The Oxford College of Science
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Supported by DST GoI under FIST program, Supported by DBT GoI under DBT-STAR College

# DBT-STAR Scheme 2025

## REPORT

**DEPARTMENT: BIOTECHNOLOGY**

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|---|---|
| **TITLE** | Determination of reducing sugars, total reducing sugars, sucrose and starch from different food samples |
| **ACTIVITY TYPE** | Enrichment program |
| **YEAR/SEMESTER** | 2026/IV Semester |
| **DATE OF EVENT** | 06.03.2026 |
| **VENUE** | 3rd Floor Biotechnology Room No. 321 and UG Laboratory |
| **ORGANISED BY** | Department of Biotechnology |
| **RESOURCE PERSON (with designation and affiliation)** | Ms. L Jahnavi Reddy, Senior Research Associate, Credora Life Sciences, Bangalore |
| **FACULTY INCHARGE/EVENT COORDINATOR** | Dr. Kavisa Ghosh |
| **TARGET AUDIENCE** | UG IV semester Biotechnology students |
| **NUMBER OF BENEFICIARIES** | 40 |

**The objectives of the Programme:**

The enrichment programme on "Determination of reducing sugars, total reducing sugars, sucrose and starch from different food samples" was conducted for undergraduate IV semester life science students with the objective of strengthening their theoretical and practical understanding of carbohydrate analysis. The programme aimed to familiarize students with the biochemical principles underlying reducing sugars, sucrose hydrolysis, starch estimation, and soluble solids measurement, while also training them in widely used laboratory techniques such as the DNS assay, Anthrone method, and °Brix measurement. By bridging classroom concepts with laboratory practice, the programme sought to enhance analytical skills and prepare students for advanced studies in food science, nutrition, and agricultural research.

**Highlights of the Programme:**

The highlights of the programme included comprehensive coverage of carbohydrate classification and their nutritional importance, followed by demonstrations of qualitative and quantitative methods such as Benedict's, Fehling's, Nelson–Somogyi, and DNS assays. The DNS method was emphasized as the most reliable quantitative technique for reducing sugar estimation. Students also learned the Anthrone method for starch analysis, which involved hydrolysis and colorimetric detection, and the °Brix method using a handheld refractometer to determine total soluble solids, linking laboratory practice to food industry standards. The sessions combined lecture slides, live demonstrations, and interactive participation, ensuring clarity of concepts and skill development. Special emphasis was placed on the relevance of these methods to food quality control, nutrition studies, agricultural research, and biochemical investigations.

**The outcome of the programme:**

The outcome of the programme was highly positive. Students gained practical competence in carbohydrate analysis methods and strengthened their conceptual understanding of reducing sugars, sucrose hydrolysis, starch quantification, and soluble solids measurement. They developed the ability to interpret spectrophotometric data, construct calibration curves, and apply these techniques to real-world food and biochemical contexts. The training enhanced their research readiness, equipping them with skills applicable to food quality control, nutritional biochemistry, and agricultural product evaluation. Overall, the programme fostered confidence, analytical precision, and scientific curiosity among the participants, preparing them for higher-level projects and professional applications in the life sciences.


Theoretical session by
Ms. L Jahnavi Reddy


Calculation and chemical preparation for practical session


Students performing experiments and taking readings for performed experiments


Students using refractometer with different food samples

**Head of the Department** **DBT-STAR Coordinator** **Vice Principal** **Principal**

**Attachments**

| Sl. NO | Document | ( ✔ ) mark (if attached) |
|---|---|---|
| 1 | Brochure of the event | Yes |
| 2 | Circular of the event<br>(For training/ workshop/guest lecture/FDP) | Yes |
| 3 | Geo-tagged photos/ Screen Shots<br>(Save as separate photos) | Yes |
| 4 | Attendance sheet with signature of the attendees | Yes |
| 5 | Copy of the Certificate/E-cerfiticate issued | Awaiting approval from resource person |
| 6 | Feedback Forms<br>(For training/ workshop/Guest lecture/FDP) | Google Form circulated to students |