.08	1.11	1.22	25.02	26.26	90.79	49.12
CF	0.0037	0.0063	12.97	16.77	59.78	20.66	0.07	0.09	18.16	20.15	81.20	33.70	0.005	0.006	15.22	16.56	84.52	28.83
PRO	2054.84	2174.75	14.29	14.7	94.48	28.62	1946.59	2789.65	13.82	16.54	69.80	23.78	1943.82	2210.95	13.85	14.78	87.92	26.76
TSS	1.78	1.9	52.48	54.28	93.49	104.54	1.59	1.76	47.25	49.78	90.00	92.35	1.68	1.79	49.83	51.48	93.69	99.35

Whereas,

VL	Vine length	AFW	Average fruit weight	NFPV	Number of fruits per vine
INL	Internodal length	FT	Flesh thickness	YPV	Yield per vine
NPB	Number of primary branches	PD	Polar diameter of fruit	CHO	Carbohydrate content
DFFO	Days to first female flower opening	ED	Equatorial diameter of fruit	CF	Crude fiber content
NFFA	Node at first female flower appeared	NSPF	Number of seeds per fruit	PRO	Protein content
SR	Sex ratio	HSW	Hundred seed weight	TSS	Total soluble solids

Table 4: *PER se* Performance of Ash Gourd Genotypes for Vine Length and Internodal Length during Kharif, Summer and Pooled Data

Acc. No.	Vine Length (cm)			Internodal Length (cm)		
	Kharif	Summer	Pooled	Kharif	Summer	Pooled
Bh 1	375.11	342.15	358.63	11.25	11.05	11.15
Bh 2	315.02	315.23	315.12	10.48	10.17	10.33
Bh 3	273.72	273.42	273.57	9.46	9.52	9.49
Bh 4	291.85	296.72	294.28	10.53	10.39	10.46
Bh 5	313.59	302.17	307.89	10.81	10.68	10.75
Bh 6	328.98	339.83	334.4	10.81	10.54	10.67
Bh 7	377.89	366.69	372.29	11.53	10.91	11.22
Bh 8	343.13	336.57	339.85	10.18	10.12	10.15
Bh 9	345.69	370.89	358.29	11.04	10.86	10.95
Bh 10	392.27	382.14	387.2	10.81	10.53	10.67
Bh 11	303.42	301.54	302.48	10.01	10.14	10.08
Bh 12	406.46	400.83	403.65	12.08	11.88	11.98
Bh 13	365.85	360.94	363.39	9.89	9.89	9.89
Bh 14	343.36	339.70	341.53	9.97	9.88	9.93
Bh 15	260.78	262.56	261.67	10.28	10.18	10.23
Bh 16	315.62	329.40	322.51	10.69	10.51	10.6
Bh 17	283.76	272.28	278.02	10.74	10.47	10.61
Bh 18	342.84	348.88	345.86	9.64	9.34	9.50
Bh 19	292.17	284.72	288.44	10.71	10.49	10.6
Bh 20	347.19	332.22	339.7	10.62	10.27	10.45
Bh 21	229.11	230.12	229.61	8.77	8.73	8.75
Bh 22	378.67	365.56	372.11	9.96	9.87	9.92
Bh 23	239.25	233.13	236.19	10.02	9.97	10.00
Bh 24	324.83	334.82	329.83	10.73	13.49	12.12
Bh 25	252.79	257.12	254.96	9.70	9.57	9.64
Bh 26	332.98	318.49	325.74	10.14	9.91	10.03
Bh 27	264.16	250.07	257.12	9.32	8.70	9.01
Bh 28	334.59	320.88	327.74	10.39	10.23	10.31
Bh 29	353.89	343.27	348.58	9.14	8.75	8.95
Bh 30	335.21	337.99	336.60	10.58	10.71	10.65
Bh 31	340.67	335.11	337.89	10.55	10.39	10.47
Bh 32	294.37	292.35	293.36	9.08	8.87	8.98
Bh 33	303.65	304.36	304.01	11.17	10.86	11.02
Bh 34	303.57	296.35	299.96	10.99	10.62	10.81
Bh 35	396.67	386.36	391.51	11.18	10.9	11.04
Bh 36	295.58	286.03	290.81	9.66	9.52	9.59
Bh 37	174.43	174.91	174.68	7.27	7.18	7.23
Bh 38	97.66	98.41	98.04	5.13	5.13	5.13
Bh 39	127.08	134.36	130.72	7.65	7.84	7.75
Bh 40	206.14	224.98	215.56	8.47	8.46	8.47
Mean	305.10	302.09	303.60	10.04	9.94	9.99
Range	406.46-97.66	400.83-98.41	403.65-98.04	12.08-5.13	13.49-5.13	12.12-5.13
CV	1.54	9.98	5.30	5.92	7.74	5.37
SEd	2.72	17.41	13.14	0.34	0.45	0.44
CD (P=0.05)	7.65	49.02	26.17	0.97	1.25	0.87

Table 5: Per se performance of Ash Gourd Genotypes for Number of Primary Branches and Days to First Female Flower Opening during Kharif, summer and Pooled Data

Acc. No.	Number of Primary Branches			Days to First Female Flower Opening		
	Kharif	Summer	Pooled	Kharif	Summer	Pooled
Bh 1	2.26	2.18	2.23	67.33	68.53	67.93
Bh 2	1.32	1.33	1.32	75.75	77.03	76.39
Bh 3	1.40	1.40	1.41	66.33	68.43	67.38
Bh 4	1.45	1.53	1.49	66.58	67.67	67.13
Bh 5	1.38	1.40	1.39	72.58	72.9	72.74
Bh 6	1.50	1.49	1.50	62.08	63.06	62.58
Bh 7	1.47	1.54	1.51	61.95	64.80	63.37
Bh 8	1.53	1.55	1.54	62.53	63.08	62.81
Bh 9	1.33	1.39	1.36	76.14	76.76	76.45
Bh 10	1.39	1.39	1.39	75.17	75.32	75.24
Bh 11	1.50	1.43	1.47	62.17	63.7	62.93
Bh 12	1.63	1.68	1.66	57.06	58.63	57.85
Bh 13	1.46	1.49	1.48	56.83	59.73	58.28
Bh 14	1.34	1.39	1.36	57.83	59.93	58.88
Bh 15	1.43	1.37	1.4	60.28	61.44	60.86
Bh 16	1.75	1.62	1.69	59.75	61.66	60.71
Bh 17	1.59	1.57	1.58	62.39	64.18	63.29
Bh 18	1.61	1.69	1.65	65.70	65.75	65.72
Bh 19	1.70	1.71	1.70	63.25	64.53	63.89
Bh 20	2.00	1.94	1.97	66.78	67.54	67.16
Bh 21	1.61	1.68	1.65	55.88	57.43	56.66
Bh 22	2.08	2.10	2.09	65.22	66.33	65.78
Bh 23	1.66	1.70	1.68	72.03	73.20	72.61
Bh 24	1.57	1.55	1.56	65.75	66.81	66.28
Bh 25	1.49	1.41	1.45	69.25	70.6	69.92
Bh 26	1.39	1.39	1.39	61.25	61.81	61.53
Bh 27	1.61	1.69	1.65	60.82	64.23	62.53
Bh 28	1.49	1.39	1.44	71.86	72.80	72.33
Bh 29	1.80	1.46	1.64	66.11	66.68	66.4
Bh 30	1.93	1.92	1.93	64.56	65.74	65.15
Bh 31	1.37	1.38	1.38	72.28	73.53	72.9
Bh 32	1.42	1.51	1.47	67.17	67.83	67.5
Bh 33	2.65	2.13	2.39	62.22	63.39	62.81
Bh 34	1.50	1.42	1.46	75.83	75.19	75.51
Bh 35	1.34	1.36	1.35	72.31	73.22	72.77
Bh 36	1.45	1.47	1.46	63.45	64.87	64.16
Bh 37	2.32	2.09	2.20	75.86	76.39	76.13
Bh 38	1.59	1.44	1.52	71.58	72.29	71.94
Bh 39	2.00	1.49	1.75	72.64	73.94	73.29
Bh 40	1.48	1.49	1.49	74.08	74.97	74.53
Mean	1.62	1.58	1.60	66.47	67.65	67.06
Range	2.65-1.32	2.18-1.33	2.39-1.32	76.14-55.88	77.03-57.43	76.45-56.66
CV	4.88	11.03	7.08	2.68	1.79	2.00
SEd	0.05	1.01	0.09	1.03	0.7	1.09
CD (P=0.05)	0.13	0.28	0.18	2.89	1.97	2.18

Table 6: *Per se* Performance of Ash Gourd Genotypes for Node at First Female Flower Appeared and Sex Ratio during Kharif, Summer and Pooled Data

Acc. No.	Node at First Female Appeared			Sex Ratio		
	Kharif	Summer	Pooled	Kharif	Summer	Pooled
Bh 1	21.57	22.79	22.18	2.55	3.66	3.11
Bh 2	15.97	15.74	15.86	2.35	3.49	2.92
Bh 3	16.33	17.05	16.7	2.45	3.81	3.13
Bh 4	19.83	20.02	19.93	2.33	3.37	2.85
Bh 5	20.1	20.32	20.21	3.47	5.02	4.25
Bh 6	19.03	18.91	18.98	2.52	3.80	3.16
Bh 7	18.2	18.11	18.15	2.52	3.64	3.08
Bh 8	19.37	19.03	19.2	2.10	3.18	2.64
Bh 9	18.13	18.47	18.3	2.19	3.40	2.80
Bh 10	18.67	18.83	18.75	2.14	3.19	2.67
Bh 11	22.3	22.15	22.23	2.58	3.74	3.16
Bh 12	19.87	20.02	19.95	2.81	3.92	3.37
Bh 13	17.9	17.61	17.76	2.76	4.07	3.41
Bh 14	14.00	13.50	13.75	2.42	3.64	3.03
Bh 15	12.43	12.36	12.4	2.46	3.61	3.03
Bh 16	18.97	18.97	18.97	2.53	3.90	3.22
Bh 17	17.83	18.87	18.35	2.42	3.92	3.17
Bh 18	20.07	19.66	19.87	2.20	3.31	2.76
Bh 19	23.27	22.65	22.96	2.23	3.39	2.81
Bh 20	19.43	19.42	19.43	2.48	3.70	3.09
Bh 21	14.97	14.70	14.83	2.66	3.84	3.25
Bh 22	18.73	19.22	18.98	2.00	3.02	2.51
Bh 23	19.70	19.58	19.64	2.21	3.64	2.93
Bh 24	17.80	17.00	17.4	2.47	3.95	3.22
Bh 25	17.27	16.89	17.08	2.27	3.56	2.92
Bh 26	18.10	17.93	18.02	2.41	3.63	3.02
Bh 27	19.67	19.47	19.57	2.28	3.62	2.95
Bh 28	16.60	16.84	16.72	2.49	3.54	3.02
Bh 29	13.27	14.11	13.69	5.36	8.11	6.74
Bh 30	19.43	18.75	19.09	2.20	3.27	2.74
Bh 31	22.00	21.52	21.76	3.55	5.34	4.45
Bh 32	18.43	18.16	18.3	4.45	6.50	5.48
Bh 33	16.97	16.39	16.68	2.49	3.72	3.11
Bh 34	13.93	13.39	13.66	2.99	4.54	3.77
Bh 35	16.57	16.51	16.54	2.95	4.62	3.78
Bh 36	16.13	16.17	16.15	2.74	4.10	3.42
Bh 37	11.23	11.03	11.14	2.22	3.31	2.77
Bh 38	13.57	13.49	13.53	2.62	3.78	3.20
Bh 39	11.87	11.67	11.77	3.03	4.54	3.78
Bh 40	11.73	11.55	11.64	2.75	4.06	3.40
Mean	17.53	17.47	17.50	2.64	3.96	3.30
Range	23.27-11.53	22.79-11.03	22.96-11.14	5.36-2.00	8.11-3.02	6.74-2.51
CV	9.24	6.81	7.81	8.28	11.67	6.12
SEd	0.96	0.69	1.12	0.13	0.27	0.17
CD (P=0.05)	2.63	1.93	2.22	0.36	0.75	0.33

Table 7: Per Se Performance of Ash Gourd Genotypes for Average Fruit Weight and Flesh Thickness during Kharif, Summer and Pooled Data

Acc. No.	Average Fruit Weight (kg)			Flesh Thickness (cm)		
	Kharif	Summer	Pooled	Kharif	Summer	Pooled
Bh 1	2.43	2.44	2.44	3.50	3.63	3.57
Bh 2	2.25	2.37	2.31	2.13	2.27	2.20
Bh 3	2.35	2.46	2.41	3.50	3.67	3.58
Bh 4	3.25	3.41	3.33	2.30	2.43	2.37
Bh 5	3.72	3.81	3.77	5.90	6.07	5.98
Bh 6	3.29	3.35	3.32	3.93	4.00	3.97
Bh 7	7.24	6.83	7.03	3.20	3.50	3.35
Bh 8	2.56	2.61	2.58	4.03	4.17	4.10
Bh 9	2.65	2.78	2.71	2.97	3.40	3.18
Bh 10	2.72	2.75	2.73	5.00	5.10	5.05
Bh 11	3.21	3.31	3.26	2.50	2.60	2.55
Bh 12	2.99	3.13	3.06	2.47	2.57	2.52
Bh 13	1.19	1.26	1.23	2.80	2.93	2.87
Bh 14	2.24	2.29	2.27	4.10	4.17	4.13
Bh 15	1.68	1.74	1.70	5.00	5.23	5.12
Bh 16	4.66	4.87	4.77	4.03	4.23	4.13
Bh 17	2.17	2.25	2.21	3.93	3.07	4.00
Bh 18	2.68	2.8	2.74	3.13	3.30	3.22
Bh 19	5.23	5.38	5.31	3.13	3.23	3.18
Bh 20	3.30	3.34	3.32	3.03	3.63	3.33
Bh 21	1.96	2.05	2.01	3.03	3.17	3.10
Bh 22	4.18	4.31	4.24	2.47	2.57	2.52
Bh 23	2.45	2.57	2.51	4.00	4.20	4.10
Bh 24	3.09	3.25	3.17	3.23	3.23	3.23
Bh 25	3.07	3.11	3.09	5.37	5.47	5.42
Bh 26	2.34	2.44	2.39	3.03	3.17	3.10
Bh 27	2.89	2.90	2.89	2.77	2.77	2.77
Bh 28	3.37	4.18	3.78	3.03	3.17	3.10
Bh 29	2.86	2.92	2.69	5.63	5.80	5.72
Bh 30	3.56	3.69	3.62	2.67	2.77	2.72
Bh 31	1.76	1.81	1.79	3.83	3.97	3.90
Bh 32	2.87	2.90	2.89	5.17	5.27	5.22
Bh 33	2.76	2.88	2.82	2.93	3.07	3.00
Bh 34	3.93	3.99	3.96	6.27	6.40	6.33
Bh 35	1.69	1.75	1.72	4.90	5.07	4.98
Bh 36	2.34	2.45	2.39	3.53	3.47	3.50
Bh 37	0.65	0.66	0.65	1.97	2.00	1.98
Bh 38	0.44	0.45	0.45	2.20	2.57	2.38
Bh 39	0.76	0.77	0.76	1.73	1.93	1.83
Bh 40	0.43	0.44	0.43	2.00	2.20	2.10
Mean	2.73	2.82	2.77	3.51	3.66	3.59
Range	7.24-0.43	6.83-0.44	7.03-0.43	6.27-1.73	6.40-1.93	6.33-1.83
CV	10.97	12.33	11.38	10.57	11.18	10.60
SEd	0.17	0.2	0.26	0.21	0.24	0.31
CD (P=0.05)	0.49	0.57	0.51	0.60	0.67	0.62

Table 8: *Per Se* Performance of Ash Gourd Genotypes for Polar Diameter of Fruit and Equatorial Diameter of Fruit during *kharif*, *Summer* and Pooled Data

Acc. No.	Polar Diameter (cm)			Equatorial Diameter (cm)		
	Kharif	Summer	Pooled	Kharif	Summer	Pooled
Bh 1	15.87	16.00	15.93	14.97	15.23	15.10
Bh 2	19.37	20.30	19.83	15.00	15.97	15.48
Bh 3	16.23	16.90	16.57	15.9	16.90	16.40
Bh 4	18.23	19.17	18.70	18.77	19.90	19.33
Bh 5	23.17	23.87	23.52	17.33	18.20	17.77
Bh 6	13.57	13.87	13.72	17.37	18.17	17.77
Bh 7	26.00	26.97	26.48	24.63	24.70	24.67
Bh 8	18.57	18.87	18.72	14.53	14.73	14.63
Bh 9	26.33	27.40	26.87	16.63	17.90	17.27
Bh 10	23.57	23.87	23.72	15.10	15.57	15.33
Bh 11	19.03	19.33	19.18	17.30	18.70	18.00
Bh 12	24.57	25.43	25.00	18.37	19.97	19.17
Bh 13	17.50	18.30	17.90	11.83	13.00	12.42
Bh 14	14.80	15.13	14.97	18.50	19.33	18.92
Bh 15	19.77	20.37	20.07	14.33	15.23	14.78
Bh 16	21.83	22.80	22.32	17.20	18.10	17.65
Bh 17	17.50	18.13	17.82	17.67	18.93	18.3
Bh 18	20.17	21.13	20.65	16.43	17.67	17.05
Bh 19	11.93	12.27	12.10	13.43	14.27	13.85
Bh 20	18.20	18.37	18.28	16.63	17.27	16.95
Bh 21	14.73	15.47	15.10	11.83	12.50	12.17
Bh 22	17.47	18.03	17.75	15.73	16.57	16.15
Bh 23	13.60	14.27	13.93	15.40	16.27	15.83
Bh 24	20.43	21.47	20.95	17.43	18.83	18.13
Bh 25	21.70	22.03	21.87	14.93	15.43	15.18
Bh 26	20.33	21.13	20.73	19.27	20.47	19.87
Bh 27	13.03	13.13	13.08	12.53	13.27	12.90
Bh 28	21.40	22.27	21.83	13.9	14.63	14.27
Bh 29	16.73	17.13	16.93	13.57	13.97	13.77
Bh 30	19.47	20.33	19.90	18.57	19.33	18.95
Bh 31	19.73	20.33	20.03	16.10	16.90	16.50
Bh 32	18.93	19.17	19.05	16.70	17.10	16.90
Bh 33	24.03	25.03	24.53	18.80	20.97	19.88
Bh 34	22.27	22.63	22.45	18.03	19.03	18.53
Bh 35	18.10	18.80	18.45	15.13	15.30	15.22
Bh 36	15.23	15.87	15.55	11.80	12.13	11.97
Bh 37	11.00	11.20	11.10	9.33	9.57	9.45
Bh 38	12.47	12.57	12.52	7.27	7.50	7.38
Bh 39	14.30	14.50	14.40	9.87	10.07	9.97
Bh 40	13.03	13.33	13.18	9.83	10.30	10.07
Mean	18.36	18.93	18.64	15.45	16.25	15.85
Range	26.33-11.00	27.40-11.20	26.87-11.10	24.63-7.27	24.70-7.50	24.67-7.38
CV	7.65	7.67	7.61	6.68	7.73	6.90
SEd	0.81	0.84	1.16	0.59	0.73	0.89
CD (P=0.05)	2.28	2.36	2.31	1.67	2.04	1.78

Table 9: Per Se Performance of Ash Gourd Genotypes for Number of Seeds per Fruit and Hundred-Seed Weight during Kharif, Summer and Pooled Data

Acc. No.	Number of Seeds Per Fruit			Hundred-Seed Weight (g)		
	Kharif	Summer	Pooled	Kharif	Summer	Pooled
Bh 1	505.87	541.39	523.63	7.17	7.59	7.38
Bh 2	531.93	576.16	554.05	7.99	8.37	8.18
Bh 3	367.85	378.97	373.41	7.73	8.21	7.97
Bh 4	557.08	602.11	579.59	9.36	9.72	9.54
Bh 5	994.10	1055.79	1024.95	7.30	7.55	7.43
Bh 6	649.68	693.05	671.37	7.69	8.03	7.86
Bh 7	589.60	638.72	614.17	7.65	7.93	7.79
Bh 8	312.51	351.02	331.77	9.14	9.56	9.35
Bh 9	1040.10	1111.88	1075.99	8.95	9.36	9.15
Bh 10	631.61	684.17	657.89	7.17	7.50	7.34
Bh 11	631.68	684.74	658.21	8.62	9.05	8.84
Bh 12	510.41	537.06	523.74	8.23	8.66	8.44
Bh 13	249.11	264.61	256.86	8.67	9.38	9.02
Bh 14	604.96	651.36	628.16	9.74	10.11	9.93
Bh 15	555.66	587.40	571.53	8.53	9.06	8.79
Bh 16	548.34	595.80	572.08	9.31	9.67	9.49
Bh 17	693.93	755.74	724.84	9.81	10.64	10.23
Bh 18	448.77	483.83	466.30	7.89	8.27	8.08
Bh 19	257.00	279.77	268.39	9.35	10.01	9.68
Bh 20	775.24	837.08	806.16	9.09	9.84	9.47
Bh 21	494.55	524.34	509.45	9.60	10.02	9.81
Bh 22	553.69	591.52	572.61	8.52	8.92	8.72
Bh 23	582.83	627.26	605.05	8.86	9.25	9.05
Bh 24	452.36	480.38	466.37	7.94	8.45	8.20
Bh 25	517.68	559.58	538.63	7.29	7.69	7.49
Bh 26	594.31	629.23	611.77	7.53	8.16	7.85
Bh 27	363.53	384.55	374.04	7.82	8.23	8.02
Bh 28	358.72	376.62	367.67	7.14	7.55	7.35
Bh 29	483.32	518.82	501.08	8.60	8.99	8.79
Bh 30	671.09	704.93	688.01	9.59	10.22	9.91
Bh 31	491.63	523.71	507.67	9.12	9.41	9.26
Bh 32	367.76	386.80	377.28	8.64	9.29	8.97
Bh 33	783.25	858.16	820.71	8.62	9.04	8.83
Bh 34	157.36	169.59	163.48	7.38	7.69	7.53
Bh 35	267.72	289.39	278.56	10.01	10.46	10.23
Bh 36	342.34	361.05	351.70	8.15	8.72	8.43
Bh 37	156.94	170.59	163.77	7.23	7.90	7.56
Bh 38	204.93	214.77	209.85	6.43	6.77	6.60
Bh 39	296.03	310.35	303.19	5.80	6.17	5.99
Bh 40	114.87	124.87	119.87	5.98	6.42	6.20
Mean	492.76	527.93	510.35	8.24	8.70	8.47
Range	1040.10-114.87	1111.88-124.87	1075.99-119.87	10.01-5.80	10.64-6.17	10.23-5.99
CV	2.26	4.62	2.99	8.83	9.12	4.54
SEd	6.44	14.09	12.47	0.42	0.46	0.31
CD (P=0.05)	18.14	39.68	24.83	1.18	1.29	0.63

Table 10: *Per se* Performance of Ash Gourd Genotypes for Number of Fruits per Vine and Yield per Vine during Kharif, Summer and Pooled Data

Acc. No.	Number of Fruits Per Vine			Yield Per Vine (kg)		
	Kharif	Summer	Pooled	Kharif	Summer	Pooled
Bh 1	2.55	2.94	2.74	5.27	6.64	5.96
Bh 2	2.98	3.45	3.21	5.29	6.75	6.02
Bh 3	2.46	3.40	2.93	4.94	6.30	5.62
Bh 4	2.63	3.04	2.83	7.18	8.95	8.07
Bh 5	2.08	2.63	2.35	6.37	8.11	7.24
Bh 6	2.02	2.33	2.17	5.37	6.84	6.11
Bh 7	2.30	3.02	2.66	14.37	18.51	16.44
Bh 8	2.13	2.46	2.29	5.46	5.77	5.62
Bh 9	2.16	2.49	2.32	4.28	6.21	5.24
Bh 10	2.71	3.14	2.92	6.19	7.73	6.96
Bh 11	2.25	2.61	2.43	5.06	7.61	6.34
Bh 12	2.25	2.83	2.54	5.73	10.03	7.88
Bh 13	2.38	2.74	2.56	4.11	5.19	4.65
Bh 14	2.38	2.75	2.57	4.55	6.15	5.36
Bh 15	2.55	2.95	2.75	3.72	4.57	4.15
Bh 16	2.08	2.42	2.25	8.12	10.31	9.22
Bh 17	2.21	2.56	2.38	4.05	5.13	4.59
Bh 18	2.96	3.44	3.2	6.72	8.83	7.78
Bh 19	3.39	3.93	3.66	14.39	18.17	16.28
Bh 20	2.38	3.16	2.77	6.52	8.26	7.39
Bh 21	2.55	2.95	2.75	4.79	5.93	5.37
Bh 22	3.84	4.45	4.14	12.61	15.95	14.29
Bh 23	2.46	2.85	2.65	4.94	6.25	5.60
Bh 24	2.81	3.26	3.04	6.98	8.75	7.87
Bh 25	1.96	2.27	2.11	4.96	6.28	5.62
Bh 26	2.25	3.17	2.71	4.49	5.66	5.07
Bh 27	3.03	3.51	3.27	7.26	9.18	8.22
Bh 28	2.30	2.99	2.64	6.40	8.32	7.37
Bh 29	2.72	3.16	2.94	5.85	7.43	6.64
Bh 30	3.25	3.77	3.51	10.36	12.34	11.35
Bh 31	3.02	3.50	3.26	4.19	5.30	4.74
Bh 32	2.72	3.16	2.94	6.36	8.06	7.21
Bh 33	2.38	2.75	2.56	5.65	6.94	6.30
Bh 34	2.25	4.70	3.47	7.35	9.92	8.64
Bh 35	2.08	2.41	2.24	2.95	3.98	3.47
Bh 36	2.25	2.94	2.59	5.43	6.92	6.18
Bh 37	1.92	2.22	2.06	1.17	1.47	1.32
Bh 38	2.42	2.79	2.61	0.89	1.37	1.13
Bh 39	1.96	2.27	2.11	1.13	1.64	1.39
Bh 40	2.25	2.60	2.43	0.77	1.06	0.92
Mean	2.48	3.00	2.74	5.81	7.47	6.64
Range	3.84-1.92	4.70-2.22	4.14-2.06	14.39-0.77	18.51-1.06	16.44-0.92
CV	13.96	6.59	10.65	6.19	4.03	7.97
SEd	0.2	0.29	0.24	0.21	0.17	0.21
CD (P=0.05)	0.56	0.81	0.46	0.58	0.49	0.42

Table 11: *Per se* Performance of Ash Gourd Genotypes for Carbohydrate Content and Crude Fibre Content during Kharif, Summer and Pooled Data

Acc. No.	Carbohydrate Content (mg/100g)			Crude Fibre content (%)		
	Kharif	Summer	Pooled	Kharif	Summer	Pooled
Bh 1	3.52	3.62	3.57	0.34	0.33	0.34
Bh 2	3.22	3.31	3.27	0.62	0.69	0.66
Bh 3	3.14	3.23	3.19	0.49	0.48	0.49
Bh 4	3.47	3.56	3.51	0.49	0.46	0.48
Bh 5	4.51	4.63	4.57	0.51	0.54	0.53
Bh 6	3.15	3.22	3.19	0.62	0.74	0.68
Bh 7	3.31	3.4	3.36	0.54	0.51	0.53
Bh 8	3.90	4.03	3.97	0.49	0.64	0.57
Bh 9	3.22	3.30	3.26	0.48	0.6	0.54
Bh 10	0.89	0.91	0.9	0.51	0.47	0.49
Bh 11	3.23	3.32	3.28	0.49	0.45	0.47
Bh 12	4.99	5.12	5.06	0.48	0.43	0.46
Bh 13	6.11	6.29	6.20	0.48	0.50	0.49
Bh 14	3.26	3.35	3.31	0.43	0.43	0.43
Bh 15	4.91	5.06	4.99	0.42	0.45	0.44
Bh 16	5.04	5.19	5.11	0.40	0.37	0.38
Bh 17	4.49	4.62	4.56	0.38	0.37	0.38
Bh 18	5.42	5.59	5.51	0.42	0.45	0.44
Bh 19	3.40	3.51	3.46	0.41	0.36	0.39
Bh 20	3.31	3.40	3.36	0.40	0.45	0.43
Bh 21	3.58	3.69	3.64	0.41	0.46	0.44
Bh 22	3.77	3.88	3.83	0.44	0.49	0.47
Bh 23	4.40	4.53	4.47	0.44	0.47	0.46
Bh 24	5.59	5.75	5.67	0.51	0.56	0.53
Bh 25	3.08	3.18	3.13	0.44	0.40	0.42
Bh 26	4.42	4.54	4.48	0.46	0.52	0.49
Bh 27	4.99	5.14	5.07	0.52	0.51	0.52
Bh 28	3.89	4.00	3.95	0.54	0.52	0.53
Bh 29	3.61	3.72	3.67	0.48	0.44	0.46
Bh 30	5.10	5.24	5.17	0.49	0.49	0.49
Bh 31	3.35	3.44	3.39	0.48	0.41	0.45
Bh 32	5.04	5.19	5.12	0.62	0.55	0.59
Bh 33	4.96	5.12	5.05	0.58	0.53	0.56
Bh 34	3.61	3.71	3.66	0.49	0.43	0.46
Bh 35	3.86	3.97	3.92	0.49	0.39	0.44
Bh 36	5.02	5.16	5.10	0.48	0.44	0.46
Bh 37	5.45	5.62	5.54	0.44	0.47	0.46
Bh 38	5.47	5.61	5.54	0.38	0.36	0.37
Bh 39	6.10	6.28	6.19	0.37	0.34	0.36
Bh 40	3.67	3.77	3.73	0.38	0.39	0.39
Mean	4.14	4.25	4.20	0.47	0.47	0.47
Range	6.11-0.89	6.29-0.91	6.20-0.90	0.62-0.34	0.74-0.33	0.68-0.34
CV	7.85	8.09	6.51	10.63	8.74	5.13
SEd	0.19	0.19	0.27	0.03	0.02	0.23
CD (P=0.05)	0.53	0.56	0.54	0.08	0.07	0.05

Table 12: *Per se* Performance of Ash Gourd Genotypes for Protein Content and Total Soluble Solids during *Kharif*, *Summer* and Pooled Data

Acc. No.	Protein Content (mg/100g)			Total Soluble Solids (°Brix)		
	Kharif	Summer	Pooled	Kharif	Summer	Pooled
Bh 1	350.43	369.01	359.72	2.50	2.60	2.55
Bh 2	311.75	317.26	314.51	3.27	3.37	3.32
Bh 3	384.79	389.3	387.05	1.27	1.37	1.32
Bh 4	301.90	313.09	307.50	1.00	1.10	1.05
Bh 5	447.77	437.55	442.66	2.70	2.80	2.75
Bh 6	305.52	320.47	313.00	1.80	1.90	1.85
Bh 7	324.54	324.33	324.43	0.30	0.40	0.35
Bh 8	340.96	347.99	344.48	2.20	2.30	2.25
Bh 9	403.64	408.92	406.28	1.57	1.90	1.73
Bh 10	250.58	260.38	255.48	2.40	2.50	2.45
Bh 11	250.94	261.13	256.04	1.13	1.23	1.18
Bh 12	262.32	271.65	266.99	0.97	1.40	1.18
Bh 13	277.52	285.21	281.37	2.87	2.97	2.92
Bh 14	222.49	223.31	222.9	2.07	2.17	2.12
Bh 15	260.41	269.24	264.83	2.17	2.27	2.22
Bh 16	391.94	363.02	377.48	2.03	2.13	2.08
Bh 17	310.40	327.47	318.94	0.50	1.20	0.85
Bh 18	322.66	226.09	274.38	3.73	3.83	3.78
Bh 19	311.74	322.63	317.19	2.47	2.57	2.52
Bh 20	330.54	325.57	328.05	1.30	1.40	1.35
Bh 21	285.28	291.06	288.17	2.27	2.37	2.32
Bh 22	293.93	313.26	303.6	1.07	1.70	1.38
Bh 23	335.85	334.38	335.12	1.80	1.83	1.82
Bh 24	333.7	335.99	334.85	1.97	2.30	2.13
Bh 25	350.44	354.11	352.27	2.87	2.43	2.65
Bh 26	264.14	275.42	269.78	2.53	2.43	2.48
Bh 27	310.49	335.89	323.19	3.03	2.50	2.77
Bh 28	317.69	320.06	318.88	3.23	3.23	3.23
Bh 29	323.67	323.4	323.54	2.47	2.67	2.57
Bh 30	299.42	304.23	301.82	4.27	4.13	4.20
Bh 31	269.37	273.54	271.46	2.50	2.93	2.72
Bh 32	340.60	353.67	347.14	3.40	3.50	3.45
Bh 33	334.97	259.56	297.27	0.83	1.27	1.05
Bh 34	353.00	361.15	357.08	3.53	3.63	3.58
Bh 35	378.08	402.42	390.25	3.23	3.33	3.28
Bh 36	272.29	284.21	278.25	2.83	2.93	2.88
Bh 37	281.57	288.61	285.09	5.73	5.83	5.78
Bh 38	315.77	315.84	315.81	6.43	6.53	6.48
Bh 39	313.12	330.50	321.81	4.27	4.37	4.32
Bh 40	349.76	351.89	350.83	5.20	5.30	5.25
Mean	317.15	319.32	318.24	2.54	2.67	2.60
Range	447.77-222.49	437.55-223.31	442.66-222.90	6.43-0.30	6.53-0.40	6.48-0.35
CV	3.45	9.09	12.93	13.84	15.70	3.84
SEd	6.32	16.76	13.35	0.2	0.24	0.28
CD (P=0.05)	17.80	47.19	26.57	0.57	0.68	0.55