

AST 426 : Precision Water and Nutrient Management II

Instructor: **Pappu Kumar Yadav, Ph.D.**
Department of Agricultural & Biosystems Engineering
Machine Vision & Optical Sensors Laboratory
South Dakota State University
Fall 2024



Quiz II

- Questions and worksheet provided in-class
- Full marks : 25
- Time: 30 Minutes





remote sensing



Article

Transforming Unmanned Aerial Vehicle (UAV) and Multispectral Sensor into a Practical Decision Support System for Precision Nitrogen Management in Corn

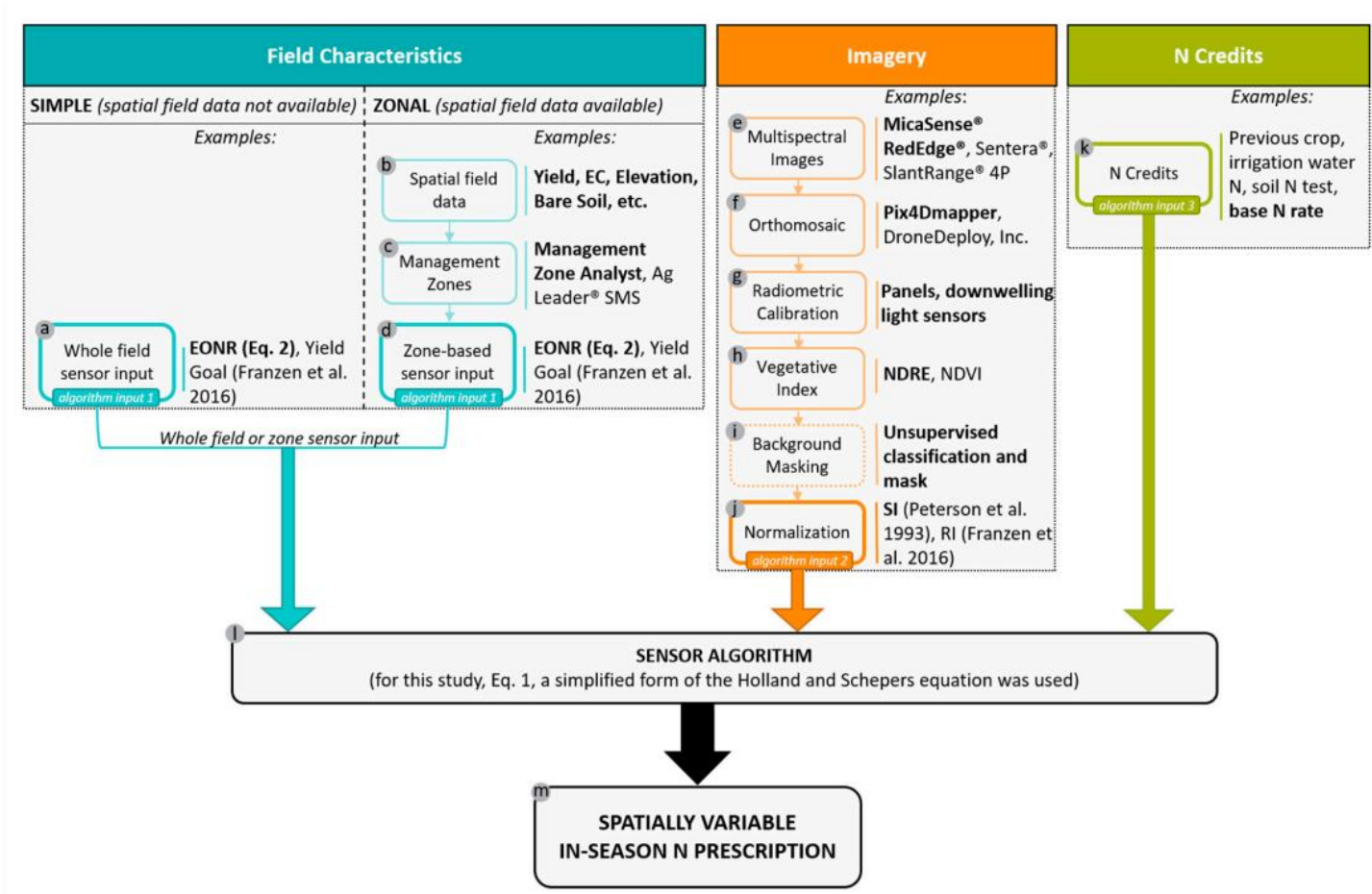
Laura J. Thompson ^{1,*}  and Laila A. Puntel ² 

¹ University of Nebraska Extension, University of Nebraska-Lincoln, 116 W 19th Street, Falls City, NE 68355, USA

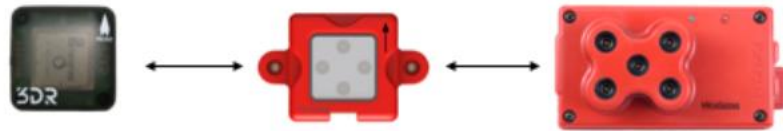
² Department of Agronomy and Horticulture, University of Nebraska-Lincoln, Keim Hall, 1825 N 38th Street, Lincoln, NE 68583-0915, USA; lpuntel2@unl.edu

* Correspondence: laura.thompson@unl.edu

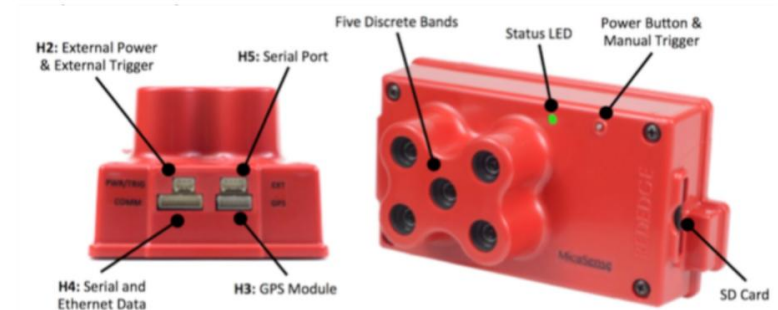
Case Study I



Case Study I

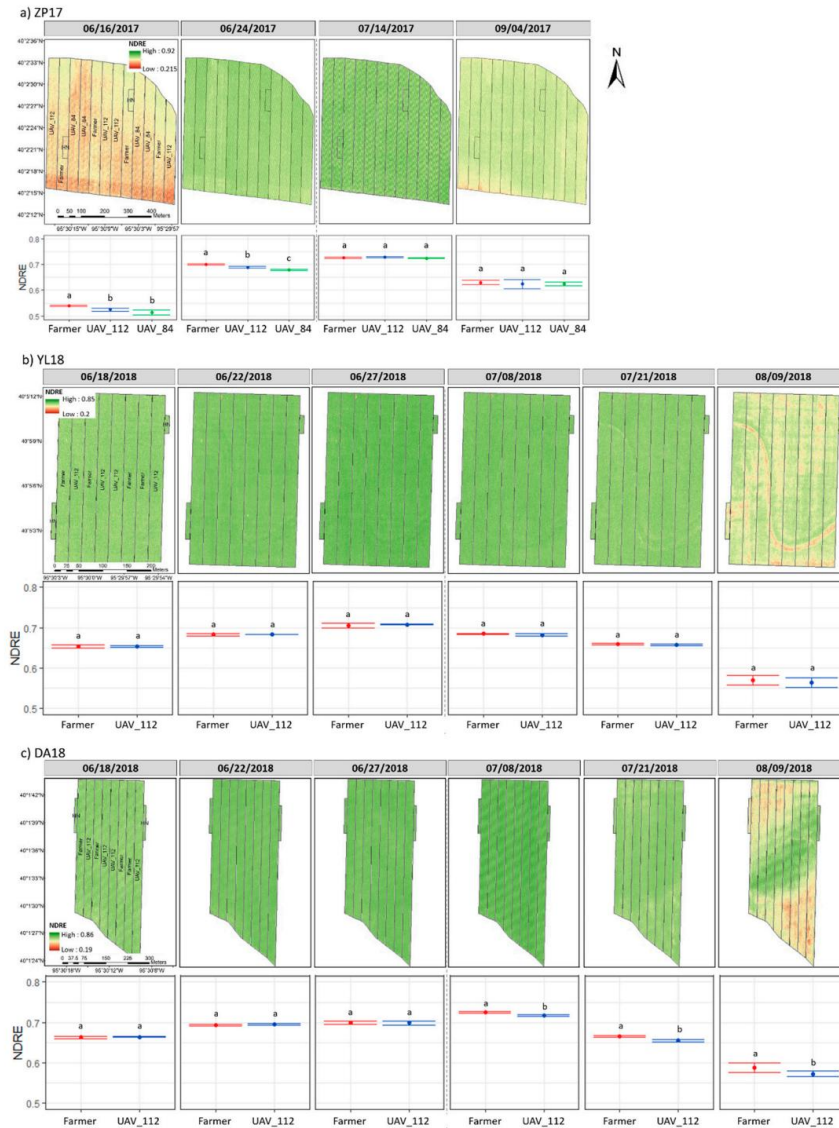


INPUTS AND OUTPUTS

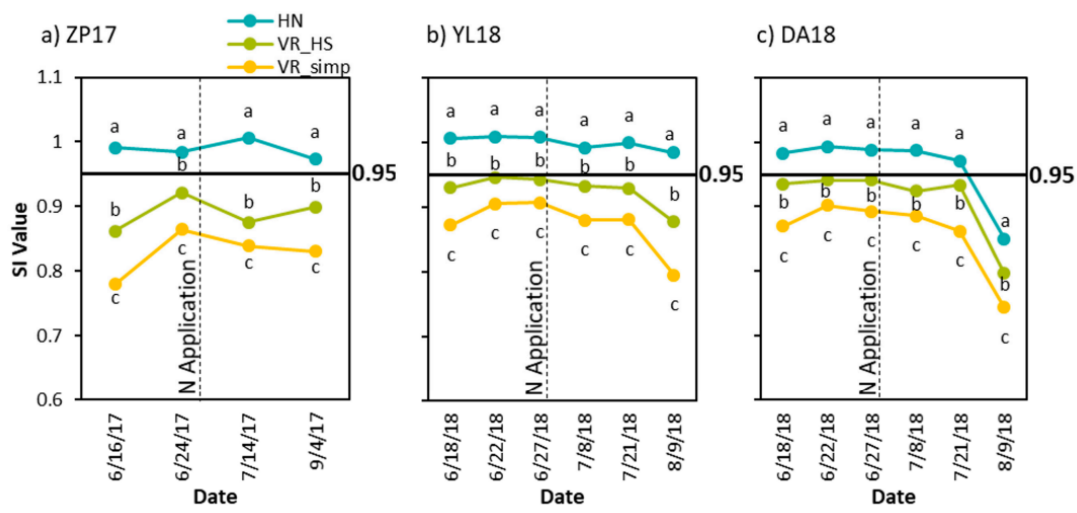
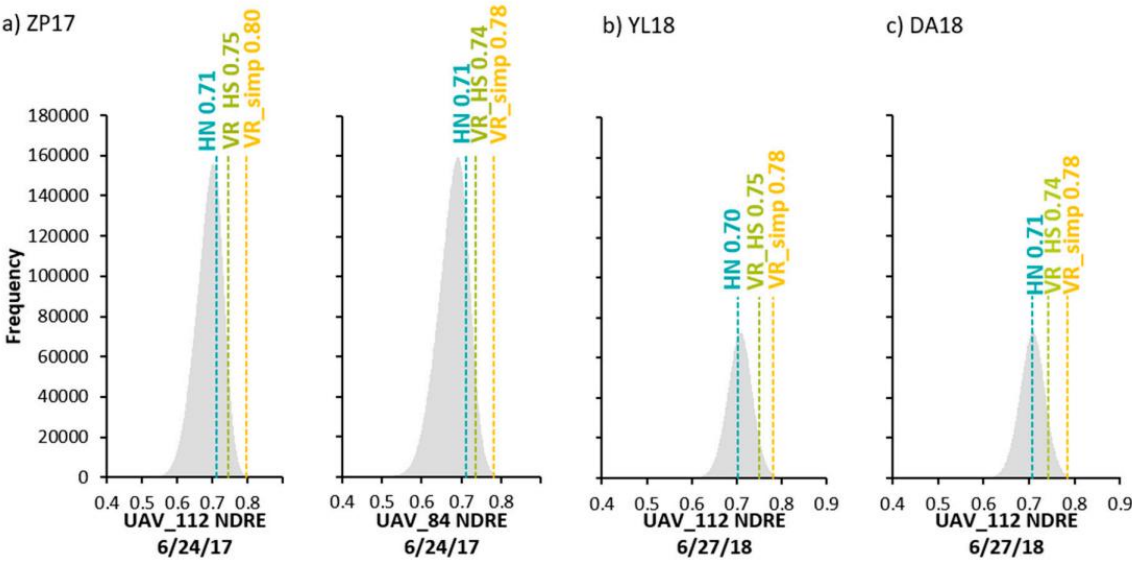


<https://support.micasense.com/hc/en-us/articles/226364087-RedEdge-3-Integration-Guide>

Case Study I



Case Study I



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Machine learning and fluorosensing for estimation of maize nitrogen status at early growth-stages

Dipankar Mandal^a, Rafael de Siqueira^b, Louis Longchamps^c, Raj Khosla^{a,b,*}

^a Department of Agronomy, Kansas State University, Manhattan, KS 66506, USA

^b Department of Soil and Crop Sciences, Colorado State University, Fort Collins, CO 80523-1170, USA

^c Department of Soil and Crop Sciences Section, Cornell University, Ithaca, NY 14853, USA

Case Study II

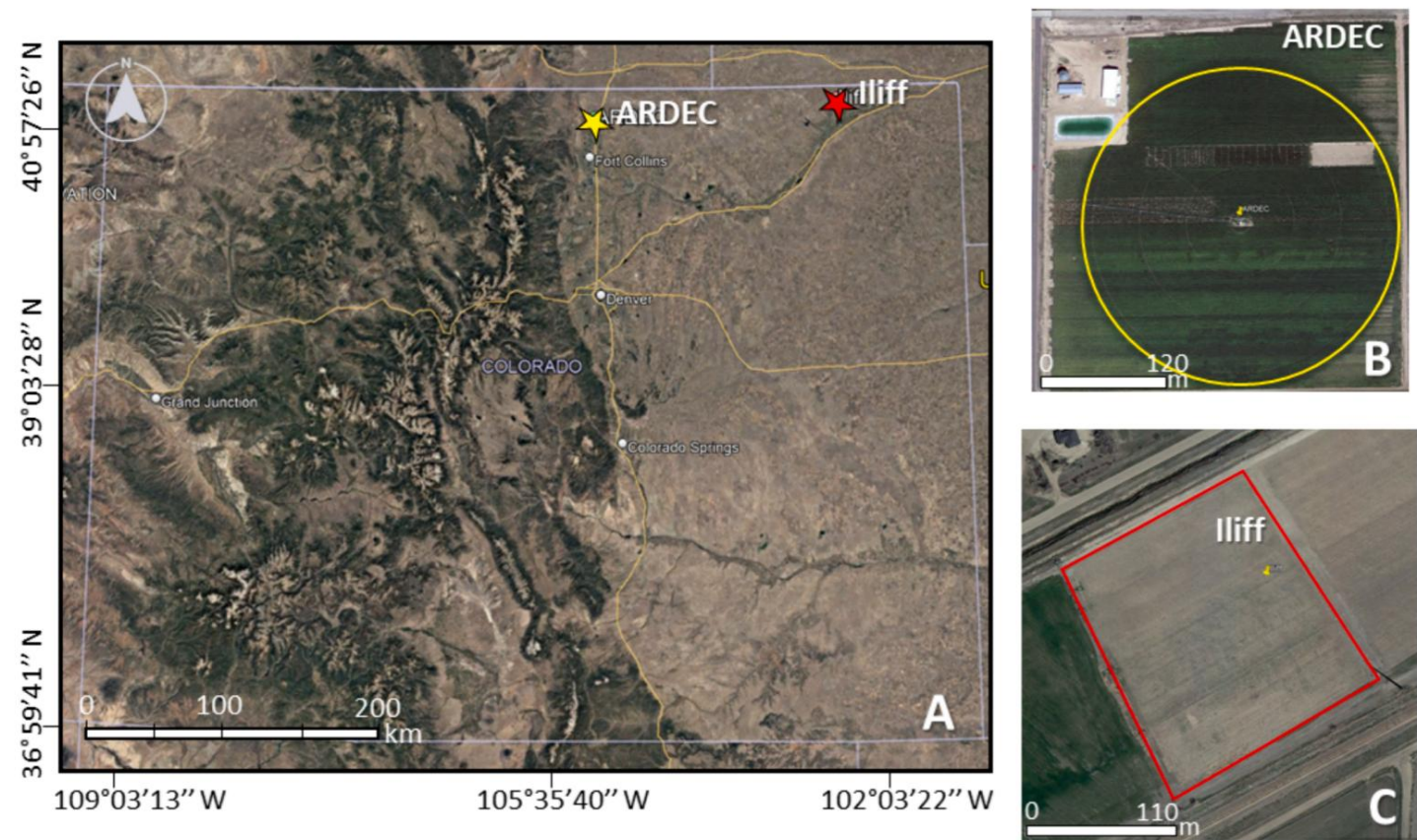


Fig. 1. Geographic location of the ARDEC and Iliff sites (star symbols) overlaid on a Google Earth imagery (A). An enlarged view of fields over two sites are highlighted in yellow (B) and red (C) polygons for ARDEC and Iliff respectively.

Case Study II

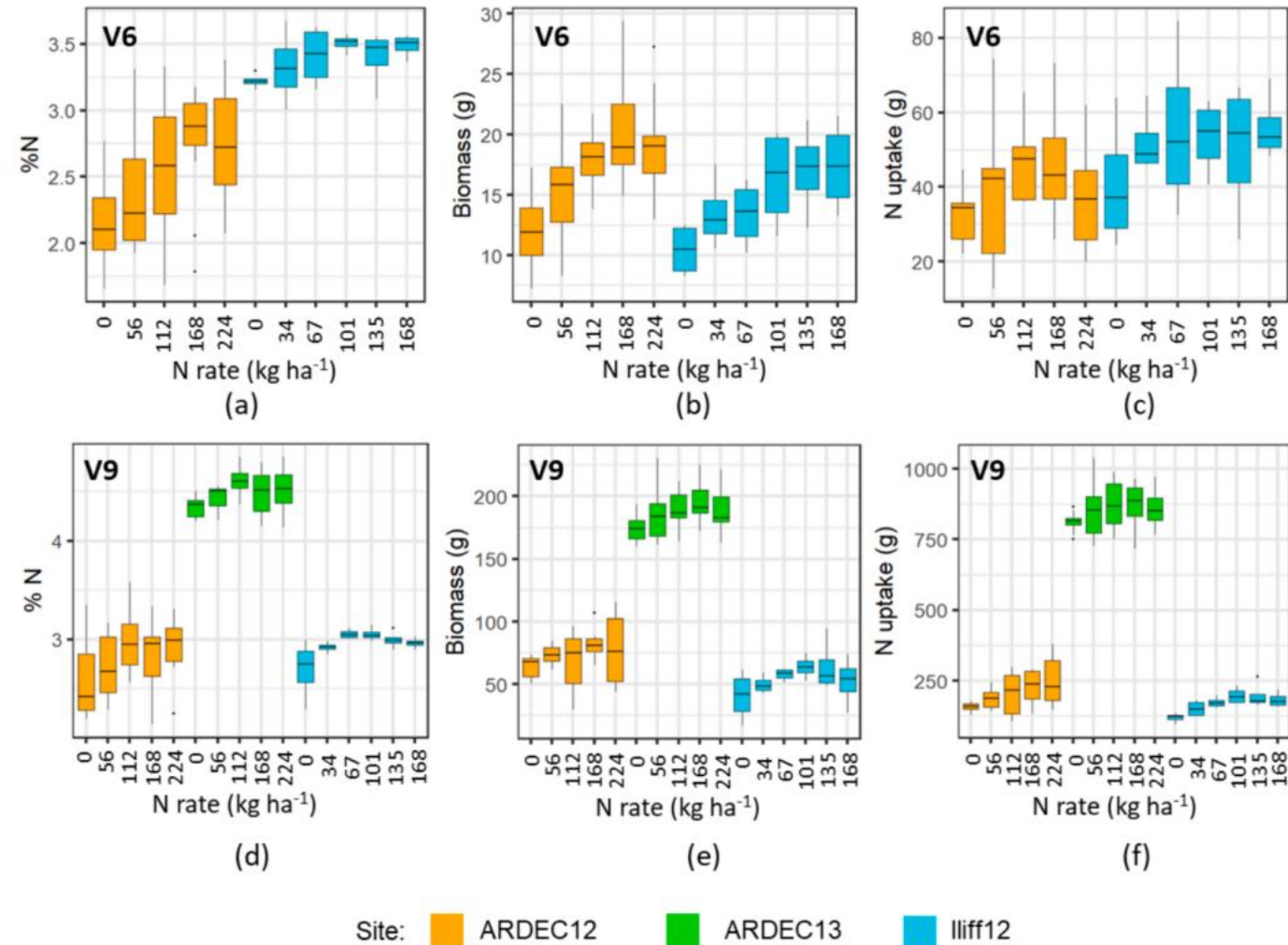


Fig. 2. Variability of %N, above ground biomass, and N uptake with N rate applications at V6 and V9 growth stages of maize for three site-years.

Case Study II

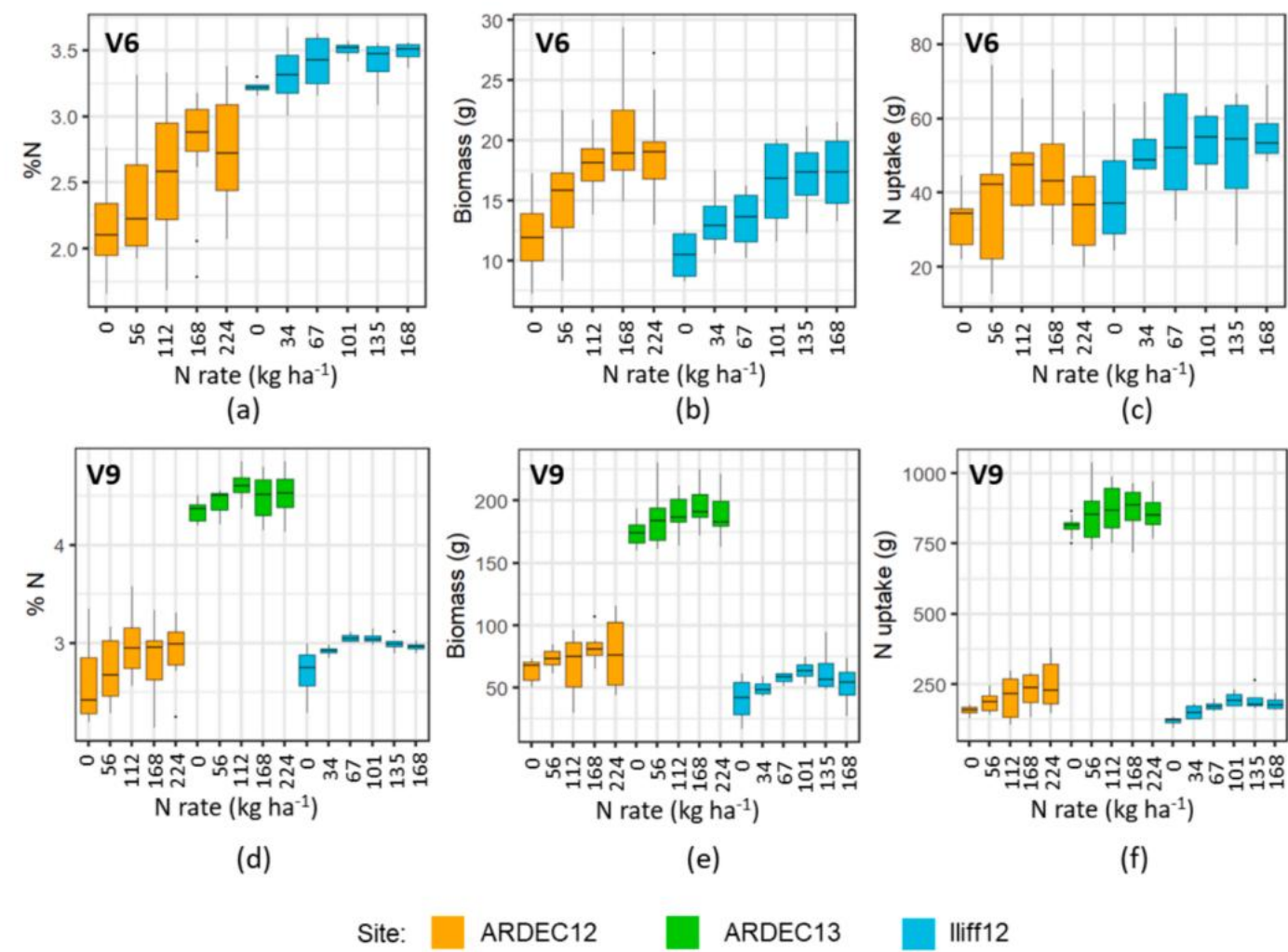


Fig. 2. Variability of %N, above ground biomass, and N uptake with N rate applications at V6 and V9 growth stages of maize for three site-years.

Next Lecture

- Guest Lecture by Dr. Sushant Mehan, SDSU

