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Weak relationship between soil health, grain quality

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Corn plants at harvest time. Photo by Chad Hajda.

Demand for high quality grains may increase in the future due to consumers' growing preference for healthy foods. Healthy soils support high grain yields (in addition to clean water and biodiversity) and have received much attention among consumers and researchers recently. But while soil health's relationships with crop yield are well investigated, studies about its role in grain quality are limited.

A recent study published in *Agricultural & Environmental Letters* examined what role soil health (evaluated using the Haney Soil Health Tool) plays in corn grain protein and oil content. Researchers working in Texas found that the soil health index accounted for only up to 13% of protein and 2–17% of oil content variability, depending on soil type.

Due to the weak relationships, the authors did not recommend using the Haney Soil Health Tool to evaluate grain protein and oil content. They concluded that the relationships between soil health and grain quality need to be evaluated across different soil and agronomic conditions. The team also reported that soil health could be mapped using easy-to-obtain soil electrical conductivity and topographic data, information that can be helpful in precision management decisions at the field level.

Dig deeper

Adhikari, K., Smith, D.R., Hajda, C., & Owens, P.R. (2022). Can soil health explain grain quality? A case study of a corn field in Texas. *Agricultural & Environmental Letters*, *7*, e20078. **https://doi.org/10.1002/ael2.20078**

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