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Farm Level Yield Variability

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Yield variability is important because it helps determine the amount of risk that farmers face. Yield variability can also play an important role when simulating the potential outcomes of various agricultural policies. However, while there exists crop yield histories at the county, crop reporting district (CRD) state, and national levels, there is less data available at the farm level. This paper uses Kansas Farm Management Association (KFMA) data to calculate crop yield variability at the farm level and then compare it to yield variability at the CRD level and at the county level. By understanding how yield variability at the farm level (where there isn't as much data) compares to county level data (where there is readily available yield histories), we can better design models that accurately incorporate farmer risks.

For this paper, we calculate farm level yield histories for corn, soybeans, and wheat for all those farms within the KFMA program that have a 15-year history of yield data. We then use t-tests to see if the county yield data differs from farm level data. Results should show how county level data can be adjusted to reflect farm level data for those counties without farm level data.