Calculation Spellchecker for Excel: user guide

Version 1.2 · November 2026

Calculation Spellchecker checks the numbers in research spreadsheets. Select cells and it tells you whether the results hang together, finds mistakes in the spreadsheet itself, adds research functions to Excel and brings R into the workbook. Everything runs on your computer, with the working shown. **No AI, just verify.**

1. Install

- **From Microsoft's add-in store:** in Excel, go to **Home → Add-ins**, search for *Calculation Spellchecker* and press **Add**.
- **Manual install (before store approval):** download the Excel *manifest.xml* from **rafikiardhi.earth/install-addin.html** and follow the steps there for Excel on the web, Mac or Windows.

It needs current Excel: Microsoft 365, Excel 2021 or later, Excel on a Mac, or Excel on the web. You only install it once; new checks and fixes appear the next time you open it.

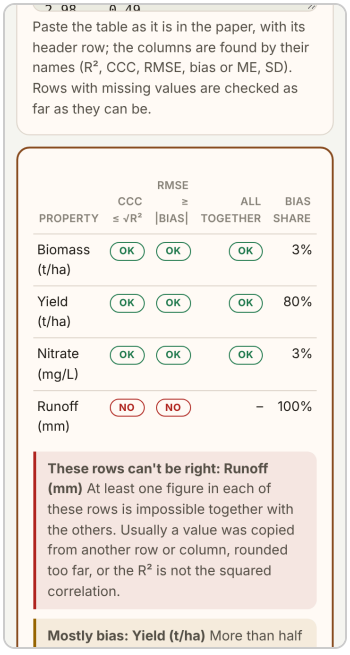
2. Open it

On Excel's **Home** tab there are two buttons: **Checks** and **Tools**. Both open the same panel on the right, with five tabs along the top: **Checks**, **Spreadsheet**, **Tools**, **Functions** and **R**. The language menu on the Checks tab switches between English, Kiswahili and Spanish.

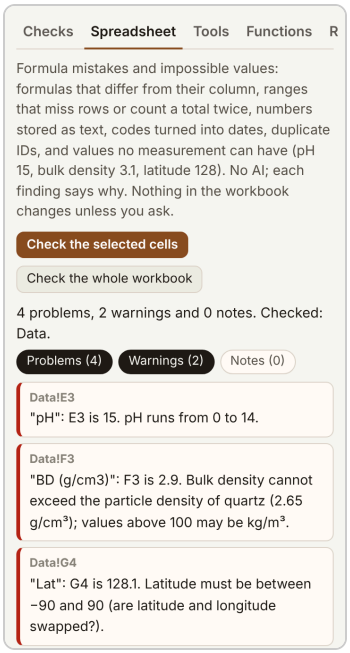
3. Checks

1. **Typed values (free):** choose a check and type or paste the values into its boxes. Results appear as you type; **Show the working** lists every step, with the references at the bottom.
2. **From your cells:** select the values with their labels, or a table with its header row, and press **Check the selected cells**. The add-in reads them into the check: for example, select a table of R^2, CCC, RMSE and bias and choose *Agreement metrics*.
3. **Check the whole workbook:** finds every result it recognises on every sheet and lists them; click one to go to its cells.
4. **Add the findings as a cell comment** puts the result on the first selected cell; results can also be written to a sheet.

The checks cover model accuracy and validation, spatial structure and sampling, data and units, and study design: the same checks as **rafikiardhi.earth/checks.html**.



4. Spreadsheet checks



On the **Spreadsheet** tab, press **Check the selected cells** (select one cell to check the whole sheet) or **Check the whole workbook**. It finds:

- **Formula mistakes:** errors such as #DIV/0!, a formula that differs from the rest of its column, numbers typed over formulas, SUM and AVERAGE ranges that stop short or count a total twice, and constants written into formulas.
- **Data problems:** numbers stored as text, codes Excel turned into dates, duplicate IDs, gaps, and units typed into cells.
- **Impossible values,** judged from the column headers: pH outside 0–14, a bulk density above that of quartz, fractions that add up to more than 100%, a bottom depth above its top, latitude and longitude swapped, and more.

Findings are sorted into problems, warnings and notes, and each says why. Click one to select its cell. **Write a report sheet** lists them on a new sheet; **Add comments for the problems and warnings** marks the cells. Nothing in the workbook changes unless you ask.

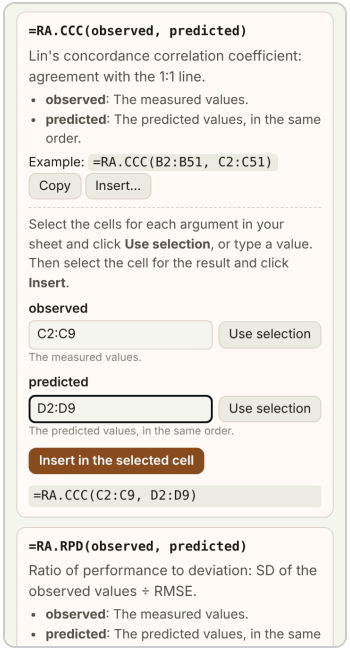
5. Tools

The **Tools** tab has the research tools from **rafikiardhi.earth/tools.html**. Choose a tool, select your data with its header row and press **Use the selected cells**. **Write to a new sheet** puts the results in the workbook, and **Insert as a picture** adds the chart to the sheet.

6. Cell functions

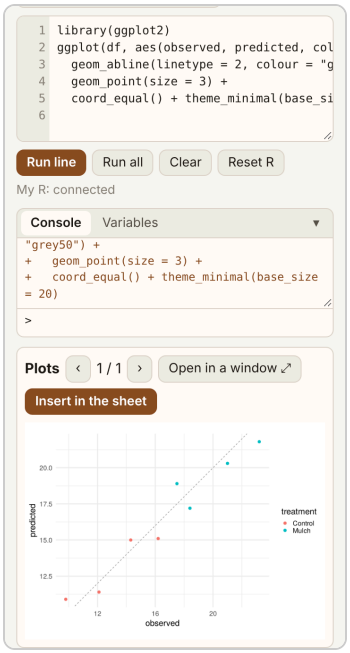
24 functions in the **RA** namespace work like any Excel function, for example *=RA.CCC(B2:B51, C2:C51)*. The **Functions** tab explains each one; **Insert...** opens a form where **Use selection** fills in an argument from the selected cells and **Insert in the selected cell** writes the formula.

Model agreement	RMSE, MAE, BIAS, R2, NSE, CCC, RPD, RPIQ, MINRMSE
Diversity	SHANNON, SIMPSON, EVENNESS, RICHNESS
Water retention	VG_THETA, VG_K
Climate and sun	DAYLENGTH, RADIATION_TOA, ET0_HARGREAVES
Calculations	CARBONSTOCK, TEXTURE, SPLINE, BACKTRANSFORM, SAMPLESIZE, DISTANCE



7. R in Excel

1. On the **R** tab, select a table with its header row and press **Selected cells → df** (or **Whole sheet → df**). It becomes a data frame called *df*; change the name in the box to keep several tables.
2. Write R code in the editor, or choose from **Insert code** (summaries, regression, t-tests, ANOVA, PCA, agreement metrics ...). **Run line** (Ctrl+Enter) runs the statement at the cursor, even over several lines; **Run all** runs everything.
3. **Plots** appear under the console. **Insert in the sheet** adds one as a picture; **Open in a window** lets you resize it, redraw it at a higher resolution, copy it or save it as PNG.
4. **Results back:** *to_excel(x)* sends almost anything to Excel: tables, matrices, model results (coefficients and fit), test results and lists go to new sheets, and ggplots are inserted as pictures.
5. The **Variables** tab lists what is in R's workspace, with a button to send each object to a sheet. ▾ hides the pane.



> **Which R. Built-in** runs R inside the panel (webR): nothing to install; the first start downloads about 30 MB, and *library(pkg)* installs a package the first time. **My R** runs the code in your own R or RStudio, with all your packages and functions: in R, run *source("https://rafikiardhi.earth/excel/rafikiardhi-connect.R"); connect()* and enter the code it prints in the panel. The link only listens on your own computer and needs that one-time code; *disconnect()* or closing R ends it.

8. Free and licensed features

Free for anyone: every check with values you type or paste, with plots and worked calculations. The All add-ins licence unlocks reading your cells, whole-workbook checks, comments and sheets, the spreadsheet checks, the tools, the cell functions and R. Licences are at **rafikiardhi.earth/membership.html**; paste your key into **Unlock** at the bottom of the Checks tab.

9. Privacy

Everything runs on your computer. Nothing you select, type or paste is sent to RafikiArdhi or anyone else; only a licence key is checked with our members service. The built-in R downloads R and its packages, but your data stays in the panel; with My R it goes only to the R on your own computer. No AI, tracking or advertising. Privacy policy: **rafikiardhi.earth/privacy.html**.

10. Help

Email **admin@rafikiardhi.earth**, or see **rafikiardhi.earth/install-addin.html**.

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