

## Non-destructive assessment of plant nitrogen status in hops using leaf chlorophyll measurements

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### Objective:

- Determination of hop plant's nitrogen status
  - Developing of fertilization algorithms
- Optimizing of nitrogen fertilization

### Methods:

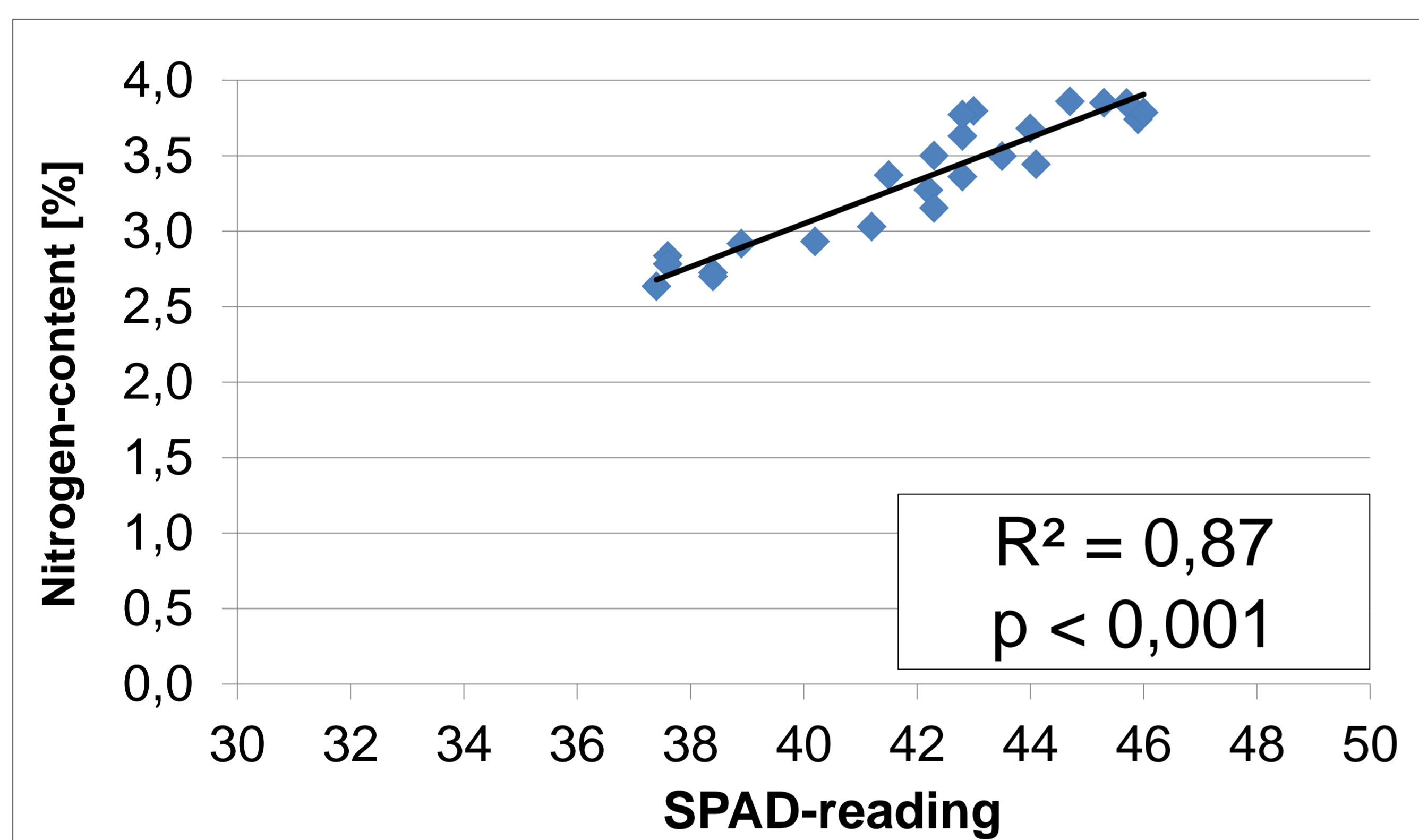
- Measurement of leaf chlorophyll content (SPAD)
  - Analysis of leaf-nitrogen-content
  - Determination of cone-yield and quality
- Linear regression analysis



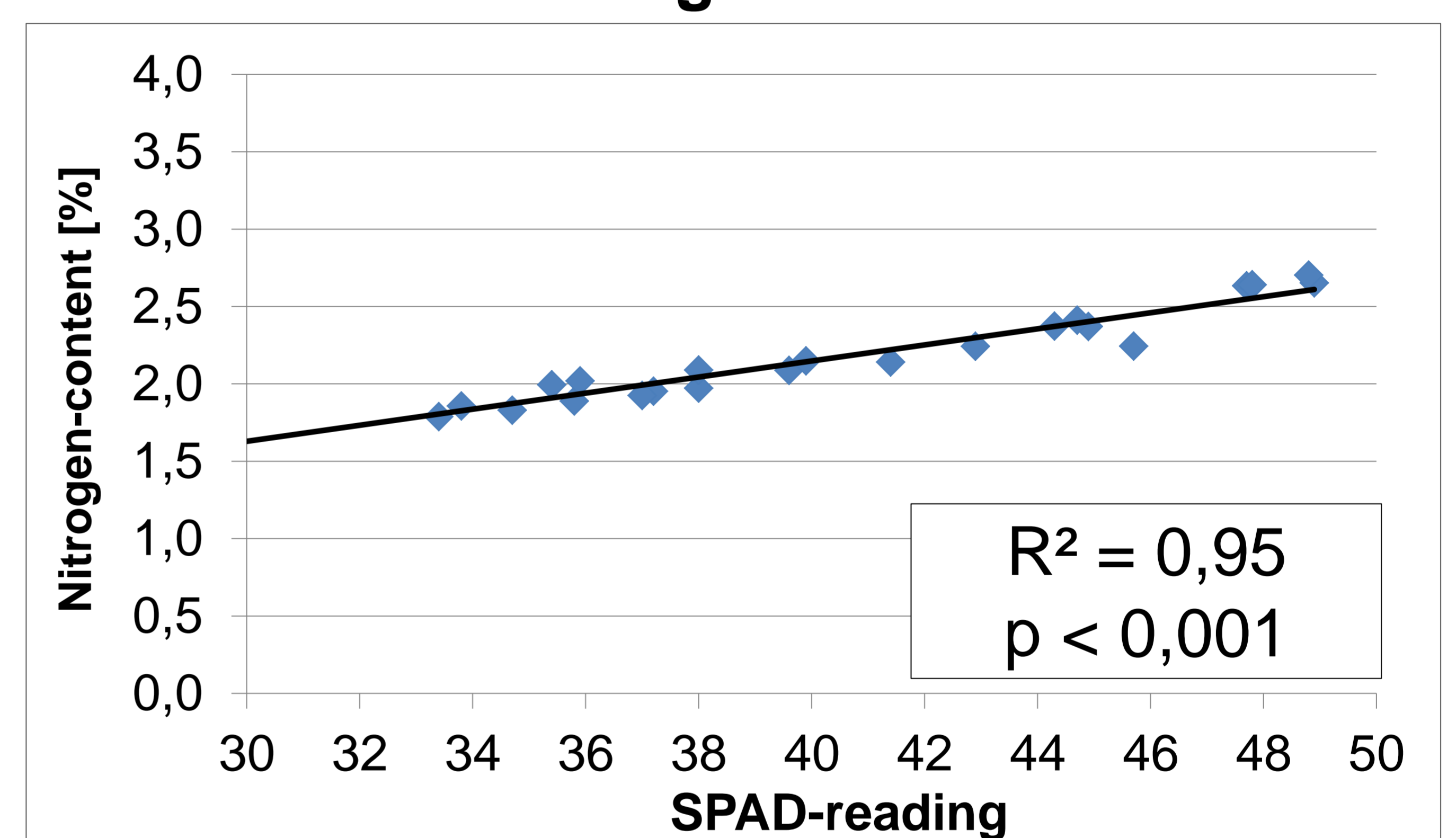
SPAD-Measurement

### Regression analysis: correlation SPAD ~ leaf-nitrogen-content

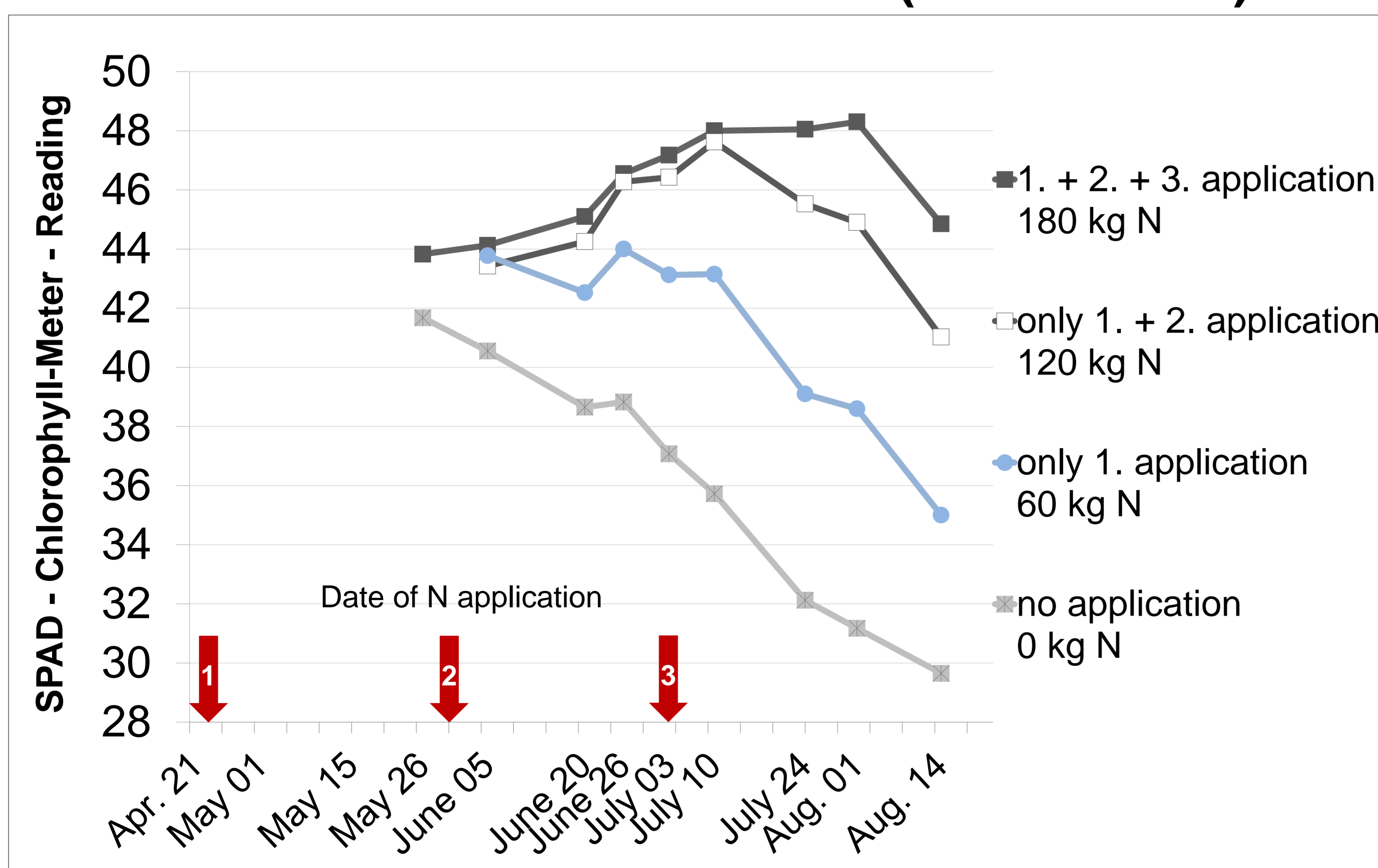
June 20



August 01



### Measurements in fertilization trial (cv. Herkules)



### Results:

- Measurement of different N-nutrition-levels
- Significant relationship between SPAD-reading and leaf-nitrogen-content
- Calibration for different varieties and growth stages
- High chlorophyll contents do not necessarily result in yield increase