Basic statistics: regression

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❑ What is regression?

Regression equation can be used for quantitative prediction of data.

$$y = mx + b$$

dependent variable
or
predictand

independent variable
or
predictor

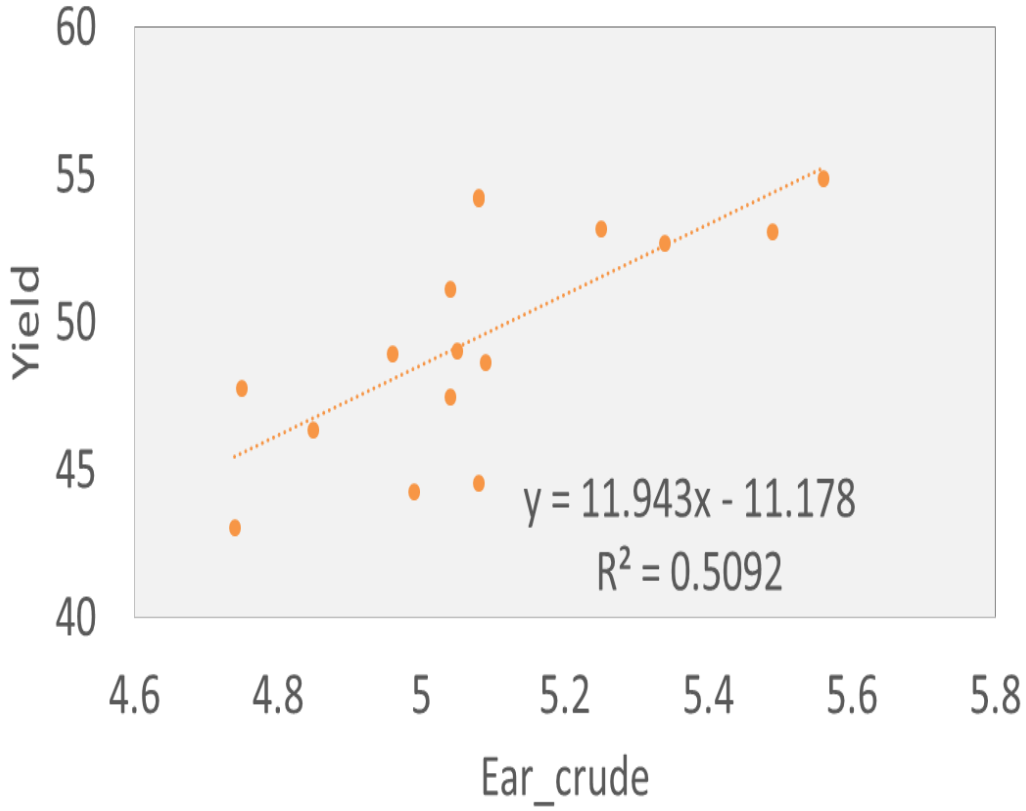
❑ What is R^2?

- ✓ It is the ratio of the sum squares of regression to the total sum squares.
- ✓ $R^2 = U/S_{yy}$
- ✓ R^2-value measures the percentage of variation in the values of the predictand (dependent variable) that can be explained by the variation in the predictor (independent variable).
- ✓ R^2-value varies from 0 to 1.

Example:

A value of 0.7654 means that 76.54% of the variance in y (predictand) can be explained by the changes in X (predictor). The remaining 23.46% of the variation in y is presumed to be due to random variability.

❑ Regression



Relationship between maize ear diameter and yield

linear regression model is Y= -11.178 + 11.943X

If ear diameter increased each 1 cm, yield will increase 11.94 kg.