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

A. K. Singh

Potential competing interests: No potential competing interests to declare.

In this study, the author(s) simply checked multiple soil sensors under laboratory conditions without their validation in real farm conditions. The specific objectives of the study were to: (a) identify the measured, developed, sourced, and adapted appropriate sensors for monitoring some selected soil properties, (b) develop an integrated soil property data acquisition and wireless transmission system for (a) above, (c) develop a real-time data analysis and situation monitoring computer-based user platform; and (d) evaluate the performance of the prototype equipment. However, only the last objective was achieved under laboratory conditions.

Suggestions:

1. Recast objectives as per the study done and written in this manuscript.
2. The title of the paper is to be changed to: Laboratory-Based Evaluation of Multiple Soil Sensors for Automated and Regulated Irrigation.
3. The work reported in the paper should be written in the past tense (e.g., ‘was’ should be used in place of 'would' on page 22).
4. Table 1 should be converted into a sentence paragraph.
5. Tables 3 to 15 should be merged into only two tables. The first table should provide information on “standard and measured data” for all parameters in one table. The second table should have statistical information on all parameters in one table.
6. The results section is very poorly written. It should provide information about sensors in different types of soils (e.g., clay loam, sandy loam, silty loam, etc.) from day 1 of irrigation to day 40 (till the soil becomes fully dried). It should be taken in a 30-litre bucket (75% filled with soil). The gravimetric method of soil moisture content (%) should be used to compare it with a sensor and a standard soil moisture meter.
7. The discussion section should elaborate on the actual results of each sensor tested and its application, limitations, and benefits in real-world field conditions.
8. The conclusion section starts with the sentence, “An integrated soil monitoring system that incorporates several soil parameters has been developed." The authors just tested the value of each sensor in moist soil under lab conditions. This is misleading information and cannot be accepted by the scientific and farming communities. Rewrite this section with valid scientific outcomes for the readers and users of such sensors in agriculture.