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ZEF Ecology and Development Series No 56

The contribution of different fauna communities to improved soil health: A case of Zimbabwean soils under conservation agriculture

Soil health is the continued capacity of a soil to function as a vital living system, and soil fauna plays an important role in improving soil health. The study analyzes soil fauna density and activity under conventional and conservation agriculture systems on smallholder farms in sub-humid and semi-arid north-eastern and southern Zimbabwe. The participation of the soil fauna in litter decomposition and its contribution to soil organic matter is higher under conservation agriculture than under conventional. Under conservation agriculture, termite and beetle larva densities respond to mulch ripper and direct seeder treatments more strongly than earthworms and nematodes. Fauna density is also influenced by soil texture, moisture and temperature. Termite galleries enrich the upper soil layer with organic matter, clay and mycorrhiza spores.