

Review of: "Integration and Implementation of Multiple Soil Sensors for Automated and Regulated Irrigation"

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Potential competing interests: No potential competing interests to declare.

Many references are outdated, with few recent ones. None from 2024.

Include references in the following sections:

Introduction:

“To enhance productivity and overcome farming challenges, the Internet of Things (IoT) is increasingly applied in agriculture (Santos et al., 2023).”

Santos, R. C., Lopes, A. L., Sanches, A. C., Gomes, E. P., Silva, E. A. D., & Silva, J. L. D. (2023). Intelligent automated monitoring integrated with animal production facilities. *Engenharia Agrícola*, 43(2), e20220225.

<https://doi.org/10.1590/1809-4430-Eng.Agric.v43n2e20220225/2023>

Materials and Methods

2.6. Testing and Evaluation Strategies

As proposed by Lovatto et al. (2020), this experiment was validated by comparing field data with the results from the constructed IoT system. To test and evaluate the newly developed system, a calibration equation would be developed for all the soil parameters to be measured by the system. ...

Lovatto, J., Santos, R. C., Souza, C. M. D., Zucca, R., Lovatto, F., & Geisenhoff, L. O. (2020). Use of linear programming for decision making: An analysis of cost, time and comfort of rural housing dwellings. *Revista Brasileira de Engenharia Agrícola e Ambiental*, 24(9), 622-629. <https://doi.org/10.1590/1807-1929/agriambi.v24n9p622-629>

There was no detailing of the statistical analysis carried out to evaluate the experimental data. Here's a suggestion.

2.8 Applied statistical analysis

For the statistical analysis, the R software was used, which calculated the coefficient of determination (R^2), the root mean square error (RMSE), the mean absolute error (MAE), and the normalized root mean square error (NRMSE). The R^2 was

used as a key indicator of model accuracy, where values above 0.5 indicate good performance, while lower values suggest unsatisfactory performance. Additionally, descriptive statistics such as mean, median, variance, kurtosis, and skewness were applied. These treatments allowed for a comprehensive understanding of the variability and distribution of the data, ensuring the robustness of the inferences made from the predictive models by correlating sensor data with laboratory readings. The analysis also included the evaluation of spatial dependence using the spatial dependence index (SDI), as recommended by Silva et al. (2020), which classified the spatial dependence of the analyzed data.

Silva, N. C. D., Santos, R. C., Zucca, R., Geisenhoff, L. O., Cesca, R. S., & Lovatto, J. (2020). Enthalpy thematic map interpolated with spline method for management of broiler chicken production. *Revista Brasileira de Engenharia Agrícola e Ambiental*, 24, 431-436. <https://doi.org/10.1590/1807-1929/agriambi.v24n7p431-436>