# Non-Destructive Evaluation of Potato Nitrogen Status with a Hand-held NDVI Meter. (S08-davenport154051-Poster)

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## Abstract:

To determine what supplemental N fertilizer is needed for potato (Solanum tuberosum L.) production during the growing season producers may test soil or plant tissue. A non-destructive tool to monitor potato N needs has the potential to evaluate status and follow up with an application more promptly than when lab analysis is used. Additionly, a non-destructive monitoring tool could be used at mulitple locations in a field for differential application. In 2001 and 2002 Ranger Russett potato were planted with four different total seasonal N rates (0, 170, 340, 500 kg/A N), replicated four times in a randomized complete block design. Weekly, from row closure through 2 weeks pre harvest, plant tissue samples were collected to determine N status. Concurrently, a small hand-held NDVI meter (Field Scout CM1000 Chlorophyll Meter, Spectrum, Plainfield, IL.) was used to measure leaf spectral reflectance on three leaves per plot. Reflectance values were compared to N rate and to tissue N content. In 2001, leaf spectral reflectance was highly correlated with N rate (P < 0.001). Comparison of leaf reflectance to N rate and tissue N concentration for both growing seasons will be discussed.

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# **Presentation Information:**

Presentation Date: Tuesday, November 12, 2002 Presentation Time: 2:00-4:00 pm Poster Board Number: 1329

## **Keywords:**

nitrogen, potato, NDVI, petiole testing