



SDI Review Form 1.6

Journal Name:	Journal of Experimental Agriculture International
Manuscript Number:	Ms_JEAI_43194
Title of the Manuscript:	Validation of flowering models for classifying maize into maturity groups in the different Agro-ecologies of West and Central Africa.
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. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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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	Introduction Grammar is very weak with several sentences that are too long, with mistakes and confusing ideas. Some are mentioned below, with line indicated. Paragraphs structure should be revised. For instance connection among sentences and opening sentences are not always appropriate. Those leads to paragraphs without a clear message and overall an unclear idea of where the research is leading. The objective of this work is not a novelty as it's a simple validation of models done in another work. Moreover, it's not clear if validation of other models to evaluate maize development were done in the same region; a more complete literature review is needed. Material and methods Grammar and paragraphs structure is also weak and needs improvement (some suggestions listed below, with line pointed). This section is very incomplete, with concepts not explained or not clear. No reference to the statistical analysis that authors used is done. It is not clear how the data for validation was created; there is no information about it. Results The format of the tables need revision. Tables are difficult to read and with missing description about column and line heads. The description of the results in table 1 are not clear. Authors make comments about "the model", however, it's not always clear what model refers too. It makes mainly reference to TEMP and little reference to the rest. Also, not clear what are the differences among table 1 and 2; headlines are the same. Sixteen tables presented are excessive; please consider eliminating data not strictly necessary. For most of the tables, there is almost not description, the authors just present the tables expecting the reader to understand a very complicated and long list of tables. Discussion In this section, also grammar and paragraphs structure is very weak. The sentences are long and confusing without clear ideas. Overall, the discussion is very poor, without clear discussion about how these information contrast with other studies, and most importantly, what adds and/ or how can this knowledge be used. Added to the long list of tables without description, the manuscript don't provide a discussion and again the reader can't take any message from this study.	Introduction The introduction section had been revised with more clarity of some of the terms and concepts Materials and Methods The section had been revised accordingly with the statistical analyses used for the data analysis clearly stated Results 1. The models were already published in Oluwaranti et al. 2015 [20] as indicated in the text. Temperature models were referred to more than the other models because the predicted days to flowering (Tasselling, Anthesis and Silking) values from the model i.e temperature model was observed to be more closer in value to the observed days to flowering than the other models (Photoperiod, Heat Units). 2. There is difference between Tables 1 and 2, the difference is in the cropping seasons, The rainy season of the rainforest agro-ecology location where the study was carried out is usually characterized with Bimodal rainy seasons which are termed early (March – July) and Late (August – October) cropping seasons. The models were validated with days to flowering of the early and late cropping seasons of 2018. Discussion The Discussion had been restructured and expanded as suggested with additional references to explain the results
Minor REVISION comments	Title It could be shorter and simpler; for example: Validation models of time to flowering for maize in West and Central Africa. Comments on lines: 14. Repeats "maize being important" 18. Use acronyms for West and Central Africa 23-26. This classification of indices is not clear; it mixes systems to classify duration of development stages (i.e. CHU, GTI, GDD), with development stages to be measured (i.e., flowering and maturity). 26. Missing space after "[10]".	There are no models in this manuscript but the values for the models' validation, hence the suggested title might not be catchy and synchronized well with the content of the manuscript. 14 Noted and adjusted appropriately 18 Acronym for West and Central Africa already used 23-26 The clarifications are as stated below: (i) There are 3 major classes of indices for the classification of maize into different maturity groups which are thermal indices, Time to flowers in days and External appearance of the plant as indicated



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	29. Means days to silking instead of “silking date”? 32. Needs to define “1/f” 37. Change “has” by “have”. 37-39. Sentence too long and confusing. 39-41. Sentence is confusing; please revise. 42-43. It is not clear if several models will be validated or just the ones proposed by authors in [20]. 57. It is not clear what flowering refers to; is it average of days to tasseling, anthesis and silking? 58. Not clear what time of development P refers to. 58. Should explain what heat units are and how where they calculated.	in red in the revised manuscript (ii) Each of these 3 major classes can be subdivided as follows a. Thermal Indices (Growing Degree Days (GDD), Crop Heat Units (CHU) and General Thermal Index (GTI)) b. Time to flower in days (Days to tasselling, anthesis and silking) c. External appearance of the plant (Kernel respiration, Kernal moisture, black layer rating and milk line rating) as indicated in Yellow colour in the revised manuscript 26 Adjusted appropriately 29. The appropriate word is still days to silking and not “Silikng date” 32 1/f already defined reciprocal of days to flowering 37 Adjusted appropriately 37-39 Adjusted appropriately 39-41 – Sentence already revised 42-43 It is only the developed flowering models by the Authors as stated in Oluwaranti et al 2015. 57 Yes, flowering in maize refers the average days to tasselling, anthesis/pollenshed and silking across the three replications of this study. 58 P is the mean Photoperiod (daylength) 58. Heat units are calculated from the daily minimum and maximum temperature using this formula: $H = \sum_{i=1}^n ((X_i^H + X_i^L)/2) - 10$ where X_i^L = Minimum temperature for the day $X_i^H = 30 - (X_i^H - 30)$ if $X_i^H > 30$ and X_i^H = Maximum temperature for the day (Abasi <i>et al.</i>, 1985)
<u>Optional/General</u> comments		