

Genstat analysis of variance of two seed

[Science](#), [Agriculture](#)



GENSTAT Analysis of Variance of Two Seed

The results of the test with respect to germination capacity and germination index values indicate deteriorative alterations that occur during seed ageing, which is reflected in the alterations within seed vigor.

ANOVA depicts the factors that significantly contribute to variation. The wide variation amidst Seed lot U and Seed lot A depicts interaction amidst embryo and maternal genotype.

Hypothesis:

H₀= there is more seedlings with unaged seeds

H₁= there is more seedlings with aged seeds

Using the ANOVA below to test the hypothesis-value is 0.36382 while the significance level $\alpha = 0.05$. The P-value $0.36382 > \alpha$ hence we accept the null hypothesis. Therefore, there will be more seedlings there will be more seedlings with unaged seeds as compared to aged seeds

Anova: Single Factor

SUMMARY

Groups

Count

Sum

Average

Variance

Column 1

24

331

13.79167

103. 6504

Column 2

24

276

11. 5

46. 17391

ANOVA

Source of Variation

SS

df

MS

F

P-value

F crit

Between Groups

63. 02083

1

63. 02083

0. 841263

0. 36382

4. 051749

Within Groups

3445. 958

46

74. 91214

Total

3508. 979

47

Treatment of the aged and unaged

Prediction

Lot

A

U

True treatment

MinT

10. 54

39. 16

P

8. 17

51. 35

PH

7. 53

49. 45

PHRC

1. 86

4. 42

ZeroT

13. 17

23. 49

There is correlation between of the treatment and Seed lot A and U as depicted on the graph above. MinT, P, PH, PHRC and ZeroT was more predominant on the unaged seeds than aged seeds.

Interaction of seedbed preparation and seed ageing

Aged seedlings increased sharply in the initial stages of seedbed preparation process implying that preparation process impacted positively on their growth. Nevertheless, their growth started declining drastically and then again increased steadily as depicted in the above graph. Conversely, unaged declined steadily in the initial stages of seedbed preparation then started increasing steadily. This implies that preparation process impacted negatively on the growth on the unaged seeds. Seed preparation directly correlates to the seedling ageing.

There is relatively higher frequency with the unaged seeds as compared to the aged seeds. Therefore, this confirms the results of the ANOVA that there is more seedlings with unaged seeds as compared to aged seeds.

Bibliography

Williams, E. R., Matheson, A. C., & Harwood, C. (2002). *Experimental Design and Analysis for Tree Improvement*. Collingwood, CSIRO Publishing.

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