

SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	International Research Journal of Pure and Applied Chemistry
Manuscript Number:	Ms_IRJPAC_122933
Title of the Manuscript:	Improved diammonium phosphate from Tahoua natural phosphate and synthetic diammonium phosphate
Type of Article :	

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
<p>The paper addresses a critical issue in agricultural soils, particularly in regions like Niger where soils are often deficient in essential nutrients such as phosphorus. Improving fertilizer quality can directly impact soil fertility and agricultural productivity. But</p> <ul style="list-style-type: none"> o The synthesis procedure lacks detailed experimental method and conditions, such as exact temperatures or reaction times etc. Parameters are not mentioned. o Inadequate Justification: The choice of NH₃ molar ratio and other parameters are not sufficiently justified. The reason behind using specific particle size of rock phosphate is also not explained. o Quality of Raw Materials: The paper does not provide detailed information on the quality and specific characteristics of the Tahoua phosphate rock used, which impacts the validity of the results. o X-ray Diffraction (XRD): The XRD analysis is mentioned but lacks detailed interpretation of results. The claim of no structural changes is not supported by comprehensive data or discussion. o Infrared Spectrometry (IR): The IR spectra are provided, but the analysis is superficial. The reason for doing IR analysis not justified. The identification of bands is not thoroughly discussed in terms of how they support the study's conclusions. The IR spectra are used to identify specific bands related to phosphate and ammonium ions. However, the interpretation of these bands might not fully account for overlapping peaks or other interactions. Detailed spectral analysis and comparison with reference spectra are necessary for accurate identification. o Inconsistent Data Presentation: The figures and tables showing P₂O₅ content and solubility data are not adequately explained. The paper lacks a detailed discussion on how these results compare to existing literature. <p>Limited Discussion: The discussion on phosphorus availability is brief and does not address the broader implications for plant growth or soil health. The significance of increased solubility is not critically assessed in the context of agronomic practices. The paper does not address potential environmental</p>	

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<p>impacts or the sustainability of using low-grade phosphate rock.</p> <p><input type="checkbox"/> Overstated Claims: The conclusion that the improved DAP fertilizer will significantly boost productivity and reduce costs is not substantiated by comprehensive field trials or cost-benefit analysis. The study lacks evidence to support these claims.</p> <p>The suggestions for future research are generic and do not provide specific guidance for further investigation into optimizing the synthesis process or evaluating real-world applicability.</p> <p>Language:- Some sentences are lengthy and complex. Breaking them down can enhance clarity. Careful proof reading of the entire document is needed to correct any grammatical or typographical errors. Ensure that the paper flows logically from one section to the next, with clear transitions between ideas. Ensure consistent use of terms such as “improved diammonium phosphate (DAP)” and “diammonium phosphate (DAPA)”. Choose one term and use it throughout to avoid confusion. Technical terms or abbreviations should be defined at first use to ensure readability for all readers. For example, explain what “PNTs” stands for when it first appears.</p>	
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Reviewer Details:

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