



Koneru Lakshmaiah Education Foundation

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REPORT ON VISIT TO TULASI SEEDS PVT LTD, PERECHERLA, GUNTUR, AP

Name of the Visit : **Tulasi Seeds Pvt Ltd, Dokiparru, Perecherla, Guntur**
Course Covered : 25AGSE003 (Seed Production Technology)
Date : 02.04.2026
Year and Section : I Year –S1, S2
Number of students participated: 69
Faculty Coordinator : Dr. K. SUDHAMANI

Session Activities: The students were accompanied by 3 faculty members. The buses with students started from our college at 08:00AM on 22nd April 2026 and reached Tulasi Seeds by 10:00 AM.

Faculty Coordinators: Dr. G. Suresh (8742)
Dr. Atul Singh (6653)
Dr. K. Sudhamani (9933)

Objectives of the visit

- To provide first-year students with an introductory exposure to hybrid seed production technology in cotton.
- To familiarize students with the basic stages and machinery involved in seed processing after harvesting of seed cotton, covering the complete chain from ginning to storage.
- To create awareness about seed testing methods, including Grow Out Test (GOT) and germination test of hybrid cotton seed.

Description of the event

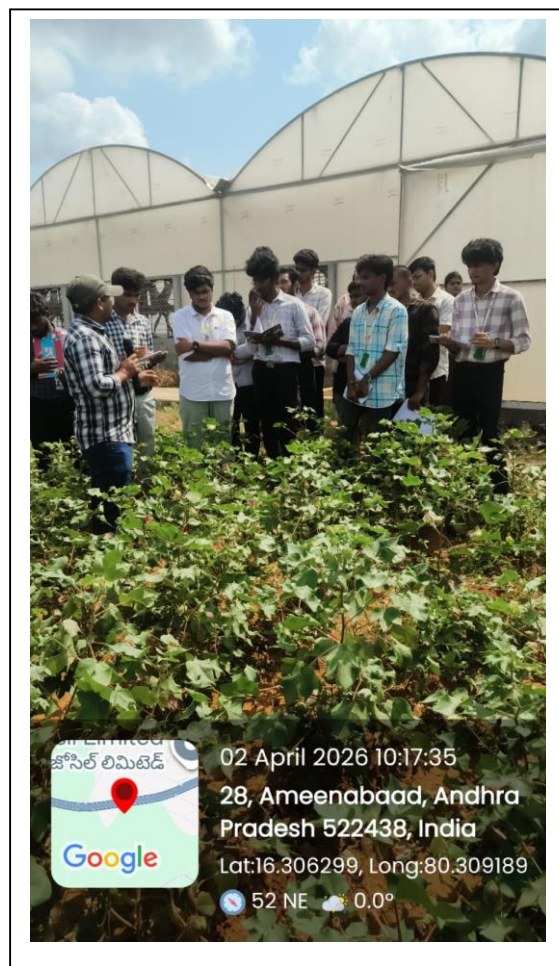
The Tulasi Seeds Pvt Ltd is one of the leading companies in the production of cotton hybrids, located at Aminabad (Post), Phirangipuram (Mandal), Guntur (District). Founded in 1992 by Mr. Tulasi Ramachandra Prabhu, the company is a prominent player in India's agricultural sector with a

turnover of ₹250 crore. With over 18 years of experience and ISO 9001:2008 accreditation, Tulasi Seeds focuses on producing and processing high-quality seeds.

During the visit, we met with the staff member of the company, Dr. Subba Rayudu, Plant Breeder. We explained the purpose of our visit and requested them to kindly share basic information on seed production of cotton hybrid, processing of cotton hybrid after harvesting of seed cotton, and purity testing of hybrid cotton seed to the first-year students, so as to provide them with an early foundational exposure to seed production technology. The staff member explained the essential details of cotton hybrid seed production technology as follows:

I. Visit to Cotton Parental Block – Seed Production:

The students first visited the cotton parental block, where they were introduced to the basic concepts of male and female plots of cotton, sowing time, general morphology of cotton plants, branching pattern of cotton such as monopodial and sympodial, distinguishing characters of male and female plants, floral biology and the basic process of identification of buds, emasculation and pollination, identification of off-types and time of harvesting. Dr. Subba Rayudu, Plant Breeder, practically explained the identification of buds and the process of emasculation in cotton. The concepts were explained in a simplified manner to provide the first-year students with a clear introductory understanding. Students also gained a preliminary awareness on how varieties and hybrids are developed and maintenance of parental lines. Students were also briefly introduced to the varietal release procedure and the screening process.



II. Visit to Chilli Crop in poly house and Bhendi GMS Lines:

The students were taken to the poly house facility where they observed the chilli crop. The staff members provided a basic introduction to chilli breeding, including the elementary concepts of emasculation and pollination methods and selfing techniques such as the overall method of selfing by

covering of the whole plant with nets. Students also observed Bhendi (Okra) GMS (Genetic Male Sterility) lines maintained by the company. The scientists briefly explained the significance of GMS lines in hybrid seed production and how male sterile lines are used to facilitate cross-pollination without the need for manual emasculation, thereby reducing the cost of hybrid seed production. This exposure provided the first-year students with an introductory awareness of different breeding approaches used across crops.



Students observing the Chilli and Bhendi crops in the poly house facility

III. Visit to Seed Processing Unit:

Subsequently, the students visited the seed processing plant, where they were introduced to the complete seed processing chain in a step-by-step manner. The staff demonstrated the entire processing procedure. He also emphasized on the usage and capacity of equipment, storage capacity and time of seed storage for a definite quantity of seed. He stressed on the kinds of precautionary measures to be taken during harvesting and processing so that there are no admixtures which result in decrease in quality of seed. The various stages observed and explained were as follows:

1. Ginning:

The students observed the initial mechanical process of ginning, which involves separating cotton fibres from the seeds. Ginning of cotton seeds is a crucial process that separates cotton from linted seeds. They were informed that from 100 grams of raw cotton seeds, the yield of linted seeds is approximately 68 grams. Following ginning, the next step is delinting.



Students observing the live demonstration of ginning process of cotton seed processing.

2. Delinting:

After ginning, the students were introduced to the process of delinting, which involves removing short fibres or fuzz from the linted seeds. This is achieved through a chemical treatment using sulphuric acid to remove lint from seeds completely, after which the seeds undergo neutralization using lime.



Students observing the live demonstration of delinting process

3. Seed Drying:

Students observed the drying process wherein seeds are kept under the sun until their moisture content reaches below 9%, ensuring proper storage quality and to ensure proper drying of the seeds.



Students observing the threshing floor used for cotton seed drying

4. Seed Cleaning and Grading (Mechanical Grading):

The students were introduced to the mechanical grading process aimed at separating under-sized, lightweight and broken seeds. The machinery works based on differences in seed weight, seed size and shape. The grading methods demonstrated included:

Sieve Grader: Equipped with sieve plates of 4.25 mm pore size, this machine separates under-sized seeds.

Gravity Grader: Following sieve grading, seeds are subjected to a gravity grader, which helps in separating lightweight seeds based on difference in seed weight.

Needle Sorter: With the help of this machine, broken seeds are effectively removed.

The staff explained that by this stage, approximately 99% of the seeds will be of normal size, weight and unbroken. The remaining 1% of impurities are then separated using Magnetic Grading.



Students observing various forms of cotton seed generated during seed processing process



Visit to the Needle Sorting Unit used in Seed grading

5. Magnetic Grading:

The remaining 1% of impurities are separated using a sophisticated Magnetic Grading instrument, which has been purchased from Japan. It uses the magnetism property to separate the remaining broken seeds. The staff explained that broken or damaged seeds catch iron dust when mixed. When this mixture is subjected between magnetic spinners, the broken seeds get separated from the mixture, and finally the proper normal seeds can be obtained. Students were informed that there is approximately 2% of loss from total seeds during the entire processing.



Visiting Magnetic Grading Unit

6. Seed Treatment:

The students observed the seed treatment process where seeds are treated with appropriate chemicals to protect them from seed-borne diseases and pests.



Visit to Seed Treatment Unit

7. Seed Packaging and Storage:

Finally, the students were shown the packaging unit where treated seeds are packed in branded packets and stored under appropriate conditions. The staff emphasized the storage capacity, time of seed storage for a definite quantity of seed and the precautionary measures to be taken during harvesting and processing to avoid admixtures that may decrease seed quality. Students were also given an overview of the dispatching process and how processed seeds are distributed to the market.



Visiting of Seed Packaging Unit

IV. Visit to Tulasi Biotechnology Research Laboratory – Seed Testing:

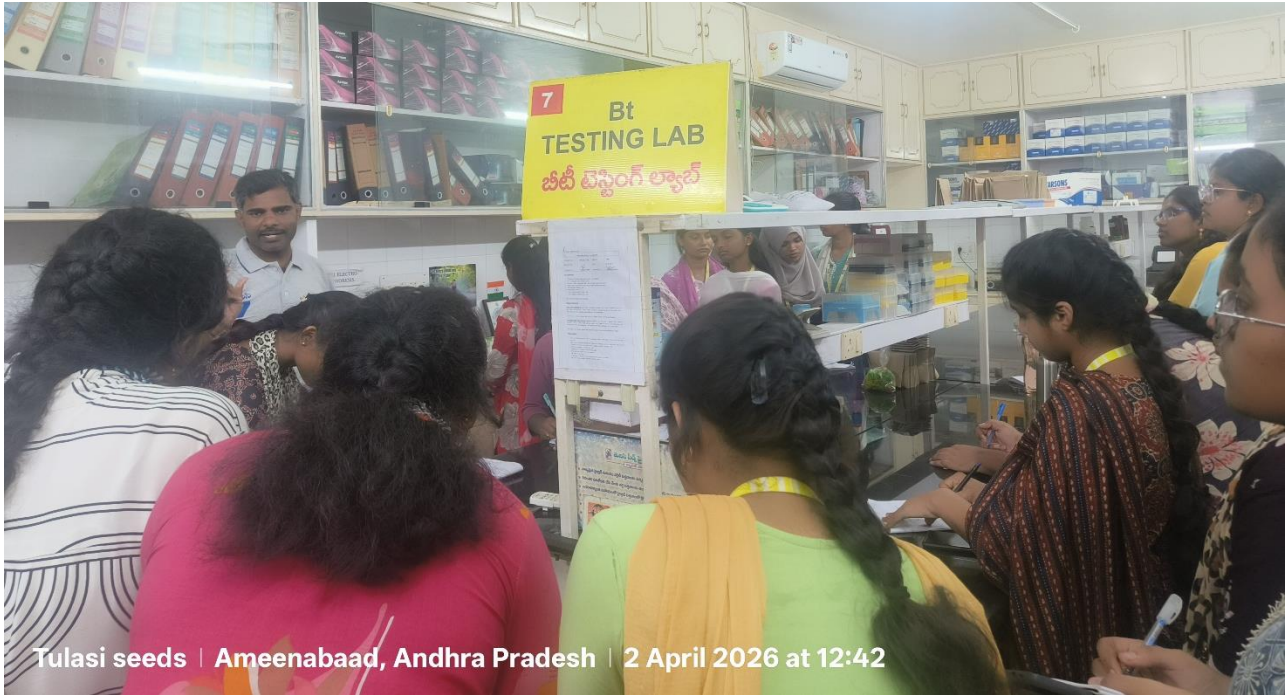
Later, the students were exposed to the biotechnology laboratory to gain knowledge about seed testing procedures and equipment. Dr. Subba Rayudu, explained the seed testing procedures and introduced the students to the various equipment and reagents used in the process. The laboratory staff explained the three levels of testing that seeds must pass before packaging:

a. Grow Out Test (GOT):

Students were informed that around 400 seeds are planted in fields for testing, and 90% and above of the plants should exhibit desired hybrid characteristics.

b. Bt Test:

The students were given a basic introduction to Bt protein testing. In the biotechnology lab, the seeds are tested for the presence of Bt protein with the help of ELISA (Enzyme-Linked Immunosorbent Assay) technique. Dr. Subba Rayudu explained the procedures of ELISA in detail. Students were told that 95% and above seeds should pass the Bt testing.



Tulasi seeds | Ameenabaad, Andhra Pradesh | 2 April 2026 at 12:42

Visit to Bt Testing Lab

c. Germination Test:

Students were introduced to the germination testing procedure wherein around 200 seed samples are collected. Of these, 100 are tested with paper germination and 100 are tested with tray germination. A minimum of 90 out of 100 seeds should germinate to meet quality standards. The staff also explained the concept of seed vigour.



Tulasi seeds | Ameenabaad, Andhra Pradesh | 2 April 2026 at 12:32



Visit to Seed Germination Chamber

The visit provided the first-year students with an early and valuable exposure to the complete chain of seed production, processing and testing technology in cotton. Students also gained a preliminary awareness on how varieties and hybrids are developed, maintenance of parental lines, and the concept of molecular breeding. Students were very much interested and enthusiastic about this visit.



Visit of Tulasi Biotechnology Research Laboratory to observe Seed Testing

Outcomes of the visit:

- Students acquired knowledge on hybrid seed production in cotton
- Students acquired knowledge on mechanical seed processing in cotton
- Students acquired knowledge about seed testing technology
- Students gained knowledge about different cotton parental lines and hybrids
- This visit covered introductory learning components such as visit to seed production farm, seed processing unit, seed testing laboratory, greenhouse facility and polyhouse unit.

We faculty of KL College of Agriculture take this opportunity to sincerely thank Dr. Ramachandraprabhu, Chairman, Tulasi Seeds Private Limited, Dr. Yogesh Chandra, Managing Director and Dr. Subba Rayudu, Plant breeder, for providing permission for the visit and for taking keen interest and patience in explaining about various procedures and practices followed in seed production, processing and seed testing, and also for their timely planning and execution of the visit. We humbly thank our Director Dr. P. Ratna Prasad and HOD Dr. B. Balakrishna for their interest in arranging the visit, providing administrative permissions, arranging buses and lunch for the students. We wholeheartedly thank our KLEF management for providing necessary permission and transport facilities for the visit and making it a grand success.

In-charge

**HoD
KL College of Agriculture**