



& **EGGOZ**  
NUTRITION

presents

# FOOD-QUEST

## Cracking the Indian Egg Industry

PRAKRITI-2022 brings to you Food Quest, one of the biggest food-product development events of the year. In this event, Eggoz shares the major challenges and constraints of the Indian egg industry. Participants are required to address them and come up with an innovative, end-to-end egg-based product which meets the specifications mentioned in the problem statement





## About Eggoz

Founded by IIT Kharagpur alumni, Eggoz was started with a passion to help farmers of rural North India to improve their yield and income.

Our farmers are onboarded to a streamlined program where they receive technical and veterinarian advisory support with IoT devices to boost their yield. We provide nutritionally balanced, pure veg and herbal feed for healthier birds. Our proprietary and unique technology is an integral part of farmer operations.

We quickly realized that our purpose is not complete till we bring these eggs to your table. [Click to see our products](#) and know more about them.

Know more at [www.eggoz.in](http://www.eggoz.in)

## Abstract

Eggs are one of the most consumed commodities across the globe that delivers protein and nutrition at a very effective cost. The Indian Egg industry has largely been a commodity that has not seen much value addition apart from Pasteurized egg Liquid/Frozen and Egg powder. Globally – the USA, Canada, Australia, Brazil & the EU region has developed technologies that produce value-added egg products.

Processed egg products have a huge application in the foodservice industry and also industrial applications like mayonnaise manufacturing. Another example is the aviation industry, where the global body IATA has made a law that eggs on airplanes have to be pasteurized before consumption. Hence, 80% of the processed egg segment is b2b focused. However, lately, some western companies have taken the leap to bring in a range that is disrupting consumer behavior.

European equipment providers, primarily 4 or 5 of them, cater to 90% of the egg processors of the world. The advanced technologies available allow eggs to be preserved from 45 days in chilled, to 2 years in frozen or powder form.

An egg is composed of mainly 4 components –

1. Egg White
2. Egg Yolk
3. Egg Shell
4. Egg membrane



## Project Task

The aim of this project is to think out of the box, do qualitative and quantitative research and also build prototypes in the value-added egg products space. Below is the list of existing products available in the market. They could be used as a benchmark and can be thought of as inventing something as per the Indian palate –

1. Liquid Eggs pasteurized(chilled & Frozen)
  - a. Liquid Egg white
  - b. Liquid Whole Egg
  - c. Liquid Egg Yolk (with added sugar or salt)
  - d. Value-added egg mixes (scrambled, bakery mix, etc.)
2. Egg Powder:
  - a. Egg white
  - b. Whole egg
  - c. Egg yolk
  - d. Value-added range of each of the above
3. Boiled Egg – Chilled and Frozen & with flavors
4. Frozen omelets – different styles – sunny side up, fried egg, half-moon, desi style
5. Long Eggs – chilled and frozen
6. Egg Bites, Egg muffins, and other baked egg products – chilled and frozen
7. Egg Wraps – chilled and frozen
8. Eggshell products
9. Eggshell membrane products
10. Enzymes derived from eggs
11. Egg chips

The challenge with value-added egg products is that once the egg is cracked open, the shelf life and storage condition creates a bottleneck for distribution, applications, and more. Also, Indian frozen and chilled infrastructure is far behind than the west. Hence it is very much preferred to have technologies that support ambient storage over frozen and chilled in priority.

During this project, you are expected to work on the following with respect to each product segment –

- a. Process flow including critical control points
- b. Equipment needed
- c. Microbiological analysis
- d. Shelf life analysis
- e. Packaging for best shelf life and optimum cost
- f. Product P&L (ex-factory cost)
- g. Applications in the respective industry
- h. Market size
- i. Distribution strategy

## Things To Note

1. This is a group event
2. Each group can have a maximum of 10 and a minimum of 2 members.
3. This competition is divided into two stages: Report submission and Final Presentation
4. Groups who are able to present a tangible end-to-end product or prototype would be given preference.
5. In case two teams have an equal score, the team who submitted their report earlier will be considered on higher priority.
6. Prizes will be given only to those participants who will be registering through the Registration portal of Prakriti 2021 or through D2C.
7. The decision of judges is final and binding. Team Prakriti reserves the right to disqualify any team in case of violation of any of the above rules or found doing illicit actions.

## Evaluation Process

The evaluation process will be done in two parts:

1. Report-Submission: 300 points
2. Final Presentation: 100 points
3. Extra 200 points possible if a finished product or prototype is shown during the final presentation



# Report Submission

- Participants are required to go through the problem statement, come up with an end-to-end solution, and submit a comprehensive report
- The report should contain the following:
  1. **Cover Page:** Mentioning the team name, name of the product they developed (if any), and any other details relevant for a cover page
  2. **Team member names**
  3. **Table of Contents:** Enlisting the headings mentioned below along with their page numbers
  4. **Main Content:** This is the main meat of the report and must contain the following components:
    - a. **Abstract:** Brief of the report (should not be more than 1 page long)
    - b. **Process flow including critical control points:** Should contain details of each and every step involved in the development of the product. Schematic diagrams, flow-charts, etc, are good to have.
    - c. **Equipments needed:** Details of the equipments required for the whole process along with their brief descriptions should be mentioned.
    - d. **Microbiological analysis:** Any assumptions, calculations, or analytical models used should be mentioned in detail.
    - e. **Shelf life analysis:** Any assumptions, calculations, or analytical models used should be mentioned in detail.
    - f. **Packaging for best shelf life and optimum cost:** Detailed reasoning supporting the proposed packaging should be mentioned along with justification of the cost.
    - g. **Product P&L (ex-factory cost):** Should contain a summary of the total income and expenses associated with the concerned Product.
    - h. **Applications in the respective industry**
      - i. **Market size:** Estimations should be based on valid assumptions and data from authentic sources
      - j. **Distribution strategy:** How exactly would the product reach the end consumer

- Any supporting data should be included as an appendix at the end of the report.
- The report should be in PDF format, with text size 12 pt and line-spacing of 1.5.
- The report should be no more than 30 pages long and the appendix should be no more than 3 pages long.
- Only the entries sent through the [Google form](#) will be accepted.
- Any sort of plagiarism will lead to disqualification.

## Final Presentation

- Selected teams are then required to make a PowerPoint presentation and present it in front of the judges on 27th March 2022.
- The presentations must be enlisting the key points of their solution.
- Extra points would be offered to the teams who present a finished product/prototype.
- Any cost incurred during the research and development of the product can be reimbursed by Eggoz if a detailed breakdown of the cost is submitted\*.  
(\* The final decision of reimbursement depends solely on Eggoz)
- The Final presentation should wrap up within 10 minutes followed by Q&A (5min).



**Total Prize Money**

**INR 90,000 + Complimentary Goodies.**

**Best Submissions May Secure Internships Or Placements At  
NUPA Technologies Pvt Ltd (EGGOZ)**

**Report Submission Link:**

**<https://bit.ly/Food-Quest-Prakriti-2022>**

**Ask Your Queries**

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