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Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	2013_BJAST_8459
Title of the Manuscript:	INFLUENCE OF BULB SIZE AT PLANTING AND DROUGHT STRESS ON GROWTH AND DEVELOPMENT OF ONION (<i>Allium cepa</i> L) IN THE NORTHERN REGION OF GHANA
Type of the Article	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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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 1. The revised 2.2 section includes more details as for the experimental array. I suggest making it clear that four bulbs per pot were planted. The added tables of ANOVA point out on the basic problem of only three reps. 2. Tables 2 (now Table 5): Approved.	1. P 2, 2.2. Design and Layout of the Experiment: How many bulbs per pot? Assuming that there was one per pot: Three reps, using a Complete Randomized Blocks, leave <i>a priori</i> too small Degrees of Freedom number. The ANOVA test is therefore expected to be most insensitive to get meaningful conclusions as for the treatments' effectiveness. 2. Table 2: The means do not contribute to understand the effect of the treatment, but the basal size does. The rule is that any piece of presentation should include ALL the info needed to understand its message. The discussion claims that larger bulbs would yield more leaves, with higher photosynthetic capability, which would ultimately yield larger bulbs. It is difficult to withdraw this conclusion based on Table 2.	Four bulbs per each weight group were planted. The planted bulbs were subjected to three levels of watering regimes after emergence and all treatment combinations were replicated 3x in RCBD. This has now been clearly stated in the revised version of the manuscript. The design has been re-written to make it more explanatory. Please read section 2.2 for more details now. Means were indicated in the tables to give an idea of the main effects, though the interaction effects were of more importance both in the presentation of the results and the discussion. Though different bulb weights were used, this is not the first time in publishing that means are used in presenting results together with the interaction. Means as used here help to give an idea of the trend in performance of the main effects of the factors used in the factorial experiment. The authors believe that since already the values of the interaction have been provided, the tables can be left as they are. In the discussion, the importance of reserved carbohydrates and water in geophytes or bulbous crops was mentioned. They were also supported with literature. It was stated that since large bulbs have more of these quantities than small and medium bulbs. The higher vegetative growth (measured as tillers, number of leaves etc) of plants obtained from the large bulbs as compared with



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		bulb from other categories was as a result of the quantities mentioned above (high carbo. Reserves, water etc.) We explained in the paper that in bulbous plants the reserved carbo play a role in sprouting and initial growth of the plants. Though data on photosynthesis was not taken due to non-availability of equipment, the higher number of leaves of plants from the large bulbs (higher photosyhtetic apparatus) might have resulted in high photosynthetic ability of the plants giving rise to higher bulb weight (accumulation of reserved food in the newly developed bulb) at harvest as shown in the table (now Table 5).
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Minor REVISION comments 1,2,3,4,5,6: Accepted.	1. P1, L33-35: Although number of pages is not limited, an attempt to save printed space is a logical request. Details of specific sites of onion cultivation in Ghana do not contribute to the message of this paper, not it is beneficial to the international reader. Suggestion: omit. 2. P1, L 48-51: It is known that [6], large mother bulb...: Change sentence to: Large mother bulb... those of the latter [6]. 3. P2, L53: Ref. No. 2&7 are the same. See General Comment no. 3. 4. P2, L60-61: "Knowing the response of onion to drought stress in the Northern Region of Ghana will improve productivity of the crop in the area": Not necessarily: one is not the logical outcome of the other. Re-phrase. 5. M&M, P 2, L71-72: Too many details about the geographic location do not contribute, and not necessary. They occupy however print space. For minutes, change (¹) with ("). 6. P2, L80: cmol/kg. 7. L 187: (p < 0.05).	The details of specific sites of onion cultivation in Ghana, though may not be beneficial to the international reader, will be beneficial to scientists, farmers and other people from Ghana, but for the sake of our international readers and to save printed space, such details have been omitted in the revised version of the paper in accordance with the reviewer's query. The position of the ref [6] in that sentence has been changed as suggested by the reviewer. Changes have been made to the citations of Refs [2] and [7]. The sentence 'Knowing the response of onion to drought stress.....' has been rephrased in accordance with the suggestion made by the reviewer. The comment on detailed description of the experimental site has already been raised by the reviewer. These details have been omitted as the reviewer claimed they are not necessary and may not be good for the international reader.
Optional/General comments 1,2,3,5,6: Accepted. Typing error: The code 2.3 was given to two sections.	1. Abstract, conclusion: Although this is a scientific study, the aims are to test agronomic practices. Logic says that recommending larger bulbs means higher costs. An economic evaluation would be beneficial. 2. P1, L37-40: This info looks like as taken from popular science sources. The editorial board	While the authors believe that the inclusion of economic analysis to this study is not a bad idea at all, we want to say that it was not the original decision to make it part of the study. Perhaps it will be too late to go back and do it to add to the results. In any case, in Ghana, it is not entirely true that big bulbs are more costly than small or medium bulbs and therefore in our conclusion, recommending big bulbs to farmers as planting



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	should consider if they encourage such material in this journal. The paper could 'survive' without it. 3. Reference order list: The references are listed according to their citation order in the text. Yet, I believe that, once a reference is cited and got a running number, it is clearer to refer to it by using that number when referred to later. Still, this is a matter of style policy of the journal. 4. Although there is no page limit, authors should adapt a space-saving style. 5. An ANOVA table may serve as a useful tool to evaluate the significance of the measured results. Use of SE with three replications, when a multi-factorial trial is applied, seems insufficient. 6. It is not entirely clear what were the agricultural aims of the study: Green leaf production? Onion bulb production? Probably not seed production, as this parameter was not tested, even number of tillers was measured. No surprise in a positive correlation between bulb initial size and leaf production but what about the gain/loss in bulb weight/size under the different regimes? If this is one of the aims, the reader might find it difficult to withdraw this info from the presented results (see Table 2). Furthermore: If the leaf production was on the expense of storage in the bulb, the results should show it. Which brings us to the basic problem: As larger bulbs are presumably more expensive to start with, what is the economically optimal size of planted onion	materials will not always increase cost of production. In fact, in some cases small or medium bulbs are even more costly than large bulbs. We do not completely support the reviewer's statement that recommending larger bulbs means higher costs. The order of referencing has been checked. In some of the data (Vigour scores) anova tables have been added in accordance with the recommendations by some of the reviewers. The aims of the study were to Determine the effects of drought and bulb weight on growth and development of onion in the study area. Thus the parameters we considered were those we know will enhance the assessment of growth and development in the crop. But in agricultural production, of course, growth/devpt may translate into economic yield (bulb production, leaves etc). This is why bulb yield/fresh weight of the crop was added. In Ghana, different parts of onion may be used for food – bulbs, leaves, bulblets etc. The paper was particularly to address the influence of the two factors on growth and development. Perhaps there is the need to modify the objectives slightly and this has been done in the revised version of the paper.
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	bulbs under the studied conditions?	The issue of storage reserves in bulbs and leaf production/growth has already been discussed both on the reviewers sheet/comments and in the script. We have already raised the issue that large bulbs may not be more expensive than small bulbs in Ghana especially when they are used as planting materials. Cost of bulbs used as planting materials may depend on a number of factors. May be in our future studies benefit/cost analysis will be an area we would like to research into on bulb production in Northern Ghana.
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