



Project  
presentation

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# Project presentation

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# Sorghum

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![Sorghum pictusorghum.jpeg]{width=85%}



# Dataset description

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The dataset is the agronomic traits that were measured in a sorghum field experiment with two levels of nitrogen treatment. Each row represents a small pieces of land with it's unique row number and column number which contains around 10 individual sorghum plants. The explanation for each column stated below:



# List of variables

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**Plot ID&Sorghum Accession:** Unique ID for each plants  
**SNPDataID** Unique ID

**Row&Column:** spatial data for sorghum plants

**Block:** Blocking number

**Treatment:** two levels of nitrogen treatment

**DaysToBloom:** How many days until the sorghum flower bloom(unit:day)

**MedianLeafAngle:** Median value of leaf angle for each 10 individual sorghum plants(unit:degree)

**LeafAngleSDV:** Standard deviation of leaf angle for 10 individual sorghum plants

**PoorStand:** If half of the sorghum plants are poor stand, if yes then the answer is Y

**PaniclesPerPlot:** How many panicles per plot have

**PanicleGrainWeight:** How much grain weight for each panicle(unit:gram)

**EstimatedPlotYield:** The estimated plot yield for 10 individual sorghum plants(unit:gram)

**FlagLeafLength:** The mean value of the flag leaf's length for each 10 individual sorghum plants(unit: cm)

**FlagLeafWidth:** The mean value of the flag leaf's width for each 10 individual sorghum plants(unit: cm)

**ExtantLeafNumber:** The number of visible leaves on the main stalk at maturity stage.

**PlantHeight:**The mean value of the plant height for each 10 individual sorghum plants(unit: cm)

**ThirdLeafLength:** The mean value of the third leaf's length for each 10 individual sorghum plants(unit: cm)

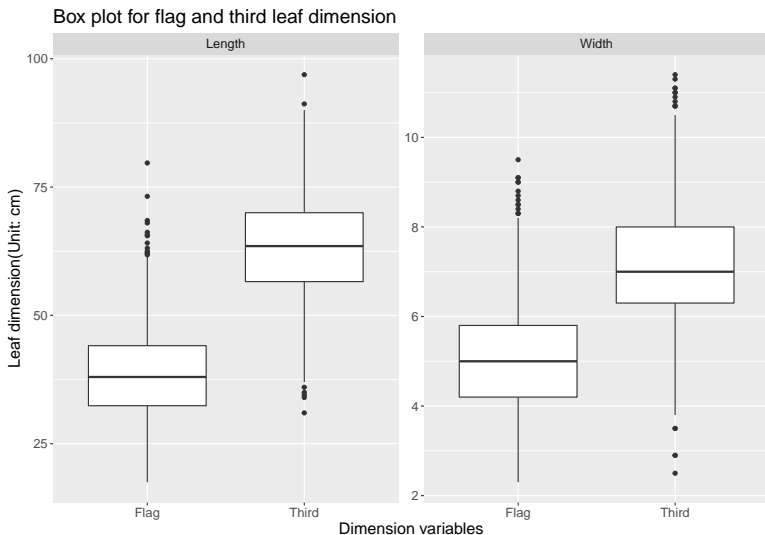
**ThirdLeafWidth:** The mean value of the third leaf's width for each 10 individual sorghum plants(unit: cm)



# Check for the properties in different variables

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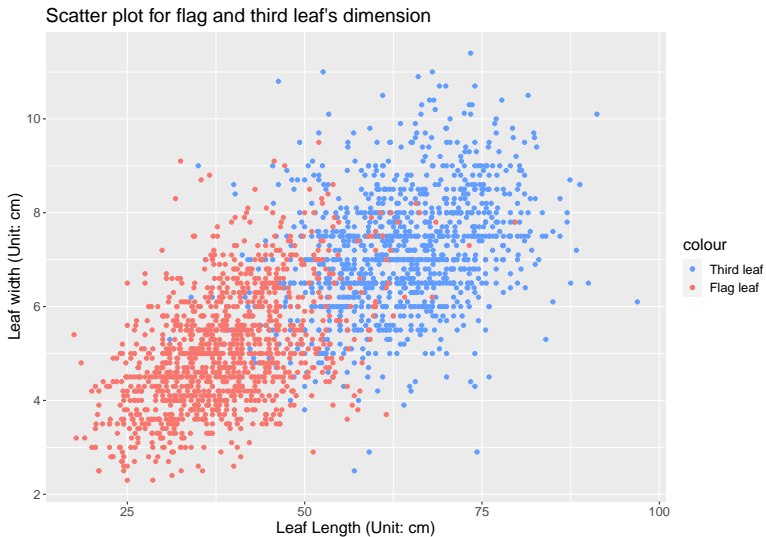




# Correlation between leaf length and width

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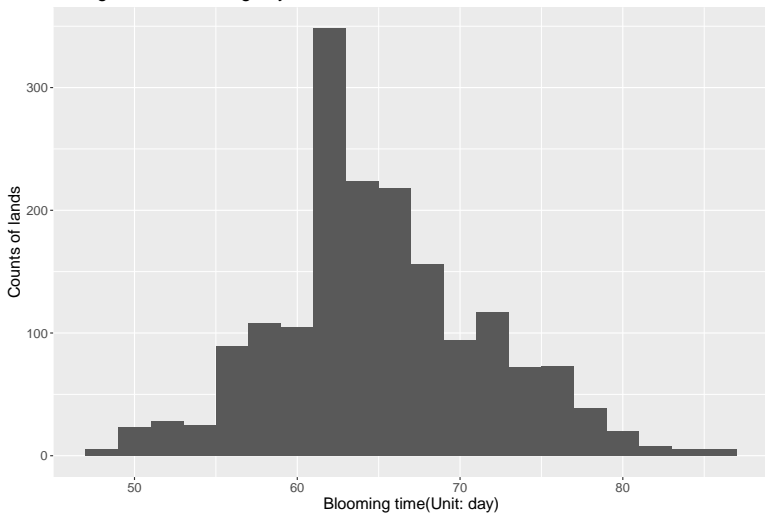
# Check for the properties in different variables

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● Mean:65.67 Median 65

Histogram for blooming day





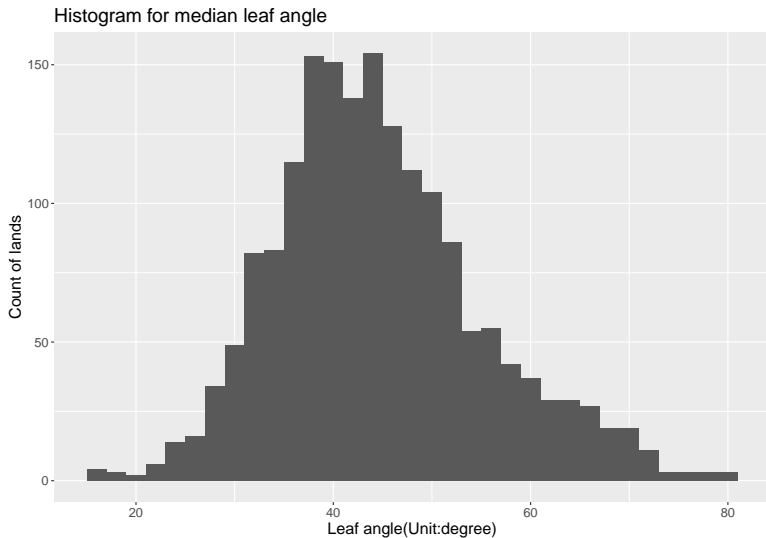


# Check for the properties in different variables

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● Mean 44.66 Median 43.50



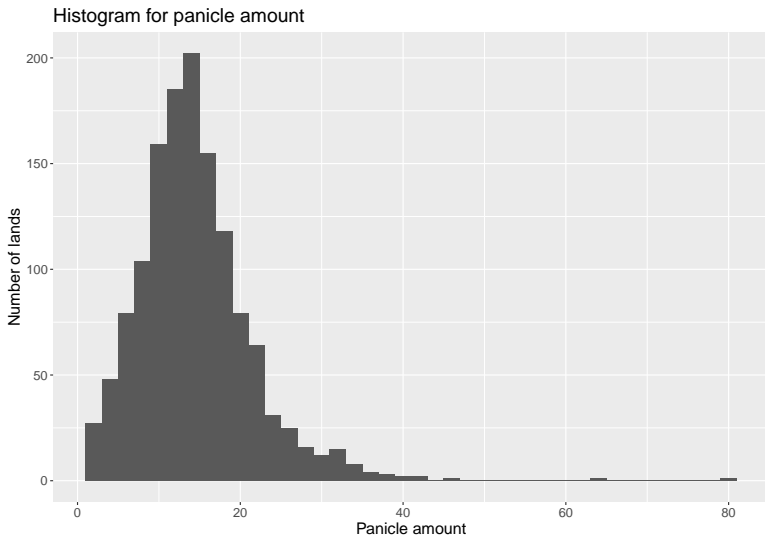


# Check for the properties in different variables

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● Mean 14.89 Median 14.00



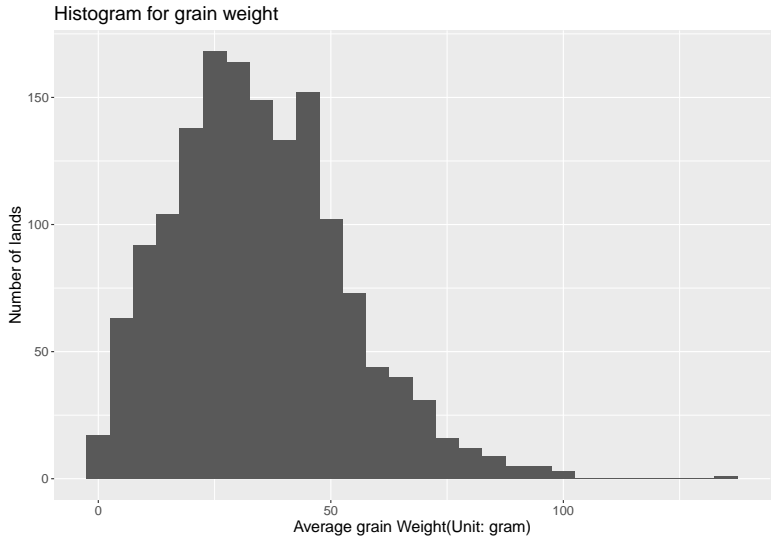


# Check for the properties in different variables

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● Mean 34.79 Median 33.20



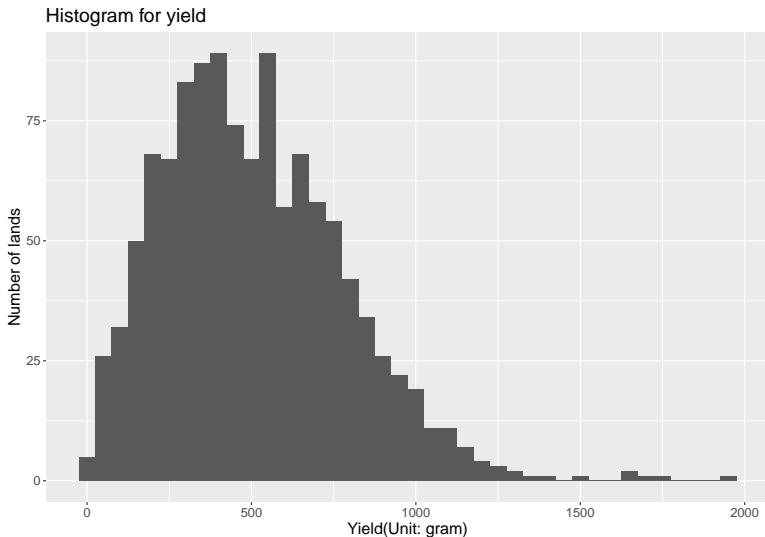


# Check for the properties in different variables

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● Mean 507.5 Median 475.2



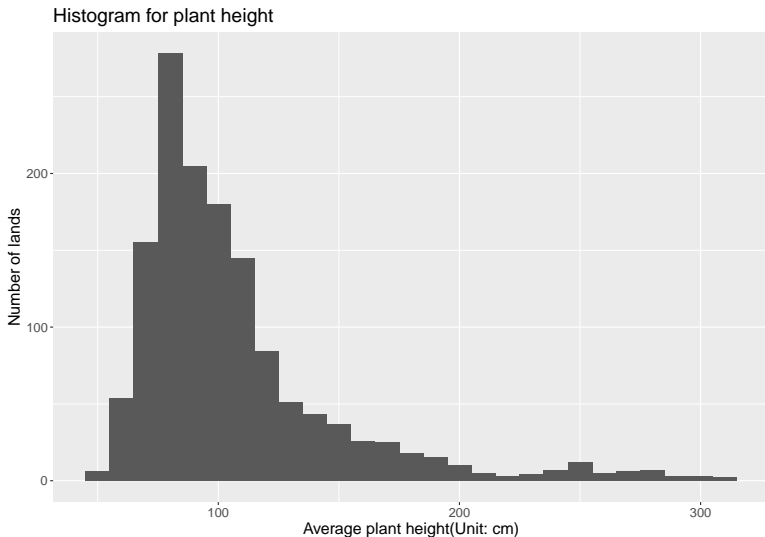


# Check for the properties in different variables

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- Mean 107.5 Median 95.0

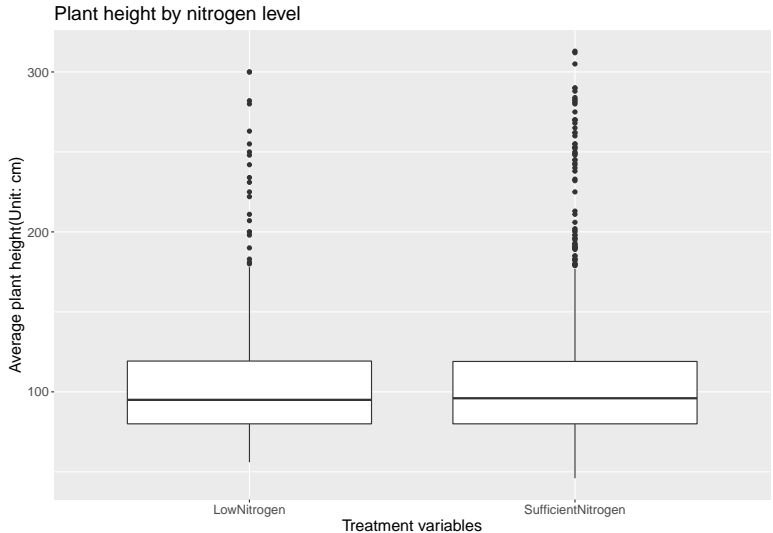




# Explore the effect of the nitrogen treatment with plant height

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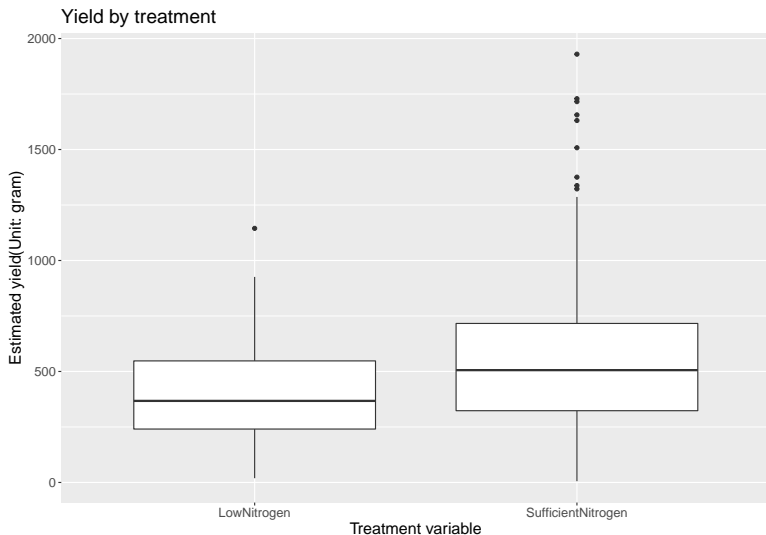




# Explore the effect of the nitrogen treatment with yield

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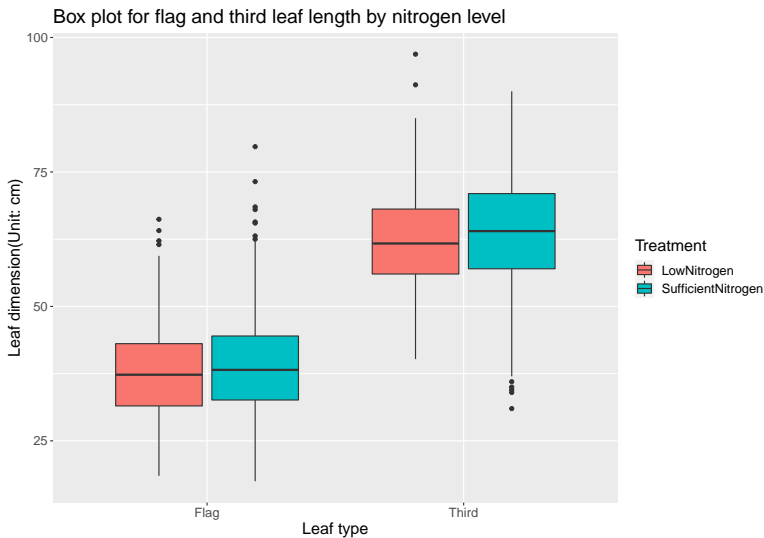




# Explore the effect of the nitrogen treatment with leaf length

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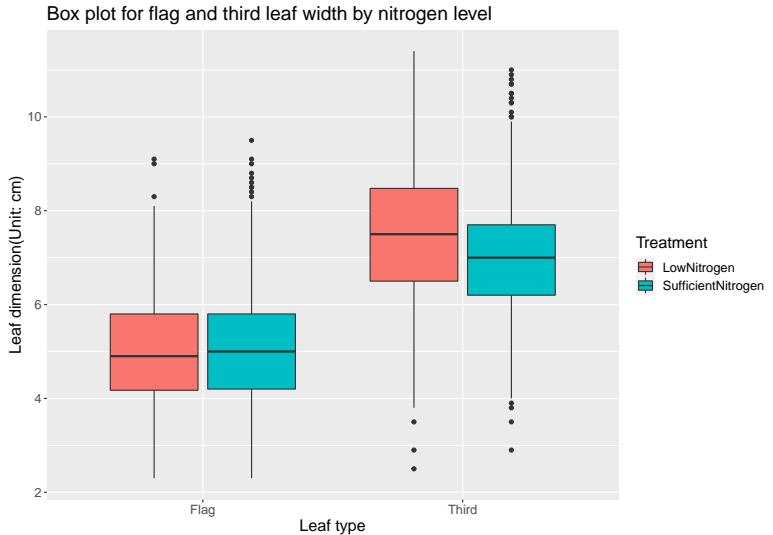




# Explore the effect of the nitrogen treatment with leaf width

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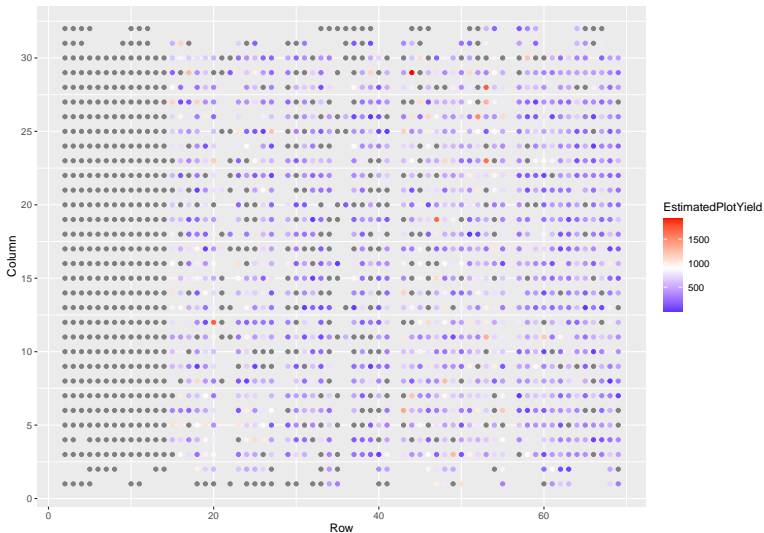




# Potential yield pattern as subject to the field layout

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# Correlation between other traits and yield.

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