



SDI Review Form 1.6

PART 1:

Journal Name:	American Journal of Experimental Agriculture
Manuscript Number:	2013_AJEA_3756
Title of the Manuscript:	Comparison of Different Parameters for Evaluation of Slow-blasting Resistance in Rice

General guideline for Peer Review process is available in this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)

- This form has total 7 parts. Kindly note that you should use all the parts of this review form.



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PART 2: 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	This data set is very interesting to analyse because experiments to evaluate rice partial resistance to blast on such a long period are no sow frequent. But, the data analyses carried out are not really appropriate to reach the objective which was to "identify the most suitable parameter for easy and quick identification of slow-blasting resistant rice genotypes". The analyses are too descriptive. There is no test to measure if a given parameter is better than another one to rank correctly the varieties for their partial resistance to blast. The expected and measured partial resistance are not compared. In addition, some analyses are clearly missing. MANOVA could be tried. It would provide much more information on the importance of each parameter. It would also allow testing the effect of years. Such a dataset allows to test if the resistance of a particular accession changed over time. Most of the time only average values are provided. Standard deviation or any other indication of the variation of the mean must be provided and used to determine if average values are statistically significant. One major problem with this type of experiment is that the inoculum is not controlled and the composition of the pathogen population attacking is unknown. Therefore, the resistance observed is the result of partial resistance and of complete (usually specific) resistance. This should	I had a consultation with some experts in the nearby Agricultural University who are of the opinion that the present method of analysis adopted for identification of suitable parameters through factor analysis is stronger test than MANOVA. There is no point in further ranking of the parameters. However, a separate Table-5 has been provided to compare the variation among seasons which indicate that the parameters PC-1 & PC-2 show no variation compared with others. Table-4 also shows the variation in disease reactions of individual genotypes across seasons. With these feedbacks the decision of the fate of the manuscript is left to the Editor, Members of Editorial Board and The Reviewer. Further feedback on adopting PCA & FA have been provided in additional comply placed below. Standard deviation values have been added in the last line of Table-1. SD values have been replaced by CD values in the 2nd revised manuscript. This point has been discussed in the discussion chapter please.



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	be clearly mentioned and taken into account when analysing and discussing the results.	
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Minor REVISION comments	All along the manuscript: I am not sure cafeteria is appropriate in this context. I suggest using Partial resistance instead of slow-blasting and rate reducing, and Complete resistance instead of vertical resistance. These expressions are more commonly used. Abstract: I suggest mentioning that you tested correlations between parameters. 21 “tested” 32 Curious way of presenting. Four groups are defined but they are grouped in two groups. Are there 4 or 2 groups? 34 Most abbreviations are not self-explanatory and should be defined. Or, the information should be summarized. 39 Already mentioned in the previous sentence. 57-58 The difference between the first two methods is unclear. 72 Discrete 83 PCA of what parameters? 93-96 And so what?	Agreed, changed in the manuscript. Agreed, the word slow-blasting resistance has been changed to partial resistance at every point in the manuscript. Agreed, it has been mentioned in the Abstract. Agreed, the spelling has been changed. This point has been clarified in the text please. Agreed, all parameters have been defined in first appearance. By way of doing so, the number of words in abstract has exceeded 300. In addition, a separate section of abbreviations has been added at the end of the revised manuscript. Agreed, this point has been taken care of. 1st: Based on components of resistance, 2nd: Based on parameters of resistance. Agreed, changed in revised manuscript. Clarified in the text pl. This was just to report the superiority of parameters in different types of data sets.
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	107 Where is this information? How is specific resistance to blast taken into account in such an evaluation? 118 Please specify the growing conditions: irrigated or rain fed. 122 How did you decide that the epidemic was complete? When was scoring carried out for disease severity? 123 This ref is old and may be difficult to obtain. So, please, briefly describe the method. 216-218 Show the data. 226-234 Show the data. 374 Using your data, you could also test if scoring every 4, 6 or 8 days is sufficient to evaluate partial resistance. Based on the data provided in Table 1 Tiace should be in group A. Correlation between parameters measures: what about using all the data not only the average values? Variation between seasons and years (indicative of variations of the pathogen population?). Repeat factorial analysis without the three accessions of group A.	This was a typed copy of the IRRI testing programme. The genotypes were selected from this result sheets supplied through NBPGR, New Delhi, India. However, this part has been deleted. This has been clarified in text pl. This point has been clarified in text by providing information. Agreed, The method of scoring has been described briefly in the revised manuscript. One additional data table has been included into the text, in order to clarify this point. I am sorry, I do not understand this point and hence could not do this. Yes, I agree. Tiace comes always in the susceptible group A & B, and never in the partial resistant group C or D. I do not think there will be much difference in correlation value calculated from average values and all the data. Hence "r" values from average data has been retained in revised manuscript. The new table on correlation from all data provided in APPENDX has been provided for perusal by the reviewer. A separate data table has been provided and explained in the revised manuscript. This has been done and the corresponding dendrogram has been provided in appendix for kind perusal of the Reviewer.
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	Clustering not so obvious in fig 1 and 2. C and D are just one group. Fig 3 Average is not enough. Add standard deviation.	The four groups in Fig.-1, when super imposed onto the ordination figure (Fig.-2) gives a clear idea on the perfect grouping of genotypes based on the genotype scores on PC-1 & PC-2. On the contrary, if two groups are considered as suggested by the reviewer, this grouping won't be so clear in Fig.-2. Hence the original grouping have been retained. Further justification has been provided in our additional comply placed below. Standard deviations have been provided in Fig.-1 pl.
Optional/General comments		

Additional comply to comments given by the Reviewer-I & II

The authors have made an attempt to find out most suitable parameter by computing multivariate analysis, following Principal Component Analysis (PCA) and Factor Analysis (FA), which are most appropriate and economical in determination of the best parameter. This has been presented in Table-6 and Table-7. The authors feel that MANOVA analysis may not be suitable since the parameters are not independent of each other as evidenced by strong associations presented in Table-2. Hence, the authors have deliberately avoided MANOVA analysis and instead, adopted most appropriate multivariate analysis involving PCA and FA.

The standard deviation provided in the last line of Table-1 (as suggested by the reviewer), have been replaced by providing critical difference (CD) values for a better comparison among the genotypes. Due to lack of space between columns, the "a,b,c,d," marks could not be mentioned against each genotype. We hope the present form will be a better way of presentation of the data for easy comparison between genotypes.

Similarly, the seasonal differences in expression of the disease reaction through different parameters have already been provided in Table-5 of the revised manuscript with CD values for comparison between seasons of study. The possible cause of such significant differences between seasons could be due to environmental conditions or due to variation in pathogen population have been mentioned in discussion section as per the suggestion by the reviewer.

Regarding the comment on clustering pattern presented in the dendrogram (Fig.-1), we do not agree with the reviewer. If we make two groups as suggested by the reviewer, C & D can be of one group, since both possess negative PC-1 values; but the D group has only positive PC-2 values and majority of genotypes in C group have negative PC-2 values. Similarly, both cluster A & B possessing positive PC-1 values; A has



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high and B with low +ve values were separated into two groups. Cluster-B contains susceptible genotypes, which express moderate degree of susceptibility (not as susceptible as those in Cluster-A) across all nine seasons of study. In rice blast pathosystem, there are always four groups of disease reactions namely, highly resistant, moderately resistant both of which have been considered here as possessing partial resistance, and highly susceptible and moderately susceptible, both of which are considered as susceptible groups. As suggested by the reviewer, we have provided a new dendrogram as appendix in the first revised manuscript, which shows the moderately susceptible genotypes in Cluster-B separately in one group. Practically, these genotypes exhibit equivalent to susceptible reactions across seasons but not as susceptible as the genotypes in highly susceptible group. In view of these facts, and from our past 20 year experience, we have made four groups based on the dendrogram as well as the ordination figure and we are determined to retain these grouping, since it is easy on the part of any rice blast scientist to classify the genotypes into partial resistant or susceptible groups. Hence, we have a strong feeling to retain the present grouping system of A,B,C & D in a narrow sense, although the reviewer's suggestion in a broad sense of grouping is not wrong. We hope the reviewer will now realize and agree with the authors.

Regarding the reviewer's comment on the correlation between parameters based on the average values (Table-2); we attempted to re-analyze the correlation using all the data and the results are presented in a separate table as APPENDIX for kind perusal of the reviewer. There is similarity in associations among the parameters in both ways of computation, with the only exceptions for non significance between AUDPC vs PC-2 and PC-1 vs PC-2 in the new all data table, both of which showed significant correlations based of average data presented in Table-2 of the first revised manuscript. Under the circumstances, if the reviewer wants to replace the Table-2 by the new correlation table provided as APPENDIX, we are prepared to do so.

The second reviewer's comments were mostly on editorial corrections limited to the style of presentation and language of the manuscript, all of which have been taken care of while preparing the first revised manuscript, following the SDI Paper Template Version 1.6 Date 11.10. 2012, provided along with the comments. In addition, we have provided the DOI nos. wherever available. No additional comply to the comments is necessary. The comply to these comments have been provided in proper format in a separate format sheet.