Figure S1. Experimental layout and design

General remarks	Plot size:

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Crop: Wheat-maize rotation system
Design:
  1. **Before liming (1991–2021)**: RCBD
  2. **After liming (2011–2018)**: Split plot design
Replication: Two replications each with 2 strata / a plot
  Sampling unit 1 = stratum 1
  Sampling unit 2 = stratum 2
Number of rows:
  1. **Before liming**: Wheat = 50
                          Maize = 14
  2. **After liming**: Wheat = 24
                        Maize = 6
Row length: 20 m
Space b/n rows:
              Wheat = 20 cm
              Maize = 75 cm
Space b/n crop:
              Wheat: drilled
              Maize: 25 cm
Space b/n blocks: 1m

Plot size:
  1. **Before liming**: 10 m x 20 m = 200 m^2
                stratum /sampling unit = 8.25m x 7.75 m = 64 m^2
  2. **After liming**: 4.9 m x 20 m = 98 m^2
                stratum /sampling unit = 4.25 m x 7.5 m = 31.87m^2
Treatments:
  1. **Before liming**: 6 (5 fertilizer treatments + 1 control): C (no fertilizer application or control); (2) N (nitrogen); (3) NP (N and phosphorus); (4) NK (N and potassium); (5) NPK (N, P, and K); (6) NPKC$_R$ (NPK fertilizer plus crop residue (C$_R$)
After liming: 11 (5 fertilizer treatments by two level of liming (no liming (−L) and with liming (+L): (1) C; (2) N−L; (3) N+L; (4) NP−L; (5) NP+L; (6) NK−L; (7) NK+L; (8) NPK−L; (9) NPK+L; (10) NPKC$_R$−L; (11) NPKC$_R$ +L.
Note: The stratification technique used for sampling was based on the principle that sampling units from the same stratum/sampling unit are more similar than those from different strata, according to [45].