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**Industrial Visit 09-11-2024**

**Department of Chemical Engineering**

## **DEPARTMENT OF CHEMICAL ENGINEERING**

### **Industrial Visit Report**

**Date of Visit** : 09-11-2024  
**Place** : **Khanal Foods, Mahadevpura, Bangalore**  
**Attendees** : Students of III and VII Semester, 2024-25  
Chemical Engineering Department.

#### **Faculty accompanied:**

1. Dr.Manish Kumar, Assistant Professor, Chemical Engineering Department
2. Prof. Megala S, Assistant Professor, Chemical Engineering Department

A group of 44 students from the 3rd and 7th semesters of the Chemical Engineering Department, accompanied by two faculty members, visited Khannal Foods located in Mahadevpura. Khannal Foods is renowned for its excellence in food processing and adherence to industry standards. This visit focused on the manufacturing of pet food, providing the students with a practical understanding of various stages in pet food production, including raw material handling, extrusion, drying, packaging, and quality assurance.

#### **Introduction to Raw Material Handling**

The visit commenced with an insightful briefing on the sourcing and handling of raw materials used in pet food production. Students learned about the importance of selecting high-quality ingredients such as grains, proteins, and essential nutrients to ensure the nutritional needs of pets. The facility demonstrated stringent protocols for the storage and handling of these materials to prevent contamination and maintain quality standards.

## Pet Food Extrusion Process

Next, the students were introduced to the core manufacturing process: extrusion. They were given a detailed explanation of how raw materials are mixed, ground, and fed into extruders. The students observed the extrusion process in action, where the feed mixture is cooked under high pressure and temperature before being shaped into the desired forms. The importance of controlling parameters such as temperature, pressure, and moisture to achieve consistent quality was highlighted.

## Drying and Coating Processes

After extrusion, the students were guided to the drying section, where they learned how moisture content is reduced to extend the shelf life of pet food. The use of advanced drying equipment to achieve uniform drying was demonstrated. The coating process, where fats, oils, and flavor enhancers are sprayed onto the dried kibble to improve palatability, was also explained. The students gained insights into how these steps ensure the final product meets the dietary preferences of pets.

## Packaging of Pet Food

The students were then introduced to the packaging process. Various types of packaging materials, such as resealable bags, pouches, and cartons, were showcased, with explanations on how packaging ensures product freshness and convenience for consumers. They observed the sealing, labeling, and coding of packages and learned about the regulatory standards governing pet food labeling, including nutritional information and storage instructions.

## Quality Assurance and Testing

The final segment of the visit focused on quality assurance. Students visited the quality control laboratory, where they were introduced to tests performed to ensure the safety and quality of pet food. Microbiological testing, chemical analysis, and sensory evaluation procedures were demonstrated. The students were educated on the importance of these tests in meeting regulatory requirements and maintaining customer trust. The quality assurance team provided valuable insights into the challenges and innovations in pet food quality management.

The visit to the Khannal Foods pet food manufacturing unit was an enlightening experience for the students. It offered them an in-depth understanding of the various aspects of pet food production, including raw material handling, extrusion, drying, packaging, and quality control. The hands-on exposure not only complemented their academic knowledge but also showcased

real-world applications of chemical engineering principles in the food processing industry. This visit is anticipated to inspire students in their future endeavors in chemical engineering and related fields.



**Group Photo of Students at Khannal Foods Pvt Ltd**

