Department of Plant Sciences

Ethnobotanical status of *Prunus armeniaca* Linn. In Tehsil Chaupal of District Shimla, Himachal Pradesh

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial

Fulfillment of the degree of

Masters of Science in Plant Science

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of

Prof. Pardeep Kumar

By

Aditi Himta

(CUHP20PLS01)

June 2022



Central University of Himachal Pradesh

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This is to certify that the dissertation entitled "Ethnobotanical status of Prunus armeniaca Linn. in Tehsil Chaupal of District Shimla, Himachal Pradesh" submitted by Aditi Himta CUHP20PLS01 D/O Sh. Santosh Himta to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of the degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Prog. Rardeep Kumar

Supervisor

Dr. Paracen Sharma

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Dean, School of Life Science हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh अस्थारी शैक्षणिक खण्ड/Temporary Academic Block शाहपुर, कांगडा (हि.प्र.)/Shahpur, Kangra (H.P.)-176206 ii

The Effect of Salicylic Acid on Growth and Biochemical Characters in UV-C Radiation Stressed Tomato Plants (Solanum lycopersicum L.)

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial

Fulfillment of the degree of

Masters of Science in Plant Science

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of

Dr. Divya V. Nair

By

Anjali

Roll No. CUHP20PLS03

June, 2022



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This to certify that the dissertation entitled "The Effect of Salicylic Acid on Growth and Biochemical Characters in UV-C Radiation Stressed Tomato Plants (Solanum lycopersicum L)". submitted by Anjali (CUHP20PLS03) D/O Yashpal to the Central University of Himachal Pradesh, Dharamshala in partial fulfilment of the requirements for the award of degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Dr. Parver Sharma

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Supervisor सहायक्-प्राप्यापक/Assistant Professor पारप विज्ञान विभाग/Department of Plant Scien

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हिमाचर : त केन्द्रीय विक्वविद्यालय Centra University of Himachal Professio अस्थाई शैक्षणिक खण्ड, शाहपुर

Temporary Academic Block, Shahpur

Dean of School

अधिष्टाला, जैविक विज्ञान स्कूल Dean, School of Life Science

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Establishment of *in vitro* cultures of *Valeriana jatamansi*Jones using different plant growth regulators

A dissertation

Submitted to the Central University of Himachal Pradesh for the partial fulfillment of the degree of

Masters of Science in Plant Science (Botany)

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of Dr. Munish Sharma

by

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This to certify that the dissertation entitled "Establishment of in vitro cultures of Valeriana jatamansi Jones using different plant growth regulators" submitted by Ankita Rana (CUHP20PLS04) D/O Sh. Karnail Rana to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of degree of Master of Science in Plant Science (Botany) has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

(Dr. Munish Sharma)

Supervisor

1) fessor

सहायक अध्यापक /Assistant Professors

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अस्थार राजाणक खान्ड, शास्त्रप्र Temporary Academic Block, Shahpur (Prof. Pandeep Kumar) Head of the Department External Examiner

Prof. Parveen Sharma

Dean of Semol of Life Sciences

अभिर्छाता, जैविक विज्ञान स्कूल Dean, School of Life Science हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय Central University of Himachal Pradesh

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A Review on the "Role of Anti-depressant Agents derived from selected Flowering Plants"

Submitted to the Central University of Himachal Pradesh for the Partial

Fulfilment of the degree of

Masters of Science in Plant Science

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of

Dr. Ashun Chaudhary

Ву

Arti Chauhan

Roll No. CUHP20PLS05

June, 2022



CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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[Established under the Central Universities Act 2009]

Dharamshala, District Kangra,

Himachal Pradesh [India]-176215

This to certify that the dissertation entitled "A Review on Role of Antidepressant agents derived from selected Flowering Plants" submitted by Arti Chauhan (CUHP20PLS05) D/O Sh. Surender Kumar to the Central University of Himachal Pradesh, Dharamshala in partial fulfilment of the requirements for the award of degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in

collaboration with an External Examiner.

Dr. Parveen Charma

External Examiner

Superior प्रियोपक / Assistant Professor प्राप्त विज्ञान विभाग / Department of Plant Science ज़ीब विज्ञान (School of Life Sciences.

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Dean of Sono of Life Sciences अधिष्यस्त, जैविक विज्ञान स्वरूल

Dean, School of Life Science हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय Central University of Himachal Pradesh अस्थायी शेक्षणिक खण्ड/Temporary Academic Block शाहपुर, कांगडा (हि.प्र.)/Shahpur, Kangra (H.P.)-176206

The Use of Halotolerant Plant Growth Promoting Rhizobacteria in Sustainable Agriculture

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial

Fulfillment of the degree of

Masters of Science in Plant Science

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of

Dr. Ashun Chaudhary

Ву

Damini

Roll No. CUHP20PLS06

June, 2022



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This is to certify that the dissertation entitled "The Use of Halotolerant Plant Growth Promoting Rhizobacteria in Sustainable Agriculture" submitted by Damini (CUHP20PLS06) D/O Sh. Narender Pal to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of the degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Dr. Ashun Chaudhary

सक्तिकि प्रिक्तिपिकी PAssistant Professor पद्द विकास विभाग/Department of Plant Sciences भीग विकास स्कूल/School of Life Sciences विभागल प्रदेश केम्द्रीय विश्यविद्यालय Central University of Himachal Pradesh

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External Examiner

Head of the Departm

Dean of School of Life Sciences

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Effect of Heavy Metal Stress on the morphology of Solanum nigrum growing under soil conditions

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial Fulfillment of the degree of

Masters of Science in Plant Science (Botany)

In the School of Life Sciences
In the Department of Plant Science



Under the Supervision of Dr. Munish Sharma

By

Diksha (CUHP20PLS07)



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This to certify that the dissertation entitled "Effect of heavy metal stress on the morphology of Solanum nigrum growing under soil conditions" submitted by Diksha (CUHP20PLS07) D/O Sh. Jagat Ram to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of degree of Master of Science in Plant Science (Botany) has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Supervisor

सहायक्-प्राप्यापक / Assistant Professor पदप विक्रम, विभाग / Department of Plant Sciences जीव विकास किला /School of Life Sciences

हिमार क्षेत्रीय विश्वविद्यालय Care Quiversity of Himachal Pradesh अस्पार् जैंभणिक खण्ड, शाहपुर andemic Block

External Exan

Head of the Department

Dean of School of Life

अधिष्ठाता, जैविक विज्ञान Dean, School of Life Science हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh अस्थायी शैक्षाणिक राण्ड/Temporary Academic Block

A Tr Mshahour, Kangra (H.P.)-176206

Effect of Mannitol Induced Seed Priming in the Salinity Tolerance of Brinjal (Solanum melongena) Seeds

A Dissertation

Submitted to the Central University of Himachal Pradesh for the Partial

Fulfillment of the Degree of

Master of Science in Plant Science

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of

Dr. Divya V. Nair

By

Diksha

June ,2022



(Established under Central Universities Act 2009)
Dharamshala (HP) - 176215

CERTIFICATE

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Dharamshala, District Kangra,

Himachal Pradesh [India]-176215

This to certify that the dissertation entitled "Effect of Mannitol Induced Seed Priming in the Salinity Tolerance of Brinjal Seeds (Solanum melongena)" submitted by Diksha (CUHP20PLS08) D/O Sh. Ravinder Kumar to the Central University of Himachal Pradesh, Dharamshala in partial fulfilment of the requirements for the award of degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Dr. Divya V. Nair

Dr. Pasiveen Shasima

External Examiner

सहायक प्राच्यापक / Assistant Professor पारच विकास विभाग / Department of Plant Sciences जीव विकास - (chieol of Life Sciences

िभार हैं महिला विश्वविद्यालय जिम्मी विश्वविद्यालय जिम्मी क्षेत्रकार कार्याहणुर अस्याई शैक्षणिक खण्ड, शाहपुर

Temporary Academic Block, Shahpur

Head of the Departmen

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अधिष्ठाता, जैविक विज्ञान स्कूल Dean, School of Life Science हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh अस्थायी शैक्षणिक राण्ड/Temporary Academic Block भारतक कांग्रहा कि ए. M. Shahour, Kanera (H.P. 1-1757) है

Ethnobotanical survey of *Ficuscarica* among local residents of Tehsil Shahpur in District Kangra of Himachal Pradesh

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial

Fulfillment of the degree of

Masters of Science in Plant Science

In the School of Life Sciences

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ISHA KUMARI

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This is to certify that the dissertation entitled, "Ethnobotanical survey of Ficus carica among local residents of Tehsil Shahpur in Kangra District of Himachal Pradesh". submitted in partial fulfillment of the requirements for the award of the degree of Master of Science (Plant science) in the Central University of Himachal Pradesh, Dharamshala is a bonafide research work carried out by ISHA KUMARI under my supervision and that no part of this thesis has been submitted for any other degree or diploma.

The assistance and help received during the course of this investigation have been

fully acknowledged.

Dean of School Life Spi

Dean, School of Life Science हिमायल प्रदेश केन्द्रीय विश्वविद्यालय

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Ethnobotanical Status of *Grewia optiva* (J.R. Drumm. ex Burret) as a Multipurpose Tree in Tehsil Shahpur of District Kangra (H.P.)

A Dissertation

Submitted to the Central University of Himachal Pradesh for the Partial

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By

KAJAL PARIHAR

June, 2022



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This is to certify that dissertation entitled "Ethnobotanical Status of Grewia optiva (J.R. Drumm. ex Burret) as a Multipurpose Tree in Tehsil Shahpur of District Kangra (H.P.)" submitted by Kajal Parihar (CUHP20PLS10) D/O Mr. Sunil Parihar to the Central University of Himachal Pradesh. Dharamshala in partial fulfillment of the requirements for the award of degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Supervisor

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Dean of School

Dean, School of Life Science हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय

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Effect of osmopriming on salinity stress tolerance of Tomato variety - Golden Seeds Tomato Vaishnavi – 2082

A Dissertation

Submitted to the Central University of Himachal Pradesh for the partial Fulfillment of the Degree of

Masters of Science in Plant Science

In the school of Life Sciences
In the Department of Plant Science



Under the Supervision of Dr. Divya V. Nair

Ву

Kanchan

(CUHP20PLS11)

June, 2022



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This to certify that the dissertation entitled "Effect of osmopriming on salinity stress tolerance of Tomato variety – Golden Seeds Tomato Valshnavi-2082" submitted by Kanchan (CUHP20PLS11) D/O Sh. Pawan Kumar to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Dr. Divya V. Nair

Supervisor

Dr. Partyeen Sharma

External Examiner

Head of the Department

ardeep Kunur

Dean of School of Lile Shienger

हिमादान प्रदेश केन्द्रीय विश्वविद्यालय Central University of Himachal Pradesh अस्याठी भैक्षणिक राण्डे/Temporary Academic Block भारत्व, क्रीनुद्ध (दि.अ.)/Thainpur, Kangra (U.C.)-17620€

Rhizofilteration as an Effective Approach for Removal of Heavy Metals from Aqueous Environment

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial Fulfillment of the degree of

Masters of Science in Plant Science (Botany)

In the School of Life Sciences
In the Department of Plant Science



Under the Supervision of Dr. Munish Sharma

Ву

KM Divya Pawar (CUHP20PLS12)



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Department of Plant Science (Botany) School of Life Sciences Central University of Himachal Pradesh, Dharamshala [Established under the Central Universities Act 2009] Dharamshala, District Kangra, Himachal Pradesh [India]-176215

This to certify that the dissertation entitled "Rhizofilteration as an Effective Approach for Removal of Heavy Metal From Aqueous Environment" submitted by KM Divya Pawar (CUHP20PLS12) D/O Sh. Manoj Kumar to the Central University of Himachal Pradesh, Dharamshala in partial fulfilment of the requirements for the award of degree of Master of Science in Plant Science (Botany) has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

(Dr. Munish Sharma)

Supervisor Professor ा । । । । । विभाग / Decarment of Plant Sciences

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Temporary Academic Block, Shahour

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Head of the Department

Dean of School of

अधिच्छाता, जैविक विज्ञान स्कूल Dean, School of Life Science हिमावल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh अस्थायी शैक्षणिक सण्ड/Temporary Academic Block शाहपूर, कांगडा (हि.प.)/Shanpur, Kangra (H.P.)-176206

A Review on the Botanicals in Organic Agriculture

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial

Fulfillment of the degree of

Masters of Science in Plant Science

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of

Dr. Ashun Chaudhary

By

Kushal Thakur

Roll No. CUHP20PLS13

June, 2022



CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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CERTIFICATE

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Dharamshala, District Kangra,
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This is to certify that the dissertation entitled "Botanicals in Organic Agriculture" submitted by Kushal Thakur CUHP20PLS13 S/O Karan Singh to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of the degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Dr. Ashun Chaudhary

Supervisor

Dr. Parveen Sharma

External Examiner

Head of the Department

Dean of School of Life Sciences

अधिष्ठाता, जैविक विज्ञान स्कूल Dean, School of Life Science हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय Central University of Himachal Pradesh अस्थायी शैक्षणिक खण्ड/Temporary Academic Block शाहपुर, कांगदा (हि.प्र.)/Shahpur, Kangra (H.P.)-176206

Saussurea costus (Falc) Lipsch. A Review on Its Ethnomedicinal uses, Phytochemistry and Pharmacology

A dissertation

Submitted for the purpose to fulfill

The Requirement

Of the degree of

Master of Science in Plant Science

In the school of life Sciences

In the department of Life Science



Under the guidance of

Dr. Ashun Chaudhary

By

Madhvi Negi

(Roll No. CUHP20PLS14)

CENTRAL UNIVERSITY OF HIMACHAL PRADESH

(TAB) SHAHPUR Dist. Kangra, Himachal Pradesh-176206 (2021)



CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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CERTIFICATE

Dated: 30 06 2022

Department /Centre

School of Life Sciences

Central University of Himachal Pradesh, Dharamshala

[Established under the Central Universities Act 2009]

Dharamshala, District Kangra,

Himachal Pradesh [India]-176215

This to certify that the dissertation entitled "Saussurea costus (Falch) Lipsch: A Review on its Ethnomedicinal uses, Phytochemistry and Pharmacology". submitted by Madhvi Negi (CUHP20PLS14) D/O Jaspal Singh Negi to the Central University of Himachal Pradesh, Dharamshala in partial fulfilment of the requirements for the award of degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

shun Chaudhary

Dr. bareen Sharma

External Examiner

उद्योगिक प्राथमिक /Assistant Professor पुरुष विज्ञान विज्ञान /Department of Plant Schenox विज्ञान रहन /School of Life Sciences

अनाचल प्रवश केन्द्रीय विश्वविद्यालय Central University of Himachal Pradesh ভাৰমাই মন্দোক অত্য, সাভ্যুং Temporary Academic Block, Shahpur

Dean of Selector Of Like Sciences

अधिष्ठाता, जैविक विज्ञान स्कूल Dean, School of Life Science हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय Central University of Himachal Pradesh

अस्थारी शैक्षणिक राण्ड/Temporary Academic Block शाहपुर, कांगडा (डि.प्.)/Shahpur, Kangra (H.P.)-17620६

Elicitation approach for in vitro regeneration of Salvia officinalis L.

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial Fulfillment of the degree of

Master of Science in Plant Science (Botany)

In the School of Life Sciences
In the Department of Plant Science



Under the Supervision of Dr. Munish Sharma

 $\mathbf{B}\mathbf{y}$

Manu Choudhary (CUHP20PLS15)



CENTRAL UNIVERSITY OF HIMACHAL PRADESH

(Established under Central Universities Act 2009) Dharamshala (HP) - 176215

CERTIFICATE

Dated: 30 -6-2022

Department of Plant Science (Botany)

School of Life Sciences

Central University of Himachal Pradesh, Dharamshala [Established under the Central Universities Act 2009] Dharamshala, District Kangra, Himachal Pradesh [India]-176215

This to certify that the dissertation entitled "Elicitation approach for in vitro regeneration of Salvia officinalis L." submitted Manu Choudhary (CUHP20PLS15) D/O Sh. Balbir Singh to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of degree of Master of Science in Plant Science (Botany) has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

(Dr. Munish Sharma)

Supervisor

सहावक्-प्राप्यापक / Assistant Professor प्रदेष विज्ञान विपान / Department of Plant Sciences जीव विज्ञान काल / School of Life Sciences किनाक / ११ केन्द्रीय विभवविद्यास्य Central university of Himachal Pradesh अस्थाई शैक्षणिक खण्ड, आरुपुर Temporary Academic Block, Shahpur External Examiner

Head of the Department

Dean of School of Life Sciences

अधिष्ठाता, जैविक विज्ञान स्कूल Dean, School of Life Science हिमावल प्रदेश केन्द्रीय विश्वविद्यालय Central University of Himachal Pradesh अस्थायी शंक्षींगक राण्ड/Temporary Academic Block

etimar adjust (f3,51,4/Shahpur, Kanara (H.P.)-176205

"Allelopathic effect of aqueous leaf extract of *Parthenium* hysterophorus and *Urtica dioica* on the seed germination and growth parameters of *Capsicum annum* variety – Suraj mukhi"

A dissertation

submitted to Central University of Himachal Pradesh

for the partial Fulfillment of the degree

MASTERS OF SCIENCE IN PLANT SCIENCE

In the School of Life Sciences
In the Department of plant science



Under the Supervision of Dr. Divya V. Nair

By

MONIKA VERMA

(CUHP20PLS16)

June 2022



Central University of Himachal Pradesh

Established under central universities act (2009)
Dharamshala (HP) - 176215

CERTIFICATE

Dated .0.5/07/2022

Department/ Centre School of life Sciences

Central University of Himachal Pradesh, Dharamshala [Established under the Central Universities Act 2009] Dharamshala, District Kangra, Himachal Pradesh [India] - 176215

This is to certify that the dissertation entitled, "Allelopathic effect of aqueous leaf extract of Parthenium hysterophorus and Urtica dioica leaves on the seed germination and growth parameters of Capsicum annum Variety – Suraj mukhi" submitted by Miss MONIKA VERMA (CUHP20PLS16)) D/o Sh. PARMOD KUMAR to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of the degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Dr. Divya V. Nair

Dr. Brof. Parveen Sharma

External Examiner

Supervisor

सहायक प्राप्यापक / Assistant Professor

पहरप विज्ञान विभाग /Department of Plant Science

जीव विज्ञानः nool of Life Sciences हिमाचलः शेय विश्वविद्यालय

Central University of Himachal Pradest Head

अस्याई शैक्षणिक खण्ड, शाहपुर Temporary Academic Block, Shahpur

Dean of School

अधिकता, जैविक विज्ञान स्कूल

Dean, School of Life Science हिमावल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh अस्थायी शैक्षणिक खण्ड/Temporary Academic Block शाहपुर, क्रांगंडा (हि.प्र.)/Shahpur, Kangra (H.P.)-176206

Commercial Cultivation of Lavender in Salooni Valley: Current Scenario and its Future Prospectives

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial

Fulfilment of the degree of

Masters of Science in Plant Science

In the School of Life Sciences
In the Department of Plant Science



Under the Supervision of

Prof. Pardeep Kumar

By

Nitin Sharma

CUHP20PLS17

June, 2022



Central University of Himachal Pradesh (Established under Central Universities Act 2009)

Dharamshala (HP) - 176215

CERTIFICATE

Dated: 30/06/2022

Department of Plant Science
School of Life Sciences
Central University of Himachal Pradesh, Dharamshala
[Established under the Central Universities Act 2009]
Dharamshala, District Kangra,

Himachal Pradesh [India] - 176215

This is to certify that dissertation entitled "Commercial Cultivation of Lavender in Salooni Valley: Current Scenario and its Future Prospectives" submitted by Nitin Sharma (CUHP20PLS17) S/0 Sh. Mool Raj to the Central University of Himachal Pradesh. Dharamshala in partial fulfilment of the requirements for the award of degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Dr. Parveen Shanna

External Examiner

Supervisor

Head of the Departmen

Dean of School of Life Sciences

अधिष्ठीता, जैविक विज्ञान स्कूल Dean, School of Life Science हिमाबल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh अस्थायी शैक्षणिक राण्ड/Temporary Academic Block शाहपुर, सांगदा (हि.म.)/Shahpur, Kangra (H.P.)-176206

A SURVEY ON KANGRA TEA AND ITS IMPORTANCE

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial

Fulfillment of the degree of

Master of Science in Plant Science

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of

Dr. Pardeep Kumar

Ву

Pallvi

Roll No. CUHP20PLS18

June, 2022

CENTRAL UNIVERSITY OF HIMACHAL PRADESH

Dharamshala, Himachal Pradesh



CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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Dharamshala (HP) - 176215

CERTIFICATE

Dated: 30/06/2022

Department of Plant Science (Botany)

School of Life Sciences

Central University of Himachal Pradesh, Dharamshala

[Established under the Central Universities Act 2009] Dharamshala, District Kangra, Himachal Pradesh [India]-176215

This is to certify that the dissertation entitled "A survey on Kangra Tea and its importance" is submitted by Pallvi (CUHP20PLS18) D/O Sh. Trilok Chand to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of the degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Supervisor

External Examiner

Brof Porveen Shoome

Head of the Department

Dean of School of Life Seignces

अधिष्ठाता.

Dean, S (hool of Life Science) हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh अस्थायी शैक्षणिक खण्ड/Temporary Academic Block शाहपुर, कांगडा (हि.प्र.)/Shahpur, Kangra (H.P.)-17620६

"Effect of Proline Induced Seed Priming on Seedling Growth and Biochemical Parameters of Brinjal Under Salinity Stress"

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial Fulfillment of the

Degree of

Master of Science in Plant Science

In the School of Life Sciences
In the Department of Plant Science



Under the Supervision of Dr. Divya V. Nair

By
Pitamber
(Roll No. CUHP20PLS19)
June 2022



CENTRAL UNIVERSITY OF HIMACHAL PRADESH (Established under central university act 2009) Dharamshala (HP) - 176215

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Department /Centre
School of Life Sciences
Central University of Himachal Pradesh, Dharamshala
[Established under the Central Universities Act 2009]
Dharamshala, District Kangra,
Himachal Pradesh [India]-176215

This is to certify that the dissertation entitled "Effect of Proline Induced Seed Priming on Seedling Growth and Biochemical Parameters of Brinjal Under Salinity Stress" submitted by Pitamber (CUHP20PLS19) S/O Rakesh Kumar to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of the degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in dellaboration with an External Examiner.

E TOIL

Dr. Parveen Sharma

External Examiner

संस्थित प्राप्ति Assistant Professor पर्प विज्ञन विभाग / Department of Plant Sciences जीव विज्ञान ना Lincol of Life Sciences विनामक जरुर केन्द्रीय विश्वविद्यालय Central University of Himachal Pradesh

अस्याई शैक्षणिक खण्ड, शाहपुर Temporary Academic Block, Shahpur

Head of the Department

Dean of School of Life Science

अधिष्ठाता, जैविक विज्ञान स्वरूल
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हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
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अस्थायी शैक्षणिक रूण्ड/Temporary Academic Block शासपुर, कोगडा (डि.प्.)/Shahpur, Kangra (H.P.)-176206

Media manipulative approaches for *in vitro* propagation of *Rhynchostylis retusa*

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial Fulfillment of the degree of

Masters of Science in Plant Science (Botany)

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of Dr. Munish Sharma

By

Pooja Thakur (CUHP20PLS20)



CENTRAL UNIVERSITY OF HIMACHAL PRADESH

(Established under Central Universities Act 2009) Dharamshala (HP) - 176215

CERTIFICATE

Dated: 30/06/2022

Department of Plant Science (Botany)

School of Life Sciences

Central University of Himachal Pradesh, Dharamshala [Established under the Central Universities Act 2009] Dharamshala, District Kangra, Himachal Pradesh [India]-176215

This to certify that the dissertation entitled "Media manipulative approaches for in vitro propagation of Rhynchostylis retusa" submitted byPooja Thakur (CUHP20PLS20) D/O Sh. Om Prakash to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of degree of Master of Science in Plant Science (Botany) has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

(Dr. Munish Sharma)

Supervisor

सहायक-प्राप्यापक/Assistant Professor पारप विज्ञान विभाग/Department of Plant Sciences जीव विकार अंग्रिका of Life Sciences

Head of the Department

External Examiner

Prof. Parveen Shaima

Dean of School of Life Sciences अधिष्ठाता, जीवक विज्ञान स्वर्

Dean, School of Life Science हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh अस्यायी शैक्षणिक राण्ड/Temporary Academic Block भारतर कांग्रज (चि.प. Mshahpur, Kangra (H.P.)-17620६

A Systematic Review on Ethnobotany, Pharmacology and Phytochemical Constituents of *Lonicera japonica*

A dissertation Submitted for the purpose to fulfill

The Requirement

Of the degree of

Master of Science in Plant Science
In the School of Life Sciences
In the Department of Plant Science



Under the guidance of

Dr. Ashun Chaudhary

By

Priya Verma

(Roll No. CUHP20PLS22)

CENTRAL UNIVERSITY OF HIMACHAL PRADESH (TAB) SHAHPUR Dist. Kangra, Himachal Pradesh- 176206

CENTRAL UNIVERSITY OF HIMACHAL PRADESH

(Established under central universities act 2009) Dharamshala (HP) - 176215

CERTIFICATE

Dated: 30 06 2022

Department /Centre

School of Life Sciences

Central University of Himachal Pradesh, Dharamshala

[Established under the Central Universities Act 2009]

Dharamshala, District Kangra,

Himachal Pradesh [India]-176215

This to certify that the dissertation entitled "A Systematic Review on Ethnobotany, Pharmacology and Phytochemical Constituents of Lonicera japonica submitted by Priya Verma (CUHP20PLS22) D/O Sh. Pawan Kumar to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Dr. Ashun Chaudhary

Dr. Proveen Sharma

External Examiner

- Superivised Assistant Professor पूर्व विज्ञान विल्ञान /Department of Plant Sciences

जीत हिन

rool of Life Sciences

ंच विश्वविद्यालन या अर्ग ui Himachal Pradesh

उन्ताई शैशियक खण्ड. शाहपुर Temporary Academic Block, Shampur

Dean of School

अधिखाता, जैविक विज्ञान स्वरूल Dean, School of Life Science हिमावल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh अस्थायी शैक्षांगिक खण्ड/Temporary Academic Block शाहपुर, कांगडा (हि.प्र.)/Shahpur, Kangra (H.P.)-176206

e Dopakinden

A Review on the Phytochemical, Ethnobotanical, and Pharmacological Studies of *Thymus linearis*

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial

Fulfillment of the degree of

Masters of Science in Plant Science

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of

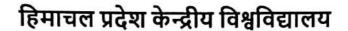
Dr. Ashun Chaudhary

Ву

Rakesh Kumar

Roll No. CUHP20PLS23

June, 2022





CENTRAL UNIVERSITY OF HIMACHAL PRADESH

(Established under central universities act 2009)

Dharamshala (HP) - 176215

CERTIFICATE

Dated 30-6-2022

Department /Centre

School of Life Sciences

Central University of Himachal Pradesh, Dharamshala [Established under the Central Universities Act 2009] Dharamshala, District Kangra, Himachal Pradesh [India]-176215

This is to certify that the dissertation entitled "A Review on the Phytochemical, Ethnobotanical, and Pharmacological Studies of Thymus linearis" submitted by Rakesh Kumar (CUHP20PLS23) S/O Sh. Govind Ram to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of the degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Man Chaudhary

Dr. Parveen Sharma

External Examiner

Assistant Professor RIMIT / Department of Plant Sciences

जीव विज्ञान स्टब्स् / School of Life Sciences हिनाबल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh अस्पाई श्रेमणिक खण्ड, श्राहपुर Temporary Academic Block, Shahput Head of the Departmen

Dean of School of Life

अधिष्यता, जैविक विज्ञान स्कूल Dean, School of Life Science हिमायल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh अस्यायी शैक्षणिक खण्ड/Temporary Academic Block शाहरपर, कांगहा (हि.प Menahour, Xangra (H.P.)-17620६

Effects of Plant Growth Regulators and Explant Type on *in vitro* multiplication of *Viola odorata* L.

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial Fulfillment of the degree of

Masters of Science in Plant Science (Botany)

In the School of Life Sciences
In the Department of Plant Science



Under the Supervision of Dr. Munish Sharma

Ву

Saroj Kumari (CUHP20PLS24)



CENTRAL UNIVERSITY OF HIMACHAL PRADESH

(Established under Central Universities Act 2009) Dharamshala (HP) - 176215

CERTIFICATE

Dated: 30/06/22

Department of Plant Science (Botany)

School of Life Sciences

Central University of Himachal Pradesh, Dharamshala [Established under the Central Universities Act 2009] Dharamshala, District Kangra, Himachal Pradesh [India]-176215

This to certify that the dissertation entitled "Effects of Plant Growth Regulators and Explant Type on in vitro multiplication of Viola odorata L." submitted by Saroj Kuamri (CUHP20PLS24) D/O Sh. Ravinder Kumar to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of degree of Master of Science in Plant Science (Botany) has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

(Dr. Munish Sharma)

सर्वायम् आर्थाप्या / Assistant Professor प्रमान विमान /Department of Plant Sciences जीव विमान स्कृत /School of Life Sciences विमाचल परेश केन्द्रीय विश्वविद्यालय Central University of Himachal Pradesh

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发展人种作品

External Examiner

Prof. Parveen

Head of the Department

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Dean, School of Life Science हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh TUZ Nemporary Academic Block

शाहपुर, कांगड़ा (हि.प्र.)/Shahpur, Kangra (H.P.)-1

"Effect of Proline Seed Priming on Growth and Biochemical Characters of Tomato (Solanum lycopersicum L.) under Salinity Stress."

A Dissertation

Submitted to the Central University of Himachal Pradesh for the Partial

Fulfilment of the Degree of

Master of Sciences in Plant Science

In the School of Life Sciences

In the Department of Plant Sciences



Under the Supervision of

Dr. Divya V. Nair

By

Shivani

(CUHP20PLS25)

June, 2022

Central University of Himachal Pradesh



Central University Of Himachal Pradesh

(Established under Central University Act 2009)

Dharamshala (HP) - 176215

CERTIFICATE

Dated 99 96 .2022

Department / Centre of Plant Sciences

School of Life Sciences

Central University Of Himachal Pradesh, Dharamshala

[Established under the Central University Act 2009]

Dharamshala, District Kangra,

Himachal Pradesh [India] - 176215

This is to certify that the dissertation entitled " Effect of proline seed priming on growth and biochemical characters of tomato(Solanum lycopersicum L.) under salinity stress " submitted by Shivani (CUHP20PLS25) D/o Rameshwar Dutt to the Central University of Himachal Pradesh, Dharamshala in partial fulfilment of the requirements for the award of degree of Master of Science in Plant Sciences has been approved by the committee after an oral, examination of the student in collaboration with an External Examiner.

Dr. Divya V. Nair

Dr. Parvein Shamo

External Examiner

Supervisor

सहायक-प्राच्यापक/Assistant Proficesor पूरप विज्ञान विभाग/Department of Plant Science ro . Partieep

जीब विज्ञान रकुल / School of Life Sciences हिनाचतः स्था वेन्द्रीय विश्वविधालय

Central University of Himachal Pradesh अस्पाई शक्षणिक खण्ड, शाहपुर Temporary Academic Block, Shahpur

Head of the Department

Prof. Purgeep Kuppar

Dean of School of Life Sciences

अधिष्ठाता, जैविक विज्ञान स्कूल

Dean, School of Life Science हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh अस्थारी शैक्षणिक खण्ड/Temporary Academic Block

शाहपुर, कांगड़ा (हि.प्र.)/Shahpur, Kangra (H.P.)-176206

Ethnobotanical Study on Noxious Weeds: Ageratum conyzoides L. and Parthenium hysterophorus L. in Tehsil Shahpur of District Kangra of Himachal Pradesh.

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial

Fulfillment of the degree of

Masters of Science in Plant Science

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of

Prof. Pardeep Kumar

By

Simran

Roll No. - CUHP20PLS26

June, 2022



Central University of Himachal Pradesh

(Established under central universities act 2009)

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CERTIFICATE

Dated: 30/06/22

Department of Plant Science (Botany)

School of Life Sciences

Central University of Himachal Pradesh, Dharamshala [Established under the Central Universities Act 2009] Dharamshala, District Kangra, Himachal Pradesh [India]-176215

This to certify that the dissertation entitled "Ethnobotanical Study on Noxious Weeds: Ageratum conyzoides L. and Parthenium hysterophorus L. in Tehsil Shahpur of District Kangra of Himachal Pradesh" submitted by Simran (CUHP20PLS26) D/O Sh. Mohinder Singh to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Prot/Pagac

External Examiner

Prof. Parveen Sharma

Dean of school Mile sprences

अधिष्ठाता, जैविक विज्ञान स्कूत Dean, School of Life Science हिमावल प्रदेश केन्द्रीय विश्वविद्यालय Central University of Himachal Pradesh

Central University of Hilliactial Fradesii

ii

Ethnobotanical Status of Nasturtium officinale in Tehsil Shahpur of District Kangra (II.P.)

A Dissertation

Submitted to the Central University of Himachal Pradesh for the Partial

Fulfillment of the Degree of

Masters of Science in Plant Science (Botany)

In the School of Life Sciences

In the Department of Plant Science (Botany)



Under the Supervision of
Prof. Pardeep Kumar
By
Sushma Kumari
Roll No. CUHP20PLS27
June, 2022



Central University of Himachal Pradesh

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Dharamshala (HP) – 176215

CERTIFICATE

Dated: 30/06/2022

Department of Plant Science (Botany)

School of Life Sciences

Central University of Himachal Pradesh, Dharamshala

[Established under the Central Universities Act 2009]

Dharamshala, District Kangra,

Himachal Pradesh, India – 176215

This to certify that dissertation entitled "Ethnobotanical status of Nasturtium offcinales in Shahpur tehsil of District Kangra (H.P.)" submitted by Sushma Kumari (CUHP20PLS27) D/0 Mr. Sham Lal to the Central University of Himachal Pradesh. Dharamshala in partial fulfillment of the requirements for the award of degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Supervisor

External Examiner

Prof. Porrenshama

Dean of School of Life Sciences

Caffician, जैविक पिजान स्कूल Dean, School of Life Science

हिमावल प्रदेश केन्द्रीय विश्वविद्यालय Central University of Himachal Pradesh

अस्थारी शैक्षणिक राण्ड/Temporary Academic Block शाहवर, कांगडा (कि.प्र.)/Shahpur, Kangra (H.P.)-176206

"Seed Priming with Proline Improved the Photosynthetic Pigment Composition and Growth of Okra (*Abelmoschus esculentus*) under Salinity Stress."

A Dissertation

Submitted to the Central University of Himachal Pradesh for the partial

Fulfilment of the Degree of

Masters of Science in Plant Science

In the school of Life Sciences

In the Department of Plant Science



Under the Supervision of

Dr.Divya V.Nair

By

Swati

(CUHP20PLS28)

June, 2022



Central University of Himachal pradesh

(Established under central university act 2009)

Dharamshala(HP)-176215

CERTIFICATE

Dated 29/06/2022

Department/Centre

School of Life Sciences

Central University of Himachal Pradesh

(Established under the Cental University Act 2009)

Himachal Pradesh (India)-176215

This to certify that the dissertation entitled "Seed priming with proline improved the photosynthetic pigment composition and growth of okra (Abelmoschus esculentus) under salinity stress" submitted by Swati (CUHP20PLS28) D/O Pardeep Kumar to the central university of Himachal Pradesh Dharamshala in partial fulfilment of the requirements for the award of degree of Master of Science in Plant Science in collaboration with external examiner.

Dr. Divva V.Nair

Supervisor

सहाबक-प्राप्यापक/Assistant Fluir sor बारप किसन विभाग/Department of Plant Science भीव विज्ञान स्कूर / School of Life Sciences िनाचल प्रदेश केन्द्रीय विभावित्यालय Centra University of Himachal Madesh अत्थाई शेशणिक खण्ड, शास्प्रर Temporary Academic Block, Shahpur

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3/22/12]] Parivict 21/23/Temporary Academic Block

Central University of Himachal Pradesh

शाहपुर, कांग्रहा (१३.४.)/Shahpur, Kangra (॥.Р.)-17620६

Dr. Paryon Shanna External Examiner

Synthesis of Zinc Oxide mediated Nanoparticles from Rhizome of *Costus speciosus* (J. Koenig) Sm.

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial Fulfillment of the degree of

Masters of Science in Plant Science (Botany)

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of Dr. Munish Sharma

By

Swati (CUHP20PLS29)



CENTRAL UNIVERSITY OF HIMACHAL PRADESH

(Established under Central Universities Act 2009) Dharamshala (HP) - 176215

CERTIFICATE

Dated: 30 06 22

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This to certify that the dissertation entitled "Synthesis of zinc oxide mediated nanoparticles from rhizome of Costus speciosus (J.Koenig) Sm." Submitted by Swati (CUHP20PLS29) D/O Sh.Prem Singh to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of degree of Master of Science in Plant Science (Botany) has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

सहायेन मिनियापेक / Assistant Professor पूरप् विज्ञान विमाग / Department of Plant School . repl of Life Sciences ्राप विश्वविद्यालय

versity of Himachal Pradesh अस्थाइ शेक्षणिक खण्ड, भारपुर

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Prof. Parveen Sharma

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हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय Central University of Himachal Pradesh

अस्थारी शैक्षणिक राण्ड/Temporary Academic Block

STANDARDIZATION OF BIO-ETHANOL PRODUCTION UNDER DIFFERENT LABORATORY CONDITIONS

A Dissertation

Submitted to the Central University of Himachal Pradesh for the Partial Fulfillment of the Degree of

Masters of Science in Plant Science

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of Dr.Ashun Chaudhary

By

UDAYPAL

June, 2022



Central University of Dimachal Pradesh (Established under Central Universities Act 2009) Dharamshala (HP) - 176215

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Date: 30 300.2022

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This to certify that the dissertation entitled "Standardization of bio-ethanol production under different laboratory conditions" submitted by UDAYPAL (CUHP20PLS30) S/o VINOD KUMAR to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

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Central University of Himachal Pradesh अस्थायी शैक्षणिक खण्ड/Temporary Academic Block शाहपुर, कांगजा (कि.स.)/Shahpur, Kangra (H.P.)-176206

ii

"The comparative study of physicochemical parameters and phytoplankton diversity of Dal Lake and Khajjiar Lake in Himschal Pradesh"

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial Fulfillment of the Degree of

Master of Science in Plant Science

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of

Dr. Ashun Chaudhary

by

Vikash Mirdha

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June 2022



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This is to certify that the dissertation entitled "The comparative study of physicochemical parameters and phytoplankton diversity of Dal Lake and Khajjiar Lake in Himachal Pradesh" submitted by Vikash Mirdha (CUHP20PLS31) S/O Suresh Kumar Mirdha to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of the degree of Master of Science in Plant Science has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

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Départment

In vitro regeneration of Origanum majorana L. – an endangered medicinal herb

A dissertation

Submitted to the Central University of Himachal Pradesh for the Partial Fulfillment of the degree of

Masters of Science in Plant Science (Botany)

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of Dr. Munish Sharma

By

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CENTRAL UNIVERSITY OF HIMACHAL PRADESH

June, 2022



CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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This to certify that the dissertation entitled "In vitro regeneration of Origanum majorana L. an endangered medicinal herb" submitted by Vineeta Kaundal (CUHP20PLS32) D/O Sh. Khem Chand to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of degree of Master of Science in Plant Science (Botany) has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

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अस्थायी शैक्षणिक खण्ड/Temporary Academic Block THE TENT IN TENT AND THE P. 1-176206

Effect of seed priming by mannitol on biochemical and morphological parameters of Capsicum under salinity stress

A Dissertation

Submitted to the Central University of Himachal Pradesh for the Partial Fulfilment of the Degree of

Masters of Science in Plant Science

In the School of Life Sciences

In the Department of Plant Science



Under the Supervision of

Dr. Divya V. Nair

By

WAJID HUSSAIN

JUNE, 2022



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This to certify that the dissertation entitled "Effect of seed priming by mannitol on biochemical and morphological parameters of Capsicum under salinity stress" submitted by Mr. Wajid Hussain (CUHP20PLS33) D/o/ S/o Mr. Khursheed Ahmed to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of degree of Master of Science in Botany has been approved by the committee after an oral examination of the student in collaboration

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