

ANDHRA UNIVERSITY
COLLEGE OF SCIENCE & TECHNOLOGY

Prof. N. Sarada Mani
Department of Botany,
College of Science & Technology,
Andhra University,
Visakhapatnam,
INDIA-530 003



Phone 91 9866681845 (Mobile)
91 891284 4545 (Office)
E mail: drnsaradamani@gmail.com

CERTIFICATE

This is to certify that the thesis entitled “Genetic transformation of sorghum for stem borer resistance using *cry1Aa* gene via *Agrobacterium*-mediated approach” that is being submitted by **Mr. Vinodh Ratnala** in partial fulfillment for the award of Ph.D. in Department of Botany, Andhra University, is a record of bonafide work carried out by him under my guidance and supervision.

The results embodied in this thesis have not been submitted to any other University or Institute for the award of any degree or diploma.

Date:

Place: Visakhapatnam

N. Sarada Mani
Signature of Supervisor

(Dr. N. Sarada Mani)



ज्वार अनुसंधान निदेशालय
DIRECTORATE OF SORGHUM RESEARCH
राजेन्द्रनगर, हैदराबाद
Rajendranagar, Hyderabad 500 030



Dr. D Balakrishna
Senior Scientist,
Biotechnology Division

Date:

CERTIFICATE

This is to certify that the thesis entitled “Genetic transformation of sorghum for stem borer resistance using *cry1Aa* gene via *Agrobacterium* mediated approach” that is being submitted by **Mr. Vinodh Ratnala** in partial fulfillment for the award of Ph.D. in Department of Botany, Andhra University, is a record of bonafide work carried out by him under my guidance and supervision.

The results embodied in this thesis have not been submitted to any other University or Institute for the award of any degree or diploma.

Date:

Place: Hyderabad


Signature of Co-Supervisor

(Dr. D. Balakrishna)

Dr. D. BALAKRISHNA
Scientist (SS), Biotechnology
Directorate of Sorghum Research (ICAR)
Rajendranagar, Hyderabad-500 030.
Andhra Pradesh, India

Off: 040-24018651, Ext: 234; Fax: 040-24016378; Mobile: 09951977288
Email: bala@sorghum.res.in; bkdomathoti@yahoo.com, website: www.sorghum.res.in