



South Dakota State University

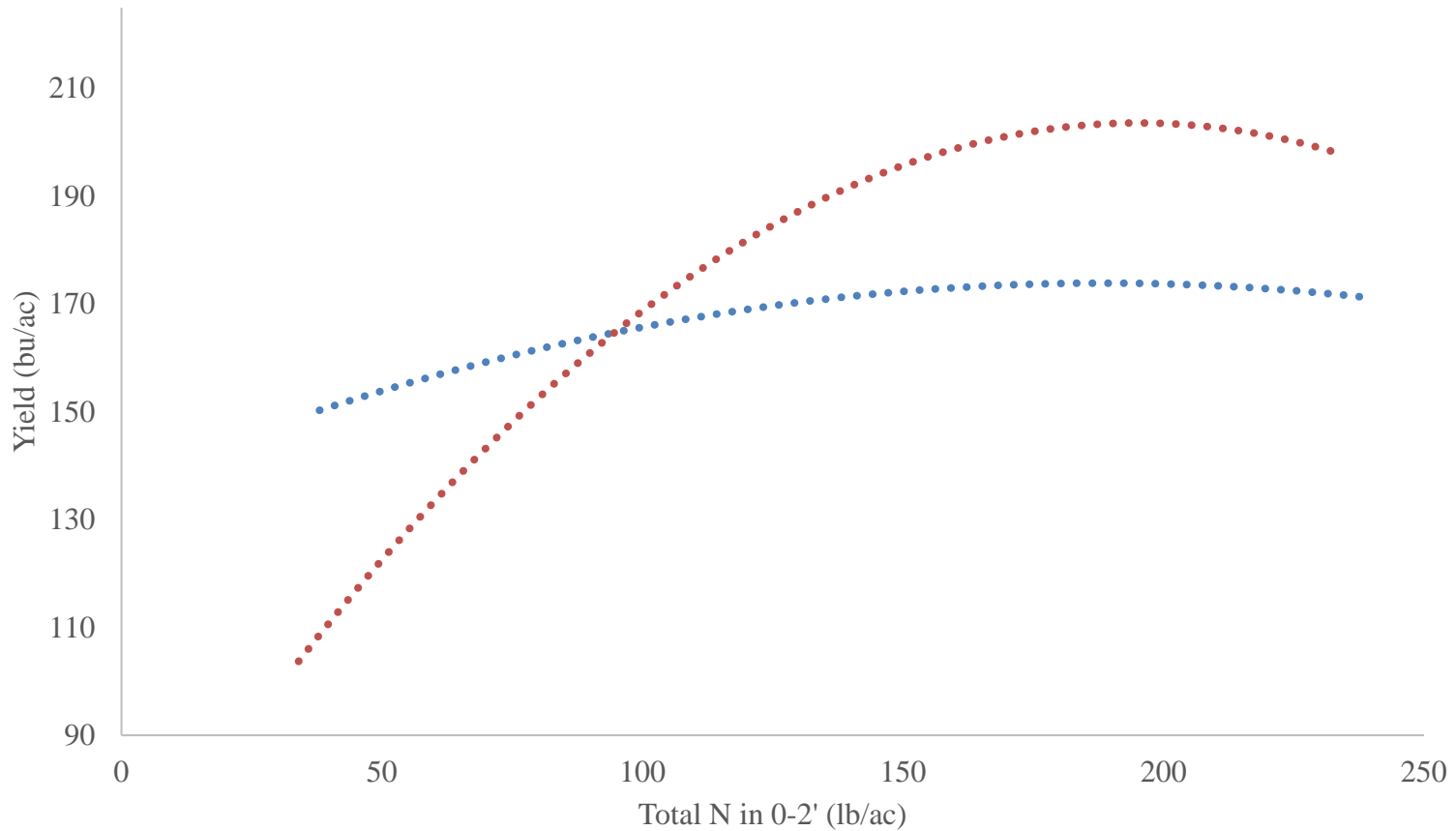
Fertilization management to reduce potential yield declines following no-till adoption in South Dakota

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Study Design:

- On-farm sites will be selected from western central and eastern regions of South Dakota based on the years since conversion to no-till.
- For each site, 6 rates of N will be applied as either 1) surface broadcast (urea), or 2) surface banded (UAN).
 - At harvest, the grain yield will be compared for each treatment and nutrient use-efficiency (yield/amount of nutrient applied) will be determined to estimate how well each system uses nutrients based on years since no-till conversion.

Year 1 Results - Corn: Yield



Long-term

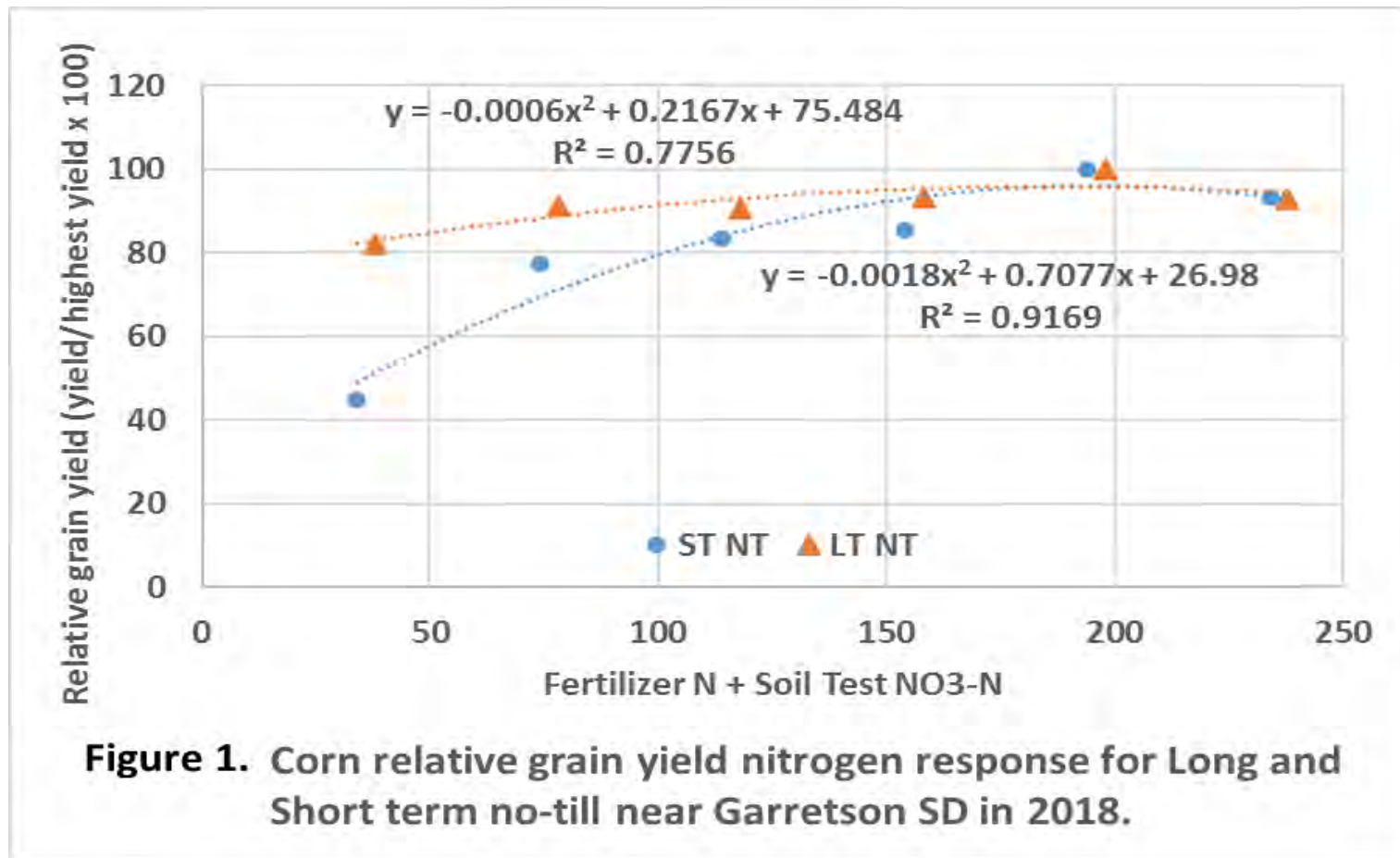
Short-term

••••• Poly. (Long-term)

••••• Poly. (Short-term)

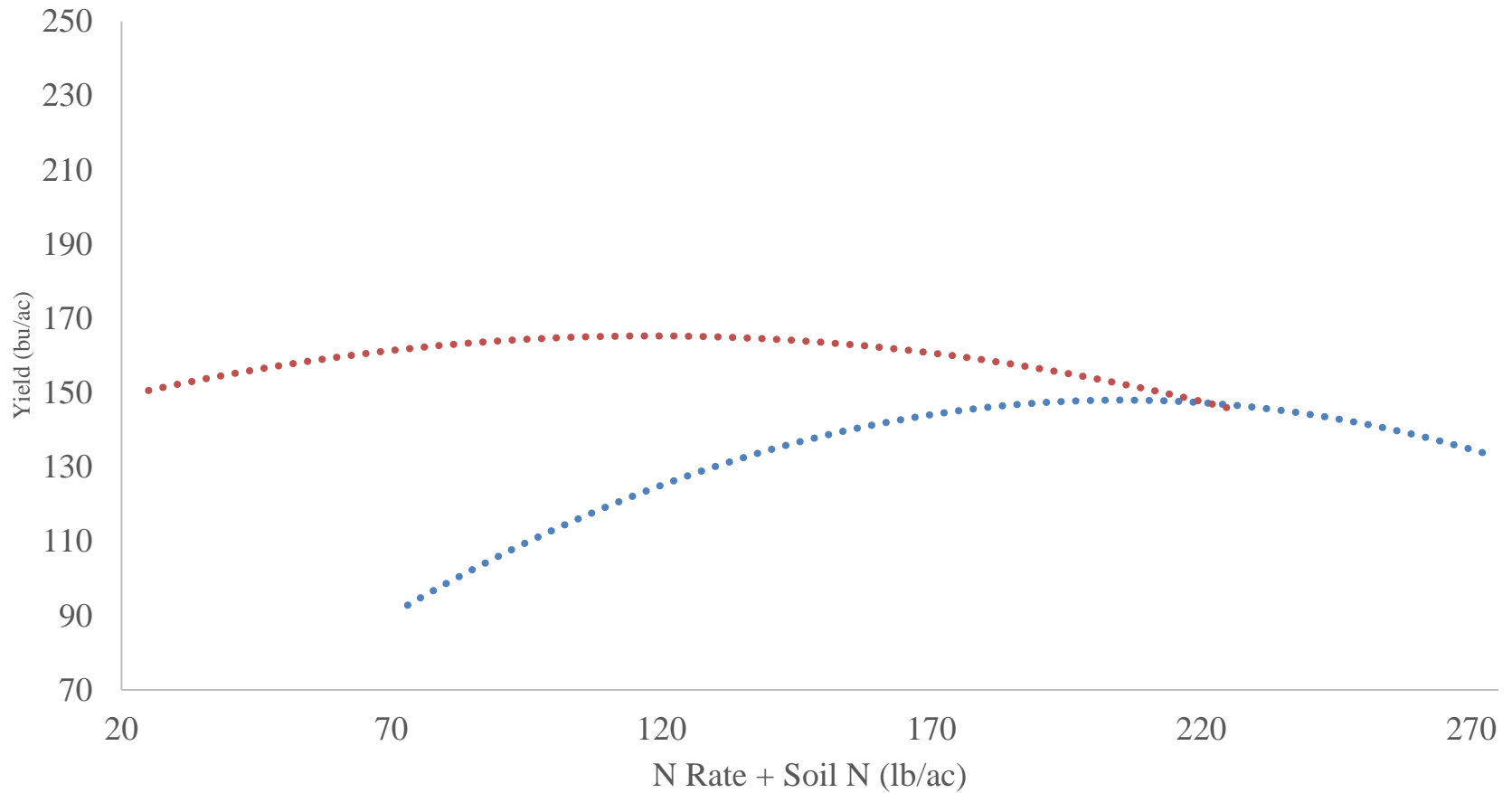
Year 1 Results - Corn:

Relative Yield



Year 2 Results - Corn:

Yield Comparison



Short-Term NT

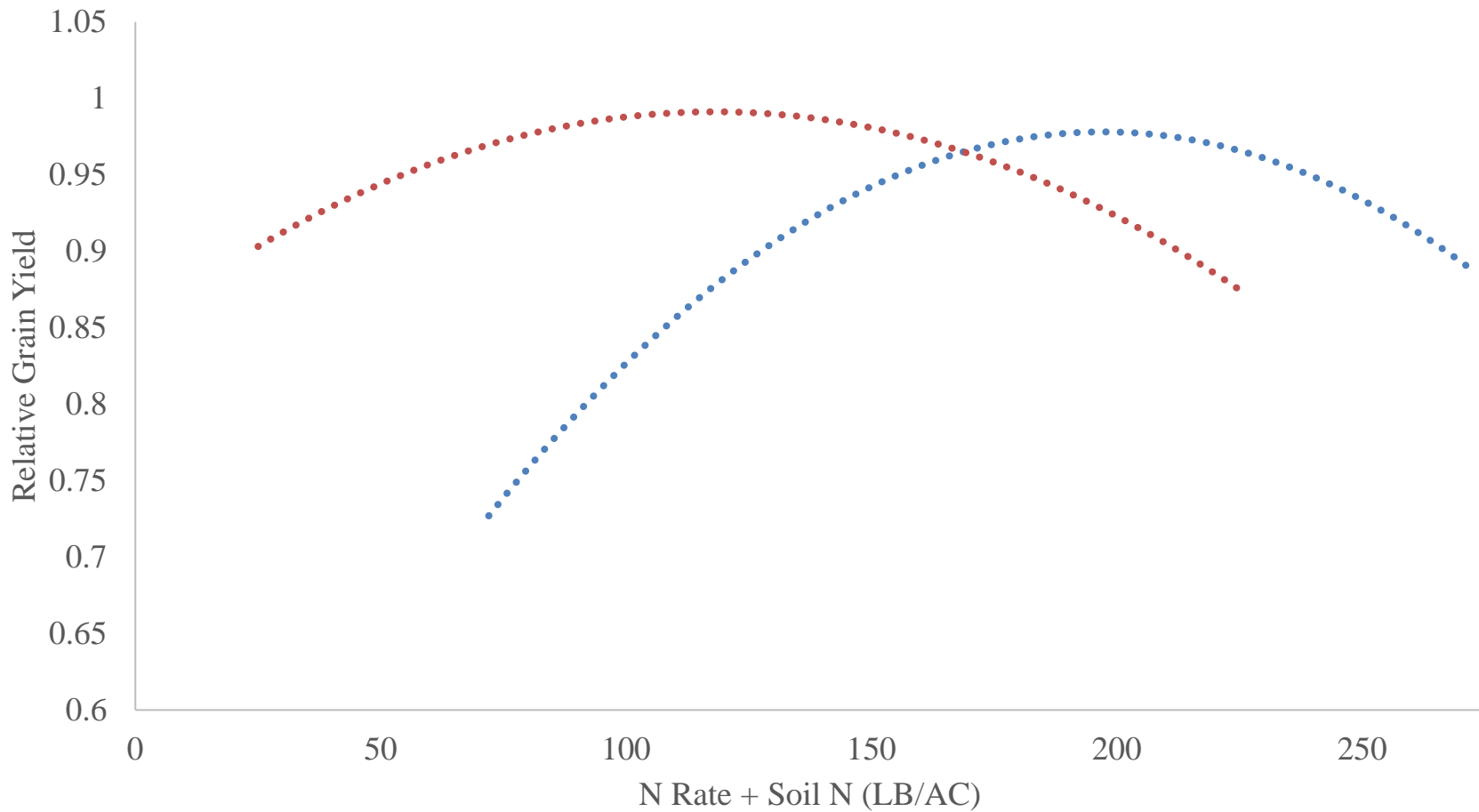
Long-Term NT

••••• Poly. (Short-Term NT)

••••• Poly. (Long-Term NT)

Year 2 Results - Corn:

Relative Yield



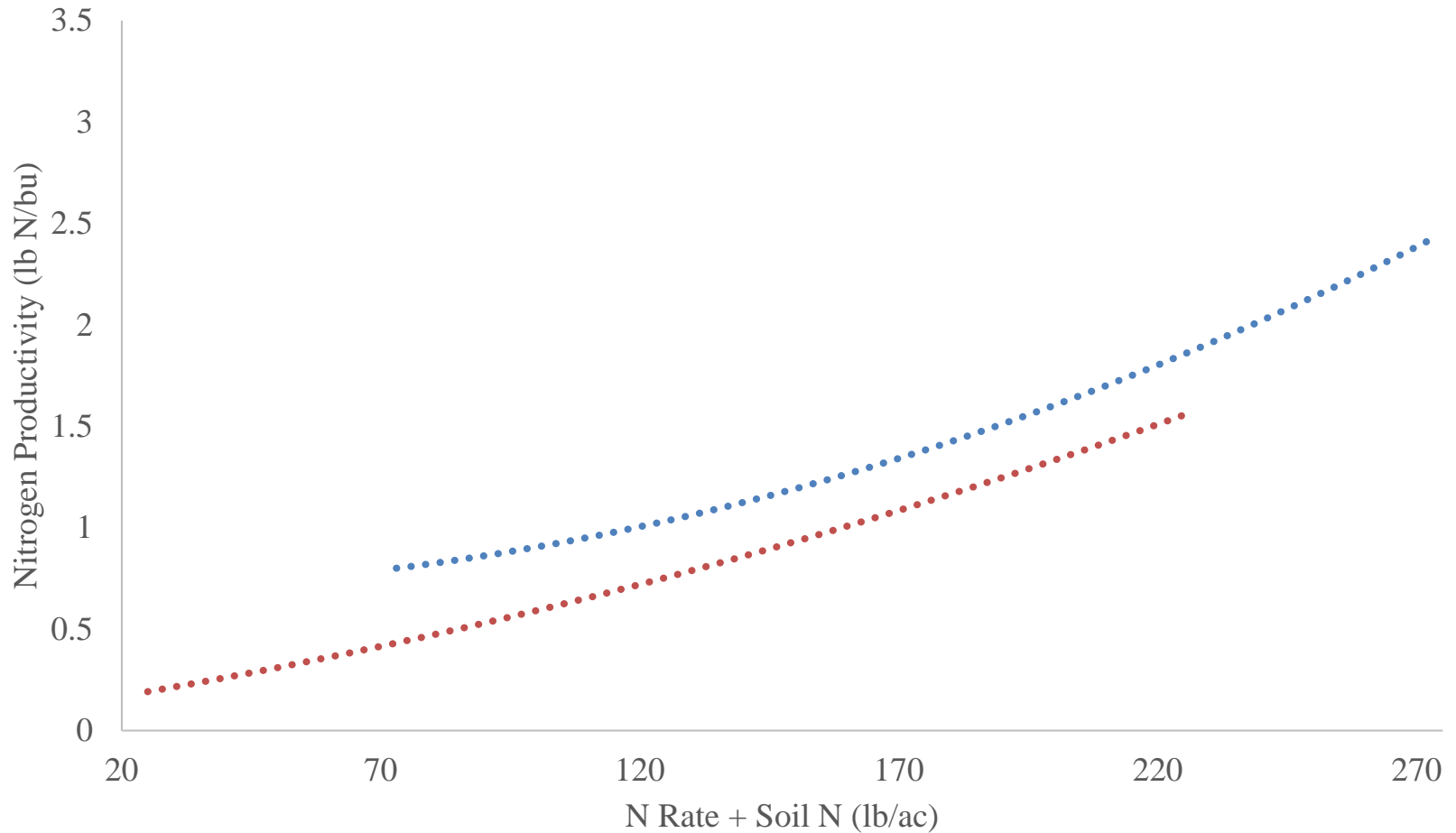
Short Term No-Till

Long-Term No-Till

•••• Poly. (Short Term No-Till)

•••• Poly. (Long-Term No-Till)

Year 2 Results - Corn: Nitrogen Productivity



Short-Term NT

Long-Term NT

•••• Poly. (Short-Term NT)

•••• Poly. (Long-Term NT)

Updates for 2020

- 2019 two sites were lost due to flooding in wheat
- Plots were not planted in 2020 due to Covid complications
- Propose continuation of corn only in 2021 to allow for collection of 3 years of data



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Questions?

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