

Reviewer Comments:

There has been a significant improvement in the editing of the manuscript, making it more comfortably readable. Likewise, the authors have made an appreciated effort to address some of the issues I previously raised.

Nevertheless, my disagreement is still with the hypothesis, the assumption the authors have made, using a nitrogen fertilizer rate recommended for lowland rice cultivation in the humid forest zone (80 kgN/ha) to grow rice in the lowland of 2nd order in the Savannah Guinea. Why did the authors have to apply a nitrogen fertilizer recommendation that fits the conditions of the humid forest zone to then draw a conclusion for nitrogen application under lowland of 2nd order conditions in the Guinea Savannah? What informed authors' assumption that the rate of 80 kgN/ha recommended elsewhere was fitted to the test site? A range of 4 to 5 rates, including no- N should have been tested as done with the P and K fertilizers to come up with a valid fertilizer recommendation for the test site. What is the test soil potential to supply N?

The purpose of the study was to develop fertilizer recommendations that would be site-specific and even season specific (the experiment was conducted for a single year over three cropping cycles, including the wet and dry seasons. Please be mindful that the processes of nitrogen mineralization and losses through e.g. leaching, denitrification, and volatilization are season-specific and site specific. Also, there should be a large array of rates of nitrogen fertilizers to be tested. The authors may not just apply a single rate of a nitrogen fertilizer recommended at a site and seasons (humid forest zone) different from the test sites (Guinea savannah) of the study, and make unjustified extrapolations. Any conclusion from such an extrapolation in recommending the applied rate of N fertilizer to be site-specific might be biased and data thereof inaccurate.

Grain Yield Response to Phosphorus Application

The good response of grain yield to the application of P – up to 45 kgP/ha – did not support the suggestion by the authors that the test soil had ten times higher available P than the critical level. Caution should be observed in interpreting the magnitude of P-deficiency in the test soil. Assessment of the P status of the reduced soil by a chemical test conducted on air-dried soil, as measured by the Olsen extraction solution, may not provide a reliable estimate of soil P availability after submergence. The good response of rice grain yield to P fertilizer application in the first cycle of its application presumably reflected the magnitude of the test soil P-deficiency, and suggested that available P was not adequate to sustain rice growth up to 45kgP/ha. The Guinea savannah zone is particularly known for its overall P and N –deficiencies.

An insight into the soil exchange acidity, i.e. the % ($\text{Al}^{3+} + \text{H}^{+}$) of CEC exchange, the effective cation exchangeable capacity (CEC) would have provided the reader with a sense of the magnitude of the P-

bearing mineral capacity of the soil parent material and subsequently the magnitude of P that might be expected for release upon submergence under lowland conditions.

Line 211 reads '20kg ha^{-1} '. Thereafter, an increasing of rice response to P-rates is observed as illustrated' It should rather reads ' ...Thereafter, an increasing of rice response to K-rates is observed as illustrated'

Conclusion

In the present study no attempt was made to determine the appropriate rates of N fertilizers to be applied under the Guinea savannah zone conditions. The 80 kgN/ha applied in the study was extrapolated from previous studies in the humid forest zone. Therefore, no conclusion as to the recommended fertilizer should include Nitrogen. In fact, the title of the research paper implies that only P and K were investigated, not nitrogen. The authors have the option to avoid discussion about and conclusions that imply that N fertilizer was tested and therefore recommended. Their conclusions should be based on P and K related data only.

Note: Anonymous Reviewer