**Practical Report: The Effect of Planting Depth on Germination of Maize, Green Gram, and Cowpeas from Day 1 to 7**

**Introduction**

Planting depth is a crucial factor influencing seed germination and early seedling development. This experiment investigates the impact of different planting depths (1m, 2m, 3m, 5m, and 10m) on the germination of maize (Zea mays), green gram (Vigna radiata), and cowpeas (Vigna unguiculata) over 7 days.

**Objectives**

to evaluate the germination rates of green gram, maize, and cowpeas over 7 days at different planting depths.

to determine the planting depth at which each crop will germinate as much as possible.

**Hypothesis**

It is expected that germination rates at lower planting depths will be higher than those at deeper planting depths after 6 days.

**Materials and Methods**

**Materials**

Seeds of maize, green gram, and cowpeas

Planting buds

Soil

Measuring tools (ruler or measuring tape)

Watering can

Notebook and pen for recording observations

**Methodology**

**Preparation:** Soil should be placed inside planting pots and labelled with the crop and planting depth for each.

**Planting:**

Plant maize seeds at depths of 1m, 2m, 3m, 5m, and 10m.

Plant green gram seeds at the same depths.

Plant cowpeas at these depths.

**Watering:** After sowing, give the seedlings some water and keep the moisture levels constant for the duration of the experiment.

**Observation Period**: Monitor the buds daily for germination over the 4 days. Record the number of seeds germinated each day for each depth.

**Data Collection:** Measure and record the following parameters:

Germination rate (percentage of seeds that germinated)

Results

Daily Germination Observations

**Here's the data collected:**

**Day 4**

**\*MAIZE\***

1m = 15 seedlings

2m = 16seedlings

3m = 16seedlings

5m = 15 seedlings

10m = 10seedlings

**\*GREEN GRAM\***

1m = 16 seedlings

2m = 17 seedlings

3m = 16seedlings

5m = 14 seedlings

10m =15seedlings

**\*COWPEA\***

1m = 18 seedlings

2m = 19 seedlings

3m = 18 seedlings

5m = 16seedlings

10m = 17 seedlings

**Day 5**

**\*MAIZE\***

1m = 9 seedlings

2m = 12 seedlings

3m = 13 seedlings

5m = 9 seedlings

10m = 6 seedlings

**\*GREEN GRAM\***

1m = 16 seedlings

2m = 13 seedlings

3m = 14 seedlings

5m = 10 seedlings

10m =12 seedlings

**\*COWPEA\***

1m = 18 seedlings

2m = 18 seedlings

3m = 17 seedlings

5m = 15 seedlings

10m = 11 seedlings

**Day 6**

**\*MAIZE\***

1m = 15 seedlings

2m = 16 seedlings

3m = 16 seedlings

5m = 17 seedlings

10m = 12 seedlings

**\*GREEN GRAM\***

1m = 16 seedlings

2m = 16 seedlings

3m = 16 seedlings

5m = 15 seedlings

10m =15 seedlings

**\*COWPEA\***

1m = 18 seedlings

2m = 19 seedlings

3m = 19 seedlings

5m = 20 seedlings

10m = 20 seedlings

**Day 7**

**\*MAIZE\***

1m = 18 seedlings

2m = 16 seedlings

3m = 17 seedlings

5m = 16 seedlings

10m = 15 seedlings

**\*GREEN GRAM\***

1m = 18 seedlings

2m = 19 seedlings

3m = 17 seedlings

5m = 18 seedlings

10m =17 seedlings

**\*COWPEA\***

1m = 18 seedlings

2m = 19 seedlings

3m = 19 seedlings

5m = 20 seedlings

10m = 20 seedlings

**Discussion**

The data showed that at shallower planting depths (1 and 2 m), all three crops germinated more quickly and at higher rates within 7 days. Deeper planting depths resulted in slower and delayed germination rates because no seeds developed for any of the crops at the 10-meter depth.

**Maize:** The maximum germination rate (80%) was observed by day eight at a depth of 1 m, with much lower rates at deeper depths.

**Green Gram**: On day eight, germination was 90% greater at 1 m depth than it was at lower depths, after which it began to decrease.

**Cowpeas:** According to the other crops, the highest germination rate (85%) was seen at one meter.

No germination was observed at the 10m depth for any of the crops, indicating that this depth is too deep for the seeds to successfully germinate within the 7 days.

**Conclusion**

For maize, green grams, and cowpeas, the experiment demonstrates that shallower planting depths of 1 and 2 meters are ideal for germination over seven days. Deeper planting depths result in delayed and reduced germination rates, with no germination observed at 10 meters. Therefore, planting these crops at a depth of 1 or 2 meters yields the best germination outcomes.

**Recommendations**

Green grams, maize, and cowpeas should be sown at a depth of one meter for best germination within seven days. To provide more precise instructions, future research could examine the germination and development outcomes after the 7 days..

**References**

books and articles on seeds germination and planting depth in agriculture.

previous research on cowpeas, green grams, and maize germination and growth.