



SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	American Journal of Experimental Agriculture
Manuscript Number:	2013_AJEA_4900
Title of the Manuscript:	Predicting the Longevity of Sesame Seeds under Short-Term Containerized Storage with Charcoal Desiccant

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
After reading the revised version, more serious questions turned up: Methods: How many replicates and how many seeds were used to determine moisture content? Results: Are there significant differences in moisture content for different treatments? By looking at Fig 1 it seems control (0g) and 200 g charcoal have the same moisture content. If this is the case, the better germination results for 200g treatment can't be linked to the desiccation of the seeds, and this should be mentioned in the discussion. Each treatment and time point has just one value, so there was no repetition? Section 3.4, second paragraph can be shortened by just mentioning how treatments and time sign. differed in moisture content (they probably did not). How come seeds had 12% moisture content at the begin of the experiment and then dropped to 3% even without desiccation agent? Were seeds fresh and had an after ripening phase? Why should 200g produce the best values for half life calculation and 160g the worst? I would guess it is coincidence and results would probably be different if desiccation treatments were replicated. Figure 1 is unacceptable. Please check other articles for a good figure. Get rid of background colour, extra lines, use same axis scale etc. All 5 graphs can be combined in one, which makes it easier for visual comparison. Table 4 can go into annex. In several tables both, germination % and number of germinated seeds is mentioned. Redundant, keep only %. I would not trust the results, since for me it is still a pseudoreplication, and not a proper experimental setup. The charcoal treatments have no replicates, the moisture content has no replicate. The topic and the already invested work are worth a bigger trail.	1. Three replicates were used to determine seed moisture content, with 5 g of seed used per replicate. I have put this in the text (section 2.2). 2. There were of course differences in moisture trends across treatments and at different time periods (Fig. 1), though values fluctuated throughout the storage period. Also, the better germination for 200 g treatment can certainly be linked to seed desiccation; because remember that the charcoal was properly dried before use, therefore the more dried charcoal in the storage container the drier storage environment it would create for the seeds, thus encouraging desiccation. Dried charcoal is a proven low-cost desiccant that is currently being tried for short/medium term storage of some agric. Crops, especially in humid tropical environments. 3. There is need to detail the seed moisture trend during the storage period (section 3.4). No. 2a above refers. 4. Certainly, seed moisture content should decrease over time especially in higher charcoal treatments. The logic behind this work which you should please follow is that dried charcoal has the potential of acting as desiccant for seed in storage (it progressively absorbs moisture from stored seeds, and even the seed storage environment). So, seed moisture decreasing in storage is logical. 5. It was unexpected to have 160 g charcoal treatment giving worst (least) half-life value in probit analysis. One would have expected 0 g or even 40 g treatment to be in that position. But that was the result I got, and I have to present it that way. 6. I have replotted Fig. 1, reflecting: no background colour, same scale used on both axes for all plots, and I think it is still one graph (with 5 different plots according to period in storage) which can be viewed and compared together. 7. I maintain that table 4 is still relevant in the main text and not annex. Germination percent and number of germinated seeds can go together; reader will decide on the parameter of interest. 8. The results are unambiguous and straight forward enough. I have tried to present it in the most simple form. I can consider replicating the charcoal treatments for future similar work; here replication was done at the seed evaluation stage (also for seed moisture determination). Other comments or observations are noted. I do appreciate your sincere and thorough evaluation, observations and comments. Thank you very much.