गुरु घासीदास विश्वविद्यालय
(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
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Guru Ghasidas Vishwavidyalaya
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TOSTUDY THE DURGA DHARA, AMARKANTAK HILLS OF GPM DISTRICT, CHHATTISGARH

A Dissertation/ Project Submitted to

Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G.

In partial fulfillment of the requirement for the degree of

Bachelor of Science
in
Rural Technology

2024

Submitted by

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B.Sc. 6th Sem. RT

Enroll No.- GGV/21/10601

Roll No.- 21048101

Supervisor

Dr. Pushpraj Singh

Professor

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This is to certify that ***Aakanksha Jaiswal*** has completed the Dissertation work entitled as ***"To Study the Durga Dhara, Amarkantak Hills of GPM District, Chhattisgarh"*** under the supervision of ***Prof. Pushpraj Singh,*** for the partial fulfillment of required degree of ***Bachelor of Science in "Rural Technology".***

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Date:

Place: **Bilaspur, C.G.**

Signature of the HoD

Dr. Rajendra Mehta

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Head of the Department

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TO STUDY THE CHAPI SPILLWAY OF KOTA BLOCK, BILASPUR DISTRICT CHHATTISGARH

A Dissertation/Project Submitted to

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In partial fulfillment of the requirement for the degree of

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2024

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This is to certify that ***Aashika Sahu*** has completed the Project work entitled as ***"To Study the Chapi Spillway of Kota Block, Bilaspur District Chhattisgarh"*** under the supervision of ***Prof. Pushpraj Singh,*** for the partial fulfillment of required degree of ***Bachelor of Science in "Rural Technology".***

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Date:

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Dr. Rajendra Mehta

Head of the Department

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Introduction to Dams

Dams are structures built across rivers or streams to hold back and manage the flow of water. They serve various purposes, including water supply, hydroelectric power generation, flood control, irrigation, and recreation. Dams have been instrumental in human development and have significantly shaped our environment and society. A dam forces water in a river or stream to go over, through, or around the obstruction in order to continue flowing.

The water backs up into a man-made lake, or reservoir, for storage on the upstream side. Water may flow through chutes, tunnels, or shafts close to the dam or over the dam's actual crest. A sluice is a dam passage that is frequently utilized to reduce the reservoir's water level.

Additionally, sluices that allow fish to pass or drain can be seen on dams. Pen-stocks, which are pipes that deliver water to turbines that use the water power to generate electricity, are found in various dams. Floodwaters that surpass a dam's capacity, such as those resulting from intense rainfall or a landslip, cross or pass via the spillway.[1]

History and Evolution

Dam construction may have originated with the ancient Mesopotamians. The Jawa Dam, which is situated in modern-day Jordan, is the earliest known dam. In the fourth century B.C.E., it was constructed. Farmers could irrigate their crops with a consistent supply of water thanks to dams. As a result, the ancient Mesopotamians could feed their expanding population.[2]

The Romans were also skilled builders of dams. To reroute water for irrigation, drinking, and bathing, they built dams. The Spanish Cornalvo Dam is among the oldest dams still in operation. It was constructed in the first or second century CE by the Romans. The force of flowing water creates mechanical power. People have harnessed this power for centuries with the use of dams.

Small dams powered paddle wheels in per-industrial Europe and America. These were used to help saw logs or grind corn and other grains[2]Larger dams were constructed by engineers throughout the Industrial Revolution.

Large industrial-scale dams could store more water to run large-scale factory and mine gear. These could drive enormous turbines to produce energy. America began to build "big dams" in the early 1900s as the country's need for electricity grew. The Hoover Dam is the most well-known of these.

TO STUDY THE CHEETADAH SPRING, GAURELA BLOCK, GPM DISTRICT, CHHATTISGARH

A Dissertation/Project Submitted to

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In partial fulfillment of the requirement for the degree of

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This is to certify that **Abhay Pandey** has completed the Dissertation work/Project entitled as ***"TO STUDY THE CHEETADAH SPRING, GAURELA BLOCK, GPM DISTRICT, CHHATTISGARH"*** under the supervision of ***Prof. Pushpraj Singh,*** for the partial fulfillment of required degree of ***" Bachelor of Science in Rural Technology".***

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Dr. Rajendra Mehta
Head of the Department

Introduction

Spring

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TO STUDY THE SPRING OF ARPA BASIN, NAWAGAON VILLAGE, KOTA BLOCK, BILASPUR, CHHATTISGARH

A Dissertation/Project Submitted to

Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G.

In partial fulfillment of the requirement for the degree of

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2024

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This is to certify that ***Mr. Abhinav Singh Thakur*** has completed the Dissertation work/Project entitled as ***"To study the spring of Arpa Basin, Nawagaon Village, Kota Block, Bilaspur, Chhattisgarh"*** under the supervision of ***Prof. Pushpraj Singh,*** for the partial fulfillment of required degree of ***Bachelor of Science in "Rural Technology".***

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Bilaspur (C.G.) 495009

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2024

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This is to certify that ***Aditi Manikpuri*** has completed the Dissertation work entitled as ***"To Study Triveni Spring of Kenda Village, Kota Block, Bilaspur District, Chhattisgarh"*** under the supervision of ***Prof. Pushpraj Singh,*** for the partial fulfillment of required degree of ***"Bachelor of Science in Rural Technology".***

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Place: **Bilaspur, C.G.**

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"Title"

"Investigation of waste material at government school"

Submission of B.sc dissertation

Submitted by

Aditi Nagwanshi

Roll no. = 21048107

Enrollment no. = GGV/21/10607

Under the supervision of(Dr. Prasoon Soni sir)

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Guru Ghasidas Vishwavidyalaya (A Central University)

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May 2024

Department of Rural Technology and Social Development.

Guru Ghasidas Vishwavidyalaya (A CentralUniversity)

Bilaspur- 495009, Chhattisgarh,India.

CERTIFICATE

This is to certify that the research proposal Dissertation "Investigation on Waste Material at Government School"submitted by "Aditi Nagwanshi", Roll no. "21048107", Enrollment no. "GGV/21/10607", For the submission of B.Sc dissertation in the department of Rural Technology and Social Development has been submitted and approved by the undersigned.the dissertation has been evaluated in accordance with the university guidelines and is recommended for further consideration by the supervisor.

Place : Bilaspur
Date : 3/6/24

Dr. Rajendra Mehta sir
Head of Department

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Table of content

Introduction :

Waste management is a critical issue affecting environmental sustainability and public health. This project aims to investigate the waste characteristics and recycling behaviour at a government school in a village Mainpuri of district kabirdham. The findings will help develop targeted strategies to improve waste management practices and promote environmental stewardship among students and staffs. In many rural areas including villages waste management systems are often under developed or poorly implemented. Government schools in these regions face unique challenges in managing waste due to Limited resources , inadequate infrastructure and a lack of awareness about sustainable practices. Understanding the characteristics of waste generated in this schools and the existing recycling behaviour is essential for developing effective waste management strategies to their specific needs.

In this study ,the waste generation at the educational institute chosen from four different level Kindergarten (5 to 6 year old), primary school(6 to 9 year old), Secondary School (10 to 13 year old), and high school (14 to 17 year old) in Mainpuri village was measured on site and the contents of the waste thrown into recycling bins were determined to specify capture rate.
The investigation of waste material released at Government schools in the critical Endeavour aimed at understanding and mitigating the environmental impact of educational institutions. This process involves a comprehensive analysis of the types quantities and sources of waste generated within school premises.

By examining waste management practices ,identifying inefficiency and implementing sustainable solution, this investigation seeks to promote environmental stewardship in enhance public health and foster a culture of sustainability among students and staff.

Key areas of focus include the segregation of waste , recycling program, food waste management, and the reduction of single use plastic. The findings from such investigation can inform policy recommended and drive the adoption of best practices across the educational sector.

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Guru Ghasidas Vishwavidyalaya
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Koni, Bilaspur – 495009 (C.G.)

Rural House Hold Waste Material in BanoraVillage fromRaigarhDistrict of C.G.

A Dissertation Submitted to

Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G.

In partial fulfillment of the requirement for the degree of

Bachelor of Science
in
Rural Technology

2023-2024

Submitted by
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To the best of my knowledge and belief of the project

1) is original and has not been submitted anywhere for award of any degree.
2) Fulfills the requirement of the Ordinance relating to the B.Sc. degree of the university.

I recommend the project report be forwarded to the respective examiners for evaluation.

Date: 3/6/24

Place: Bilaspur, C.G.

Signature of the HoD

Dr. Rajendra Mehta

Head of the Department

TABLE OF CONTENTS

1. INTRODUCTION

A person living in a rural environment uses many types of things to fulfill hid basic need and saves the useless things which are included in the form of household Waste .it is of no use and become useless and such a person does many types of things every day. Like garbage is called garbage at home.

DOMESTIC WASTE MATERIAL FROM RURAL AREAS

- **Solid Waste-** food , paper , plastic , textiles , leather , wood , glass , metals , and other Wastes.
- **Organic Waste-** greenWaste , food Waste food – soiled paper , non – hazardous , wood Waste .
- **Hazardous Waste-** Pesticides and other garden chemical .
- **Liquid Waste** –Waste water, fact, oils and grease, liquid, solid.

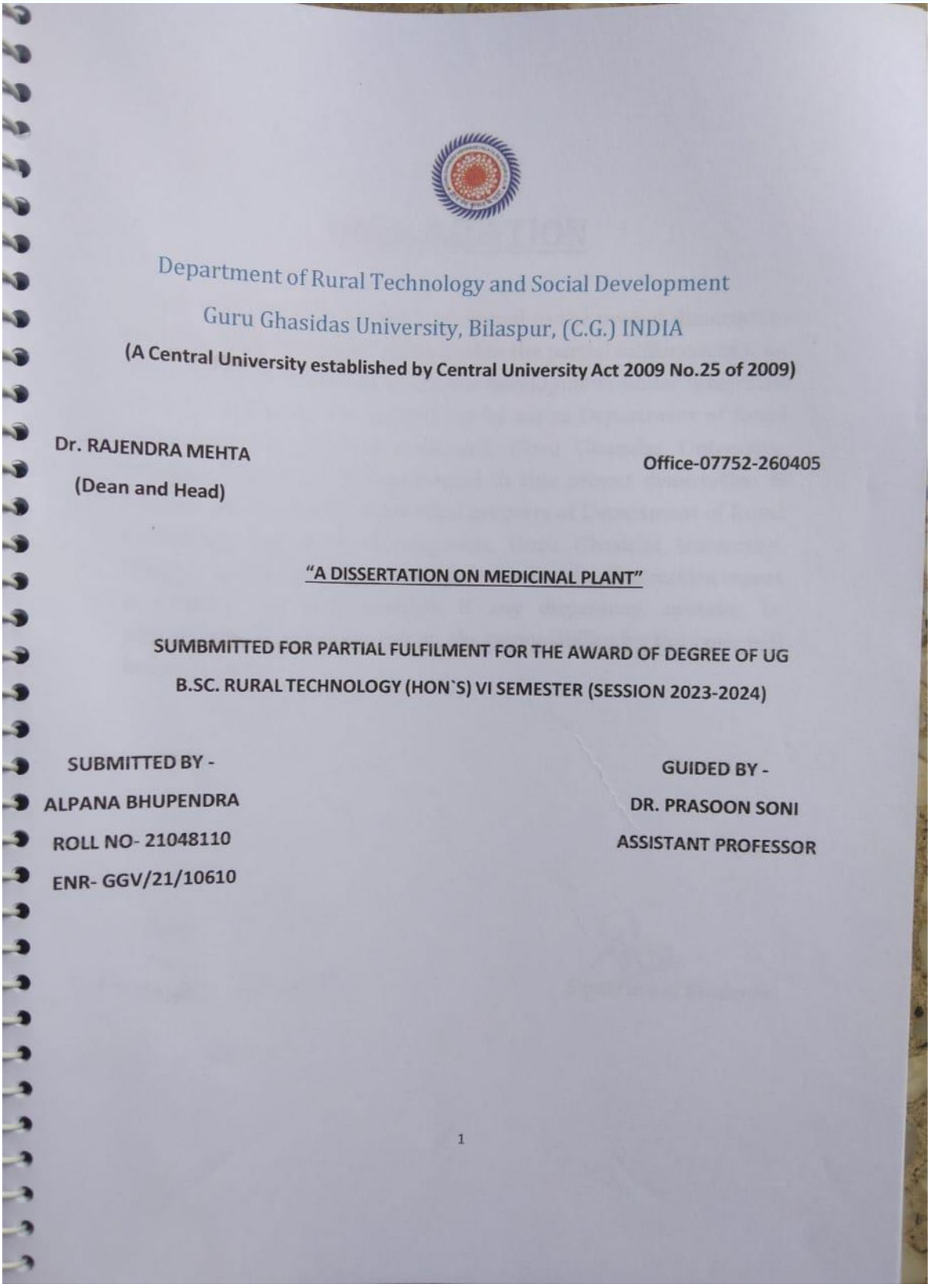
Every day mostly plastic and kitchen item are found in the houses in rural area.

MANAGEMENT

Household Waste management involes properly disposing of recycling and reducing Waste generated within a household minimize environment impact. It included practices like segregating recyclables composting organic Waste and reducing overall consumption. Proper Waste management help conserve resources reduce pollution and protect ecosystem.

RECYCALLING

Household Waste recycling is the process of collecting sorting and processing material that can be reared or transformed into new product. Common recyclable plastic, glass, and metal. Recycling theseitems reduces the amount of the Waste sent to landfills and conserves natural resources by using recycled material to manufacture new products. It's an important aspect of sustainable Waste management.



Department of Rural Technology and Social Development

Guru Ghasidas University, Bilaspur, (C.G.) INDIA

(A Central University established by Central University Act 2009 No.25 of 2009)

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"A DISSERTATION ON MEDICINAL PLANT"

SUMBMITTED FOR PARTIAL FULFILMENT FOR THE AWARD OF DEGREE OF UG

B.SC. RURAL TECHNOLOGY (HON`S) VI SEMESTER (SESSION 2023-2024)

SUBMITTED BY -

ALPANA BHUPENDRA

ROLL NO- 21048110

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GUIDED BY -

DR. PRASOON SONI

ASSISTANT PROFESSOR

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Place – Bilaspur

Date 3/6/24

TABLE OF CONTENTS

INTRODUCTION

Medicinal plants are not only a major resource base for the traditional medicine & herbal industry but also provide livelihood and health security to a large segment of Indian population. Medicinal plants are resources of new drugs. Medicinal plants are important for human health. These plants have been used from the prehistoric times to present day. These plants-based medicines are consumed in all civilizations. It is believed that the herbal medicine can give good effect to body without causing side effects to human's life. Besides, the usage of medical plants has been increasing as an important role that can support the economic system. The medical plants for health are used as herbal treatments and therapies that can be new habits for culture. Medicinal plants constitute a large segment of the flora, which provide raw materials for use by various industries.

India has 15 Agro climatic zones and 17000-18000 species of flowering plants of which 6000-7000 are estimated to have medicinal usage in folk and documented systems of medicine, like Ayurveda, Siddha, Unani and Homoeopathy. About 960 species of medicinal plants are estimated to be in trade of which178 species have annual consumption levels more than 100 metric tons.

Medicinal plants are not only a major resource base for the traditional medicine & herbal industry but also provide livelihood and health security a large segment of Indian population.

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Evaluation of Greenhouse Gas Emission from Sewage Treatment Plant in Raigarh City

A Dissertation Submitted to

Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G.

In partial fulfillment of the requirement for the degree of

Bachelor of Science
in
Rural Technology

2023-2024

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To the best of my knowledge and belief of the project

1) is original and has not been submitted anywhere for award of any degree.
2) Fulfills the requirement of the Ordinance relating to the B.Sc. degree of the university.

I recommend the project report be forwarded to the respective examiners for evaluation.

Date: 03/06/2024
Place: **Bilaspur, C.G.**

Signature of the HoD
Dr. Rajendra Mehta
Head of the Department

CONTENT

1. INTRODUCTION

Wastewater treatment facilities are vital to environmental preservation. Several pollutants, such asorganic matter, nitrogen, and phosphorus, can be removed from effluent through the use of appropriatetechnologies and well-established operational strategies, thereby preventing their negativeenvironmental impact. Thus play an important part in resource conservation and recycling in theecosystem. Recent studies have identified the WWTPs as potential sources of anthropogenic GHGemissions, contributing to climate change and air pollution. WWTPs have been recognized as one ofthe largest of minor GHG generators due to their production of the three primary GHGs i.e. carbondioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) both on-site and off-site (Kyung D,2015).

WWTPs produce on-site GHGs during wastewater treatment, sludge digestion, and system maintenance(Kyung D,2015). Off-site GHG emissions from electricity production for unit process operations aswell as from production and transportation of chemicals and fuels for on-site consumption (KyungD,2015). Carbon dioxide released from the WWTP process is considered as biogenic in nature. Thedisintegration of organic matter anaerobically in the WWTP process produces methane while nitrousoxide is produced from the enhanced nitrification and denitrification process in the WWTP. The contribution of GHGs to global warming is commonly expressed by their Global WarmingPotential (GWP), which is dependent on the timeframe of consideration, usually 100 years.

The GWPfactors for a 100-year horizon are given in Table 1. This means that over a period of 100 years one tonof methane (CH4) will have a warming effect equivalent to 29.8 tons of CO_2 and one ton of nitrousoxide(N2O) will have a warming effect equivalent to 273 tons of CO_2.In the calculations in this paper, only methane and nitrous oxide are considered since, carbon that ispresent in wastewater is biogenic (that is to say it was initially drawn down from the atmosphere in theproduction of food crops). As such, returning the carbon in this material to the atmosphere as CO_2represents no net flux to the system (IPCC 2006). But production of CO2 from power generation processis included in the calculations. Because of strict regulation by international climate-change-preventionprotocols, WWTPs will soon be confronted with the challenges of mitigating their GHG emissions andmaintaining the required quality of treated wastewater (Bani Shahabadi et al., 2009).

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"Air Pollution and Air Quality : India"

Submission of B.Sc. Dissertation

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Place: Bilaspur
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03/06/2024

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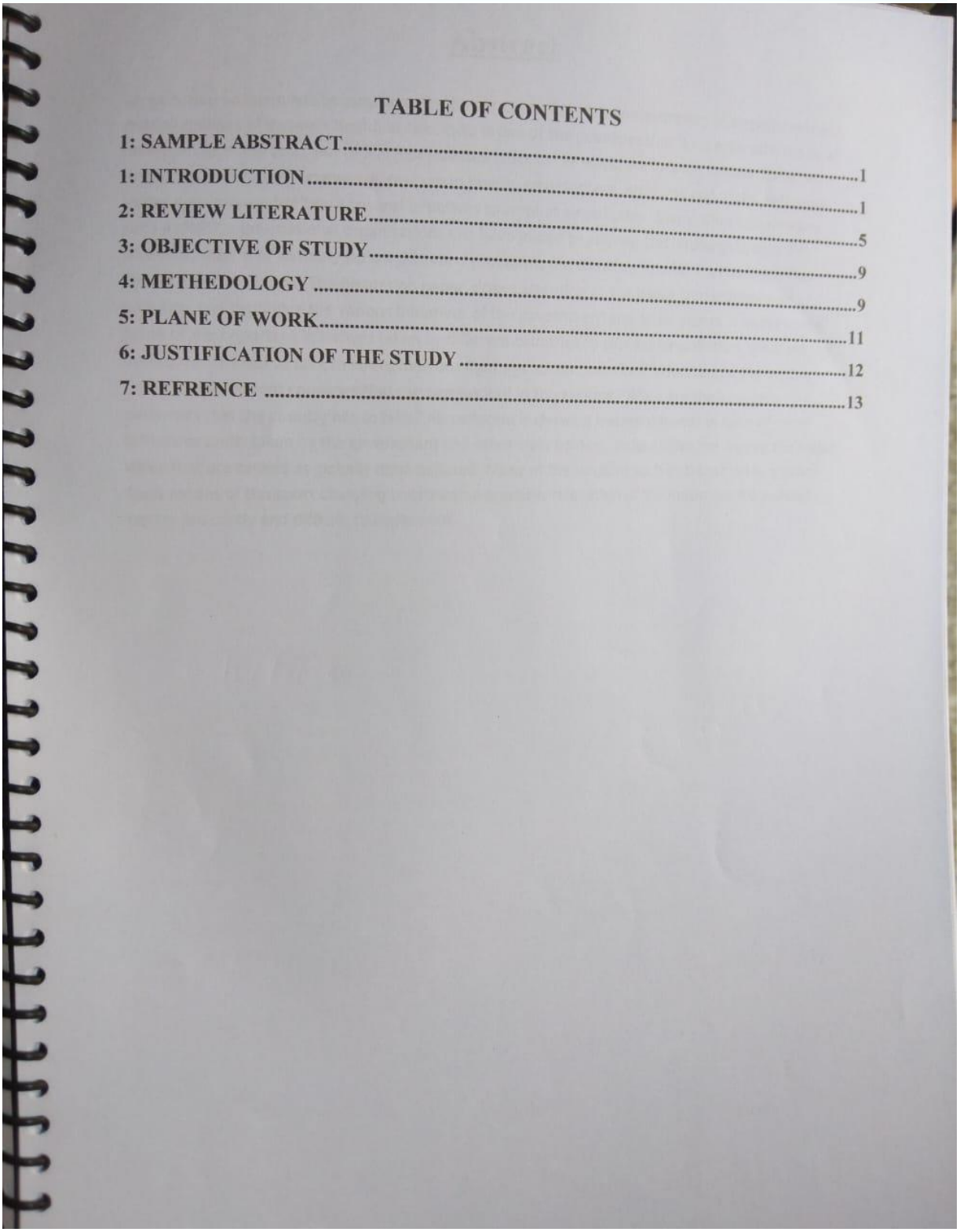

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Introduction

Air pollution poses a multi-faceted risk due to its adverse impact on health. It is the leading contributor of mortality from cardiovascular diseases, stroke, chronic obstructive pulmonary disease and lung cancer. DALYs (Disability adjusted life years) due to air pollution is alarming, which is a composite metric that combines the years of life lost due to premature death (YLLs) and the years lived with disability (YLDs) developed by the Global Burden of Disease Study in 2017 (Global Burden of Disease Study 2017, Siddique et al. 2011) (Table 1). Air pollution has also severe adverse impacts on flora and fauna in different regions, threatening the environment and ecosystem and even leading to extinction of some species. The populations are affected not only by exposing to outdoor pollution but also the indoor air pollution is very high across different vulnerable regions. The socio-economic impact of air pollution affects the population in different ways, particularly economically deprived people in a more vulnerable way. It is estimated that 9 out of 10 people worldwide are exposed to air pollution. According to WHO,2 air pollution kills around 7 million people every year worldwide. India is one of the most affected countries by air pollution and there are increasing evidences of adverse effects on health due to air pollution. Several studies have shown short and long-term impacts of air pollution on human health. Global Burden of Disease Study 2017, state-wise analysis of Indian state carried out to study the impact of air pollution on deaths, disease burden, and life expectancy, has shown significant impacts of air pollution(Global Burden of Disease, 2017). The average PM2.5 count in populated areas globally. This figure draws attention to the fact that India has an average PM2.5 level of 40-50 µg per cubic meter, approximately four times that of WHO prescribed limit of 10 µg. The air pollution in Indian cities, on average, exceeded the WHO recommended safe limit threshold by an alarming 500% (Gurjar 2021). Among 30 most polluted cities in the world, 22 cities of India were found to be most polluted (World Air Quality report 2020). WHO (2019) ranked India as the fifth most country affected by air-pollution based on the PM2.5 concentrations. It is estimated that about 1.7 million deaths in 2019 occurred in India due to direct and indirect effect of air pollution only (Dandona 2021); which is about 18% of the total deaths during the period. It is estimated that about 1.36% of GDP has been lost due to premature deaths and morbidity in India which is equivalent to about Rs. 2,78,640 crore (approx. 36.8 billion USD) (Dandona 2021); which is more than four times of the allocation for healthcare in the Union budget for 2020-21. Diseases attributed to air pollution has adversely affected economic growth through reduced productivity, decreased labor supply, health expenditure, etc. (Chang 2016, Hansen-Lewis 2018, World Bank 2016, Quah and Boon 2003). This economic loss has been estimated to affect state GDP ranging from 0.67% to 2.15%. The impact has been more severe in the low per capita GDP States like Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh and Chhattisgarh. Delhi had highest per capita economic loss due to air pollution which is followed by Haryana (Dandona 2021).

PROJECT REPORT ON

PADDY MUSHROOM PRODUCTION TECHNIQUE

SUBMITTED FOR PARTIAL FULFILLMENT OF

THE DEGREE OF BACHELOR OF SCIENCE

RURAL TECHNOLOGY AND SOCIAL DEVELOPMENT

(Session: 2023-2024)

Under the supervision of

Dr. Dilip Kumar

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Submitted by

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A REVIEW OF COMPOSITION AND MEDICINAL USES OF TRIPHALA POWDER

A DISSERTATION SUBMITTED

FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE

IN

RURAL TECHNOLOGY

SUBMITTED BY

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DEPARTMENT OF RURAL TECHNOLOGY AND SOCIAL DEVELOPMENT

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INDEX

Chapter-1

Introduction

Trifla churn is a popular Ayurvedic herbal concocon that may be purchased as a nutrional supplement worldwide. Emblica officinalis Gaertn. (Amalika), Terminalia belerica Roxb. (Bibhitaki), and Terminalia chebula Retz. (Haratki) fruits are pulverized together in equal proporons (Sharma, 2015). This composition is a significant rasayana in the Ayurvedic medical system.The recipe for this Ayurvedic composion can be found in the Charak Samhita and Susruta Samhita, which were wrien around 1500 B.C. (Gupta, 2010). Trifla is a 'tridoshic rasayan' that balances and rejuvenates the three constuonal aspects that control human life: vata (nervous system) and pia (metabolic processes). and kapha, which promotes structural stability (Gupta, 2010). In India, a common statement goes, "No mother?" "Don't worry, as long as you have Trifla. Trifla can care for the body's internal organs in the same way that a mother does for her offspring. Trifla is a gentle, non-habit forming, safe, and effecve laxave and purgave composion suitable for anyone. Herbal praconers commonly recommend it as a revitalizing agent and elixir of life to treat various diseases (Sharma, 2015).

Fig. 1 Photographs of plant used for making of triphala

CERTIFICATE

I have great pleasure in certifying that **MASTER BHOJENDRA GANJIR S/o Mr. DANI RAM GANJIR** is a regular student of B.Sc (Hon,s) Rural Technology VI Semester during the session of 2023-24 of Department of Rural Technology and Social Development, GGU, Bilaspur. This is to certify that the dissertation entitled " PADDY MUSHROOM " during this semester under my guidance.

I wish him all the success in his academics.

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INDEX

CHAPTER 1

INTRODUCTION

The word mushroom has been used in a variety of ways at different times and in different countries. A broad use of the term mushroom embraces all larger fungi, or all fungi with stalks and caps, or all large fleshy fungi. A more restricted use includes just those larger fungi that are edible and/or of medicinal value. The most extreme use of the term mushroom is its reference to just the edible species of Agaricus. The term mushroom is broadly defined as follows: "a mushroom is a macrofungus with a distinctive fruiting body which can be either epigeous (above ground) or hypogeous (under ground) and large enough to be seen with the naked eye and to be picked by hand.

A mushroom is a type of fungus that typically has a stem , cap ,and gills underneath the cap where spores are produced. They come in various shapes sizes and colours and can be found growing in a wide range of environment including forest grasslands and even on the decaying materials. Mushroom are the fruiting bodies of some members of a lower group of plants known as fungi. The fungi are characterized by the absence of chlorophyll and undifferentiated bodies except the spore bearing structures. The fruiting bodies, mushrooms, are fleshy spore bearing structures of the fungi. They contain numerous spores, functionally similar to seeds of the higher plants for propagation of fungi. Mushrooms appearing after rains in various shapes, sizes and colour have fascinated human being since time immemorial and were sure to draw the attention of humans even when they were living as hunters and gatherers. Even though, man started agriculture 10,000 years ago, the cultivation of mushrooms is a relatively new phenomenon and has picked up across the globe only in the last century that has witnessed newer innovations and applications. The Chinese were reportedly the first to artificially cultivate tropical and sub-tropical mushrooms thousands of years back but commercial production started in Europe with button mushrooms in caves during 16th and 17th centuries. The mushroom cultivation then made its way to the United States.

The economic importance of mushroom lies primarily in their use as food for human consumption. The exotic flavor, taste and fleshiness of mushroom have made it an important delicacy in human diet. Mushroom is considered to be a complete, healthy food and suitable for all age groups. Though, the nutritional value is determined by the type, stage of development and other environmental conditions, mushrooms are rich in proteins, dietary fiber, vitamins and minerals. They have insignificant lipid level and high proportion of polyunsaturated fatty acids resulting in low calorific value. The protein content, though varies greatly in different mushrooms, is usually high. Mushrooms are an excellent source of vitamins especially C and B (Folic acid, Riboflavin, Niacin and Thiamine) and minerals like potassium, sodium and phosphorus. It also contains other essential minerals like Cu, Zn and Mg in traces. Mushrooms are also known to have medicinal values as these have been shown to promote immune function,

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INDEX

Chapter-1

Introduction

Trifla churn is a popular Ayurvedic herbal concocon that may be purchased as a nutrional supplement worldwide. Emblica officinalis Gaertn. (Amalika), Terminalia belerica Roxb. (Bibhitaki), and Terminalia chebula Retz. (Haratki) fruits are pulverized together in equal proporons (Sharma, 2015). This composition is a significant rasayana in the Ayurvedic medical system.The recipe for this Ayurvedic composion can be found in the Charak Samhita and Susruta Samhita, which were wrien around 1500 B.C. (Gupta, 2010). Trifla is a 'tridoshic rasayan' that balances and rejuvenates the three constuonal aspects that control human life: vata (nervous system) and pia (metabolic processes). and kapha, which promotes structural stability (Gupta, 2010). In India, a common statement goes, "No mother?" "Don't worry, as long as you have Trifla. Trifla can care for the body's internal organs in the same way that a mother does for her offspring. Trifla is a gentle, non-habit forming, safe, and effecve laxave and purgave composion suitable for anyone. Herbal praconers commonly recommend it as a revitalizing agent and elixir of life to treat various diseases (Sharma, 2015).

Fig. 1 Photographs of plant used for making of triphala

PROJECT REPORT ON

PADDY MUSHROOM

FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE

IN

RURAL TECHNOLOGY

SUBMITTED BY

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dissertation entitled " PADDY MUSHROOM " during this semester under my

guidance.

I wish him all the success in his academics.

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CONTENTS

INTRODUCTION

Stem fungus (Volvariella volvacea), also known as straw fungus or Chinese fungus is a member of the Basidiomycetes It belongs to the Pluteaceae family (Kotl. and Pouz) (Singer, 1961). It is an edible mushroom in tropical and subtropical regions and was cultivated in China in 1822 (Chang, 1969). Originally, this mushroom known as "Nashua mushroom" after the Nashua Temple in Guangdong Province, China. At first, Buddhist monks grew rice and straw the mushrooms for their own tables, but in 1875 they were given to the royal family as tribute. Cultivation of this mushroom is believed to have started before the 19th century, about 300 years ago (Chang, 1977). Between 1932 and 1935, this mushroom was introduced to the Philippines, Malaysia and other Southeast Asian countries by the Chinese (Baker, 1934; Chang, 1974)

Paddy straw mushroom is moreover known as "warm mushroom" as it develops at moderately high temperature. It is a quickly developing mushroom and under positive developing circumstances all out crop cycle is finished with in 4-5 weeks time. This mushroom can utilize extensive variety of cellulosic materials and the C: N proportion required is 40 to 60, very high in correlation with other developed mushrooms. It very well may be developed very rapidly and effectively on uncomforted substrates, for example, paddy straw and cotton squander or other cellulosic natural waste materials (Ahlawat and Kumar, 2005). It has been considered as one of the most straightforward mushrooms to cultivate. Paddy straw mushroom was first developed in Quite a while in 1940, nonetheless, its orderly development was first endeavored in 1943. As of now this mushroom is more well known in waterfront states like Orissa, Andhra Pradesh, Tamil Nadu, Kerala and West Bengal, notwithstanding, it can likewise be developed in the majority of the states, where agro climatic conditions suit and agro waste is accessible in plenty.

The financial significance of mushroom lies essentially in their utilization as nourishment for human utilization.

The fascinating flavor, taste and beefiness of mushroom have made it a significant delicacy in human eating routine.mushroom is viewed as a total good food and reasonable for all age gatherings.

The healthy not set in stone by the sort, progressive phase and other natural circumstances.

A

Project/Dissertation Report

On

"Paddy Mushroom Cultivation Techniques"

Submitted for partial fulfillment for the award of degree of

Integrated UG/PG B.Sc. Rural Technology and Social

Development (Hon's) VI Semester

(Session 2023-2024)

Under the supervision of

Dr. Dilip Kumar

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Submitted by

Divya Patel

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Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

DECLARATION

I hereby declare that the work presented in the project/dissertation entitled "PADDY MUSHROOM PRODUCTION TECHNIQUES" submitted in the partial fulfillment of B.Sc. (Hons's) Rural Technology And Social Development, under Integrated UG/PG programme was carried out by me at Department of Rural Technology And Social Development, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

The work presented in this project/dissertation is original and will be the intellectual property of Department of Rural Technology And Social Development, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.). The information presented in the project/dissertation report is original and duly credited. If any disperancy, mistake, or plagiarism is found in the report, the responsibility for thesame will be solely mine.

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CHAPTER 1

Introduction

Mushrooms are macro fungi which utilized as food and Medicines since ancient times. FAO recognizes mushroom as a proteinaceous food for the poor people inunderdeveloped countries. Mushrooms contain good qualityprotein, unsaturated fatty acids, minerals and vitamins. These are low in fat, carbohydrates, salts and rich source of dietary fiber. In addition to nutritional value, edible mushrooms possess unique characteristics in terms of color, Taste, aroma and texture, which make them attractive for Human consumption.The overall production of Mushroom in India during 2010 was 1.13 lakh metric tonnes. The per capita consumption of mushroom in India is about 90 g which is very less as compared to 1.49 kg in USA and in China 1.16 kg. Paddy straw mushroom (Volvariella Volvacea) is the sixth most important mushroom cultivated in The world with an annual production of 180800 metric tonnes Accounting for 3% of the total mushroom production. This Mushroom can use wide range of cellulosic materials and the N ratio needed is 40 to 60, quite high in comparison toOther cultivated mushrooms. Eastern India comprises NorthEastern region (Arunachal Pradesh, Meghalaya, Manipur,Mizoram, Tripura, Sikkim and Assam),West Bengal, part ofBihar, Jharkhand and Odisha has tremendous potential andScope for paddy straw mushroom cultivation due to the easyAvailability of basic substrate (paddy straw). The highTemperature requirement 26°C to 30°C for myceliumDevelopment and 34 to 37°C for fructification [4] relativeHumidity 70-90% also make it a good choice for adoptionIn round the year cultivation of mushrooms. This mushroomCan be successfully cultivated on several crop residues likePaddy straw cotton waste wheat straw and sugarcaneIndustrial waste. The box method of straw mushroomCultivation has shown great promise in Philippines.However, helix and tier type beds were found most suitable inIndia. A wide range of diverse cellulosic substrates wereUsed by various workers for cultivation of V. volvacea.Hand threshed rigid and tall rice straw was found to be moreAppropriate than dwarf cattle threshed and flexible strawAgainst V. esculenta.Cellulose/lignin ratios in substratesWere positively correlated to mycelial growth rates andMushroom yields which can be maintained by properSupplementation of substrates. Slightly greater concentrationof nitrogen is necessary for the fruiting body formation thanThe concentration supporting mycelial growth.ManyResearcher reported the efficacy of organic amendments vizCotton seed cake, cotton waste, neem cake, soyabean melDeoiled rice bran, mustard cake, wheat bran, gram dalPowder etc. for V. volvacea . In this context, studiesHave been planned to evaluate the potentiality of variousSubstrates, cultivation methods, supplements etc., forEnhancing the Biological Efficiency of Volvariella volvacea.Paddy straw mushroom (Volvariella volvacea), commonlyknown as the straw mushroom, Or the Chinese mushroom,Belongs to the family Pluteaceae(Kotl. & Pouz) of theBasidiomycetes (Singer, 1961). ItIs an edible mushroom of tropicsAnd subtropics, and firstCultivated in China in 1822(Chang, 1969). Initially thisMushroom was known as"Nanhua mushroom" after theName of Nanhua Temple inNorthern Guangdong Province inChina. In the beginning, paddyStraw mushroom was cultivatedBy Buddhist monks for their ownTable, however, by 1875 it was sentAs a tribute to the royal family. ItIs presumed that cultivation ofThis mushroom begun before the18th century, almost 300 years ago (Chang,1977). Around 1932 to1935, this mushroom wasIntroduced into the Philippines,Malaysia and other South AsianCountries by Chinese (Baker,1934; Chang, 1974). Paddy straw mushroom is alsoKnown as "warm mushroom" asIt grows at relatively highTemperature. It is a fast-growingMushroom and under favorableGrowing conditions total cropCycle is completed within 4-5Weeks time. This mushroom canUse wide range of cellulosicMaterials and the C: N ratioNeeded is 40 to 60, quite high inComparison to other cultivatedMushrooms. It can be grown quiteQuickly and easily onUncomposed substrates such asPaddy straw and cotton waste orOther cellulosic organic wasteMaterials (Ahlawat & Kumar,.(2005). It has been considered asOne of the easiest mushrooms toCultivate. Paddy straw mushroomWas first cultivated in India in1940, however, its

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"OYSTER MUSHROOM CULTIVATION TECHNIQUE"

A Dissertation Submitted to

In partial fulfillment of the requirement for the degree of

Bachelor of Science
in
Rural Technology

2024

Supervisor

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FORWARDING CERTIFICATE

This is to certify that ***Mr. Divyansh Kurrey*** has completed the Dissertation/Project work entitled as ***"Oyster Mushroom Cultivation Technique"*** under the supervision of ***Dr. Dilip Kumar***, for the partial fulfillment of required degree of ***" Bachelor of Science in Rural Technology".***

To the best of my knowledge and belief of the project

1) is original and has not been submitted anywhere for award of any degree.
2) Fulfills the requirement of the Ordinance relating to the B.Sc. degree of the university.

I recommend the project report be forwarded to the respective examiners for evaluation.

Date: - 04/06/24
Place : Bilaspur (C.G)

Signature of the HoD
Prof. Rajendra Mehta

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CHAPTER – 01

INTRODUCTION

A mushroom is the fleshy, spore-bearing fruiting body of a fungus, typically produced above ground on soil or on its food source. It contains both edible and non-edible groups. Edible mushrooms have a high nutritional value and are high in protein. They are also a good source of vitamins (B1, B2, B12, and C), essential amino acids, and carbohydrates but are low in fat and fiber and contain no starch. When fresh they have a very high-water content of around 90%.

Mushrooms, also called 'white vegetables' or 'boneless vegetarian meat' contain ample amounts of proteins, vitamins and fiber apart from having certain medicinal properties. Mushroom contains 20-35% protein (dry weight) which is higher than those of vegetables and fruits and is of superior quality. Mushrooms are now getting significant importance due to their nutritional and medicinal value and today their cultivation is being done in about 100 countries. At present world production is estimated to be around 5 million tonnes and is ever-increasing. Though 20 mushroom varieties are domesticated about half a dozen varieties *viz;* button, shitake, oyster, wood ear, and paddy straw mushrooms contribute 99% of the total world production.

Mushroom offers prospects for converting lignocellulose residues from agricultural fields, and forests into protein-rich biomass. Such processing of agro waste not only reduces environmental pollution but the byproduct of mushroom cultivation is also a good source of manure, animal feed, and soil conditioner.

Indian agriculture will continue to be a main strength of the Indian economy. With the variety of crops grown today, we have achieved food security by producing over 200 million tons of food grain. However, our struggle to achieve nutritional security is still on. Though we have significant achievements in milk, vegetable, and fruit production still we have to do more. In the future, the ever-increasing population, depleting agricultural land, changes in the environment, water shortage, and need for quality food products at competitive rates are going to be important issues. To meet these challenges and to provide food and nutritional security to our people, it is important to diversify agricultural activities in areas like horticulture.

Diversification in any farming system imparts sustainability. Mushrooms are one such component that not only impart diversification but also help in addressing the problems of

REPORT ON

OYSTER MUSHROOM PRODUCTION TECHNIQUES

SUBMITTED FOR PARTIAL FULFILLMENT OF

THE DEGREE OF BACHELOR OF SCIENCE

RURAL TECHNOLOGY AND SOCIAL DEVELOPMENT

(Session: 2023-2024)

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Department of Rural Technology

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Submitted By

Harish Kumar Patel

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The work presented in this project dissertation is original and will be the intellectual property of Department of Rural technology and social development, Guru Ghasidas University, Bilaspur (C.G.). The information presented in the dissertation report is original and duly credited. If any disperancy, mistake, or plagiarism is found in the report, the responsibility for the same will be solely mine.

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Harish Patel
SIGNATURE OF STUDENT

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INTRODUCTION

Mushrooms are known all over the world for their nutritional and medicinal properties. Cultivating them is a useful bio conversion method that transforms waste materials into potentially valuable resources. This approach shows promising opportunities for sustainable agriculture and forestry not only in India but also globally. About 15,000 species of mushrooms are known in the world, of which 2,000 are used for human consumption and more than 700 have medicinal properties. However, less than 100 species are cultivated commercially. In addition, the global mushroom market was estimated to be worth USD 46.1 billion in 2020. It is expected to grow at a compound annual growth rate (CAGR) of 9.5% from 2021 to 2028 and reach USD 86.6 billion by 2025. highlighting the edible. mushrooms are a powerful agricultural industry worldwide [1]. Of the various types of mushrooms, oyster mushrooms are cultivated the most. They are the second most cultivated mushroom species in the world. China leads oyster mushroom production and produces 74.00 percent of the world's total production. Other producing countries of oyster mushrooms include Italy, Poland, the Netherlands, Romania, Republic of Korea, Spain, Lithuania and India. 1]. The genus Pleurotus, which includes oyster mushrooms, has received considerable research attention for its lignolytic properties such as white root. Besides being edible and salty, mushrooms contain important bioactive compounds with various biological effects. Because of their simple and cost-effective cultivation methods, high biological efficiency, and nutritional and medicinal benefits, oyster mushrooms are widely popular and cultivated worldwide [2].

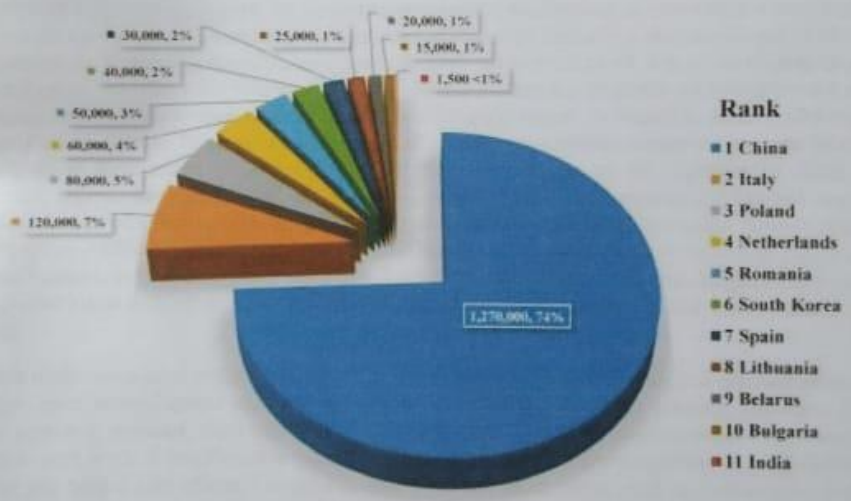

Fig. 1. Global oyster mushroom production share (tons).

Oyster Mushrooms- Nutritional and Culinary Marvels

Oyster mushrooms (Pleurotus ostreatus) have gained global recognition for their nutritional and therapeutic advantages. Their cultivation serves as an effective bioconversion method, converting waste materials and wood into potentially valuable resources. This practice holds significant potential for sustainable agriculture and forestry both in India and globally . The oyster mushroom holds a prominent position among the widely grown cultivated mushrooms worldwide. It is the second most commonly grown mushroom in the world, following the white button mushroom[3]. This popularity is particularly evident in regions like Southwest

PROJECT REPORT ON

"VERMICOMPOSTING"

FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE

IN

RURAL TECHNOLOGY

SUBMITTED By

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B.Sc. VI Semester

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I have great pleasure in certifying that **MASTER HARISH PAINKRA S/o Mr. HEMSAGAR PAINKRA** is a regular student of B.Sc (Hon,s) Rural Technology VI Semester during the session of 2023-24 of Department of Rural Technology and Social Development, Guru Ghasidas Vishwavidyalaya, Bilaspur. This is to certify that the dissertation entitled " VERMICOMPOSTING" during this semester under my guidance.

I wish him all the success in his academics.

04/06/2024

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CONTENT

1. INTRODUCTION TO VERMICOMPOST

In recent years, the disposal of organic wastes from domestic, agricultural and industrial sources has caused increasing environmental and economic problems and many different technologies to address this problem have been developed. The growth of earthworms in organic wastes has been termed vermiculture and the processing of organic wastes by earthworms is known as vermicomposting (Edwards, 2004). There is a marked trend towards the use of novel technologies, mainly based on biological processes, for recycling and efficient utilization of organic residues. Therefore, it is possible to conserve the available resources and to recover the natural products, and in some cases, to combat the disposal problems and minimize the pollution effects. Vermicomposting has been arising as an innovative biotechnology for the conversion of agro-industrial wastes into value added products, which can be utilized for improving the soil structure and fertility in organic farming (Garg, Gupta, 2009).Reduced use of water for irrigation, reduced pest attack, reduced termite attack, reduced weed growth; faster rate of seed germination and rapid seedlings growth and development; greater numbers of fruits per plant (in vegetable crops) and greater numbers of seeds per year (in cereal crops) are only some of the beneficial effects of the vermicompost usage in agricultural production (Anonymous, 2009).

Pure vermicompost is not so good for agricultural production, because it contains too much nutrients (Olle 2016a, Olle, 2017). The beneficial effects in using vermicompost based substrates in agriculture (Olle, 2016b): it accelerates growth; increases crop yields; creates a

"Analysis of Growth and Trends in Production of Pigeon Pea & Sorghum Crops in India"

A DISSERTATION

SUBMITTED FOR PARTIAL FULFILLMENT

FOR THE AWARD OF DEGREE

BACHELOR OF SCIENCE IN RURAL TECHNOLOGY

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This is to certify that **Mr. Harsh Nishad** student of Bachelor of Science (Rural Technology) 6th semester in the Department of Rural Technology and Social Development, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.) as completed his dissertation work entitled **"Analysis of Growth and Trends in Production of Pigeon Pea & Sorghum Crop in India"** under the guidance of **Dr. Lokesh Kumar Tinde (Assistant Professor)**, has submitted to the Department. The dissertation is the partial fulfillment of the requirement to receive the degree in Bachelor of Science (Rural Technology).

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Introduction:

Botanical Name- *Cajanus cajan* (L.).

Family- fabaceae

Number of Chromosome- 2n = 22

Production Practice of Pigeon Pea

Pigeon pea (Cajanus cajan (L.) Millsp.), commonly known as red gram or tur or Arhar, is a very old crop of this country. After gram, arhar is the second most important pulse crop in the country. It is mainly eaten in the form of split pulse as 'dal'. Seeds of arhar are also rich in iron, iodine, essential amino acids like lycine, threonine, cystine and arginine etc. More than 80% of tur production comes from 6 states of Maharashtra, MP, Karnataka, UP, Gujarat and Jharkhand.

Some important varieties

- Use wilt and Sterility Mosaic disease (SMD) resistant /tolerant varieties BSMR 736, 853, 846, ICPL 96053, BDN 2010, ICPL 43, 44, IPA 203, 204, 234 and IPH 09 - 5 as per suitability of region. (IIPR AICRP Pigeonpea).
- Wilt resistant varieties VL Arhar - 1, Vipula, JKM - 189, G.T. - 101, Pusa 991, Azad (K - 91 - 25), BSMR - 736, M A - 6 etc.
- Use hybrid varieties PPH - 4, ICPH - 8, IPH 09 - 5, ICPH - 2740 as per suitability of region.
- Pod borer tolerant UPAS 120.
- Intercropping varieties Birsa Arhar-1,ND-1,ND-2,Bahar.

Climate: Pigeonpea is predominantly a crop of tropical areas mainly cultivated in semi arid regions of India. Pigeonpea can be grown with a temperature ranging from 260C to 300C in the rainy season (June to October) and 170C to 220C in the post rainy

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"Analysis of Growth and Trends in Production of Sorghum & Wheat Crop in India"

A DISSERTATION

SUBMITTED FOR PARTIAL FULFILLMENT

FOR THE AWARD OF DEGREE

BACHELOR OF SCIENCE IN RURAL TECHNOLOGY

Session: 2023-24

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04/10/2024

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Dr. Lokesh Kumar Tinde

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"Growth and Trends in Production of Sorghum Crop in India"

A DISSERTATION

SUBMITTED FOR PARTIAL FULFILLMENT

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Introduction:

Introduction: - Sorghum (Sorghum bicolor) known to us as Jowar, originated in Africa and has spread throughout the globe. Sorghum is a genus of about 25 species of flowering plants in the grass family Poaceae. Some of these species have grown as cereals for human consumption and some in pastures for animals. Global demand for sorghum increased dramatically between 2013 and 2015 when China began purchasing US sorghum crops to use as livestock feed as a substitute for domestically grown corn

Botanical Name:- *Sorghum bicolor*

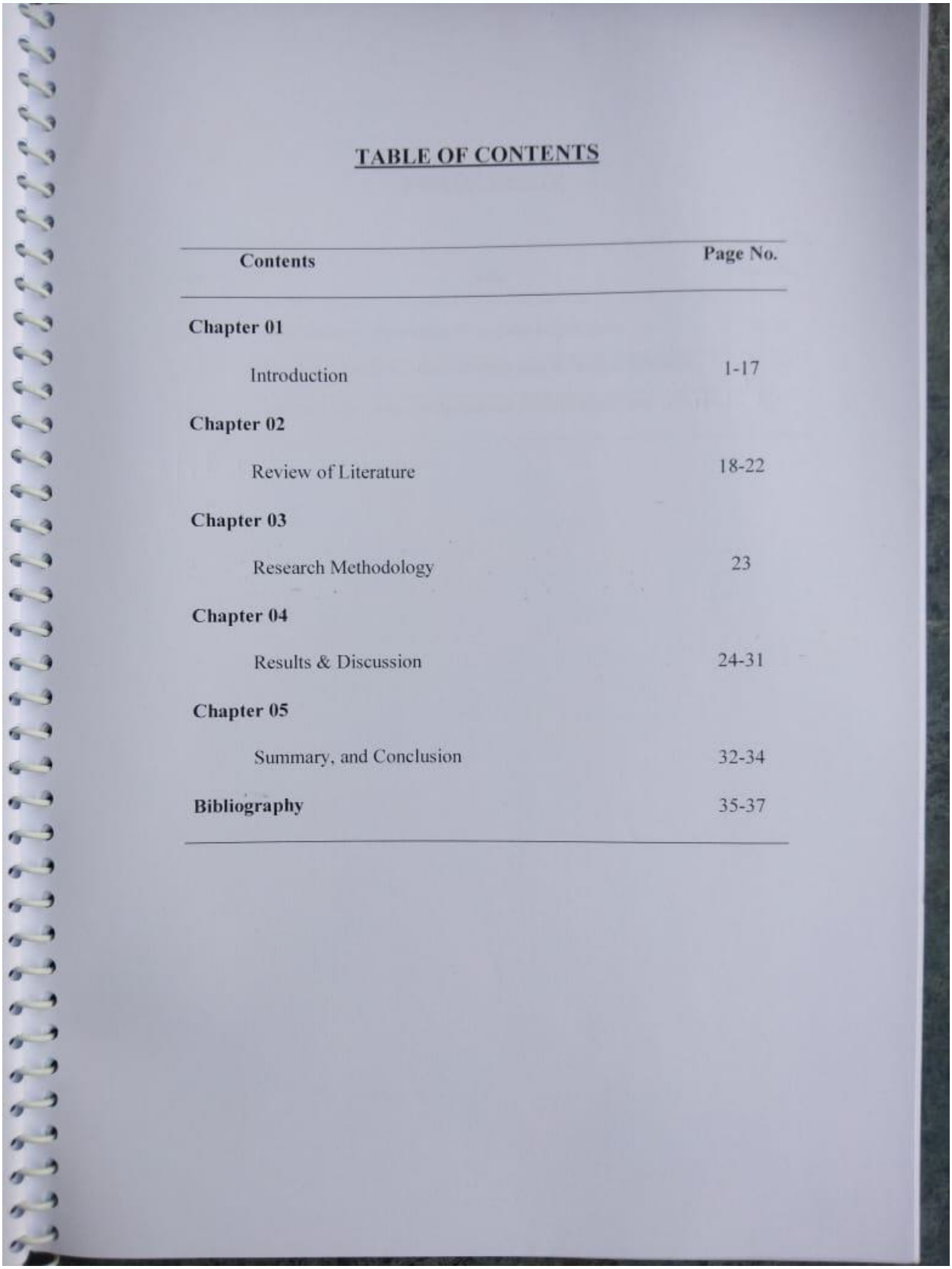
Family:- Poaceae

Chromosome No.:- 20

Origin:- Sorghum likely originated in Africa.

Uses:-

1. **Food:** Sorghum is a staple food in many countries with high population density in Africa, Asia, and Central America. It can be used in various forms such as granulated, semolina, and flour. It can be cooked whole, like rice, or fried to make a sort of popcorn. It's also used in baking, and its syrup is used as a sweetener.



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"Trends Analysis in Area, Production and Productivity of Pigeon pea Crop in India"

A DISSERTATION

SUBMITTED FOR PARTIAL FULFILLMENT

FOR THE AWARD OF DEGREE

BACHELOR OF SCIENCE IN RURAL TECHNOLOGY

Session: 2023-24

Supervised to

Dr. Lokesh Kumar Tinde

(Assistant Professor)

Submitted by

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Trends Analysis in Area, Production and Productivity of Pigeon pea Crop in India

Introduction:

Pigeon pea belong to the genus *Cajanus;* subtribe *cajaninae* ; Pigeonpea (Arhar) commonly known as red gram or tur is a very old crop of this country. After gram, arhar is the second most important pulse crop in the country. It is mainly eaten in the form of split pulse as 'dal'. Seeds of arhar are also rich in iron, iodine, essential amino acids like lycine, threonine, cystine and arginine etc. Pigeonpea [*Cajanus cajan* (L.) Millspaugh] is an important legume crop of the *Papilionaceae* family. It is an often cross-pollinated crop, and breeding principles of both self and cross-pollinated crops are highly effective in its genetic enhancement. Pigeonpea is a hard woody shrub, extensively adaptable to a range of soil types, temperature, and rainfall. It has a deep taproot system extending up to two meters and can grow to a height of four meters. Pigeonpea roots form a symbiotic association with Brady rhizobium spp. and perform biological nitrogen fixation. The branching pattern of stem may vary from bush type to compact upright type and is of determinate, semi-determinate, and non-determinate type based on the flowering pattern. The primary leaves are simple, opposite, and caduceus, while the latter ones are pinnately trifoliate with lanceolate to elliptical leaflets. Pigeonpea flowers are zygomorphic, borne on terminal or auxiliary racemes and are normally yellow in color with some variations. It has ten stamens in diadelphous condition with light or dark yellow anthers. The ovary is superior with a long style attached to a thickened, incurved, and swollen stigma. Pigeonpea is an often cross-pollinated crop with an average of 20% cross-pollination. The fruit of pigeonpea is called pod, which is of various colors, with and without deep constrictions. Seeds (with 20–22% proteins and amino acids) can be round or lens shaped, in shades of white and brown color with yellow color cotyledon. Pigeonpea is a widely consumed multi-utility pulse crop, thus the knowledge about the crop botany is vital for modifying it according to future challenges and goals. *Cajanus cajan*, commonly known as pigeonpea, is a multipurpose drought-tolerant crop cultivated mainly for its edible seeds which are high in dietary protein. It also has household importance and a number of medicinal uses. Apart from human consumption, it is also used as forage, feed, and meal for animals, piggery, and fishery. *Cajanus cajan* is a natural barrier for soil erosion and biological factory for fixing atmospheric nitrogen in soil. Globally, it

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"Growth and Trends in Production of Wheat Crop in India"

A DISSERTATION

SUBMITTED FOR PARTIAL FULFILLMENT

FOR THE AWARD OF DEGREE

BACHELOR OF SCIENCE IN RURAL TECHNOLOGY

Session: 2023-24

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Growth and Trends in Production of Wheat Crop in India

Introduction:

Wheat (Triticum spp.) belongs to the genus Triticum of the Poaceae (Gramineae) family originally from the Levant region of the Near East and Ethiopian Highlands, but now cultivated worldwide. The three species of wheat namely, Triticum aestivum (bread wheat), Triticum durum (macaroni wheat) and Triticum dicoccum (Emmer or Khapli wheat) grown on commercial basis in the Indian subcontinent from pre-historic times with share of production in percent 95%, 4% and 1% respectively, are being cultivated in the country.

Wheat is a very adaptable crop and is grown under the wide range of soil & climatic 0 0 0 conditions. The crop is most successfully grown between latitude of 30 N & 60 N and between 27 0 S & 40 S. In India it is grown mostly in the plains where as in the hills it is cultivated in mountainous region of North India & Nilgiris and Palani hills in South India.

Wheat (*Triticum aestivum* L.) belonging to one of the most diverse and substantial families, Poaceae, is the principal cereal crop for the majority of the world's population. This cereal is polyploidy in nature and domestically grown worldwide. Wheat is the source of approximately half of the food calories consumed worldwide and is rich in proteins (gluten), minerals (Cu, Mg, Zn, P, and Fe), vitamins (B-group and E), riboflavin, niacin, thiamine, and dietary fiber. Wheat seed-storage proteins represent an important source of food and energy and play a major role in the determination of bread-making quality.

Wheat is used by human beings in form of flour for making Chapaties, Semolina and Pasta products. It is also used for preparation of bread, biscuits, cookies, cracks,

"Growth and Trends in Area, Production and Productivity of Wheat & Pigeon Pea Crops in India"

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BACHELOR OF SCIENCE IN RURAL TECHNOLOGY

Session: 2023-24

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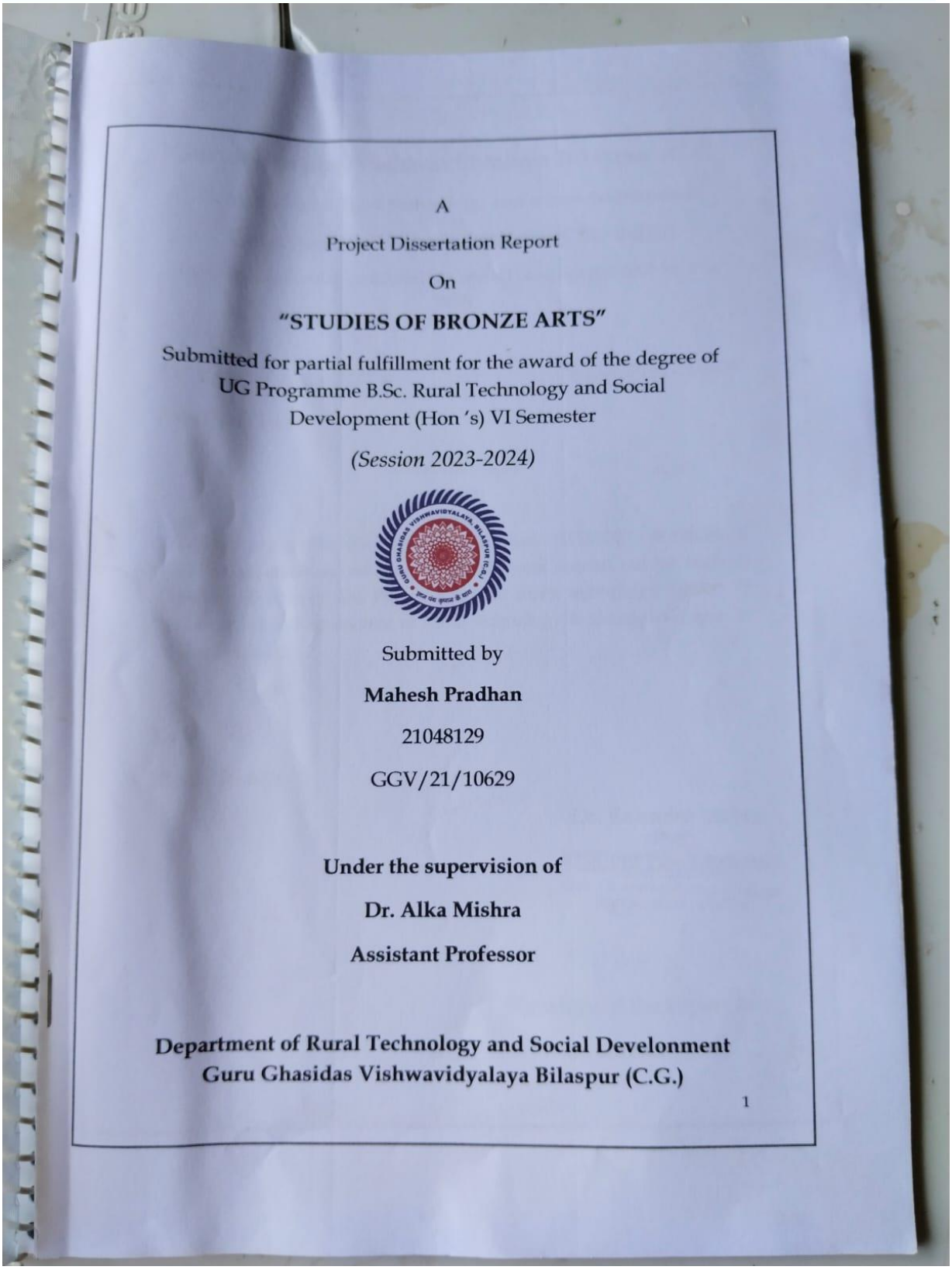

A

Project Dissertation Report

On

"STUDIES OF BRONZE ARTS"

Submitted for partial fulfillment for the award of the degree of
UG Programme B.Sc. Rural Technology and Social
Development (Hon 's) VI Semester

(Session 2023-2024)

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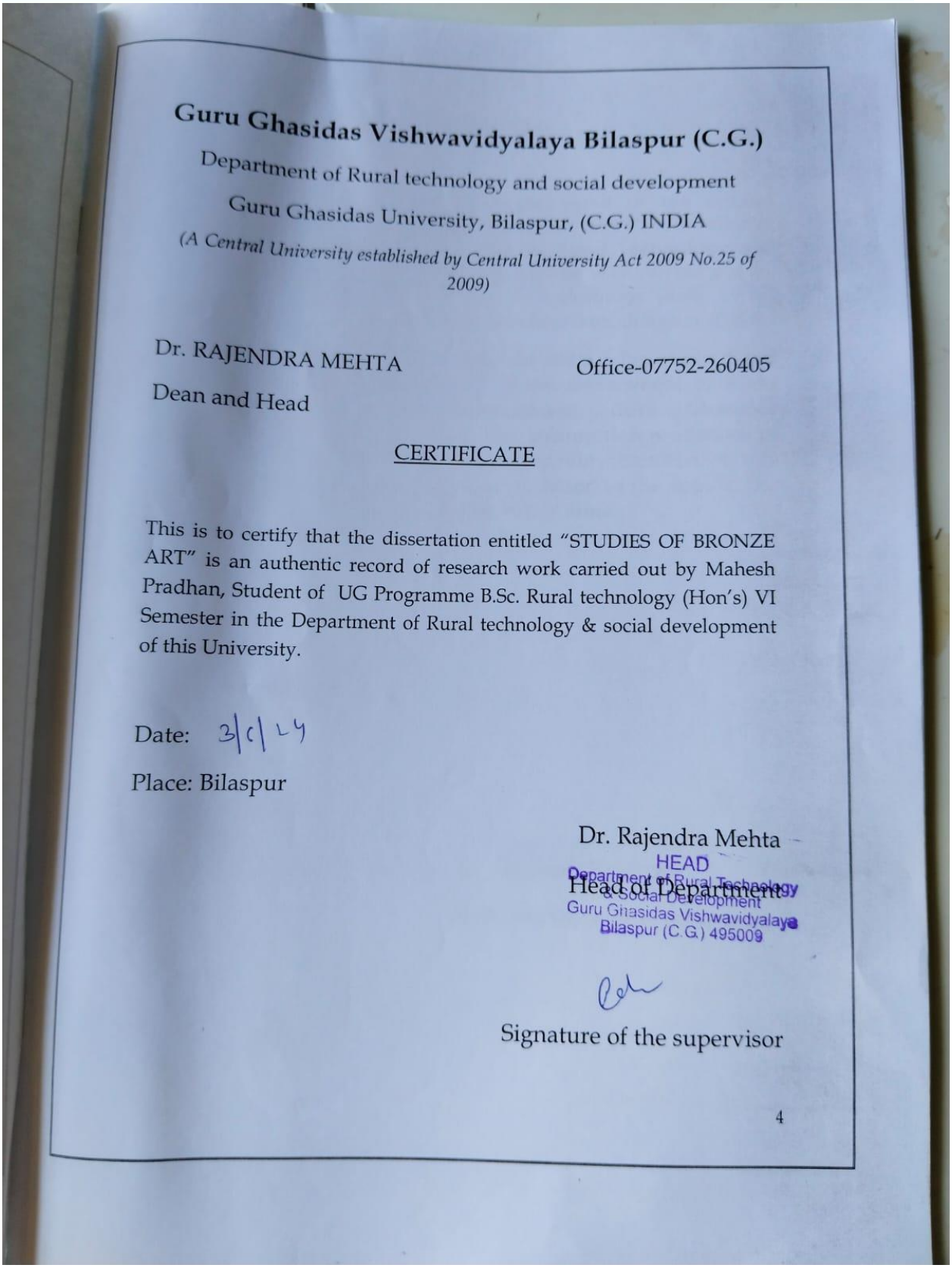

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Introduction

The introduction of bronze art in India dates back to the Indus Valley Civilization (circa 2500-1500 BCE), marking one of the earliest instances of metalwork in the region. The Harappan culture is renowned for its sophisticated metallurgy and production of bronze artifacts, including tools, weapons, and intricate sculptures.

One of the most famous examples of early Indian bronze art is the "Dancing Girl" from Mohenjo-daro, a small figurine that exemplifies the advanced casting techniques and artistic sensibilities of the time. This period saw the use of the lost-wax casting method, which remained prevalent in Indian metalwork throughout history.

Bronze art continued to evolve through subsequent Indian dynasties. During the Chola dynasty (circa 9th to 13th centuries CE), South India became a significant center for bronze sculpture. The Chola bronzes are renowned for their exquisite craftsmanship, religious themes, and detailed representation of Hindu deities, particularly Shiva in the form of Nataraja, the cosmic dancer.

This rich tradition of bronze art highlights India's long-standing expertise in metallurgy and its cultural significance, reflected in the religious and artistic heritage of the subcont

Dancing Girl is a prehistoric bronze sculpture made in lost-wax casting about c. 2300–1750 BC in the Indus Valley civilisation city of Mohenjo-daro (in modern-day Pakistan)

Woman Riding Two Bulls (bronze), from Kosambi, Uttar Pradesh, c.2000-1750 BCE

A DISSERTATION

ON

"Some medicinal plants in herbal garden of ggv"

SUBMITTED FOR PARTIAL FULFILMENT FOR THE AWARD

OF DEGREE OF INTEGRATED

BACHELOR OF SCIENCE IN RURAL TECHNOLOGY (HON'S) VI SEMESTER

UNDER THE

SCHOOL OF STUDIES OF INTERDISCIPLINARY EDUCATION AND RESEARCH

(SESSION – 2023-24)

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This is to certify that the dissertation entitled Medicinal plant nd Trees Tree's Oil s an authentic record of research work carried out by Manisha Jaiswal , Student of Integrated UG/PG Rural technology (Hon's) VI Semester in the Department of Rural technology & social development of this University.

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Some Medicinal Plants in Herbal Garden of GGV

Introduction

The known fact that India is treasure house of medicinal plants having the ability to cure many dreadful diseases and ailments without any side effects. India is blessed with varied agro-climatic conditions which permits the large biodiversity of medicinal plants. There are about 7000 plant species known to have medicinal values out of 18000 species of higher plants reported in India. Any other country in the world is not having this much proportion of medicinal plants against the existing flora. Since, the times immemorial Indians are using variety of medicinal plants for curing different diseases/ailments of humans and animals. The Indian Systems of Medicine (ISM) is one of the famous medical systems in the world which include Ayurveda, Siddha, Unani, Homeopathy and other indigenous practices. Ayurveda is the oldest known medical system in India has alone documented 2000 medicinal plants followed by Siddha and Unani. The estimates of World Health Organisation (WHO) shows that 80% of the population in developed and developing countries depends on traditional plant-based medicines for their health requirements.

Need for Herbal Gardens

The ISM is based mainly on medicinal herbs found in the wild and forest sources which contribute 90% of raw materials for the production of herbal medicines. India has exported USD 330.18 million worth of herbs and 456.12 million worth of value-added herbal products during 2017-18. Also, there are several stakeholders in the medicinal plants sector, right from herb collectors, manufacturers and consumers. Continuous harvesting of medicinal plants from the forest resources for the past decades has resulted in the population decline of many high value species. The key threats for medicinal plants are due to destructive collection of species, industrialization, forest fires, animal grazing, habitat specificity, climate change, exploding human population and genetic erosion. In contrast, the demand of herbal medicines has been increasing manifold in developed and developing countries over the years since they do not have any side effects and available at affordable prices. Hence, there is a need for conservation, cultivation, maintenance and sustainable use of medicinal plants. As the demand for medicinal plants is ever increasing as people are more and more fascinated towards herbs, extraction from wild has its own problems and risks, the important medicinal plants can be assembled and grown in herbal garden and the same can be propagated for large scale distribution.

Definition

Herbal Garden refers to growing of Medicinal and Aromatic plants (MAPs) which are having preventive and curative properties against diseases or ailments. Herbal Gardens are established in different places to serve as a germplasm collection of important herbs for their conservation and to use them for educational and research purpose besides promoting health or medical tourism. The establishment of herbal garden will bring awareness on local medicinal plants for common ailments and encourage the small and marginal farmers to cultivate them for raising their income resources. Cultivation and propagation will help to conservation of medicinal plants.

A Dissertation

On

"WILD FRUIT FORM ANTAGARH IN BASTER REGION"

(Session 2023-2024)

Submitted by

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WILD FRUIT FROM ANTAGARH IN BASTAR REGION

Introduction:-

Broadly, the botanical term fruit refers to the mature ovary of a plant, including its seeds, covering and any closely connected tissue, without any consideration of whether these are edible. Fruit is one of the major dietary sources of various antioxidant phytocompounds for humans. Our daily diet plays a key role in healthy aging and preventing chronic disease including obesity, diabetes, cardiovascular diseases, cancer, and osteoporosis (Heber, 2009). Fruits are an integral part of human diet and nutrition, as they are rich sources of fibre , vitamins, water, minerals , including folate, potassium and vitamins A and C and phytochemicals. Forests have been meeting our demands for fuel, fodder, food, fibre , timber and medicines. Foods from forests and trees outside forests – such as leaves, seeds, nuts, honey, fruits, mushrooms, insects and wild animals – have been important parts of rural diets for thousands of years. Forests, trees and agroforestry systems may contribute to food security and nutrition in many ways, they provide better and more nutritionally-balanced diets, greater control over food inputs—particularly during lean seasons and periods of vulnerability but such contributions are usually poorly addressed by the policy makers and remain largely under-researched and less understood. The wild edible fruits occurring in different forest tracts of the Indian subcontinent botanically come from wide range of plant families. In all, about 600 kinds are known, of which about 100 are more agreeable types. The forests are abundant with seasonal juicy succulent fruits like Buchanialanzan (Chirongi), Pheonix sylvestris (Chind), Diospyros melanoxyion (Tendu), Albizia lebeck (Sihad), Madhucha longifolia (Mahua), Phyllanthus emblica (Shri amla), etc wild fruits are undoubtedly man's oldest food and

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A

Project Dissertation Report

On

"POULTRY MANAGEMENT IN SUMMER SEASON"

Submitted for partial fulfilment for the award of the degree ofIntegrated UG/PG B.Sc. Rural Technology and Social Development (Hon's) VI Semester

(Session 2023-2024)

Submitted by

Mukesh Choudhary

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Introduction

In the summer season, as the temperature increases, poultry suffers from the condition called heat stress, also known as summer stress. This is a condition of imbalance between heat generation and heat loss in the body. This condition not only brings poor performance in birds but is also responsible for huge economic losses in terms of poor growth, lowered production, and higher mortality. This condition becomes a greater challenge when coupled with a high humidity environment, making the birds even more vulnerable. According to research, poultry is most Novus Logocomfortable in an environmental temperature around 22-28°C (known as their thermoneutral zone). Once the temperature rises beyond this point, poultry show symptoms of heat stress: reduction in feed intake, poor growth, poor production, and increased mortality.

In general, birds are susceptible to high environmental temperature due to an absence of sweat glands, their full body of feathers, their higher body temperature, and the fatty nature of the birds. This heat or summer stress not only brings lowered performance in poultry but also leads to immunosuppression issues, which can result in disease outbreaks and cause heavy mortality. This is mainly due to an absence of sweat glands in poultry making it impossible for them to dissipate heat. In this, males are found to be more prone to heat stress than females.

Ultimately, heat stress causes acid-base disequilibrium, or the inability to cool the body to maintain normal body temperature. Panting allows birds to release heat through an evaporative cooling kind of method, but high humidity coupled with high temperature causes insufficient panting to control body temperature resulting in heat stress.

Behavioral, neuroendocrinal, and physiological changes are observed in birds during heat stress. Behavioral changes can include decreased feed intake, increased water intake, panting, less walking, and elevated wings. Physiological changes include oxidative stress, acid-base imbalance, and respiratory alkalosis. Internally the bird may experience decreased protein digestion and absorption, increased metabolic disorders, Increased chances of disease prevalence, and fertility issues. Production challenges can include reduced feed intake, poor feed conversion ratio, reduced body weight, impaired meat, and egg quality, and, as mentioned before, increased mortality.

A Dissertation Work

On

"An In-depth Study of Sericulture and Silk Coloring Processing"

Submitted for partial fulfilment for the award of degree of Integrated UG/PG

B.Sc. Rural Technology (Hon`s) VI Semester

(Session 2023-2024)

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INTRODUCTION

Sericulture, often referred to as silk farming, is the practice of cultivating silkworms for the production of silk. This ancient craft has a rich history spanning thousands of years and has played a significant role in various civilizations, economies, and cultures around the world. From its origins in ancient China to its spread across Asia and beyond, sericulture has been both an art form and a source of economic prosperity for many societies.

Background and Significance of Sericulture

Sericulture, often referred to as the art of silk farming, holds a profound historical significance that spans millennia. Its origins can be traced back to ancient China, where the process of silk production was a closely guarded secret for centuries. Legend has it that Empress Leizu discovered silk production around 2700 BCE when a silkworm cocoon fell into her tea, unraveling and revealing the delicate fibers within. This discovery marked the beginning of sericulture, which soon became a cornerstone of Chinese civilization.

The significance of sericulture goes beyond its historical roots; it embodies cultural heritage and tradition. Silk, with its lustrous sheen and luxurious texture, became synonymous with royalty, elegance, and prestige. In ancient China, silk was reserved for the emperor and nobility, symbolizing wealth and status. The Silk Road, a network of trade routes connecting East and West, facilitated the exchange of goods, ideas, and culture, with silk serving as one of its most prized commodities.

Overview of Research Objectives

Against this backdrop, this dissertation aims to provide a comprehensive study of sericulture and silk production, with a focus on enhancing sustainable development and economic growth. The research objectives can be summarized as follows:

A DISSERTATION

ON

"Poultry Farm Housing and Management"

SUBMITTED FORPARTIAL FULFILLMENT FOR THE AWARD

OF DEGREE OF INTEGRATED

BACHELOR OF SCIENCE IN RURAL TECHNOLOGY (HON'S) VI SEMESTER

UNDER THE

SCHOOL OF STUDIES OF INTERDISCIPLINARY EDUCATION AND RESEARCH

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POULTRY FARM HOUSING AND MANAGEMENT

1. Introduction:-

Poultry production has occupied a leading role in the agriculture industry worldwide in recent years. The compound annual growth rate of poultry protein between 2015 and 2025 is estimated to be +2.4%. Asia, South America and Africa characterized by rapid urbanization, poverty and hot climate recorded the highest growth increment in poultry production. Extreme weather conditions in the tropical regions of the world have proven generally detrimental to livestock production and is particularly of interest in chicken because of the latter's high sensitivity to temperature change. Just like mammals, the avian species have the ability to regulate their body temperatures by losing or generating heat in response to environmental temperature. If the body temperature of a bird, which normally runs between 39.4 and 40°C, is allowed to increase, the bird will not perform well. Heat stress in poultry productionhad resulted in under-nutrition, stunted growth, reduction in egg production and size, laying of premature eggs and even death. This problem is further compounded by the high body heat generated by genetically improved laying birds with increased metabolic activity resulting from the high rate of egg production.

Poultry housing design plays a vital role in the determination of the internal climatic conditions of the house for optimum health, growth and productive performance of the birds. Consequently, the type of poultry housing system employed by the proposed poultry farm is a function of the prevailing climatic conditions of the region where the farm is located. While open poultry house system has been adjudged a good method of housing in the tropical countries because of the simplicity of its construction, ease of heat management and minimal management cost, the controlled housing system is the most common in the temperate regions of the world.

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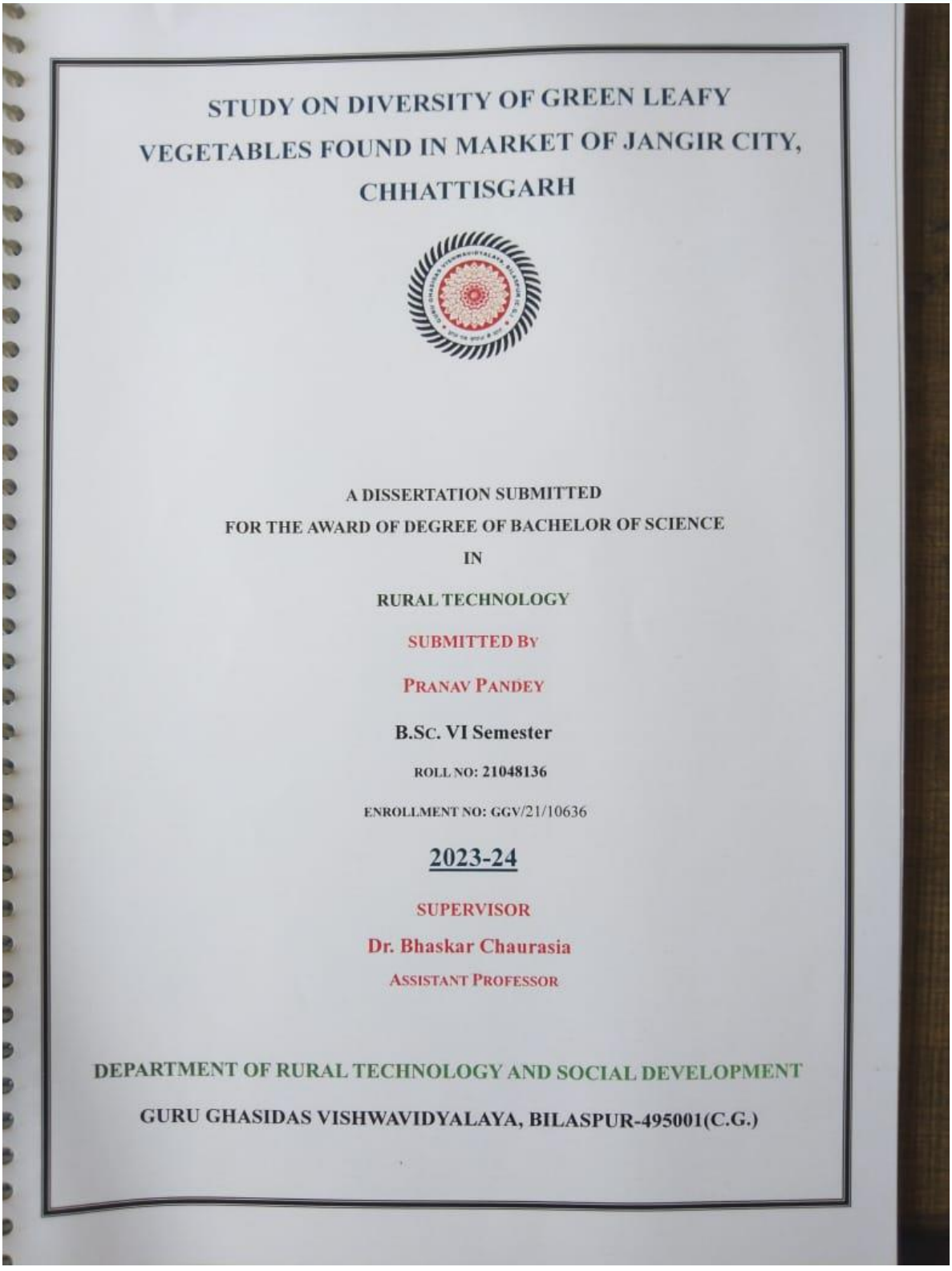

STUDY ON DIVERSITY OF GREEN LEAFY VEGETABLES FOUND IN MARKET OF JANGIR CITY, CHHATTISGARH

A DISSERTATION SUBMITTED
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Content

Leaf vegetables, often referred to as leafy greens, are a fundamental component of diets worldwide, prized for their rich nutritional profiles and versatile culinary uses. These vegetables include a wide variety of plants, such as spinach, lettuce, kale, and collard greens, among others. They are typically low in calories but high in essential vitamins, minerals, and antioxidants, making them crucial for maintaining good health and preventing various diseases.

In many regions, leaf vegetables are a staple food, playing a significant role not only in nutrition but also in local economies and cultural practices. Despite their importance, the availability, diversity, and quality of leaf vegetables can vary significantly based on local agricultural practices, climatic conditions, and market dynamics. Understanding these variables is essential for improving the production, distribution, and consumption of leaf vegetables.

This dissertation aims to survey the locally available leaf vegetables in a specific region, providing a comprehensive analysis of their botanical characteristics, nutritional content, cultivation practices, economic significance, and cultural relevance. By doing so, it seeks to highlight the critical role of leaf vegetables in local diets and economies and identify opportunities for enhancing their production and consumption.

IMPORTNCE OF LEAFY VEGETABLES

Leafy vegetables, also known as leafy greens, are essential components of diets worldwide due to their comprehensive health benefits, economic value, cultural significance, and environmental sustainability. Understanding their importance can inform nutritional guidelines, agricultural practices, and public health policies.

Nutritional and Health Benefits

Leafy vegetables are nutritional powerhouses, packed with essential nutrients that contribute to overall health and disease prevention. Key health benefits include:

Rich Source of Vitamins and Minerals: Leafy greens are high in vitamins A, C, K, and folate, and minerals such as iron, calcium, magnesium, and potassium.

These nutrients are crucial for maintaining healthy vision, immune function, bone health, and cellular processes.

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A dissertation entitled on

"Study on composition, process and making of Handia (Rice beer) in Surguja, Chhattisgarh."

submitted to

Guru Ghasidas Vishwavidyalaya, Bilaspur
For partial fulfillment of the requirement for the degree of

Bachelor of Science
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Rice beer is a type of alcoholic beverage (ethanol level around 6% v/v) that is popular in Asian countries. [1] Traditional meals and beverages made from the natural fermentation of various food substrates have helped people improve their dietary intake. Cereals are rice and millet-based foods and beverages produced through natural fermentation, for example nonalcoholic and alcoholic beverages made from palm sap.[2]

Hadia, a traditional rice beer cherished by diverse tribal communities across various regions, stands as a testament to cultural heritage and communal traditions. Embedded within the fabric of social gatherings, ceremonial rites, and spiritual rituals, Hadia transcends its status as a mere beverage, embodying centuries-old brewing practices and collective identity. Its significance extends beyond the realms of taste and intoxication, serving as a symbolic link to ancestral roots and shared experiences. From the meticulous preparation process to the communal act of consumption, Hadia fosters a sense of unity, belonging, and celebration within tribal communities, reinforcing cultural bonds and preserving age-old customs for generations to come.Handia (Also handi or hadiya) is a rice beer originating from the Indian subcontinent, popular in the Indian states of Assam, Jharkhand, Bihar, and Odisha. As the name implies, rice beer is a beer that contains rice as an ingredient, whether it is the husk or the grain of the rice or any rice-based products.

Figure 1: Handia (rice beer)

These days, you will find modern-day brewers using whole rice, rice syrup or rice flakes. Popular in the northern and eastern parts of India like Bihar, Jharkhand and Odisha, Handia is a kind of rustic rice beer made by boiling rice and some locally produced tablet that

A REVIEW ON PHYTOCHEMICAL AND MEDICINAL IMPORTANCE OF *MORINGA OLEIFERA* LAM.

A DISSERTATION SUBMITTED

FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE

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Chapter 1

Introduction

Medicinal plants offer a natural and diverse pharmacopeia, rich in bioactive compounds that provide therapeutic benefits. Medicinal plants are like nature's own pharmacy, offering a vast array of bioactive compounds that interact with the human body in unique ways. Each plant has its own signature blend of chemicals, creating a rich tapestry of healing potential. Just as each person is unique, medicinal plants offer personalized medicine from nature. Different individuals may respond differently to the same plant-based treatment, allowing for tailored approaches to healthcare. Medicinal plants not only target specific symptoms but also support holistic healing. They often work in concert with the body's natural processes, promoting overall health and well-being beyond just alleviating symptoms.

Medicinal plants have been integral to healthcare for centuries, documented in ancient texts like the Ebers Papyrus and Ayurveda. Basically, medicinal plants are plants having therapeutic values. This plants, such as willow bark (aspirin) and opium poppy (morphine), have significantly influenced modern medicine by providing bioactive compounds like alkaloids, glycosides, terpenoids, and phenolics. Examples include Aloe Vera for skin issues, Ginseng for stress, Turmeric for inflammation, and Garlic for antimicrobial benefits. With rising demand, sustainable cultivation and conservation are crucial. Integrative medicine now combines traditional and modern practices, regulated for safety and efficacy by organizations like the WHO. Ongoing research in biotechnology and pharmacology aims to discover new treatments, though challenges like overharvesting and habitat destruction persist.

The oldest type of medicine is derived from medicinal plants, which have been utilized for thousands of years in traditional medicine throughout numerous nations. Over generations,

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Economic Viability of Small-Scale Poultry Farms Of HardiBazar, Korba: A Case Study

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CHAPTER -1

INTRODUCTION

Poultry farming has a rich and extensive history that traces back thousands of years. The domestication of chickens is believed to have started with the wild species Gallus gallus in Southeast Asia around 7,000 years ago. Early references to poultry are found in ancient Chinese documents from around 1,400 BC, and Aristotle mentioned Egyptian practices of artificial incubation as early as 400 BC.In the Roman era, detailed accounts of poultry farming practices appear in writings by Cato the Elder in the 2nd century BC, which include methods for fattening hens for meat production. By the 12th century, advanced poultry farming techniques were also documented in the works of Muslim scholars in Spain (Anonymous 1).

The commercial expansion of poultry farming began in earnest in the late 19th and early 20th centuries, fuelled by advances in genetics and nutrition. This period marked the transformation of poultry farming into a significant industrial activity, particularly in the United States and Europe (Anonymous 2).

The poultry industry has seen significant changes in practices to improve efficiency, such as the use of automatic waterers, self-feeders, and climate-controlled housing to ensure optimal conditions for the birds. Additionally, modern poultry farming places a strong emphasis on disease prevention and animal welfare, with stringent measures to control diseases like Newcastle and avian influenza.

Different techniques related to poultry management-

Poultry management encompasses a range of techniques aimed at optimizing the health, productivity, and welfare of domestic birds such as chickens, turkeys, ducks, and geese. Effective poultry management involves a comprehensive understanding of nutrition, housing, disease control, breeding, and overall care. Below are detailed descriptions of various techniques related to poultry management:

Housing and Environmental Control

Proper housing is crucial for the welfare and productivity of poultry. The design and maintenance of poultry houses should consider factors like

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Poultry Farming a Beneficial Model for Entrepreneurship: A Case Study

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CHAPTER-1

INTRODUCTION

INTRODUCTION

The word "poultry" is applicable to chicken or domestic Fowl. The domestic fowl is the commonest avian species Raised in most countries such as Nigeria for either table Meats or for eggs or both for human consumption Throughout the world, the domestic fowl is unique for its Use for both meat (e.g. turkey, duck and guinea foul) and Egg production. Some strains of ducks notable Khaki Campbell and Indian Runners are exception. They excel he egg laying strains of the domestic fowl in egg Production. The Khaki Campbell laying duck can lay as Many as 360 eggs per annum while the white leghorn Layer can lay up to 230 eggs (Stanley, 2002). Poultry farming has now developed into a commercial Enterprise involving thousands of birds. Large poultry Units have replaced the backyard poultry units while more Efficient strains of meat or egg type birds, balanced feed, Intensive housing and better poultry equipment came into Use by farmers. Nevertheless, commercial poultry Farming has not been fully developed in the tropics unlike. The temperate regions. The bane of this is attributed to Several reasons. The Nigerian poultry industry is less

Poultry production in all its ramification represents Of the viable farming enterprises providing the much needed animal protein sources (table egg and meat) to Ameliorate the protein deficiency factor in Nigerian food Crisis. However, commercial poultry production is faced with many problems, such as high cost of feeding and Veterinary drugs, poor quality of commercial feeds due to Formulating abuses of the manufacturers, inadequate Capital investment and lack of knowledge of nutrients and Energy requirements of the various classes of poultry. Diseases/parasites, mortality, high cost of fixed inputs as Said by Aromolaran (1999), give poultry farmers serious Challenges and thus, hinder the poultry business. This Culminates to low production and subsequently reduced Income which frustrates the business venture and Sometimes lead to financial bankruptcy. Technical Proficiency usually account for most crises experienced in Poultry production. Therefore, there is the need for a Diagnosis in the area of poultry production technique by The commercial poultry farmers and thus identity Deficiencies and solutions to them if the poultry enterprise Is to be profitable and maintained.

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Study on Non timber Forest Produce of Kanker District, Chhattisgarh

A DISSERTATION SUBMITTED

FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE

IN

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Chapter-1

Introduction

Non –timber forest product are natural resources which is obtained from forest other than timber and fuel wood it may be plant origin or animal origin. NTFPs are an important source of income for people who live near forests. It plays a crucial role in livelihood of millions of people worldwide. Particularly in rural and indigenous communities by providing income, food, medicine, sustainable development etc. It also plays a major role in addressing poverty issues for the people who depends on forest and also to the people who are marginalized.

Forest products are mainly categorized into two first major forest product which include all fuel wood and timber wood and second is minor forest product which include all the natural resources like fruits, flowers, nuts, seeds, herbs, resins, oils, honey, mushroom, berries, fur bearer, sap, foliage, spices, forage, insects etc. and all the NTFPs lies under minor forest product.

The term Non-timber forest product (NTFP) was coined by de beer and Mcdermott in 1989 in their historic work on the economic value of NTFPs in South East Asia. NTFPs are also known as non-wood forest product (NWFP) or minor forest product (MFP).

In India approximately 16000 plant species are there which come under NTFPs which 40% of forest revenue and 55% of forest based employment. Over 500 million individuals in India depends on NTFPs for their subsistence and cash income. In India approximately 275 million poor rural people-27 percent of total population-depends on NTFPs for their survival and livelihoods (Malhotra & Bhattacharya, 2010; Bhattacharya & Hayat, 2009). NTFPs are once undervalued but are now recognised as essential forest resources. Around 100 million people in India directly derive their livelihood from market and collection of

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A Literature Survey on Few Hepatoprotective Plants

A Dissertation
For the partial fulfilment for the Degree of

BACHELOR OF SCIENCE
IN
RURAL TECHNOLOGY

Submitted by
Rituraj Sinha
B. Sc. (R.T.) VIth Semester

Under the Supervision of
Dr. Satendra Kumar Nirala
Assistant Professor

DEPARTMENT OF RURAL TECHNOLOGY AND SOCIAL DEVELOPMENT
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INTRODUCTION

Liver disorders have been classified in the high priority areas of health care. According to an estimate by the World Health Organization, approximately 500 million people of the world are suffering from a severe form of liver disorders, that is, chronic hepatitis (Al-Asmari et al., 2014). Medicine of herbal origin may serve as a feasible therapy for the prevailing liver problems because of their safety, easier availability, cost effectiveness, and environment friendliness (Izzo, Hoon-Kim, Radhakrishnan, & Williamson, 2016). Medicinal plants have acquired importance in healthcare system throughout the world for their proven and effective therapeutic properties (Helmstädter & Staiger, 2014). An estimated 80% of the world's population is relying on medicines that contain compounds of herbal origin (Ekor, 2013). The International Union for Conservation of Nature has suggested that approximately 50,000 to 80,000 flowering plants are used for medicinal purposes (Chen, Li, Ren, & Hu, 2016). Many factors regarding these medicines are important. Herbal medicines are claimed to both treat and prevent diseases, which adds to a deep belief that these treatments are safe because they are "natural and gentle" and therefore, a harmless alternative to the conventional medicine. Moreover, the latter may sometimes cause disappointing results and undesirable side effects in patients (Izzo et al., 2016). In addition, the less expensive herbal products are often not subject to strict regulations and medication prescribed by a physician or other qualified practitioners (Hunter & Hegele, 2017). Although medicinal plants have been used globally, their wider usage is limited to a few countries like Japan, India, China, Pakistan, Thailand, Iran, and some African countries (Bahmani et al., 2014; Iwu, 2014; Li, 2016; Sivasankari, Anandharaj, & Gunasekaran, 2014). Other countries are also encouraging the use of plant-based medicinal products in their healthcare systems. For example, Natural Health Product Regulations of Canada for the plant-based product in healthcare encourages usage of modern technology and evidence-based scientific support towards promoting medicinal plants and the associated products (Tomlinson & Akerele, 2015). A major concern of scientists investigating herbal treatments is that the chemical composition of the plants contributing to their biological effects is mostly undetermined (Ling et al., 2009).

Herbs and herbal medicines have been used for the treatment of liver diseases for a long time (Dhiman & Chawla, 2005). There are many herbs having ingredients that are potential sources of medicine for the treatment of liver diseases having various modes of actions and bioactivities (Babu, Bhuvaneswar, Sandeep, Ramaiah, & Rajendra, 2017; Gnanadesigan, Ravikumar, & Anand, 2017; Pereira, Barros, & Ferreira, 2016). However, several of them are well-studied for

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INTRODUCTION

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Few Plants with Therapeutic Potential against Cardiovascular Diseases: A Literature Survey

A Dissertation
For partial fulfilment for the Degree of

BACHELOR OF SCIENCE
in
RURAL TECHNOLOGY

Submitted By
Shashikant Khute
B. Sc. (R.T.) 6th Semester

Under the Supervision of
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This is to certify that **Mr. Shashikant Khute,** student of Bachelor of Science (Rural Technology) in the Department of Rural Technology and Social Development, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) has completed his dissertation entitled **"Few Plants with Therapeutic Potential against Cardiovascular Diseases: A Literature Survey"** and submitted to the Department under the supervision of **Dr. Satendra Kumar Nirala (Assistant Professor)**. The dissertation is submitted for the partial fulfilment for the award of the degree of Bachelor of Science in Rural Technology.

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INTRODUCTION

Cardiovascular diseases (CVDs) are a broad term for conditions affecting the coronary blood vessels and heart . Among the risk factors for CVD, high blood pressure is associated with the strongest evidence for causation, and it has a high prevalence of exposure. Abnormal lipid metabolism leads to hyperlipidemia, a common cause of multiple chronic disorders, including cardiovascular disease (CVD) (Alves-Silva *et al*. 2016, Fuchs F. D., *et. al* 2020, Islam S. U. *et. al* 2021).Heart attack, also called myocardial infarction (MI), and related complications are the main causes of deaths throughout the world. The use of herbal antioxidants is increasing as defensive agents against number of cardiovascular abnormalities. The bioactive agents from natural sources have gained fundamental importance in modern system of medicines, reducing the risks of cardiac ailments by scavenging the free radicals formation Herbal medicines play considerable role in health care to a large proportion of world's population and have been regarded as component of cultural heritage of various tribes. Polyphenols perform cardioprotective activity by inhibiting the oxidation of low-density lipoprotein. Most of the pharmacologically important drugs are derived from plants. Plant derivatives as drugs play significant role in health-care systems around the globe for animals and humans. They not only used for the management of disease condition but also to maintain proper health. Since long, medicinal plants have been used for the treatment of ischemic heart diseases. Accumulation of phytochemical, biological, and clinical data during past decade of 20th century revealed that plant-based herbal remedies are the emerging choice for the treatment of various ailments. Medicinal plants such *Daucus carota* Linn, *Nerium oleander (NO)* Linn, *Amaranthus viridis*, *Ginkgo biloba*, *Terminalia arjuna*, *Tinospora cordifolia*, *Hydrocotyle asiatica* Linn, *Mucuna pruriens*, and *Cichorium intybus* are known to have cardioprotective potential. Large number of important phytochemicals has been identified from plant sources by the scientists. This

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A Review of Literature on Medicinal Plants with Antifertility Properties

A Dissertation submitted in
Partial fulfilment for the Degree of

BACHLEOR OF SCIENCE

IN

RURAL TECHNOLOGY

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CHAPTER - 01
INTRODUCTION

Infertility, a condition characterized by the inability to conceive after a year of regular unprotected intercourse, stands as a multifaceted and increasingly prevalent reproductive health concern affecting millions of individuals and couples worldwide. Beyond its clinical manifestations, infertility imposes profound emotional, psychological, and societal burdens, disrupting personal relationships, challenging self-identity, and engendering social stigma. In response to this complex landscape, the pursuit of effective infertility treatments has spurred innovation across medical disciplines, ranging from assisted reproductive technologies (ART) to pharmacological interventions. However, amidst this technological advancement, there exists a growing recognition of the limitations and drawbacks inherent in conventional approaches, prompting a reevaluation of alternative modalities that offer holistic, patient-centerer solutions.

In recent years, the resurgence of interest in complementary and alternative medicine (CAM), particularly plant-based therapies, has captivated the attention of both patients and practitioners in the realm of infertility management. Herbal remedies, steeped in centuries-old healing traditions and indigenous knowledge systems, have emerged as promising candidates for augmenting fertility and addressing underlying reproductive dysfunctions. Rooted in the premise that nature provides a bounty of remedies for human ailments, botanical medicine offers a holistic approach to fertility enhancement, harnessing the synergistic interplay of phytochemical constituents to restore balance and vitality to the reproductive system.

The utilization of botanicals in fertility enhancement represents more than a nostalgic return to ancient practices; it embodies a convergence of traditional wisdom with modern scientific inquiry. Through rigorous phytochemical analysis,

A Review on Anticancer Potential of Few Plants

Submitted in

Partial fulfilment for the Degree of

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in
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By

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Activity Of Medicinal Plant's In Diabetes: A Litrature Survey

Dissertation

For partial fulfillment of the degree of

B.Sc in Rural Technology

Submitted By

Ms. Smriti Shrivas

Under the Supervision of

Dr. S.K Nirala

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Table of contents

Introduction

Medicinal plants play a significant role in the treatment of diabetes mellitus which is a serious metabolic disorder. Traditional plants are reported to have significant anti-diabetic properties with no harmful side effects. They are rich sources of anti-diabetic compounds such as flavonoids, alkaloids, phenolic and tannins that improve the efficiency of pancreatic tissues by increasing the insulin secretion or decreasing the intestinal absorption of glucose (Kooti et al. 2016). Literature suggests that there are approximately 410 experimentally proven medicinal plants with anti-diabetic properties out of which the complete mechanism has been studied only for 109 plants. Several medicinal plant extracts have been shown to modulate the metabolic pathways such as glycolysis, gluconeogenesis, Krebs cycle, glycogen synthesis and their degradation, synthesis and release of insulin, cholesterol synthesis, carbohydrate metabolism and absorption (Prabhakar and Doble 2008). Diabetes mellitus (DM) is a chronic endocrine disorder which is characterized by high blood glucose levels that can interfere with carbohydrate, protein, and fat metabolism (Bastaki 2005). It is caused due to the deficit production of insulin by the β-Langerhans islet cells of the pancreas or due to defective insulin uptake in the peripheral tissues (Al-Goblan et al. 2014). An increase in the blood glucose level immediately after a meal triggers the release of insulin hormone from the pancreas. Insulin stimulates the liver to metabolize glucose and also stimulates the fat and muscle cells to remove glucose from the blood which results in a drop of blood sugar level to normal levels. If a person is diabetic, the blood sugar level remains high due to nil or ineffective production of insulin by the pancreas (Dean and McEntyre 2004). India has more than 61 million people living with diabetes and hence is considered to be the "capital of diabetes". Effective treatment of diabetes and its associated complications still remains a major challenge for India due to several issues such as inadequate health care system, lack of proper facilities, etc. (Viswanathan and Rao 2013). Herbal formulations are favored over synthetic drugs to reduce the ill-effects of diabetes and its secondary complications due to lesser side effects and also being cost-effective (Modak et al. 2007). The present review aims to summarize some of the important Indian medicinal plants with anti-diabetic activities based on the electronic literature data available online.

In the last few years there has been an exponential growth in the field of herbal medicine and these drugs are gaining popularity both in developing and developed countries because of their natural origin and less side effects. Many traditional medicines in use are derived from medicinal plants, minerals and organic matter . A number of medicinal plants, traditionally used for over 1000 years named rasayana are present in herbal preparations of Indian traditional health care systems . In Indian systems of medicine most practitioners formulate and dispense their own recipes . The World Health Organization (WHO) has listed 21,000 plants, which are used for medicinal purposes around the world. Among these 2500 species are in India, out of which 150 species are used commercially on a fairly large scale. India is the largest producer of medicinal herbs and is called as botanical garden of the world . The current review focuses on herbal drug preparations and plants

A

Project Dissertation Report

On

" LAYER MANAGEMENT IN POULTRY FARMING "

Submited for partial fulfilment for the award of degree of

Integrated UG/PG B. Sc. Rural technology and socia

Development (Hon's) VI Semester (Session 2023-2024)

Submitted by

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This is to certify that the dissertation entitled **"layer management in poultry farming "**is an authentic record of research work carried out by **SUCHI RATRE,** A student of Integrated UG/PG Rural technology and social development (Hon's) VI Semester in the Department of Rural technology and social development of this University.

Date: 30/05/2024

Place: Bilaspur

30/05/2024

Signature of the supervisor
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Able oF Contents

implementing biosecurity measures, vaccination programs, and disease prevention strategies to maintain the health and well-being of the flock.

Environmental factors, such as temperature and humidity, also play a significant role in layer management. The report explores the impact of thermal stress on layer performance and egg quality, and discusses strategies for mitigating the effects of heat stress, such as providing adequate ventilation, cooling systems, and access to clean water.

The report also highlights the importance of monitoring and record-keeping in layer management, as this allows farmers to track the performance of their flock and make informed decisions regarding management practices. The report discusses the use of modern technologies, such as automated feeding and egg collection systems, to improve efficiency and reduce labor costs[3][5].

This dissertation report emphasizes the importance of adopting a comprehensive approach to layer management that takes into account the various factors that influence layer performance and egg quality. By providing layers with a suitable housing environment, a balanced diet, proper health management, and optimal environmental conditions, poultry farmers can maximize the productivity and profitability of their layer operations while ensuring the production of high-quality eggs for consumers.

Introduction

Layer management is a critical aspect of poultry farming that focuses on the care and husbandry of egg-laying hens to ensure optimal egg production, quality, and overall welfare of the flock. Layers play a vital role in the poultry industry, providing a consistent supply of high-quality eggs for consumption

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A

Dissertation

Report On

"BOODER MANAGEMENT IN POULTRY"

Submitted for partial fulfilment for the award of degree of Integrated B.Sc.Rural technology and social development (Hon's) VI Semester

(Session 2023-2024)

Guru Ghasidas University

Submitted by

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production cycle. Effective brooder management is key to fostering healthy, thriving chicks and ultimately achieving success in poultry farming endeavors.

Table of Contents:

1.INTRODUCTION

Poultry production plays a significant role in global food security and economy. Effective brooding management is essential for the successful rearing of poultry, ensuring the health, welfare, and performance of chicks during the crucial early stages of life. This dissertation aims to provide a comprehensive overview of brooder management practices, highlighting key considerations such as environmental conditions, nutrition, disease control, welfare, and emerging technologies.

Newly hatched birds, such as chicken and turkey are virtually helpless at the time of hatching and require the constant attention. Just after arrival of day old chicks to the farm it is necessary to brood the chicks. After birth the birds can not regulate their body temperature during the first few weeks of life unless they are housed in a warmed environment. There is a thermoregulatory mechanism in the body which regulates body temperature. New born mammals quickly can adopt in its environment due to its developed thermoregulatory mechanism. But, in birds it will take time to develop in relation with climate and seasons. In winter season it takes time up to 4-6 weeks and in summer it is up to 2 weeks. This is why birds should be brood up to 4-6 weeks of age.

Brooding of chicks

Brooding is the process of providing heat and other management services to the baby chicks at an early age.

Types of brooding

1. Natural Brooding- By broody hen

2. Artificial Brooding- By artificial ways

Broiler chicks reproduced from parent stock. So, no question will arise for natural brooding. Here artificial brooding is practiced. Successful brooding will lead the chicks to become healthy and produce more meat. Unsuccessful brooding results less meat and profit. Although chicks become active and able to feed themselves within 24 hours of birth, they require supplementary heat for at least 4 weeks and sometimes preferably up to 6 weeks. Artificial heat supply related with environmental temperature.

The broiler growers use many types of brooders. Name of brooder depends on either energy source or material they use to brood the chicks. For producing heat poultry growers use gas, electricity, kerosene, coal, wood etc as availability, flock size and economic capacity of the poultry growers. The objective of brooding is to

A

Dissertation

Report On

"HOUSING MANAGEMENT OF JAPANESE QUAIL"

Submitted for partial fulfilment for the award of degree of Integrated B.Sc.
Rural technology and social development (Hon's) VI Semester
(Session 2023-2024)
Guru Ghasidas University

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Introduction:

Japanese quail (Coturnix japonica) are a vital part of the poultry industry, with millions being raised annually for eggs, meat, and research purposes. As a social species, Japanese quail have complex behavioral and physiological needs that must be met to ensure their welfare and productivity. Housing management plays a critical role in fulfilling these needs, and its impact on quail welfare and productivity cannotbe overstated.

Japanese quail are sensitive to their environment, and their housing conditions can significantly affect their behavior, health, and productivity. Inadequate housing can lead to stress, disease, and reduced egg production, while optimal housing can promote quail well-being and improve production efficiency.

Historically, Japanese quail have been housed in battery cages, which prioritize efficiency and productivity over bird welfare. However, growing concerns about animal welfare and the need for more sustainable and humane production systems have led to increased interest in alternative housing systems, such as enriched cages and aviaries.

Enriched cages and aviaries offer quail more space, social interaction, and environmental stimulation, which can improve their behavioral and physiological well-being. However, these systems also present challenges, such as increased costs, management complexity, and potential health risks.

A

Project Dissertation Report On

"Hatchery management in poultry "

Submitted for partial fulfilment for the award of degree of Integrated B.Sc. Rural technology and social development (Hon's) VI Semester (Session 2023-2024)

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Introduction

The poultry industry has experienced significant growth in recent years, driven by the increasing global demand for protein-rich food products. As the industry continues to expand, the importance of efficient and effective hatchery management has become increasingly evident. Hatchery management is a critical component of poultry production that focuses on the successful incubation and hatching of fertile eggs to produce healthy chicks that can thrive in the grow-out phase and ultimately contribute to the production of high-quality poultry products.

Hatchery management encompasses a range of practices and strategies aimed at optimizing the incubation process, ensuring the health and well-being of the chicks, and maximizing hatchery efficiency and productivity. Proper hatchery management is essential for maintaining high hatchability rates, producing robust and uniform chicks, and minimizing losses due to embryonic mortality, hatch failure, and chick quality issues.

Importance of Hatchery Management

Hatchery management plays a pivotal role in the success of poultry production, as it directly impacts the quality and quantity of chicks available for grow-out. Healthy, high-quality chicks are essential for achieving optimal growth rates, feed conversion efficiency, and overall flock performance.

A Dissertation

On

"Poultry broiler management"

Submitted for partial fulfilment for the award of degree of Integrated UG/PG

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CONTENT

Introduction

This dissertation addresses the multifaceted approach required for effective poultry broiler management in commercial farming. Broiler chickens, bred specifically for meat production, necessitate precise management of nutrition, housing, health, and welfare to ensure optimal growth and productivity. It also explores the intricate balance between these factors, highlighting the importance of integrated strategies for enhancing broiler performance. By examining current practices and identifying areas for improvement, this dissertation aims to provide valuable insights into sustainable and ethical broiler management, ultimately contributing to the advancement of the poultry industry.

Indian Poultry Industry is one of the fastest growing segments of the agricultural sector today in India. Production of agricultural crops has been rising at a rate of 1.5 to 2% per annum while the production of eggs and broilers has been rising at a rate of 8 to 10% per annum. Today India is world's fifth largest egg producer and the eighteenth largest producer of broilers. Driving this kind of expansion the contributing factors are growth in per capita income, a growing urban population and falling poultry prices. The Indian Poultry Industry has undergone a paradigm shift in structure and operation. A very significant feature of India's poultry industry is its transformation from a mere backyard activity into a major commercial activity in just about four decades which seems to be really fast. The kind of transformation has involved sizeable investments in breeding, hatching, rearing and processing. Indian farmers have moved from rearing nondescript birds to today's rearing hybrids such as Hyaline, Shaver, and Babcock which

ensure faster growth, good livability, excellent feed conversion and high profits to the rearers.

Image (01) – Indian broiler Farming

A

Project Dissertation Report

On

"HOUSING MANAGEMENT OF DUCK"

Submitted for partial fulfilment for the award of degree of

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In conclusion, effective housing management for ducks involves a comprehensive approach that considers the physiological and behavioral needs of ducks, ensuring their well-being, productivity, and overall success in commercial and backyard farming settings. By implementing sound housing practices, duck farmers can enhance the sustainability and profitability of their operations while prioritizing the health and welfare of their duck populations.

Introduction

Housing management is a critical aspect of duck farming that directly impacts the health, welfare, and productivity of ducks. Proper housing ensures that ducks are provided with a comfortable and safe environment, protecting them from adverse weather conditions, predators, and diseases. The type of housing system chosen depends on factors such as the scale of production, available resources, and climatic conditions.

In backyard duck farming, a simple shelter is often constructed using locally available materials, such as bamboo baskets or wooden structures. These shelters provide a dry and well-ventilated space for ducks to rest at night, while allowing them to forage during the day. In semi-intensive and intensive duck farming systems, more elaborate housing is required to accommodate larger flocks and ensure optimal productivity.

Semi-intensive duck housing typically consists of a night shelter and an outside run, with a ratio of 1:3. The night shelter should be well-ventilated, dry, and rat-proof, while the outside run should gently slope away from the house to provide drainage. In intensive duck housing, ducks are raised in confined conditions, such as wire floors, deep litter, or welfare cages. The housing should be designed to provide adequate space, proper ventilation, and lighting to meet the physiological and behavioral needs of ducks.

Factors such as floor space, temperature, feeding space, and watering space are crucial considerations in duck housing management. Overcrowding can

"Comparative Studies on Powder Microscopy of *Aegle marmelos* L."

A PROJECT WORK

SUBMITTED FOR PARTIAL FULFILMENT FOR THE AWARD OF THE DEGREE

OF

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IN

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CHAPTER 1

INTRODUCTION

Introduction-
Plant Description: Beal
Scientific name: *Aegle marmelos*
Family: Rutaceae

The World Health Organisation has compiled a list of more than 21,000 plant species that are used medicinally worldwide. Approximately 2500 plant species from over 1000 genera are used in India's traditional medical system. India is ranked second globally in terms of the number and value of medicinal plants exported. With 16 agroclimatic zones, India is one of the world's 12 mega biodiversity centres. Of the approximately 45,000 plant species, 15,000 are flowering plants, and 7,000 have been classified as medicinal herbs. The world's blooming plants belong to around 400 families, at least 315 of which India represents. (Bansal and Bansal , 2011)

Despite our extensive history and understanding of the application of plant-based medications, there hasn't been much focus on adapting these low-cost treatments to meet contemporary needs. The pharmaceutical industry now uses just 40 plant species (11 foreign and 29 native). Similarly, just 42 plant species-out of a rich genetic foundation of over 1300 plant species known for their aromatic properties-are currently used by the fragrance chemical industry.

Twenty of the 42 plant species are native, with the remaining species having been introduced from outside. According to Tandon and Thayil, one of the longest living traditions in the world, India's medical history, is in risk of going extinct. Bael, *Aegle marmelos* (Linn.) Correa ex Roxb., an Indian plant with immense medicinal potential that is underutilised. It is a member of the citrus fruit family, Rutaceae. In several languages, it goes by different names. Aegle marmelos fruiting branch Marredy (Malyalam); Belo (Oriya); Vilvama, Vilva

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"STUDY ON EXTRATION, APPLICATION AND USES OF FIBRE YIELDING PLANTS: A REVIEW"

A DISSERTATION SUBMITTED

FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE

IN

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INDEX

Chapter 1

Introduction

Overview of fiber-yielding plants

A fiber plant is a type of plant that produces fibers which can be extracted and used for various applications, primarily in the production of textiles, ropes, paper, and other materials. These fibers can come from different parts of the plant, such as the seeds, leaves, stems, or fruits. Depending on the source and characteristics, plant fibers are classified into several categories, including seed fibers, bast (or stem) fibers, leaf fibers, and fruit fibers.

Natural Fibers from Plants are

1. Cotton (*Gossypium* spp.)

•**Description:** Cotton is a soft, fluffy staple fiber that grows in a boll around the seeds of cotton plants.

•**Uses**: Primarily used in textile production for making clothing, bed linens, and various fabric-based products.

•**Growing Regions:** Predominantly grown in warmer climates, such as the United States, China, India, Pakistan, and Brazil.

2. Flax (*Linum usitatissimum*)

•**Description:** Flax produces bast fibers taken from the stem of the plant. The fibers are long, strong, and flexible.

A DISSERTATION SUBMITTED
FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE
IN
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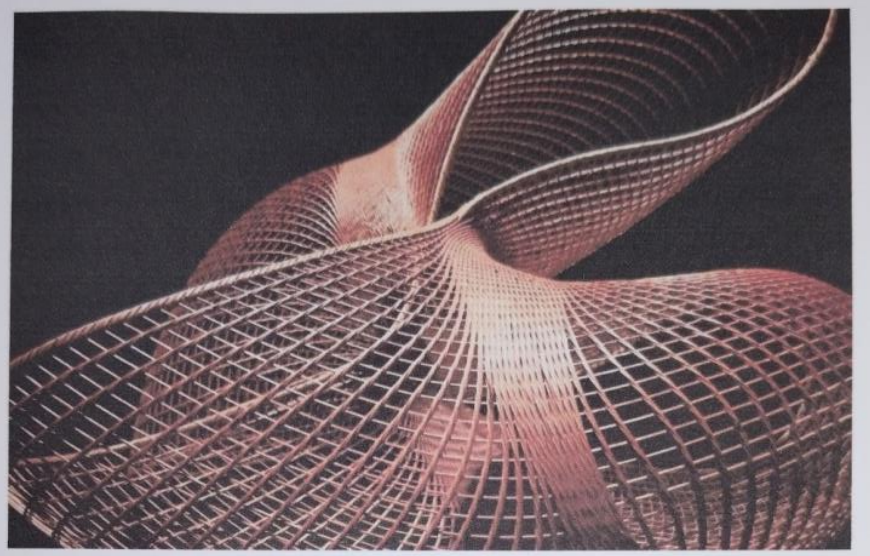

Introduction

The art of bamboo working, which originated in South Asia, involves using bamboo strips to create showpieces, furniture, and buildings. Bamboo scroll paintings have been a delicate and simple art form in Asia for many generations. Ancient Indian artwork is preserved in traditional bamboo crafts.

In Southeast Asia, more than a hundred different types of bamboo are grown. Bamboo has long been used in human crafts and artwork dating back to ancient times. Generally Bamboo has a long lifespan and is regarded as the Chinese symbol of integrity. Stated differently, bamboo is recognized as one of the "Four Gentlemen" and plays a significant role in traditional Chinese civilizations, serving as an example of gentlemanly behavior. Archaeological evidence then confirms the existence.

Bamboo handicraft, another name for bamboo art and craft, is part of the handicraft industry. This sector of the economy is connected to our Indian cultural past. The world was once filled with the commerce of our handicrafts and handloom industry, but as modernity gained momentum, all the industries that were a part of our daily lives gradually vanished and handicrafts were replaced by mechanization. Perhaps our economics are aware of the value of this handcrafted bamboo art, which means that

A REVIEW ON GUM AND RESIN YIELDING PLANT OF CHHATTISGARH

A DISSERTATION SUBMITTED

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INDEX

Chapter 1
Introduction

The people who live in all around the forest depend on nature and natural resources. For them, Non-timber Forest Products (NTFPs) are culturally, socially and economically important. NTFPs may in the form of roots, tubers rhizomes, leaves, flowers, fruits, seeds, gums, resins, herbs, medicinal plants, bamboos, etc. In India, most of the people are living in the villages proximate to the forests and depend on forests for their day-to-day life. In India, ca. 15 to 18 thousand plant taxa were reported, of which 3000 species yield NTFPs (Murthy et al., 2005). Even though, only 126 NTFP species that have been commercialized in India (Yadav et al., 2019) and about 50 million people depend on NTFPs for their subsistence (Bhat, 2012) and ca. 17% of landless people depend on NTFPs collection and provide 50% income for about 25% of labour force (Rasul et al., 2008; Omkar et al., 2022). They used to collect gums and resins along with other NTFPs from the forests. India is one of the largest producers of natural resins, gums and gum-resins (NRGs) in the world among China, Indonesia, Russia and Brazil harvesting about 2.8 lakh tons (Pal, 2013). Of these, about 80% are gums, 19% are resins and left over fraction is of gum-resins. These products are biodegradable, environmentally friendly and nontoxic. NRGs are low quantity and have high value in commerce. These are wonderful source of commerce to local poor people and contribute significantly to poverty alleviation (Gachathi & Eriksen, 2011). Share of NRGs in India's total export 18494.34 billion rupees and 19565.15 billion rupees in 2016-2017 and 2017-2018, respectively. In the exportation of NGRs, India placed third position with 12.9% after France (24.2%) and Sudan (20.8%).

STUDY ON DHOKRA ART WORK OF EKTAL VILLAGE OF RAIGARH CHHATTISGARH

A DISSERTATION SUBMITTED
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RURAL TECHNOLOGY

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This is to certify that Mr. Yogesh Patel Student of Bachelor of Science (Rural Technology) VI[th] semester in the Department of Rural Technology and Social Development, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh India, has completed his dissertation work entitled **"Study on Dhokra Art Work of Ektal Village of Raigarh Chhattisgarh** " under the guidance of **Prof. Rajendra Mehta, Professor and Ms Sakshi Gautam, Assistant Professor (Adhoc),** Department of Rural Technology and Social Development, Guru Ghasidas Vishwavidyalaya, Bilaspur has submitted to the Department. The dissertation is the partial fulfillment of the requirement to receive the degree in Master of Science (Rural Technology).

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Chapter -1

Introduction

India is a developing country that is distinguished for its handicrafts. These handicrafts are found in the country's interior and are more common in hamlets, villages, and small towns. In rural India, it is one of the industries with the highest employment levels after agriculture (Liebl and Roy, 2004; Jagatramkaa and Prasad, 2021). For these and other reasons, handicrafts are now a focus of programs meant to alleviate poverty and solve challenges of rural livelihood (Liebl and Roy, 2004; Jagatramkaa and Prasad, 2021) With its luscious forests, lakes and rivers, rocky formations, caves, and diverse topography, Chhattisgarh is a state dominated by tribes. Chhattisgarh's primary land cover is deep forest, with numerous protected areas teeming with a diverse range of plants and animals. Due to the region's topography and cultural heritage, several tribes are located in the Region. These tribes create crafts and artwork that reflect their way of life and the world around them, drawing inspiration from their immediate surroundings (Jagatramkaa and Prasad, 2021).

The Bell metal craft is practiced by the Jhara, a sub-tribe of the Gond of Ektaal. Metal casting is a technique that has been handed down through many centuries. Thus, the trade is referred to as "Jhara Shilp" locally. There are several steps involved in creating the craft. Mud that has been sun dried is used to cast the mold in the first step. The second phase involves applying several varieties of bee wax all over the mold. After covering the bee wax with mud, the sun is allowed to dry it. Melted metal is poured into the mold after it has dried, allowed to cool, and then shattered to release the metal figurine. The original raw materials for the craft were obtained from the nearby area and combined with local metal debris. The nearby fields and riverbed provide the terracotta needed for the mold. The neighboring areas also provided the wood needed for burning. The bee wax, now sold in the marketplaces, was originally taken from the nearby forests and utilized for the figures'