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Exploring Genetic Variability, Correlation, and Path Coefficient Assessment for Yield and its Attributing Traits in *Summer* Green Gram (*Vigna radiata* L.): Insights into Crop Improvement

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ABSTRACT: An experiment was laid out on green gram to study the genetic variability among the yield and yield contributing characters was conducted at the research farm of Lovely Professional University, Phagwara during the *summer* season of 2022. The experiment followed a Randomized Complete Block Design with three replications. Morphological traits were recorded from five random plants selected from each recombinant genotype in each replication. Analysis of Variance revealed a highly significant difference among the genotypes for all the traits. Conversely, low genetic variability was observed in traits such as days to maturity, Pod length, and days to fifty percent flowering. Heritability estimates based on broad sense were highest for plant height, 100 Seed Weight, Number of Pods per Plant, Number of Seeds per Pod, and Number of Primary Branches per plant. Genetic advance as a percentage of the mean at a selection intensity of five percent was high for the traits Number of Pods per Plant, Number of Seeds per Pod, 100 Seed Weight, Number of Primary Branches per plant, and Seed Yield per Plant. The combination of heritability estimates and genetic advance indicated the influence of additive gene action. Based on the findings of this study, the inbred lines MGG-336, MGG-351, MGG-348, and Vijetha SRPM-26 were identified as superior genotypes in terms of yield attributing traits.

Keywords: Greengram, Variability, Correlation, Path coefficient.

INTRODUCTION

Greengram [(*Vigna radiata* L. Wildzek) (Diploid, 2n=22)] from the family of Leguminosae whereas the Origin is India and Central Asia. Its cultivation prevalent in prehistoric times. Green gram is an erect or semi erect herbaceous annual. Leaves trifoliate with long petioles, stipules with basal appendage, stipules minute and leaflets entire ovate, flower bear on axillary racemes, diadelphous stamens, ovary with long bearded style Thanniru *et al.* (2022). Pod longer than in black gram with short hairs. Seeds globular, yellow cotyledons (Source: Online directory, KVK, ICAR). According to the 'Outlook report from ANGRAU', during the period of 2021-2022, the production of green gram was 31.5 lakh tonnes, at a productivity rate of 783 kg/ha. This accounted for 11% of the total pulse production across an estimated 40.38 million hectares of land. The first advance estimates for Kharif 2022-2023 state that on an area of 33.37 lakh hectares, 17.5 lakh tonnes of green gram were produced.

The degree of genetic diversity and the heritability of desired characteristics are key factors in crop genetic improvement. When choosing the optimal yield traits for selection or hybridization, genetic diversity is helpful. It is crucial since it serves as the foundation for wise choosing. The splitting of the correlation coefficient into the direct and indirect effects of numerous characters on seed production is made easier by correlation and route analysis (Makeen *et al.*, 2007).

MATERIALS AND METHODS

The experimental study titled Exploring Genetic Variability, Correlation, and Path Coefficient Assessment for Yield and its Attributing Traits in Summer Green Gram (*Vigna radiata* L.): Insights into Crop Improvement" was conducted during the summer of 2022 at the Research Farm, Department of Plant Breeding and Genetics, Lovely Professional University, Phagwara (Punjab). The experimental area had a pH ranging from 7.8 to 8.5. Soil was sandy loam, Various observations were recorded in this study, including DFF, DM, PH (cm), NPP, PL (cm), NSP, NPB, NSB, NCP, NPC, SYP, HI(%), and 100 SW. The mean values obtained from the analysis were used to estimate genotypic and phenotypic coefficients of variation, heritability (broad sense), and genetic advance, following the methods described by Johnson *et al*. (1955); Al Jibouri *et al*. (1958). Correlation and path analysis were conducted based on the approach outlined by Dewey and Lu (1959). The experimental material consisted of 15 diverse genotypes like MGG 336 (G1), MGG 295 (G2), Rajendran G-65 (G3), WGG 37 (G4), TM 96-2 (G5), MGG 348 (G6), MGG 347 (G7), MGG 351 (G8), WGG 42 (G9), LGG 460 (G10) from KVK, Rudroor, Telangana. Whereas Moong Tilak (G11), Tilak Gold (G12), Banshi Moong (G13), Vijetha SRPM 26 (G14), Virat Gold (G15) collected from ARS, Sri Ganganagar.

[Where; DFF- Days to 50% percent flowering, DM- Days to maturity, PH- Plant height (cm), NPP- Number of pods per plant, PL- Length of the pod (cm), NSP- Number of seeds per pod, NPB- Number of primary branches per plant, NSB- Number of secondary branches per plant, NCP- Number of clusters per plant, NPC- Number of pods per cluster, Number of seeds per plant, HI- Harvest Index (%), and 100 SW- 100 grain weight (g), SYP- Seed yield per plant Whereas P1 =days to 50 % flowering, P2 =plant height, P3 =primary branches per plant, P4 =secondary branches per plant, P5=clusters per plant, P6 = days to maturity, P7 = no. of pods per plant, P8 = pod length), P9 = no. of seeds per pod, P10 = test weight, P11= harvest index, P12 = biological yield P13=Seed yield per plant].

RESULTS AND DISCUSSION

The present research focused on 15 genotypes of green gram [*Vigna radiata* (L.) Wilzeck]. The experiment included 13 different characteristics, and their analysis of variance revealed highly significant differences. The yield per plant exhibited a variability range of 8.03 g to 14.28 g, with an average of 11.07 g. Similar ranges of variability were observed in other traits such as DFF, DM, PH (cm), number of productive branches per plant, number of productive pods per plant, NSP, HI, and SYP (g).

The estimation of GCV and PCV revealed significant values for traits such as seed yield per plant, harvest index, and number of pods per plant, indicating the potential for improvement through selection. These findings align with the results reported by Nand *et al*. (2013) regarding seed yield per plant and pods per plant. On the other hand, moderate values of GCV and PCV were observed for traits like plant height, biological index, and NSB. In terms of yield per plant, GCV values were lower than PCV values, which is consistent with the findings of Siddique *et al*. (2006); Makeen *et al*. (2007).

The heritability estimates coupled with genetic advance in this study were high, indicating a lesser influence of the environment and a more significant role of genotype in traits such as NPP, SYP, 100 SW, and NPB. However, for traits like DFF, NCP, and HI, the heritability was comparatively low. These findings align with previous studies that reported high heritability estimates, including the works of Momin and Misra (2004); Idress *et al*. (2006); Babu *et al*. (2007); Tabasum *et al*. (2010); Rahim *et al*. (2010); Reddy *et al*. (2011); Makeen *et al*. (2007); Roy Chowdhury *et al*. (2012).

According to Johnson *et al*. (1955), genetic gain tends to be low when there is no additive gene interaction, whereas genetic advance is higher in the presence of additive gene interaction. In the current experimental study, traits such as pods per plant, number of seeds per pod, and number of primary branches exhibited high heritability, accompanied by significant genetic advance. This suggests that the high heritability observed in these traits is attributed to additive gene interaction, and simple selection practices can be employed to improve them. These results highlight that considering both heritability and genetic advance provides better outcomes compared to solely focusing on heterosis alone, as stated by Johnson *et al*. (1955), Singh *et al*. (2010). Additionally, high heritability combined with a high expected genetic advance was observed in SYP, indicating the influence of additive gene expression, which aligns with the findings of Das *et al*. (1998) for pods per plant and Chakraborty *et al*. (2001). However, these findings contrast with the results reported by Loganathan *et al*. (2011).

The selection index, determined using phenotypic correlation coefficients, provides an assessment of the close relationship between different traits and helps in identifying their collective contribution to overall crop improvement. On the other hand, the use of genotypic correlations allows us to understand the specific associations between traits and indicates their relative importance in crop improvement. In this study, at the genotype level, yield per plant exhibited significant positive correlations with PH, NSB, NPP, test weight, HI, and biological yield. Similarly, DFF showed significant positive correlations with DM, NSB, 100 SW, and NSP, which align with the findings of Ebenezer Babu Rajan *et al*. (2000). Additionally, plant height demonstrated a significantly positive correlation with traits such as pods per plant, harvest index, and test weight.

The traits of DFF, NPB, NSB, NCP, and NPP exhibited significant and strong direct effects on SYP, indicating a true and strong relationship between these traits and seed yield. This finding is valuable for selecting high-yielding genotypes. However, these results contradict the findings of Pooran Chand and Rabhunandha Rao (2002) regarding the NPC, Chauhan (2007) for number of pods per cluster, and Govindaraj and Subramanian (2001) for cluster per plant.

Source, it is designated as “poor man’s meat” (Potter and Hotchkiss, 1997)

Table 1: Analysis of variance in green gram for 13 different characters.

Sr. No.	Characters	Mean sum of squares		
		Replications (R)	Treatment (T)	Error (E)
1.	Days to 50% flowering	112.07	1066.6**	2031.93
2.	Plant height	8.87	1820.69**	68.46
3.	No. of primary branches	0.19	21.9**	1.68
4.	No. of secondary branches	0.81	5.05**	2.37
5.	No. of clusters per plant	0.94	11.58**	19.15
6.	Days to maturity	4.05	239.43**	38.70
7.	No. of pods per plant	3.19	1700.01**	114.75
8.	Pod length	0.29	2.99**	2.61
9.	No. of seeds per pod	0.42	45.54**	3.19
10.	100 seed wt.	1.93	751.66**	48.94
11.	Harvest index	61.77	1328.16**	2752.12
12.	Biological yield	30.98	634.11**	518.87
13.	Seed yield per plant	2.93	248.47**	138.87

* and ** denotes significance at 5 % and 1 % level of probability respectively

Table 2: Genetic Parameters of traits showing variability variation coefficient.

Sr. No.	Characters	Range		Mean	Coefficient of variation (%)		Heritability in Broad Sense (%)	Genetic Advance in percent of Mean(%)
		Min	Max		PCV	GCV		
1.	Days to 50% flowering	38.75	57.75	53.30	8	4.9467	36.50	6.15
2.	Plant height	38.42	64.02	52.12	10.94	10.87	98.75	22.25
3.	No. of primary branches	2.52	4.85	3.80	16.44	16.23	97.44	33.00
4.	No. of secondary branches	1.35	2.32	1.66	18.07	16.59	84.38	31.41
5.	No. of clusters per plant	4.8	6.35	5.49	8.28	5.54	44.87	7.65
6.	Days to maturity	72.75	80.75	74.88	2.761	2.68	94.61	5.38
7.	No. of pods per plant	22.15	39.4	29.31	18.79	18.58	97.75	37.85
8.	Pod length	3.45	4.12	3.70	6.245	5.25	70.86	9.12
9.	No. of seeds per pod	3.75	6.62	5.27	17.11	16.91	97.67	34.44
10.	100 seed wt.	1.65	2.668	2.19	16.72	16.54	97.83	33.71
11.	Harvest index	39.88	55.46	46.28	10.52	5.8525	30.93	6.70
12.	Biological yield	17.45	29.07	24.75	13.59	11.59	72.72	20.37
13.	Seed yield	8.03	14.28	11.07	19.02	17.16	81.37	31.89

Table 3: Genotypic (rg) (above diagonal) and Phenotypic (rp) (below diagonal) correlation coefficients among 13 characters of green gram.

Ch.	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
P1	**1.00**	1.37**	-0.18	0.73**	-0.08	-0.15	1.01**	-0.82**	-0.53*	1.01**	1.18**	0.85**	1.0296
P2	0.84**	**1.00**	0.18	0.43	-0.19	-0.06	0.64*	-0.36	0.03	0.59*	0.73**	0.21	0.52
P3	-0.11	-0.11	**1.00**	0.09	0.36	-0.14	0.16	0.26	0.76**	-0.06	0.46	-0.34	-0.17
P4	0.38	0.38	0.38	**1.00**	0.24	-0.04	0.20	-0.36	0.20	0.53*	1.27**	0.13	0.70
P5	-0.16	-0.16	-0.16	-0.16	**1.00**	0.83**	0.38	-0.89**	0.29	0.22	-0.07	0.45	0.28
P6	-0.14	-0.14	-0.14	-0.14	-0.14	**1.00**	-0.05	-0.04	-0.26	-0.11	-0.75**	0.19	-0.06
P7	0.59*	0.59*	0.59*	0.59*	0.59*	0.59*	**1.00**	-0.68**	0.12	0.79**	0.64**	0.67**	0.75
P8	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	**1.00**	0.34	-0.68*	-0.88**	-0.51*	-0.69
P8	-0.30	-0.30	-0.30	-0.30	-0.30	-0.30	-0.30	-0.30	**1.00**	0.02	0.96**	-0.03	0.20
P10	0.60*	0.60*	0.60*	0.60*	0.60*	0.60*	0.60*	0.60*	0.60*	**1.00**	1.12**	0.56*	0.81
P11	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	**1.00**	0.28	0.85
P12	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	**1.00**	0.82
P13	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	**1.00**

Table 4: Genotypic path coefficient analysis showing direct and indirect effect of different contributions on yield per plant in green gram.

Characters	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
P1	**-0.0444**	-0.0609	0.0082	-0.0320	0.0037	0.0068	-0.0447	0.0366	0.0235	-0.0448	-0.0523	-0.0376	1.0296
P2	-0.1978	**-0.1442**	-0.0256	-0.0614	0.0274	0.0085	-0.0918	0.0520	-0.0048	-0.0859	-0.1055	-0.0305	0.5218
P3	0.1456	-0.1403	**-0.7918**	-0.0723	-0.2883	0.1132	-0.1261	-0.2037	-0.6000	0.0485	-0.3653	0.2700	-0.1747
P4	0.5195	0.3066	0.0657	**0.7198**	0.1737	-0.0326	0.1457	-0.2586	0.1450	0.3797	0.9119	0.0938	0.7015
P5	0.0042	0.0097	-0.0186	-0.0123	**-0.0510**	-0.0426	-0.0195	0.0459	-0.0147	-0.0112	0.0034	-0.0228	0.2787
P6	-0.0160	-0.0061	-0.0149	-0.0047	0.0868	**0.1040**	-0.0061	-0.0042	-0.0272	-0.0114	-0.0781	0.0208	-0.0574
P7	1.3084	0.8265	0.2067	0.2627	0.4969	-0.0763	**1.2981**	-0.8784	0.1544	1.0270	0.8299	0.8673	0.7526
P8	-0.1365	-0.0597	0.0426	-0.0595	-0.1489	-0.0067	-0.1121	**0.1657**	0.0557	-0.1121	-0.1463	-0.0854	-0.6922
P9	-0.1825	0.0115	0.2612	0.0694	0.0990	-0.0902	0.0410	0.1158	**0.3447**	0.0061	0.3305	-0.0122	0.2044
P10	-0.5638	-0.3327	0.0342	-0.2948	-0.1227	0.0615	-0.4422	0.3781	-0.0098	**-0.5589**	-0.6281	-0.3144	0.8146
P11	0.1703	0.1058	0.0667	0.1832	-0.0097	-0.1086	0.0925	-0.1277	0.1387	0.1625	**0.1446**	0.0409	0.8524
P12	0.0226	0.0056	-0.0091	0.0035	0.0119	0.0053	0.0179	-0.0138	-0.0009	0.0150	0.0076	**0.0268**	0.8168

R Square =1.1248; Residual Effect =Sqrt (1- 1. 1 2 4 8)

Table 5: Phenotypic path coefficient showing direct and indirect effect of different contributions on yield per plant in green gram.

Characters	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
P1	**0.6743**	0.5637	-0.0760	0.2585	-0.1103	-0.0923	0.4019	-0.3275	-0.2023	0.4078	0.1995	0.1936	0.5502
P2	-0.4653	**-0.5566**	-0.0967	-0.2210	0.0628	0.0293	-0.3482	0.1677	-0.0189	-0.3240	-0.2265	-0.0994	0.4732
P3	0.0445	-0.0686	**-0.3949**	-0.0341	-0.0882	0.0532	-0.0614	-0.0855	-0.2908	0.0220	-0.0967	0.1103	-0.1565
P4	0.0404	0.0419	0.0091	**0.1054**	0.0250	-0.0023	0.0202	-0.0285	0.0191	0.0503	0.0673	0.0111	0.5778
P5	-0.0097	-0.0067	0.0132	0.0140	**0.0590**	0.0327	0.0140	-0.0247	0.0095	0.0086	0.0057	0.0124	0.2034
P6	-0.0426	-0.0164	-0.0419	-0.0069	0.1725	**0.3114**	-0.0175	-0.0022	-0.0768	-0.0337	-0.1359	0.0614	-0.0445
P7	0.4521	0.4744	0.1179	0.1449	0.1793	-0.0427	**0.7584**	-0.4269	0.0890	0.5841	0.2641	0.4191	0.6548
P8	-0.2202	-0.1365	0.0981	-0.1227	-0.1897	-0.0032	-0.2552	**0.4533**	0.1202	-0.2655	-0.1830	-0.1510	-0.4808
P9	-0.0116	0.0013	0.0284	0.0070	0.0062	-0.0095	0.0045	0.0102	**0.0385**	0.0004	0.0192	-0.0011	0.1641
P10	-0.2856	-0.2749	0.0263	-0.2251	-0.0690	0.0512	-0.3638	0.2766	-0.0050	**-0.4723**	-0.2962	-0.2248	0.7319
P11	0.2909	0.4002	0.2408	0.6274	0.0951	-0.4292	0.3424	-0.3970	0.4900	0.6168	**0.9833**	0.0983	0.6295
P 12	0.0829	0.0516	-0.0807	0.0303	0.0606	0.0570	0.1596	-0.0962	-0.0084	0.1375	0.0289	**0.2888**	0.7186

Square = 0.9943; Residual Effect = 0.0755

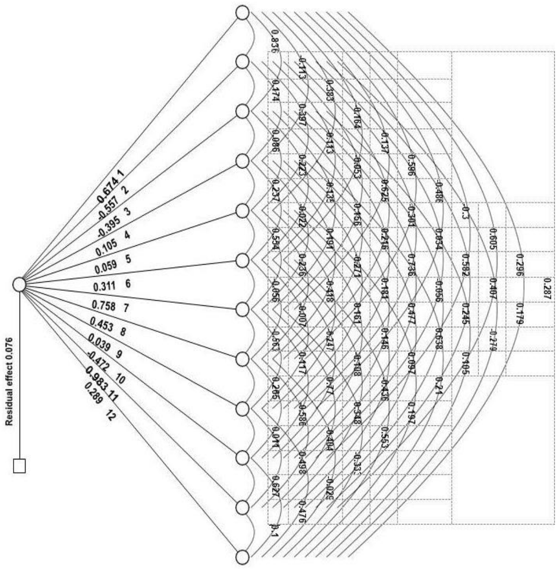

Fig. 1. Phenotypic path Diagram for seed yield per plant.

CONCLUSIONS

In conclusion, the research conducted on green gram genotypes revealed significant genetic variability among yield and yield-contributing traits. The study highlighted traits with high heritability and genetic advance, indicating the potential for genetic improvement through selection. Notably, certain genotypes like MGG-336, MGG-351, MGG-348, and Vijetha SRPM-26 exhibited superior attributes in terms of yield. The findings contribute to understanding the genetic basis of green gram traits, providing valuable insights for crop improvement strategies. Further exploration of the genetic interactions underlying yield traits could enhance breeding programs aimed at enhancing green gram productivity and resilience.

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Conflict of Interest. None.

REFERENCES

Al-Jibouri, H.A., Miller, A.R. and Robinson, H.F. (1958). Genotypic and environmental variances and covariances in upland cotton crosses of interspecific origin. *Journal of Agronomy*, *50*, 633-637.

Babu, G. C., Reddy, B. S., and Lavanya, G. R. (2007). Evaluation of quantitative characters in mutant lines of mungbean. *Journal of Food Legumes*, *20*(2), 205-206.

Chakraborty, S., Borah, H., Borah, B., Pathak, D., Zaman, A., Baruah, B., and Barman, B. (2011). Genetic correlation and coheritability between F_1 and F_2 generations for quantitative traits in some crosses of green gram (*Vigna radiata* L. Wilczek). *Acta Agronomica Hungarica*, *59*(1), 57-63.

Chauhan, M. P., Mishra, A. C. and Ashok Kumar Singh. (2007). Correlation and path analysis in urdbean. *Legume Research*. **30**(3): 205-208.

Crop Outlook Reports of Andhra Pradesh (2022-23)- By ANGRAU https://angrau.ac.in/downloads/AMIC/OutlookReports/2022/8-Greengram%20Outlook%20Report%20-%20January%20to%20December%202022.pdf

Das, S. Y., Supnyo Chakraborty, and Chakraborty, S. (1998). Genetic variation for seed yield and its components in green gram [*Vigna radiata* (L.) Wilczek]. *Advanced PI Sciences*, *11* (1) 271-273.

Ebenezer Babu Rajan, R., Wilson, D., and Vijaya Raghava Kumar (2000). Correlation and path analysis in the F2 generation of green gram, *Madras Agricultural Journal*, *87*(10-12) 590-593.

Govindaraj, P, and Subramanian, M. (2001). Association analysis in black gram (*Vigna mungo* L. Hepper). *Madras Agricultural Journal*, *88*(4-6), 240-242.

Green gram Botanical description- By KVK, ICAR. https://kvk.icar.gov.in/API/Content/PPupload/k0447_5.pdf

Idress, A., Sadiq, M.S., Hanif, M., Abbas, G., and Haider, S. (2006). Genetic Analysis and Path Coefficient Analysis in Mutated Generation of Mungbean. [*Vigna radiata* (L.) Wilczek]. *Agricultural Research*, *44*, 181-191.

Johnson, H. W., Robinson, H. F., Comstock, R.E. (1955). Estimates of genetic and environmental variability in soybeans. *Agronomy Journal*, *47*(7), 314–318.

Kumar, P., Pal, M., Joshi, R., and Sairam, R. K. (2013). Yield, growth, and physiological responses of mung bean [*Vigna radiata* (L.) Wilczek] genotypes to waterlogging at vegetative stage. *Physiology and Molecular Biology of Plants*, *19*, 209-220.

Loganathan, P., Saravanan, P. K, and Ganeasan, J. (2001). Genetic variability in green gram [*Vigna radiata* (L.) Wilczek]. *Research Crops*, *2*(3), 396-397

Makeen, K., Abrahim, G., Jan, A, and Singh, A. K. (2007). Genetic variability and correlations studies on yield and its components in mungbean (*Vigna radiata* (L.) Wilczek). *Journal of Agronomy*, *6*(1), 216-218.

Momin, B. W., and Misra, R. C. (2004). Induced variability, character association and path coefficient analysis in mutant cultures of green gram, *Environment and Ecology*, *22*(3), 608-61.

Nand, M. J. and Anuradha, C. (2013). Genetic variability, correlation and path coefficient analysis for yield and yield components in mungbean [*Vigna radiata* (L.) Wilczek]. *Journal of Research ANGRAU*, *41*, 31-39.

Pooran Chand, and C. Rabhunandha Rao (2002). Breakage of undesirable correlations in black gram (*Vigna mungo* L. Hepper). *Legume Research*, *25*(1), 37-40.

Potter, N. N. and Hotchkiss, J. S. (1997). Food science. *CBS Publishers*, New Delhi, India, 403.

Rahim M. A., Mia, A. A., Mahmud, F., Zeba N., and Afrin, K. S. (2010). Genetic variability, character association and genetic divergence in mungbean (*Vigna radiata* L. Wilczek). *Plant Omics Journal*, *3*, 1-6

Reddy, D., Venkateswarlu, O., Obaiah, M. C. and Jyothi, G. L. (2011). Studies on genetic variability, character association and path co-efficient analysis in green gram [*vigna radiata*. (L.) Wilczek]. *Legume Research*, *34*(3).

Roy chowdhury, R., Datta, S., Gupta, P., and Tah, J. (2012). Analysis of genetic parameters on mutant populations of mungbean [*Vigna radiata* (L.) Wilczek] after ethyl methyl sulphonate treatment. *Notulae Scientia Biologicae*, *4*(1), 137-143.

Siddique, M., Faisal, M., Anwar, M., and Shahid, I. A. (2006). Genetic divergence, association, and performance evaluation of different genotypes of mungbean (*Vigna radiata*). *International Journal of Agricultural Biology*, *6*, 793-795.

Singh, A., Singh, S. K., Sirohi, A., and Yadav, R. (2009). Genetic variability and correlation studies in green gram (*Vigna radiata* L. Wilczek). *Progressive Agriculture*, *9*(1), 59-62.

Singh, G., Aggarwal, N., and Khanna, V. (2010). Integrated nutrient management in lentil with organic manures, chemical fertilizers, and bio-fertilizers. *Journal of Food Legumes*, *23*, 149-151.

Tabasum, A., Saleem, M., and Aziz, I. (2010). Genetic variability, trait association and path analysis of yield and yield components in mungbean (*Vigna radiata* (L.) Wilczek). *Pakistan Journal of Botany*, *42*(6), 3915-3924.

Thanniru Bhavyasri, I. R. Delvadiya and A. V. Ginoya (2022). Breeding of physiological traits and improving the productivity of green gram (*Vigna radiata* L. Wilczek). *The Pharma Innovation Journal*, *11*(9), 2591-2601.

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