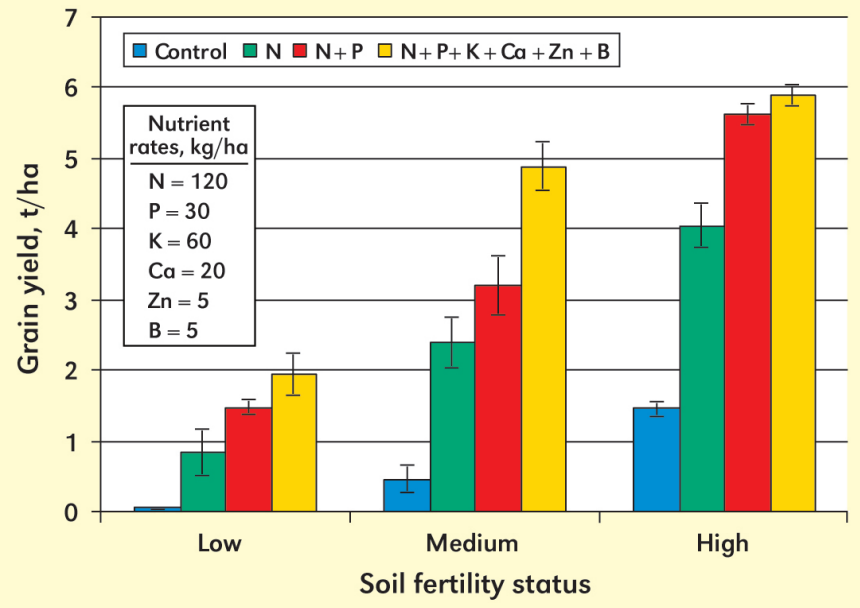
**Module 3.2-1 Balancing organic and mineral nutrients for maize in Africa.** Studies in sub-Saharan (SSA) show that fertilizer use is consistently more profitable and efficient on fertile fields. When soils are degraded, restoration of soil fertility through balanced fertilization and organic matter additions is necessary to achieve high crop productivity. Other options for managing soil fertility, such as manure, crop rotations, and improved fallows are most effective when strategically combined with fertilizer. In trials conducted on fields varying in soil fertility across many locations in SSA, application of N alone gave the largest maize yield increase under high and medium soil fertility conditions. Addition of P also led to a significant increase in yields on the high fertility fields, but in medium fertility fields, addition of base cations (K and Ca) and micronutrients (Zn and B) was required to significantly increase crop yields above the N treatment. On the low fertility fields, yields were increased to less that 1 t/ha by applying N and to less than 2 t/ha by applying N, P, K, Ca, Zn and B. Under such conditions, addition of organic resources to increase soil organic matter is required to increase retention of soil nutrients and water, better synchronize nutrient supply with crop demand, and improve soil health through increased soil biodiversity.
**Source:** Zingore, S. 2011, Better Crops with Plant Food 95(1): 4-6.

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