Abstract

Micronutrient deficiencies impair the health and productivity of over 2 billion people worldwide, yet reliable estimates of these “hidden” deficiencies are scarce. Rather than measuring micronutrient status directly, we often rely on food recall data and food composition tables (FCTs) to calculate vitamin or mineral intake for a given population. FCTs report sample-specific mean nutrient content by food, ignoring that nutrient content is a distribution and shifts over space and time. For this reason micronutrient intake estimated via FCTs will tend to under-estimate deficiency prevalence, and will fail to detect key vulnerable populations. In rural Uganda, crops sampled at market are far lower in nutrient status than newly harvested crops sampled from homes; children reliant on those market-purchased crops are differentially vulnerable to zinc deficiency. This paper models crop zinc content for farms across Uganda using a unique dataset containing crop nutrient content and a larger, nationally representative panel dataset. It explores the spatial, household-specific, and time-varying factors that drive selection into the staple market, and therefore influence crop zinc content at market in any given season. The low zinc content of market crops is explained primarily by regional selection into market, but zinc content at market also shifts over time. Temperature variation, in particular, drives selection to market and shapes the nutrient content of market crops.

Keywords: micronutrients, minerals, zinc, deficiency, crops, soil, market participation

JEL Classification: I14, I15, Q12, Q18, O13