

Details of Instruments Procured under DBT Project (4001-627)

The following instruments were procured under the DBT-funded project File No. **BT/PR51044/AGIII/103/1465/2023** entitled “Deciphering the genetics and molecular mapping of wide compatibility trait using *Brassica rapa* var. yellow sarson ‘NRCPB rapa 8’ genotype for accelerating the pre-breeding program in rapeseed–mustard”:

1. Beckman Coulter Flow Cytometer (Ploidy Analyser)

Product: Beckman Coulter Flow Cytometer

Model: CytoFLEX

HSN Code: 9027 (Instruments and apparatus for physical or chemical analysis)

Detection Parameters: Up to 8 parameters (6 fluorescence + 2 scatter)

Description:

The CytoFLEX is a compact, high-sensitivity flow cytometer that enables simultaneous detection of multiple fluorescence and light-scatter parameters. It is designed for both research and diagnostic applications, offering flexibility for a wide range of fluorescence-based assays.

1. Ploidy Determination & Genome Size Estimation

- Rapid identification of diploids, polyploids (triploid, tetraploid, etc.)
- Essential for: Wide hybridization programs, Amphidiploid confirmation, Doubled haploid validation
- Helps in stabilizing synthetic lines in crops like *Brassica*

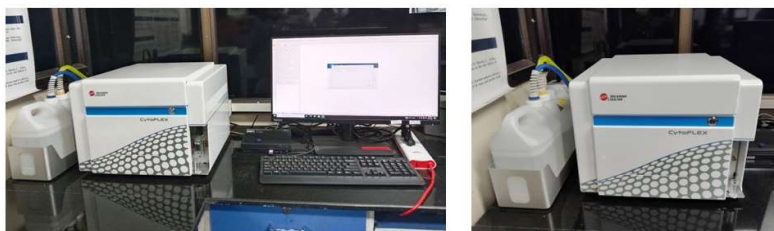
2. Cell Cycle Analysis

- Determines distribution of cells in G₀/G₁, S, and G₂/M phases
- Useful for: Studying growth patterns, Evaluating stress effects (abiotic/biotic) on cell division

3. Nuclear DNA Content Analysis

- Quantifies relative DNA content using fluorescent dyes (e.g., PI, DAPI)
- Supports: Genome stability studies, Detection of aneuploidy or mixoploidy

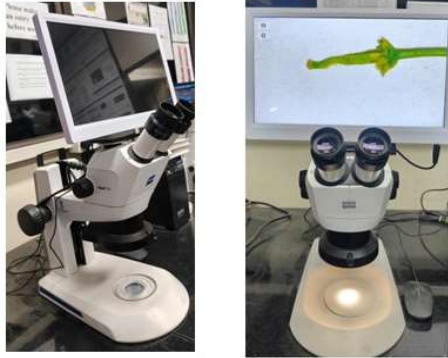
The equipment is also registered on I-STEM portal (<https://www.istem.gov.in/equipment-info/58225/FLOW+CYTOMETER>) for munificent utilisation to the users.



2. Stereo Microscope- ZEISS

Model: Stemi 305, Carl Zeiss

The ZEISS Stemi 305 Stereo Microscope is a compact and user-friendly microscope designed for routine laboratory observation and sample analysis. It provides clear, high-contrast images with integrated LED illumination, making it suitable for biological and material science applications. Its ergonomic design and digital imaging capability enable easy documentation and comfortable use during extended laboratory work.



For detailed information or any query, please contact:

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