Review of: "Yield Forecasting Model for Maize Using Satellite Multispectral Imagery Driven Vegetation Indices"

Mesfin M. Mekonnen[1]

1 University of Alabama at Tuscaloosa

Potential competing interests: No potential competing interests to declare.

The authors present interesting works that may benefit farmers in the region. I have a few suggestions:

1. Enhancing the clarity of the novelty in this research is crucial given the existence of similar studies.
2. The authors must articulate the distinct contributions of their work in comparison to prior research. Notably, Kayad et al. (2016) [https://doi.org/10.1371/journal.pone.0157166] have explored various indices for predicting alfalfa yield. The current study, however, uses NDVI as the primary predictor. Justification for this selection is paramount and could draw upon the extensive literature on NDVI's effectiveness as a yield predictor, establishing its significance as a robust indicator.
3. Furthermore, the reliance on a single or the max NDVI necessitates thorough justification and uncertainty analysis. Campos et al. (https://doi.org/10.1016/j.agrformet.2017.07.018) have previously utilized multiple satellite images throughout the corn growing period to forecast yield, raising pertinent questions about the reliability of a single NDVI. Addressing the uncertainty associated with this approach is essential. How confident are the researchers that the maximum NDVI value, obtained during the non-clouded period, accurately represents the true maximum? Clarifying this aspect will bolster the validity of the methodology.
4. Additionally, the generalizability of the regression equation across different growing seasons and regions merits attention. The current study, limited to two-year data and a single year for testing the model, leaves unanswered questions about the model's applicability in varied agricultural contexts. It is imperative for the authors to acknowledge this limitation and discuss potential factors influencing the model's performance under different conditions. Recommendations for future research that explores the model's robustness across diverse scenarios would enhance the completeness of the study.