

# PLANT BIOTECHNOLOGY

TOPIC-CRYOPRESERVATION

BY

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# WHAT IS CRYOPRESERVATION?

- STORAGE OF BIOLOGICAL MATERIALS (CELLS, TISSUES, ORGANS etc.) AT LOW TEMPERATURE (-196 °C)
- TO PREVENT ALL BIOLOGICAL PROCESSES OF BIOLOGICAL MATERIALS
- MATERIALS DOES NOT DECOMPOSE

# STEPS INVOLVED IN CRYOPRESERVATION

- SELECTION OF MATERIAL
- ADDITION OF CRYOPROTECTANT
- FREEZING
- STORAGE IN LIQUID NITROGEN
- THAWING
- WASHING & RECULTURING
- MEASUREMENT OF VIABILITY
- REGENERATION OF PLANTS

# NAME OF CRYOPROTECTANT

- DMSO(DIMETHYLSULFOXIDE)
- GLYCEROL
- PROLINE
- SUCROSE
- ETHANOL

COMBINATION OF TWO CRYOPROTECTANT IS  
MORE USEFUL

# ADVANTAGES OF CRYOPRESERVATION

- SAFETY FROM CONTAMINATION (FUNGUS,BACTERIA,GENETIC)
- WE CAN STORE THE MATERIAL FOR LONG TIME
- IT IS A TYPE OF EX-SITU CONSERVATION
- CONSERVE THE GERMPLOASM OF ENDANGERED SPECIES

**THANK YOU**