

## Declaration by Research Scholar

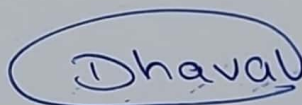
### Originality of Research Work

I, **Nirmal Dhaval Atulkumar** declare that thesis entitled "*Morpho-Physiological Studies on Micropropagated Rose as Influenced by Liquid Culture System and Culture Vessels Environment*" is my own work conducted under the supervision of **Dr. Preetam Joshi** at Department of Biotechnology, Faculty of Science, Atmiya University, Rajkot, Gujarat, India and approved by the Director of Research, Atmiya University.

I further declare that to the best of my knowledge the thesis does not contain any part of any work which has been submitted for award of any degree either in this University or any other University without proper citation.

Date: 06 / 01 / 2025

Place: Rajkot



**Nirmal Dhaval Atulkumar**

Research Scholar

## Certificate of Supervisor

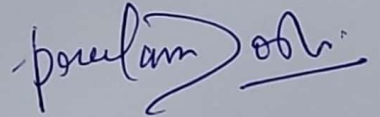
This is to certify that work entitled "*Morpho-Physiological Studies on Micropropagated Rose as Influenced by Liquid Culture System and Culture Vessels Environment*" is a piece of research work done by **Nirmal Dhaval Atulkumar** under my supervision for the degree of Doctor of Philosophy in Department of Biotechnology, Faculty of Science, Atmiya University, Rajkot, Gujarat, India

To the best of my knowledge and belief the research work and thesis

- I. Embodies the work of candidate himself
- II. Has duly been completed,
- III. Fulfils the requirement of ordinance related to Ph.D. degree of the University & is up to the standard both in respect of content and language for being referred to the examiner.

Date: 06/01/2025

Place: Rajkot



**Dr. Preetam Joshi**

Supervisor



# ATMIYA UNIVERSITY

(Established under the Gujarat Private University Act 11, 2018)

Yogidham Gurukul, Kalawad Road, Rajkot - 360005, Gujarat (INDIA)

## Certificate

### Pre Thesis Submission Presentation

This is to certify that **Nirmal Dhaval Atulkumar** has made Pre Ph.D. presentation on the research work entitled **Morpho-Physiological Studies on Micropropagated Rose as Influenced by Liquid Culture System and Culture Vessel Environment** in the Faculty of Science, Atmiya University, Rajkot on 06/11/2024 before Departmental Research Committee for getting feedback and comments.

This is also to certify that all the suggestions and comments given by the Doctoral Progress Review Committee are incorporated. Moreover the presented research work was appreciated and recommended by all attendees.

Date: 06/11/2024

Place: Rajkot

Director

Centre for Research, Innovation & Translation



## Thesis Approval Form

The Viva-Voce of the Ph.D. thesis entitled "*Morpho-Physiological Studies on Micropropagated Rose as Influenced by Liquid Culture System and Culture Vessel Environment*" submitted by **Nirmal Dhaval Atulkumar (Enrolment No. 191681001)** was conducted on **30/12/2024 (Monday)** at Atmiya University, Rajkot, Gujarat

Based on the Performance of the Candidate, We, the panel of examiners, recommend that  
(Please tick any of the following)

1. He / ~~She~~ be awarded Ph.D. Degree
2. He / She be awarded Ph.D. Degree with minor modification

Please Suggest Modification

3. The following modifications are to be incorporated in the thesis within one month and viva-voce be re-conducted by the same panel of examiners

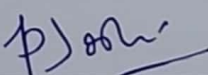


Please Suggest Modification

4. He / She should not be awarded Ph.D. Degree

Please mention Reason for Rejection

Date: 30/12/2024

Place: Rajkot

Signature			
	Research Supervisor	University Nominee	External Examiner

## Acknowledgement

First and foremost, I would like to express my sincere gratitude to my supervisor, **Dr. Preetam Joshi**, Associate Professor in the Department of Biotechnology at Atmiya University, Rajkot for their invaluable guidance, support, and encouragement throughout my research journey. Their expertise in Plant Biotechnology has been instrumental in shaping the direction and quality of this research. He provided insightful feedback on my work, challenged me to think critically, and helped me navigate the complexities of research. I am particularly grateful for their willingness to meet outside of office hours, their helpful suggestions on structuring the research and thesis. This research would not have been possible without their guidance.

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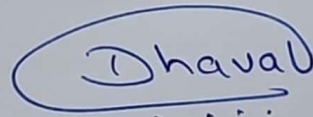
I am deeply thankful to **P. P. Tyagvallabh Swamiji**, President of Atmiya University, Rajkot, and **Dr. K. D. Ladva**, Principal of Shree M and N Virani Science College, Rajkot, for their instrumental roles in my academic journey leading to the completion of my Ph.D. degree. Swamiji's profound guidance, unwavering support, and inspirational blessings have been pivotal in shaping my academic path.

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Date:

Place: Rajkot

A handwritten signature in blue ink that reads "Dhaval". The signature is enclosed within a hand-drawn oval shape.

**Nirmal Dhaval Atulkumar**