**Effect of lunar phase on root angle in maize**

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**OUTLINE:**

**Introduction**

The influence of the moon phase on plant development

Historical practice

Modern evidence?

**Methods and Results**

Experimental design to record root response after gravity stimulation

The main results shown by the two independent experiments:

1. Lunar phase explains a maximum of ~11% of the variation in root angle.

2. A maximum of ~40% of the variation is accounted for by lunar phase, genotype and replicates.

3. Timing and direction of the lunar phase effect are similar between the two analyses.

4. Demonstrate the pattern is consistent across different genotype

**Discussion**

Interpret the differences

* Fewer genotype (2 vs. 235)
* Fewer replicates ?
* Different distribution of trials across lunar days.

Propose possible explanations for the phenomena

**Introduction:**

Since prehistoric times, people has been planting and harvesting crops according to the phases of the moon [citation]. The moon’s orbit around our planet affects the rising and falling tides, but it is affect on plant development is completely unclear.

**Results:**

Two independent experiments were conducted.

Both of the experiments shown evidence for an effect of lunar phase on root angle bettern 18-63 mins after gravity stimulation. The maximal effect right before 50 mins.

Lunar phase explains a maximum of ~11% of the variation in root angle.

A maximum of ~40% of the variation is accounted for by lunar phase, genotype and replicates.

Timing and direction of the lunar phase effect are similar between the two analyses.

Differences could be explained by

* Fewer genotype (2 vs. 235)
* Fewer replicates ?
* Different distribution of trials across lunar days.

**Method:**

1st experiment:

2nd experiment:

Root angle taken every 3 minutes over 3 hours, a total of 61 data points were collected for each plant. 17 unique lunar days were sampled across 3 lunar months with 18.29+\_ 9.97 replicates per lunar day.

A mixed linear model was fitted as below:

Y = A + B +C + error

Where, the lunar day was fitted as the fixed effect and Genotype and replicates were fitted as random effects.

**Discussion:**