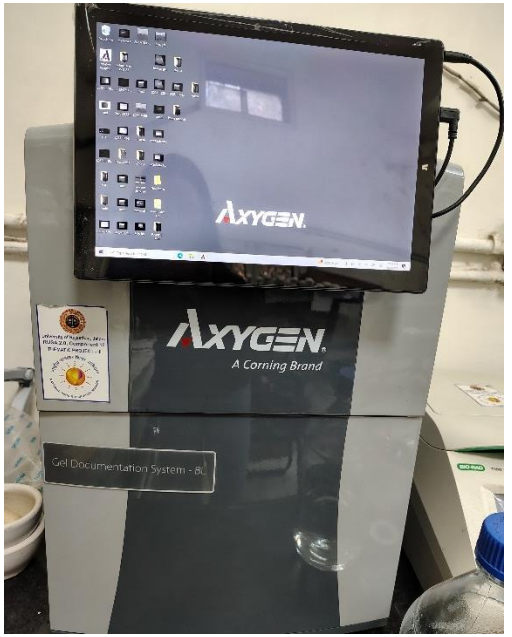
Major Instruments in Lab No. 9 of Botany Department

Name of Instruments	Brief Description of Instruments	Image of Instruments
Lab No. 9		
Gel Documentation System, Axygen, GDBL_1000	**Introduction:** The Axygen GDBL_1000 Gel Documentation System is an imaging system designed for visualizing and analyzing nucleic acids and proteins in agarose and polyacrylamide gels. **Principle:** It operates on the principle of fluorescence or chemiluminescence detection, where UV or blue light excites the stained DNA/RNA/protein bands, which are then captured using a high-resolution camera. **Applications:** Used in molecular biology labs for gel electrophoresis imaging, DNA quantification, mutation analysis, and protein studies.	

Gradient PCR, Bio-Rad	**Introduction:** The Bio-Rad Gradient PCR is an advanced thermal cycler designed for optimizing DNA amplification by testing multiple annealing temperatures in a single run. It enhances efficiency and reproducibility in molecular biology experiments. **Principle:** It follows the standard PCR process—denaturation, annealing, and extension—while utilizing a temperature gradient to determine the optimal annealing temperature for primers. **Applications:** Used in gene amplification, cloning, mutation analysis, genetic studies, molecular diagnostics, and forensic research.