

Review Form 1.6

Journal Name:	International Journal of Plant & Soil Science
Manuscript Number:	Ms_IJPSS_84032
Title of the Manuscript:	Assessment of genetic divergence for hardseededness with field emergence and storage duration in Mungbean genotypes [Vigna radiata(L.)Wilczek]
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal’s peer review policy states that **NO** manuscript should be rejected only on the basis of ‘**lack of Novelty**’, provided the manuscript is scientifically robust and technically sound.
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Review Form 1.6

PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	<p>The manuscript is interesting for Mungbean cultivation as seed hardness induces unsynchronized seedling emergence in the field, leading to uneven plant establishment and uneven maturity, ultimately reducing seedling growth. crop yield. Evaluating the influence of hard seeds on emergence in the field and also to know the effect of the storage period on the appearance of hard seeds is important for breeders. It would be interesting to add in the discussion of the results found the reason for the analysis of the 18-month storage period.</p>	<p>Added in Discussion Portion.</p>
Minor REVISION comments	<p>The cophenetic correlation coefficient data should be included in the analysis of the clusters. Why was that distance used?</p> <p>I think that perhaps tables 3 and 4 should be added or reissued so that an analysis can be carried out to determine whether or not the differences are significant between the clusters formed for the variables analyzed.</p> <p>Regarding the interest of evaluating the storage period of 18 months, I do not find both in the introduction and in the discussion, if this period is important depending on its destination (whether it is for seed or grain).</p>	<p>Cluster analysis of 51 mung bean genotypes in fresh and stored seed lots were done using (SAS Institute Inc., Cary, NC) software using Wards Method and squared Euclidian distance method. In Ward's minimum variance method, the distance between two clusters is the ANOVA sum of squares between the two clusters summed over all the variables. At each generation, the within-cluster sum of squares is minimized over all partitions obtainable by merging two clusters from the previous generation. The sums of squares are easier to interpret when they are divided by the total sum of squares to give the proportions of variance (squared semipartial correlations). Ward's method joins clusters to maximize the likelihood at each level of the hierarchy under the assumptions of multivariate normal mixtures, spherical covariance matrices, and equal sampling probabilities. Ward's method tends to join clusters with a small number of observations.. The wards method is one of the best ways of making clusters. The distance Graph beneath the cluster also explains the distance between two clusters and the similarity level also.. The Distance Graph is the plot that appears beneath the dendrogram. This graph has a point for each step where two clusters are joined into a single cluster. The horizontal coordinates represent the numbers of clusters, which decrease from left to right. The vertical coordinate of the point is the distance between the clusters that were joined at the given step. This is the reason behind using wards method</p> <p>The manuscript is focused towards the occurrence of hard seeds and the influence of storage on it. In the Figure 2, it is clearly shown that the number of genotypes with (0-10%) hard seeds were significantly increased after storage, which clearly proved the effect of storage period on hardseededness. Result indicated that, in general, the number of hard seeds and abnormal seedlings reduced significantly while normal seedlings and dead seeds increased significantly in the stored seeds (The mean values of 51 genotypes of all the parameters studied for fresh and stored seeds compaired with t test. Data not presented in the manuscript. However comparison between the clusters for the parameters studied is not the main focus of the study from the objective point of view.)</p> <p>Added in Discussion Portion. As per the Indian Minimum Seed Certification Standards The min. Germination Percentage for seed certification is 75%. From the previous studies it was noted that beyond 18 months of storage the germination percentage comes below 75% due to increase of number of dead seeds. So</p>

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		the period of storage study was kept 18 months. The study was carried out for Seed. Not for Grain.
<u>Optional/General</u> comments		

PART 2:

	Reviewer's comment	Author's comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	