Review Form 1.7

Journal Name:	**Advances in Research**
Manuscript Number:	**Ms_AIR_101516**
Title of the Manuscript:	**Hydrolysis and Analysis of Agricultural Wastes Using Mineral Acids for Possible Glucose Synthesis.**
Type of the Article	**Original Research Article**

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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. Is the manuscript important for scientific community?** (Please write few sentences on this manuscript) **2. Is the title of the article suitable?** (If not please suggest an alternative title) **3. Is the abstract of the article comprehensive?** **4. Are subsections and structure of the manuscript appropriate?** **5. Do you think the manuscript is scientifically correct?** **6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.** **(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)**	1. Yes, it is important. The use of solid waste has repercussions for the benefit of environmental improvement worldwide 2.No: Evaluation of a model in the production of sugar from organic waste. 3. Yes, but it is not entirely consistent with the conclusion. 4.No: - Introduction This paragraph is repeated: simple sugars with the molecular formula $C_6H_{12}O_6$. The following paragraph can be omitted, and we are not talking about physiological processes: Glucose is the key to keeping the mechanisms of the body in top working order. When our glucose level is optimal, it often goes unnoticed. But when they stray from recommended boundaries the unhealthy effect it has on normal functioning begins to show [13-14]. **2.1 Sample collection and processing** The amount of sample or NaOH used is not mentioned. **2.3 Hydrolysis of plantain peels and water yam peles** Neither the standard nor its concentration is mentioned for the reducing sugars calibration curve. **2.4 Characterization of the samples** The concentration of nitric acid is not mentioned. **2.5 Kinetics study of cellulose hydrolysis to glucose** This paragraph is not methodology Reaction kinetics also called chemical kinetics is the study of the rates of chemical processes or system which includes investigations how time dynamics, concentrations and different conditions can influence the speed of reaction and glucose yield according to Igbokwe et al, 2016. First order kinetics model describes the change in bulk concentration of the system using a simple order equation as shown below in equation (1) $C_t - C_o e^{-k1t}$ (1) Equation (1) can be rearranged to obtain a linear form as shown in equation (2) $logC_t = \frac{K1}{2.303}t + logC_o$ (2) Where C_t and C_o are the concentration of the solute at time t and initial concentration of glucose produced (mg/l) respectively, K1 is the first order rate constant (min^{-1}). The application of this order will give a linear relationship plotting log C_t versus t with K1/2.303 and log C_o as slope and intercept respectively. Second order kinetic model is a typical second order equation is as shown in equation (3) $dc/dt = -K_2\ C_t^2$ (3) Integrating equation (3) with boundary conditions will yield equation (4) $\frac{1}{C_t} = K_2 t + \frac{1}{C_0}$ (4) C_t and C_o are the concentration of the solute at time t and equilibrium (mg/l) respectively, K_2 is the order rate constant (l/mg.min). A plot of $1/C_t$ versus t to give a linear relationship with K and $1/C_o$ as slope and intercept respectively. Seaman pseudo-first order model was designed for the	

	hydrolysis of cellulose according to Ahmad et al. [20]. The change in the concentration of waste (cellulose) either positively or negatively at a constant temperature over a period of time can be described by a relationship as given in equation (5) $C_o - X = C_o \exp(kt)$ (5) Where *C* , the total initial waste cellulose concentration, *k* , specific rate constant (min-1), cellulose concentration at time *t* (g/l), *X* ,glucose content (g/l), and *t* , time (min). On the basis of a first-order reaction for the hydrolysis, equation (5) becomes: $In\frac{c_o}{c_o - x} = -kt$ (6) Thus, equation (6) allows the natural logarithmic plots of experimental values of $\frac{c_o}{c_o - x}$ versus process time (*t*) in which straight lines obtained are indications of the validity of first-order reaction kinetics for the cellulose acid hydrolysis. **3.1 Characterization of treated and untreated peels** In methodology, the solubility process of the extract in ethanol is not mentioned: The impurities left after base treatment was soluble in ethanol extract as it aids the polymer extraction loosening it packed surface. In Table 1, the physical drives are missing: Table 1: Characterization of the treated and untreated plantain and water yam peels **3.3 Effect of Feedstock dosage on glucose yield** The grinding tested is standardized in the methodology: The higher the degree of grinding of the cellulosic feedstock, the greater the contact areas for the acid penetration. This could be the reason for the increase in dosage resulting to increase in glucose yield. **3.6 Kinetics modelling of the hydrolysis process** Comparative analysis with authors who have developed study models similar to this topic. 5. No: The article is confusing as the conclusion seems to be based on figures 1 and 2. The second order model is not considered in the conclusion, even though it is mentioned in the abstract as an element that is important for the article. It seems that the study has two complementary approaches 6. Yes, but it is necessary standardize the bibliography. The volume, number, use of italics, misspelling, spacing, etc. are missing.	
Minor REVISION comments **1. Is language/English quality of the article suitable for scholarly communications?**	Review the content of each section of the article.	
Optional/General comments		

PART 2:

	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)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

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