Article title	Evaluation of Yield-Limiting Nutrients for Teff and Wheat Under Different Landscape Positions in Ethiopia
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Abstract	Soil fertility depletion and low crop yield are critical constraints affecting agricultural productivity in Sub-Sahran Africa (SSA). The problem is severe in the undulating landscapes of Ethiopian highlands. Multiple on-farm nutrient omission trials were conducted in 2020 and 2022 seasons to (1) identify yield limiting nutrients for wheat and teff across three landscape positions (hillslope, midslope, and footslope) and (2) determine the effects of landscape position and soil type on nutrient responses and rainwater productivity (RWP). The trial included 11 treatments vis ALL1 [nitrogen (N), phosphorus (P), potassium (K), sulfur (S), zinc (Zn), and boron (B)] - blend**,** ALL1-K, ALL1-S, ALL1-Zn, ALL1-B, ALL2 (NPKSZnB individually applied), ALL3 (NPSZnB compound + K), NP (ALL1-KSZnB), 50% ALL1, 150% ALL1, and a control (without fertilizer). Results showed that landscape position, and fertilizer treatments significantly increased yield of wheat (30%) and teff (35%) at the footslope position due to the application of ALL1 treatment compared to the yield achieved at the hillslope position. However, statistically significant yield difference both on wheat and teff were not observed due to the addition or omission of K, S, Zn, and B nutrients with the same rate of N and P. Instead, the change in the application rate of ALL1 treatment significantly influenced yield of both crops. A yield increase of 23% and 18% on teff and 25% and 17% on wheat respectively on footslope and hillslope positions were observed due to the application of 150%ALL1 compared to the ALL1 treatment. Besides, application of 150% ALL1 treatment has also significantly increased RWP at the footslope position. The 50%ALL1, however, significantly decreased yield. Further research is required to determine the optimum rates of N and P nutrients in majority of these locations and of K,S and Zn in selected responsive locations to optimize the yield of both crops.
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