

# Govt Rani Durgawati College

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### About The Book

The study of the inner workings of plants, or their physiology, is known as plant physiology. It is a sub-discipline of botany. Breathing, hormone functions, photosynthesis, feeding, nastic motions, tropisms, parthenogenesis, phototropism, as well as circadian rhythms are some of the primary activities discussed. Environmental stress physiology, seed germination, stomatal function, and dormancy are also covered. Besides, the topic is strongly associated with the sciences like plant morphology, plant ecology, phytochemistry, genetics, biophysics, molecular biology and cell biology. Plant physiology focuses on examining every internal action of the plant. The major physical and chemical processes are explored in the topic. This includes events that occur on a wide range of temporal and spatial scales. In other words, the study examines molecular interactions like photosynthesis and also the internal transport of water, minerals, and nutrients. There are also large-scale processes, such as changing the seasons, the growth of plants, the regulation of reproduction, and hibernation. The physiology of plants is a vital field of study for farmers. How plants are grown is an art form. Agriculture is the bedrock upon which human civilization was built. Domesticated species farming creates food surpluses that allow city dwellers to have a better standard of living. Plant genetics, agronomy, and also the use of the agrochemicals like fertilisers and pesticides are all part of today's agriculture.

Price: 546 INR



FIRST EDITION

FIRST EDITION

# Plant Physiology And Metabolism



Dr. H M Patil  
Dr. Balram Sahu  
Dr. Madhushri Das  
Dr. Vinayaka K. S

AGPH Books





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Dr. Sahu is actively involved research and has published a number of research articles in reputed peer-reviewed journals (SCI/Scopus/Web of Science). He has participated in and presented research work at many national and international conferences. Dr. Sahu currently working as an Assistant Professor (Botany) at the Govt. Rani Durgawati College, Wadrafnagar

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Possibilities and Challenges in the Present Perspectives

RURAL DEVELOPMENT

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# Rural Development

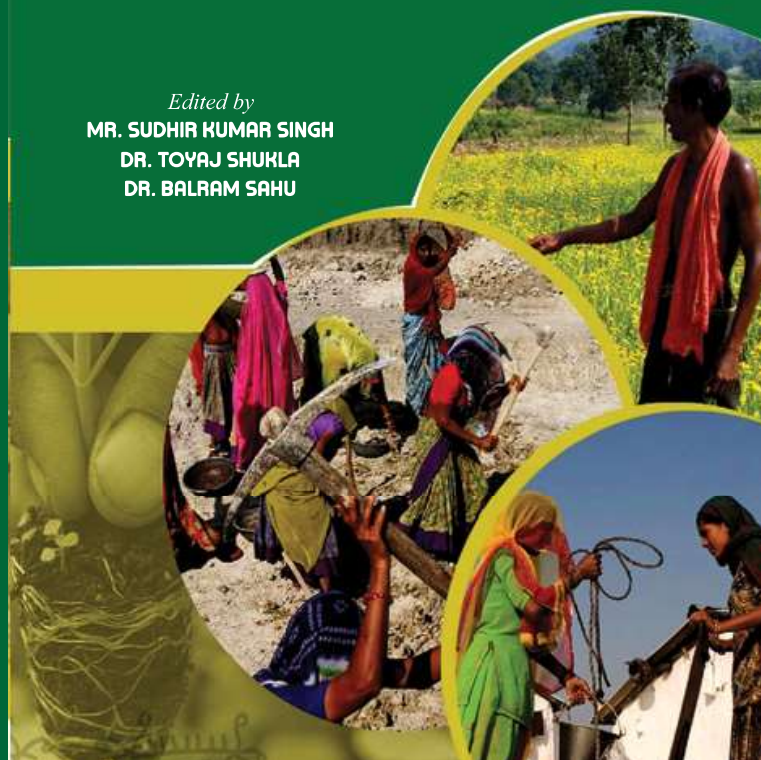
## POSSIBILITIES AND CHALLENGES IN THE PRESENT PERSPECTIVES

*Edited by*

**MR. SUDHIR KUMAR SINGH**

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Ankush Kerketta and Balram Sahu\*

## Chapter 13

# Nanomaterials synthesis from medicinal plant extract

**Abstract:** Synthesis of nanomaterials by plant extracts is the utmost convenient, easy, cost-effective, and ecologically beneficial way which is devoid of the contribution of hazardous chemicals. Hence, a number of environmentally benign methods for the rapid synthesis of nanomaterials have been reported in recent years by employing aqueous extracts of plants. This chapter summarizes the synthesis of medicinal plant-based nanomaterials, plant components involved in its synthesis, and factors affecting nanomaterials' synthesis process and application. Many phytochemicals found in plants, including flavonoids, alkaloids, tannins, saponins, and other metabolites, play a vital role in the production of NMs and have important implications for the development of a variety of purposes. In order to create nanoparticles, various secondary metabolites included in the extracts work as stabilizing and/or reducing agents. Medicinal plant extracts offer a potential method for the production of nanomaterials through safer pathways. This chapter mainly focuses on the recent reports of nanomaterial synthesized by medicinal plant extract. Here, significant and recent developments for diverse biological uses of these plant-based nanomaterials are reviewed together with discussions. Recent developments in nanotechnology, with a focus on medicinal plant extract specifically, offer insight into their use as edible nanoparticles generated from plants. This chapter also briefly covers the application and future prospects of nanomaterials.

## 13.1 Introduction

In today's era of advanced technology, an interesting class of materials known as nanomaterials (NMs) is now in high demand for a variety of applications. Any particles that are at least 100 nm in size are known as nanoparticles or nanomaterials. Richard Feynman (a Nobel Prize winner and an American physicist) first time proposed the term *nanotechnology* in 1959 and seeded the idea of contemporary technology, and because of this, he is known as the father of modern nanotechnology. Particularly in the realm of biotechnology, nanotechnology is a growing area of

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## Chapter 10

### Assessment of heavy metal toxicity in humans

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#### Abstract

Heavy metals have harmful effects on human health and increased anthropogenic, industrial, and agricultural activities as well as modern industrialization are the major causes of heavy metal exposure to the environment. Heavy metal contamination of water and air affects millions of people worldwide as it has negative impacts on human health. Heavy metal pollution in food is a problem for both human and animal health. The accumulation of heavy metals in the body's soft tissues in hazardous proportions is known as heavy metal toxicity. Depending on the amount of metal accumulating, different symptoms and physical findings are linked to heavy metal toxicity. In a low dose, several heavy metals, including zinc, copper, chromium, iron, and manganese, are necessary for physiological function. However, substantial harm might result if these metals accumulate in the body to the point where they become poisonous. Humans are exposed to varieties of heavy metals by various sources like air, water, food materials, *etc.* Heavy metals such as arsenic, lead, cadmium and mercury are most often linked to human toxicity which accumulated in the human's internal system and counteracts various metabolic processes. Free radicals produced by heavy metals contribute to oxidative stress and carcinogenesis by destroying lipids, proteins, and DNA molecules. The focus of this chapter is to report the latest findings and describe the mechanism, toxicity and amelioration of selected heavy metals *viz.* arsenic, mercury and lead, in humans along with their health effects.

**Keywords:** Heavy metal, Arsenic, Lead, Mercury, toxicity, amelioration

#### Introduction

Metals naturally occur in the earth's crust and their concentrations vary from region to region according to the environmental conditions. There are around 92 elements,

# Organic Farming: A Sustainable Approach of Agriculture

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## **Abstract**

The human population is increasing day by day, due to increasing natality and decreasing mortality, which is causing a decline in resources and increasing food scarcity. Global warming, climate change, and heavy chemical fertilizer use affect agricultural products' productivity and quality. Using chemical fertilizers in agriculture is not environmentally friendly and is hazardous to human health and other organisms. To produce healthier and sufficient amounts of food for the growing human population in a

# 1

## **Importance and Side Effect of Organic Fertilizers in Agriculture**

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**Dr. Toyaj Shukla**

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### **Abstract**

Green revolution has shown the way to the world, how to improve production in the agriculture products to achieved the food demand for the booming of world's population. But along with the increase in the production of the food, the utilization of chemical fertilizers has also been increased very rapidly, and after few decades of start of green revolution, it had been increased up to the level, where it become one of the major environmental threat, which we have to address at an urgent basis. Soil health management is crucial for ensuring sustainable agricultural productions and maintenance of biodiversity. Fertilizers and pesticides are a necessary evil for industrial agriculture. Though, they continue to be critically important tools for global food security, their undesirable effects cannot be overlooked particularly when sustainable agriculture is the

# **Role of ICT in Rural Development Benefits and Challenges**

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## **Abstract**

Information communication technology plays a very important role in various sector in the rural area. ICT application and tools are using many sectors in rural area like agriculture, health, education, e-governance employment, climate change and economic development. People of the village can improve they standard of the leaving by using ICT tools. Agriculture is the main source of employment for the rural people .by using ICT tools they can make great progress in the agriculture business. Rural former can get a lot of information related to agriculture such as crop tracing, fertilizer, animal husbandry, soil test, weather information and crop market etc. by using ICT tools. ICT help of health information technology in information exchange between patients, medical provider and quality monitors etc. Through computer system a present information computer technology is being used



## Web-based Plagiarism Detection Software (PDS) in the Digital World

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\*Pankaj Kumar

\*\*Brijesh Kumar Chaurasia

### Abstract

This paper aimed to highlight plagiarism, type of plagiarism, avoid plagiarism, and various Plagiarism Detection propriety and free Software. Plagiarism detection has proceeded in manual and computer-based Software. It's a severe problem in the academic field. Still, due to the emergence of information technology, it is straightforward to identify by the latest online subscription and free base software. This Plagiarism Detection software plays a vital role in maintaining academic honesty in the academic profession.

### Keywords:

Plagiarism, Plagiarism Detection, Plagiarism Tools, Turnitin, Ouriginal, Computer Software.

### Introduction

Today Academic and Research Institutions are evolving in the production of new ideas through Research Publication, Teachers, Scientist & Researchers writes and publishes Research Paper for honour, promotion & respect in the profession. Currently, most information is available on the internet, so for many reasons, professionals copy and paste the information into their publications without giving credit/ citation to the primary author. This act is desired, of course, in academics Research Institutions Publications Plagiarism.

### What is Plagiarism?

Plagiarism is derived from the Latin word "Plagiarius," which means a person who kidnaps something.

## छत्तीसगढ़ की ग्रामीण अर्थव्यवस्था

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श्री जगदीश कुमार खुसरो  
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### प्रस्तावना

छ.ग. की स्थापना 1 नवम्बर सन् 2000 में हुई। वर्तमान में छ.ग. की जनसंख्या 2,55,40,128 (जनगणना 2011 के अनुसार) है। जिसमें 79% ग्रामीण व 21% शहरी जनसंख्या निवासरत है। यह प्रदेश खनिज सम्पदा से भरा हुआ है। यहां कोयला, इस्पात, बाक्साइड, डोलोमाइट व चूनापत्थर बहुतायत में पाया जाता है। जिससे राज्य सरकार को राजस्व प्राप्त होता है। चूंकि छग राज्य एक कृषि प्रधान राज्य है यहां ग्रामीणों द्वारा ज्यादातर धान की खेती की जाती है यहां कृषि भूमि 36%, सिंचित है कृषि वर्षा के पानी पर निर्भर है। छत्तीसगढ़ में ग्रामीण क्षेत्र में निवासरत कृषक वर्ग जिसके पास भूमि नहीं है या बहुत कम भूमि है उन्हें अपने रोजगार के लिये दूसरे राज्यों में पलायन करना पडता है। यहां ग्रामीण लोगों का जीवन वन सम्पदा पर निर्भर है। वनों से ग्रामीणों के लघु वनोपज के रूप में बहुत सारे फल, फूल आदि का संग्रहण करते हैं जो उनके आजीविका का एक महत्वपूर्ण साधन है।

## छत्तीसगढ़ में ग्रामीण विकास योजनाएँ: एक अध्ययन

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श्री सुधीर कुमार सिंह

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राजनांदगांव (छ.ग.)

### प्रस्तावना

प्रस्तुत शोध पत्र में छ.ग. के ग्रामीण विकास में शासकीय योजनाओं के प्रभाव का अध्ययन किया गया है। शोध पत्र के माध्यम से छत्तीसगढ़ के दूर-दूर फैले गाँवों के विकास के लिए कार्य कर रही प्रमुख ग्रामीण विकास योजनाएँ जिसमें मनरेगा, प्रधानमंत्री आवास योजना, प्रधानमंत्री ग्राम सड़क योजना, राष्ट्रीय आजीविका मिशन, स्वच्छ भारत अभियान (ग्रामीण), पेंशन योजना को शामिल किया गया है। उपरोक्त योजनाएँ ग्रामीण आधारभूत संरचना विकास के साथ रोजगार के अवसर एवं आय बढ़ाने में सहायक है किन्तु जागरूकता, अशिक्षा एवं समन्वय के अभाव के कारण योजनाओं का पूर्ण लाभ नहीं मिल रहा है।