**Status of Seed Viability and Germination Percentage of Seed Collected from Farmer's Field**

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Executive Summary

This report evaluates the germination performance of various farmer-level seeds in Meherpur district under room temperature conditions. The study analyzes germination percentages to assess seed viability and identify potential concerns related to seed quality. Findings indicate significant variation in germination success, highlighting the need for better seed selection, handling, and storage practices.

Key Findings

* Excellent Germination (Above 80%): Maize (80.66%), Okra (83.33%), and Wheat (100%) demonstrated high viability, indicating their suitability for planting.
* Good Germination (60–79%): Onion (73.33%), Mungbean (73.33%), and Tobacco (64.56%) showed reasonable viability but may benefit from improved seed treatment.
* Moderate Germination (20–59%): Green Amaranth (40%) and Hybrid Rice-48 (20%) exhibited lower viability, requiring better storage or enhanced seed treatment.
* Poor Germination (<20%): Lal Swarna Dhan (10%), Bitter Gourd (10%), and Maize (16.66%) showed poor germination, raising concerns about seed quality.
* No Germination (0%): Bottle Gourd, Cucumber, Sponge Gourd, and Spinach failed to germinate, indicating extremely poor seed viability.

Implications

The results emphasize the importance of proper seed handling and quality control. Addressing seed viability issues will:

* Improve crop establishment and yield potential.
* Enhance seed storage conditions to reduce deterioration.
* Support farmers in making informed seed selection decisions.
* Encourage the use of certified seeds to ensure better germination rates.

Introduction

This study examines the germination rates of various crops grown in Meherpur district to determine seed viability and quality. Germination tests were conducted under room temperature conditions to evaluate seed performance.

Germination Performance by Crop

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| Crop Name | Germination Percentage (%) |
| Maize | 80.66 |
| Onion | 73.33 |
| Okra | 83.33 |
| Mungbean | 73.33 |
| Wheat | 100 |
| Hybrid Rice-48 | 20 |
| Green Amaranth | 40 |
| Dhaincha | 100 |
| Tobacco | 64.56 |
| Lal Swarna Dhan | 10 |
| Bottle Gourd | 0 |
| Cucumber | 0 |
| Bitter Gourd | 10 |
| Sponge Gourd | 0 |
| Spinach | 0 |

Observations and Recommendations

Excellent Germination (Above 80%)

* Maize, Okra, Wheat: These seeds show high germination rates and are ideal for planting. Maintaining current storage and handling practices will help retain quality.

Good Germination (60–79%)

* Onion, Mungbean, Tobacco: While viable, slight improvements in seed storage and pre-treatment could enhance germination rates further.

Moderate Germination (20–59%)

* Green Amaranth, Hybrid Rice-48: Lower viability suggests the need for enhanced seed treatment and optimal storage conditions.

Poor Germination (<20%)

* Lal Swarna Dhan, Bitter Gourd: Poor performance may be due to aging seeds or improper storage. Replacing these seeds with higher-quality alternatives is recommended.

No Germination (0%)

* Bottle Gourd, Cucumber, Sponge Gourd, Spinach: These seeds are non-viable and should be discarded. Future seed batches should be sourced from reputable suppliers to avoid failed crops.

Conclusion

The study highlights significant variability in seed germination rates among different crops. Ensuring better seed quality through proper storage, selection, and treatment can enhance agricultural productivity in Meherpur district. Farmers should prioritize high-viability seeds and adopt best practices for seed preservation to maximize successful crop establishment.