Yields and quality of Phaseolus bean cultivars under farmers’ conditions in eastern and southern Africa - DTU Orbit (03/01/2019)

Yields and quality of Phaseolus bean cultivars under farmers’ conditions in eastern and southern Africa

Common bean (Phaseolus vulgaris L.) is a dominant grain legume in eastern and southern Africa, where it constitutes a major source of protein and microminerals in peoples’ diet. The current studies aimed at determining how initially promising genotypes of bean responded in terms of yield and grain element composition under farmers’ cropping conditions. It was found that variations between genotypes in the proportions of elements in the grain dry matter across a wide range of conditions could be linear with an additional 20% iron (Fe) or zinc (Zn) for some genotypes. However, this linearity was only identifiable under relatively favourable conditions. Further, a favourable season could enhance the proportion of Fe in the grains of the same genotypes by up to 20%, whereas Zn did not respond. Fe and Zn correlated only to some degree with P (r² > 0.35). It is concluded that the supply of elements in the diet may best be secured by selecting for high-yielding cultivars as the amounts of phosphorus (P), Fe and Zn in the grains correlated strongly (r² > 0.93) to the dry matter grain yield.

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