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Dr. R. G. Bhojar Arts, Comm.
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**INDUSTRIAL SCALE PRODUCTION OF ORGANIC WASTE RECYCLER,
BLACK SOLDIER FLY, *HERMECIA ILLUCENS* L IN
RURAL AND URBAN AREAS OF INDIA**

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Abstract:

Organic waste recycling and waste management is rapidly increasing problem in rural and urban areas in all over India. As per studies 40% to 50% of solid waste generated is organic. Organic waste dumped in soil release methane from decomposition of biodegradable waste under anaerobic conditions which contributes to global warming. Open dumping of organic waste, where number of flies sit and can spread diseases. A more sustainable, economically valuable and environment friendly solution for management of such waste is the use of black soldier fly, *Hermetia illucens* L. farming, which helps for any organic waste management as well as can, solve the food problem of aquaculture and poultry. Black soldier fly larvae not only useful as a feed of livestock but can generate other by products like Chitin, biodiesel, biogas, fertilizers etc. This chapter will show light on importance this fly and how this fly is best suitable for organic waste management, in rural and urban areas of India.

Keywords: Biowaste management, Black soldier fly, *Hermetia illucens*, insect biomass, waste reduction, biomass conversion, feed conversion rate

Introduction:

The management of solid waste generated in a country must be one of the priorities while forming policies at the National level (Abas and Wee, 2014). The framework for solid waste management is still in the development process in India (Akhilesh and Avlokita, 2020). 40 to 50% of solid waste is organic waste which needs to be processed systematically to reduce environmental hazards so development of sustainable waste management solutions is essential. Organic waste management problem is rapidly growing day by day yet difficult to solve, given increased waste production and high costs of disposal (Otlis *et al.*, 2015).

Conversion of organic waste into compost by saprophagous such as earthworms and microorganisms are well documented (Suthar and Sing, 2008). In many developing countries, waste collection and disposal are ever-increasing problem and it is believed that one to two thirds



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Bacterial Physiology and Fermentation Technology (MB 212)

Multiple Choice Questions

*As per revised syllabus of Savitribai Phule Pune University, Pune
w.e.f 2020*

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Please check the version of Google Chrome – Go to the top right corner of the browser and click the - option settings – About Browser (Left corner) – if the version is lower, can download chrome from: - https://www.google.com/intl/en_in/chrome/
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- b) Phosphofructokinase
- c) Hexokinase
- d) None of the all

269. A dynamic regulator of Embden Meyerhof Parnas and gluconeogenesis pathway is

- a) Phosphoenolpyruvate
- b) Fructose 2,6-diphosphate
- c) Fructose1,6 diphosphate
- d) None of the all

270. In glycolysisAdenine diphosphate Phosphate (ADP) is converted into Adenine triphosphate (ATP).

- a) Substrate level phosphorylation step
- b) Preparatory phase
- c) Phosphorylationstep
- d) All the all

Answer Key

- 100)c
- | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 101)a | 102)a | 103)a | 104)b | 105)b | 106)a | 107)b | 108)b | 109)c | 110)a |
| 111)b | 112)a | 113)b | 114)a | 115)b | 116)b | 117)c | 118)b | 119)a | 120)a |
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| 131)a | 132)c | 133)a | 134)d | 135)a | 136)b | 137)d | 138)a | 139)b | 140)c |
| 141)b | 142)a | 143)c | 144)a | 145)b | 146)a | 147)a | 148)b | 149)a | 150)a |
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| 181)b | 182)a | 183)a | 184)a | 185)a | 186)b | 187)b | 188)c | 189)a | 190)b |



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Paper II - Organic Chemistry

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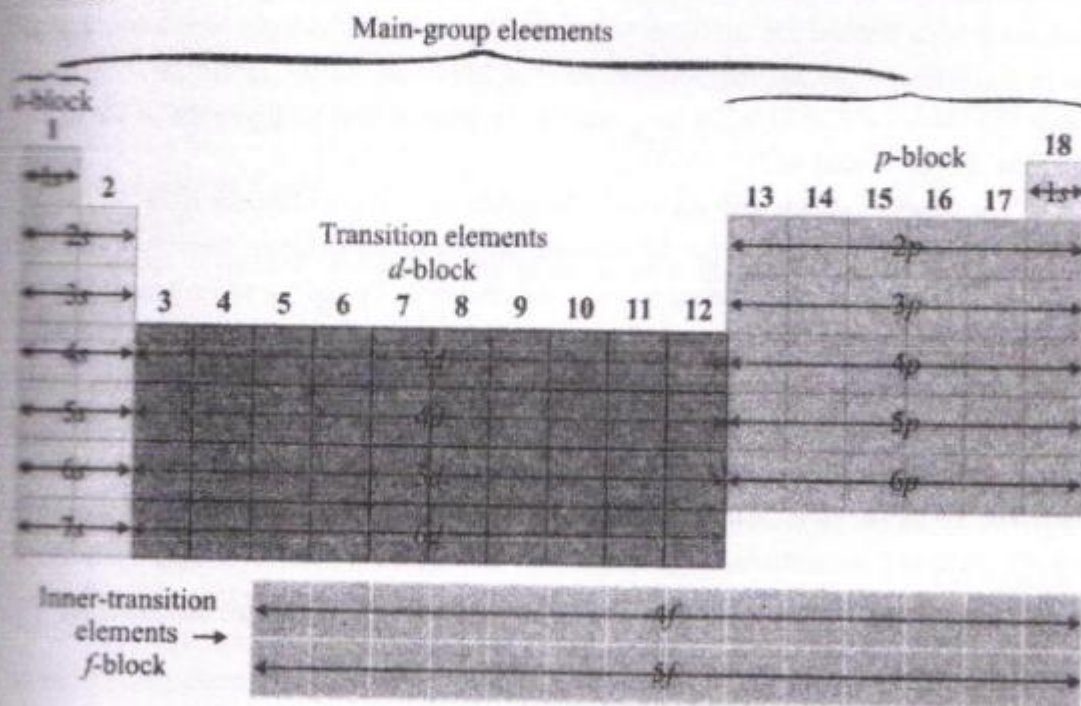
ule. Explain its

er.

UNIT II

A. CHEMISTRY OF ELEMENTS OF FIRST TRANSITION SERIES

The *d*-block elements have been defined as 'the elements whose atoms receive the last electron in the *d*-subshell belonging to the penultimate or $(n-1)^{\text{th}}$ shell'. The *d*-block elements are also called the transition elements or metals. This is because they change the chemical properties from *s*-block (electropositive) to *p*-block (electronegative) elements i. e. their properties have been found to be intermediate between those of the *s*-block and *p*-block elements. Thus these elements are located in the middle of the periodic table and are the members of the groups 3 to 12 (IIIB to VIII to IIB) in the modern periodic table. According to IUPAC definition, 'a transition element is an element which has an incomplete *d*-subshell in either neutral atom or in ions in chemically significant (or common) oxidation state'. According to this definition zinc (Zn), cadmium (Cd) and mercury (Hg) are excluded from the list of transition elements as they neither have partly filled *d*-subshell in their atoms or ions nor they show the usual properties of transition elements to an appreciable extent. Still in order to rationalize the classification of elements, they are studied along with other *d*-block elements.



There are four series of elements which constitute the *d*-block elements. Each series comprises ten elements as given below:



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Vikas Swarup's Q&A as a Critique of Contemporary India

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Abstract

Q&A is Vikas Swarup debut novel. He captures the essence of Indian culture and delivers a razor-sharp critique of modern Indian society, concentrating on the marginalized isolation and misery. This article follows an incredible tour through India, from Delhi to Mumbai. Although India portrays itself as a cohesive nation aspiring to be a superpower, the novel problematizes the concerns of slum dwellers that are constantly persecuted and alienated. Swarup exposes the rising authoritarianism in the ruling administration and the occasional, comparably unsuccessful resistance to it within the narrative framework of the novel, drawing on events and people from recent Indian history. Despite the employment of a number of non-realistic literary tropes, "Q&A" is primarily a realistic storey, depicting an Indian diplomat's vision of a corrupt and degrading India.

Keywords: critique, slum, dwellers, narrative, suffering

Vikas Swarup is a prolific and astute author with a broad range of thought and creativity. He is a fearless, inventive writer who aims to convey the story in a bold manner. In a broader sense, he attempts to depict a universe of experience that is brimming with burning issues, problems, and concerns. He has a distinct theme and vision. All of his works are about contemporary sociocultural and political concerns, and they cover a wide range of topics. As Swarup attempted to put his views and experiences in his books, a number of themes arose and found expression in them.

The books of Vikas Swarup, which feature serious analyses of modern socio-cultural and political concerns, might be arranged in the following sequence. He began his career as a novelist with "Q&A" which he completed in sixty days while stationed in London. "Q&A" became a worldwide bestseller, selling over half a million

copies. It was nominated for the Commonwealth Authors' Prize for Best First Book and won South Africa's Exclusive Books Grand Prize in 2006, as well as the Paris Book Fair's Reader's, The Prix Grand Open in 2007. It was voted the most popular book in Taiwan in 2008 and the winner of the Best Travel Product award in 2009. The book recording, read by Kerry Shale, received the award for Best Audiobook of the Year in 2005. It was well appreciated in India and a foreign nation, and it became a worldwide success, with translation rights sold in forty-three languages. As he said about his first creative writing,

"Q&A is a kaleidoscope of colossal, vibrant, chaotic, and enchanting India. It delineates the destiny of underprivileged youngsters vis-a-vis the destiny of India today. *The Independent* calls it "A beginner's guide to quintessential India" (qtd. in Swarup, "Six Suspects" blurb)



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Introduction to Microbial World (MB 111)

F.Y.B.Sc (Microbiology) (Semester I)

Multiple Choice Questions

*As per revised syllabus of Savitribai Phule Pune University, Pune
w.e.f 2019-2020*

Authored by

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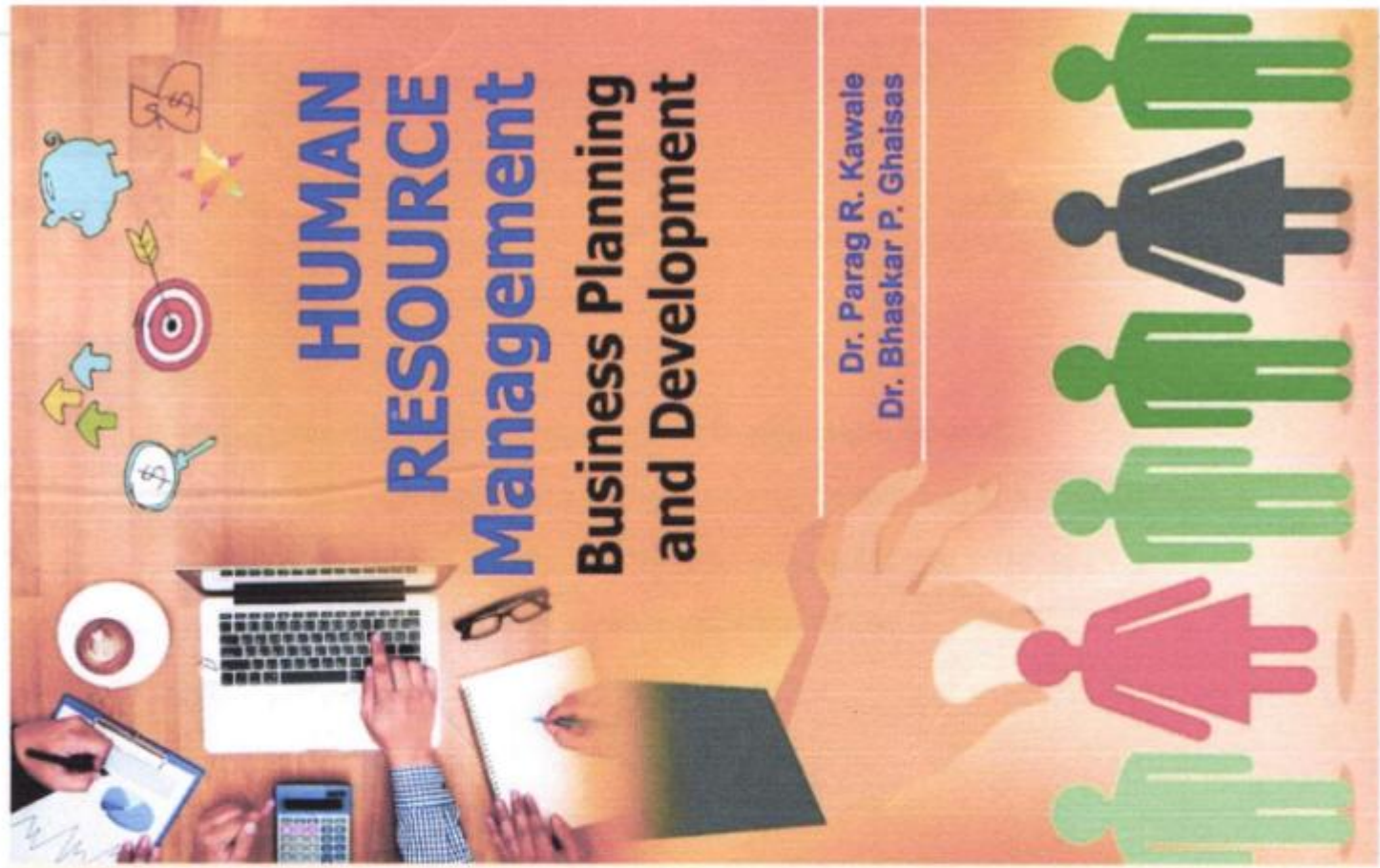
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1

Introduction

Human Resources Development is a framework for the expansion of human capital within an organization or (in new approaches) a municipality, region, or nation. Human Resources Development is a combination of Training and Education, in a broad context of adequate health and employment policies, that ensures the continual improvement and growth of both the individual, the organisation, and the national human resourcefulness. Adam Smith states, "The capacities of individuals depended on their access to education". Human Resources Development is the medium that drives the process between training and learning in a broadly fostering environment. Human Resources Development is not a defined object, but a series of organised processes, "with a specific learning objective". Within a national context, it becomes a strategic approach to intersectoral linkages between health, education and employment.

Human Resources Development is the structure that allows for individual development, potentially satisfying the organization's, or the nation's goals. The development of the individual will benefit both the individual, the organization, or the nation and its citizens. In the corporate vision, the Human Resources Development framework views employees, as an asset to the enterprise whose value will be enhanced by development, "Its primary focus is on growth and employee




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An Analytical Study of Institutional Infrastructure for Export Promotion: Issues and Implications

Prof. Dr. Siddhartha D. Nagdive

Vidyabharti College, Seloo, Dist:-Wardha (MS)

Introduction

The structure of Indian exports is typical of a developing economy. India has traditionally been an exporter of agricultural raw material and manufactures based on agricultural raw material. There has been continues decline in the share of agricultural raw materials and allied products. One reason for the relative decline of food, beverages and tobacco in the total exports is the increase in population and consequent increase in domestics' consumption of these goods. Accordingly, the export surplus in many traditional commodities like Tea, has not been increasing as much as the Government would have wished. In this connection the growing importance of certain product, cashew kernels, coffee and rice. Vegetable and fruits are also growing in importance.

Since 1960, under the impact of industrialisation exports of non-traditional items are gaining in importance. These items consist of engineering goods, handicrafts, which include pearls, precious and semi-precious stones and jewellery, iron and steel, machinery and metal manufactures, chemicals, readymade garments, fish and fish preparations. These goods constitute about 70 per cent of Indian export. The fact that some of these non-traditional item's such as engineering goods, handicrafts, ready-mades etc. have established themselves in the markets of even the most advanced countries show that they would continue to be part of India's exports in the years to come.

India is now in a position to take advantages of both favourable demand situation and attractive price situation in international market. While some commodities have tremendous exports potentials e.g. handicrafts, engineering goods, ready-mades, sugar, jute, yarn and manufactures, iron and steel have fluctuated widely. With the announcement of the new agricultural policy emphasis is being given to boosting the export of agricultural products. Rice export is gaining importance besides this fruits and vegetables and processed foods are also becoming significant in our exports.

The export promotion programmes Initiated by the Government

A Firm has to overcome several barriers in its process of internationalization. It, therefore, become necessary for an export manager to know about the institutional




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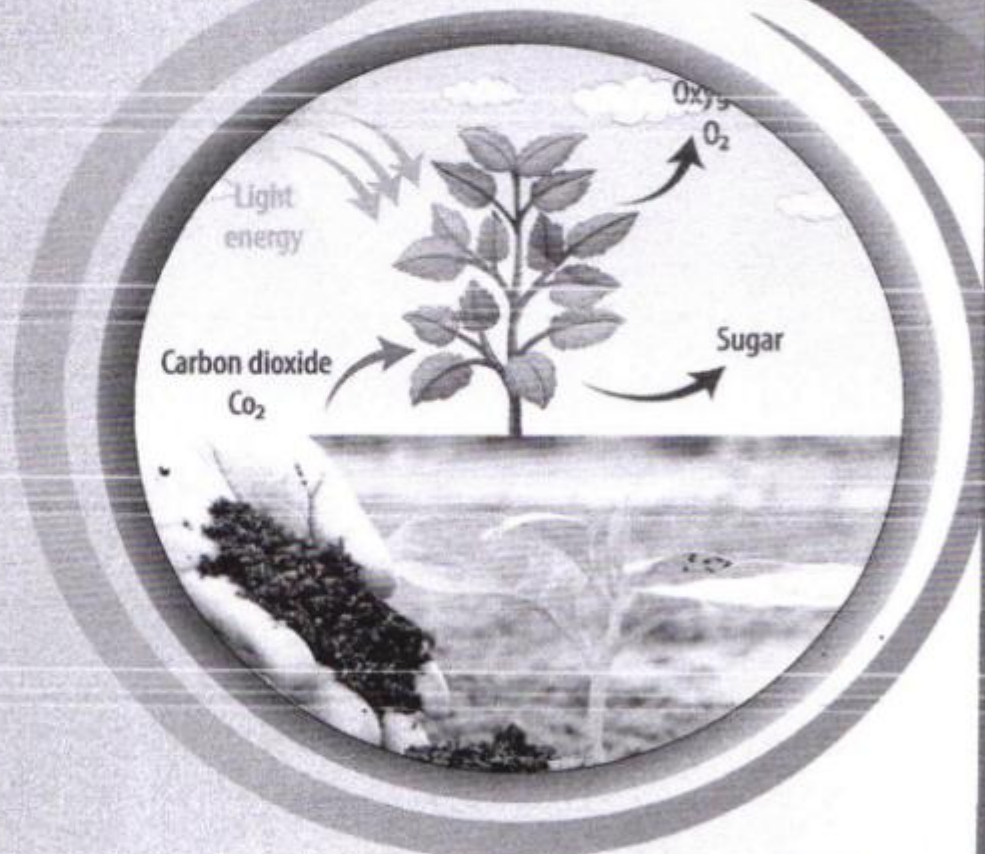
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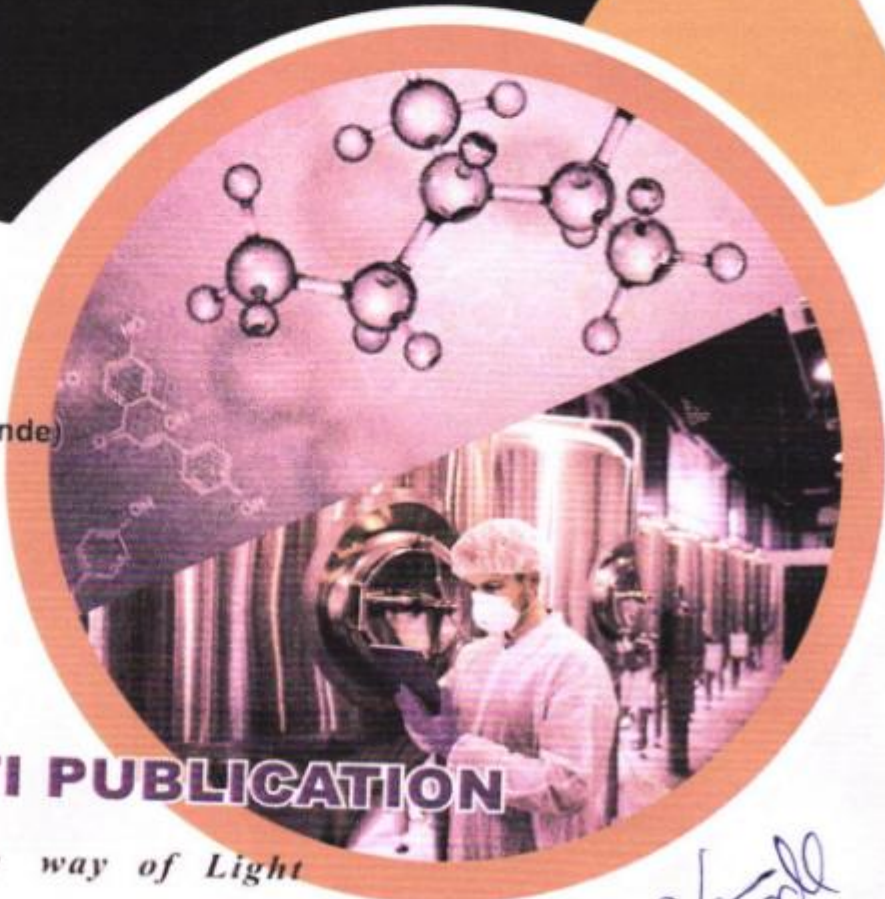
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PRODUCT PROMOTIONAL PLANNING IN EVENT MANAGEMENT: CURRENT SCENARIO

Prof. Dr. Parag R. Kawale

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Abstract

Event management is a need in approximately any kind of business - entertainment, finance, government, retail, fashion, sport, music and so their day-to-day job can be filled with an enormous range of stimulating challenges and unique situations. So, the role of Event Management increases day by day. To find profit and to survive in the rivalry Event Management should change according to the requirements of the Market. Therefore, to convene the requirements of the market lots of trends are innovated in the market. The study on awful planning is destroying good planning in management. This paper aims to study the challenges in event management and also to suggest some concept planning to deal with the crucial problem of managing and suggesting strategies for sustaining in disorderly times of Business.

Key Words: - Products, Event Management, Concept planning, Strategies, Promotional.

Introduction

Event management is the purpose of project management to the pattern and development of festivals, events and conferences, etc. Event management involves studying the particulars of the brand, identifying the object audience, devising the event conception, developing the logistics and coordinating the procedural aspects prior to essentially initiation the occasion. Post-event study and ensuring a revisit on speculation have become important drivers for the event industry. The recent expansion of festivals and events as an industry concerning the globe way that the management can no longer be ad hoc. Events and festivals, such as the immense

Games, have a huge collision on their communities and in some gear, the entire country. The diligence now includes events of each and every one size from the Olympics down to a banquet meeting for ten or more business people. Many industries, altruistic and interest groups will embrace events of some size to promote them, assemble business affairs, increase money or rejoice.

There are 5 Stages important in Event management.

- 1) Concept Planning
- 2) Research
- 3) Strategic Planning
- 4) Implementation
- 5) Evaluation

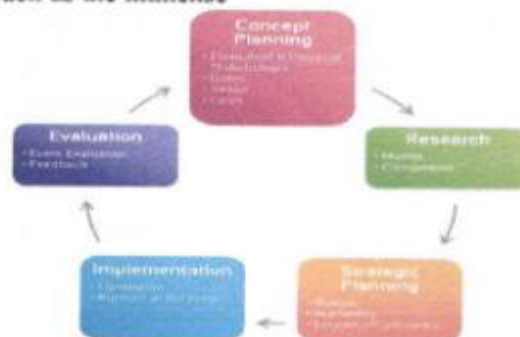


Fig. 01

I. Concepts of Event planning:

- A) Event Brief & proposal
- B) Event Stakeholder

- C) Event Dates
- D) Event Venue
- E) Event Budget/Cost



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EDUCATION PRACTICES IN POST-PANDEMIC
WORLD IN THE FIELDS OF ENGINEERING,
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CHAPTER – 13

THE POST-PANDEMIC IMPACT OF SOCIAL MEDIA NETWORKING SITES ON THE LIVES OF STUDENTS IN INDIA

Dr. Parag R. Kawale

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Abstract

Social media is integral for students and the people around the Universe to discuss their problems and suggest solutions. The fast growth of the internet and communication technology has made human beings quickly connect and interact with other groups of people. On other hand, Children are growing up with mobile devices and interactive social networking sites such as Facebook, Twitter, Blogs, Wikis, MySpace, YouTube, and Orkut which has prepared social media an essential portion of their life. In this paper author cover various aspects of social networking sites with their positive and negative effects, Review conducted by other peoples are also examined. Focus is on particular fields like health, education, society, and youth. In this article, the author presents the actual impact of the daily interactions of youth on social media.

Keywords: *Social Media, College Students, Education, Social Networking Sites.*

Introduction

Social media provides students with the capability to acquire additional valuable information; they attach with educational systems and further teaching groups that compose education suitable. It is very difficult to imagine a young generation who at least once a day did not check for updates on social networks and did not leaf through the news lines. The social network gets more opportunities for students and institutions to improve learning methods.

Today's world is a place where the personal connection is simplified by the various Platforms and channels available to us on the World Wide Web. School, College, and university students expend a lot additional of their instance on social media since there is an enormous amount of independence on these platforms. Students are liberated to do as



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Wellness

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Today, health is defined differently among experts, involving the whole person's relation to the total environment. Health encompasses the behavioural, social, and physical environments, policies and interventions, and access to quality health care. Wellness is more than simple physical health. We refer to wellness as an active process, a lifestyle, which reflects a positive quality of life. This wellness lifestyle emphasizes health-promoting behaviours such as daily physical activity, healthy eating, avoidance of harmful substances, and maintaining of healthy relationships. A lifestyle who acquires a good wellness enhances the overall health and well-being, which may increase one's life span, and provides a superior quality of life.

The assimilation of many different dimensions i.e. physical, physiological, psychological, emotional, spiritual and social that creates one's potential to live (quality of life) and work effectively and to make a significant contribution to society. Wellness reflects how one feels (a sense of well-being) about life, as well as one's ability to function effectively. Quality of life a term used to describe wellness an individual with quality of life requires a pleasant and supportive community.

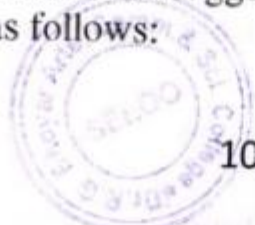
Dimensions of Wellness


Wellness can be given more importance than health, because it is the way of living happily. Wellness can be stated as conscious, inclusive, self – directed, evolving, holistic, positive and multidimensional nature. Wellness is fuelling your body, engaging your mind, and nurturing your spirit. Wellness is dynamic and continuous, therefore, no dimension of wellness functions are integrated and functioning harmoniously. Your environment (work, school, family, community) and your physical, physiological, psychological, emotional, intellectual, occupational, spiritual, as well as social dimensions of wellness are in every individual.

According to the different author's numbers of dimension are suggested differently some are given, five, six, even some suggested nine dimensions of wellness.

In this book author's suggested some important dimensions of wellness, which are as follows:

- Social Wellness




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Through spiritual wellness one can realise the peace and harmony in his lives.

Intellectual Wellness: Intellectual wellness can be defined as the ability to express new ideas and experiences with open mind which can be applied to take personal decisions, group interaction and community betterment.

Occupational Wellness: Occupational wellness can be defined as the ability of an individual to enjoy at workplace. The individual who enjoy doing his work or at his workplace provides oneself personal satisfaction and life enrichment that is consistent with your values, goals, and lifestyle.

Environmental Wellness: Environmental wellness inspires everyone to understand the relation between people and environment or surroundings i.e. air, water, plants, chemicals, noise, earths, etc. As everyone knows that we are responsible for the surrounding or nature that how we nurture the surrounding which knowingly or unknowingly affect our health and well-being.

Physical Wellness: Physical wellness can be defined as the ability to maintain a healthy quality of life. Physical health helps us to perform or carry out the daily activities without undue fatigue or physical stress. Every individual should adopt the healthy habits like regular exercise, balanced diet, proper hygiene, routine check-ups, etc., and should avoid the destructive healthy habits like consumption of alcohol, tobacco, drugs, etc.

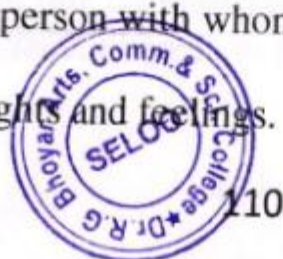
Way to wellness

Social

- The social aspect of wellness is to get involved in a variety of clubs and organizations both on and off campus in activities that interest you.
- Know when you're in an interrupted relationship.
- Balanced your academic responsibility and your social life.
- Give time to your family and peer ones.
- Interact with people from other religions, cultures, and backgrounds to learn about diversity.

Emotional

- Try to remain calm and quite even when difficulties arise.
- Find the thing that makes you feel less stressed, good management will help you to feel less stressed.
- Find a trustworthy person with whom you can freely express your feelings.
- Awareness of thoughts and feelings.



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“CYTOTOXIC STUDIES OF PLGA ENCAPSULATED *ANNONA MURICATA* EXTRACTS AS POTENT ANTICANCER COMPOUNDS”

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ABSTRACT

Cancer is a complex disease in which cells in a particular tissue are no longer responsive to the signals with in the tissue that regulates the division of the cells which results into the rapid division of the cells and formation of solid mass. In this research we focus on the leave of *Annona muricata* has anti-cancerous properties by synthesized the PLGA encapsulated nanoparticle as shown the Cell imaging refers to observing the change in cell morphology after treating it with test compounds. For cell imaging MDA-MB 231 cells are used MDA-MB 231 cells are triple negative breast cancer cell, triple negative means that they lack estrogen receptor, progesterone receptor and human epidermal growth factor receptor. These cells are '1' shaped initially when seeded into the plate. These test samples were added into the wells in variable concentration and plate was kept for incubation for one day after incubation images of cell were taken using inverted microscope. From this pictures it can easily see that the cells treated with Ethyl acetate extract has undergone apoptosis in larger quantity than the cells treated with neat ethyl acetate. Cell morphology of the Ethyl acetate extract cells is changing they have become round and are undergoing apoptosis. From these pictures we can conclude that this is most efficient in terminating cancer cells it is more effective.

Keywords: Cancer, *Annona muricata*

AB-81]

MICROSTRIP PATCH ANTENNA TO IMPROVE PERFORMANCE AND EMPHASIZE RESEARCH IN COMMUNICATION


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ABSTRACT

There have been many studies on microstrip patch antennas in recent years. Microstrip patch antennas have many advantages compared to conventional antennas. We get it from him Dual and circular polarization, Frequency Agility, broadband width flexibility, dual


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GREEN SYNTHESIS OF SELENIUM NANOPARTICLES FROM MORINGA LEAF AND ITS ANTIMICROBIAL ACTIVITY

P.K. Pantawane^{1*}, B. A. Mehere², K. S. Gour³, V. S. Jedhe⁴, S. D. Adole⁵

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ABSTRACT

Green nanotechnology is an emerging field fascinating researchers all over the world. Green synthesis is a reliable, sustainable, environmental friendly, pollutant free, simple, effective, cheap, rapid approach to synthesize metal nanoparticles which reduce harmful

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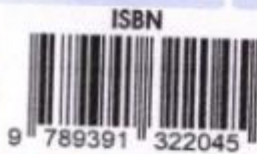
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effect of commonly used traditional methods like chemical and physical methods. The present study involves synthesis of selenium nanoparticles from *Moringa oleifera* leaf extract. The synthesized SeNPs confirmed by UV-VIS spectrophotometer and characterized by FTIR, SEM and XRD. In this plant based selenium nanoparticles synthesis method Moringa leaf extract play important role as reducing as well as capping agent. Further antimicrobial analysis of synthesized copper nanoparticles shows antibacterial activity on *E.coli*, *S.aureus* and antifungal activity on *Candida albicans* using agar well diffusion method.

Keywords: *Green Nanotechnology, reliable, sustainable, environmental friendly, nanoparticles, capping agent, antimicrobial*



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**EVALUATION OF PHYTOEXTRACT OF *LEUAS ASPERA*
AGAINST PHYTOPATHOGEN**

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ABSTRACT

A large portion of population from developing countries depends on the natural system of drugs for curing and preventing diseases. Many plant genera are used medicinally and plants are vital sources for potent and powerful drugs. The present study was conducted to screen the pharmacological activity extract of *Leuas aspara* for its antimicrobial activity against pathogenic fungi. Three different fungal isolates i.e. *Aspergillus flavus*, *Penicillium notatum*, *Fusarium oxysporum* and one bacteria *Pseudomonas aeruginosa* were tested for its antimicrobial activity. The collected leaf samples were powdered and the bioactive compounds were extracted. The antifungal activity was determined by using well diffusion method or by comparing the growth in the plate containing plant extract and the plate without plant extract. The inhibitory effect of ethanol extract was relatively high. Phytochemical analysis showed that the antimicrobial activity of leaf extract was due to the presence of phytochemical compounds like alkaloids, steroids, tripenoid, flavonoid, phenolic, triterpene compounds and tannins. This study also encourages cultivation of the highly valuable plant in large scale to extend the economic status of the cultivators and supply a support to use of the plant in traditional medicine. It also encourages forming the nanoparticles for various medicinal uses.

Keywords: Antifungal activity, Ethanol extract, Zone of inhibition, Phytochemical Compounds, Nanoparticles.

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**PREDATORY BEHAVIOUR OF ANTS (FORMICIDAE) WITH
RESPECT TO BIOLOGICAL CONTROL IN DIST. WARDHA,
MAHARASHTRA INDIA.**

Vaishali J. Badwaik

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ABSTRACT

Ants are scavengers and predators in several agricultural crop field. District wardha is part of vidarbha region having incredible agricultural field. In the present study, the predatory behaviour of ants on pest of crop field in district wardha have been studied.

**THE EFFECT OF CYMOXANIL 8% + MANCOZEB 64% WP
ON THE LIVER OF BROILER (*GALLUS DOMESTICA*)**

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Abstract:


In agriculture the huge use of fungicide may lead to the several health issues. The research was performed to show the effect of cymoxanil 8% + Mancozeb 64% wp on serum and liver of the broiler. 1.5 Kg broiler birds was taken and they divided into four groups that are fed on the contaminated food grains with 2% Cymoaxanil 8% + Mancozeb 64% (w/w) of locally made powder called "Crizol". The control group contains no contamination. After 24 hrs the birds were sacrifice by decapitation and the liver extirpated. Analysis of liver serum reveled that the increase in the lipid concentration. Increase in serum cholesterol and triglyceride, significantly the level of the HDL and LDL.

Keywords: Cymoxanil + Mancozeb, Fungicide, Broiler, Biochemical effect, serum.

Introduction:

There is increase in the use of fungicide in the agriculture because of the several fungus diseases occurs in the crops (Ethelbert *et al.*, 2017). In various agricultural and domestic use of fungicide is the source to introduce in environment. Use of fungicide leads to affect the humans and domestic animals. Biomagnification of the fungicides in the food chain causes several health issues in humans and animals (Ethelbert *et al.*, 2012). Propensity of domestic poultry birds to pick up contaminated food from environment stands for a risk of poisoning (Ezeji *et al.*, 2011). As all the fungicide the cymoxanil and mancozeb is also used to prevent fungal attacks on crops. The contact of these fungicides could be resulting in death due to coronary disease. This study reveled that the toxicological effect of cymoxanil and mancozeb on broiler using some biological biomarkers (Ethelbert *et al.*, 2017).




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English Language Teaching and Learning in the Present Context : Issues, Practices and Challenges



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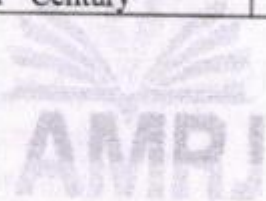


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The competence and limitation of English Language Teaching: Methods and Techniques in Indian Classroom.

Dr. Vaibhao Bhumesh Pimpale

Head & Assistant Professor, Department of English

Dr. R. G. Bhoyar ACS College, Seloo

Email: vaibhaopimpale@gmail.com

Abstract:

Methods and techniques for English language teaching have shed insight on particular philosophy of linguistic learning and preparation. Up till now, there have been brainstorming debates regarding their utility and applicability. To have a sound understanding and preparation for future usage of English language teaching, this research article analyses the competence and limitation in the field of English language teaching, some of prominent approaches and techniques as the Communicative English Language Teaching approach, traditional Grammar-translation approach, Direct English Language Teaching approach, and bi-lingual English Language Teaching approach in the Indian classroom.

Keywords: English language teaching methods and techniques; limitation; competence.

1. Introduction

In the Indian classroom, teaching of English language has an extensive, enthralling, but somewhat contentious legacy in which a question about English language teaching methodology or techniques has primarily engaged over the previous hundred years in the Indian classroom. The various predominant or used techniques or methods of English language teaching in the classroom are the Communicative Teaching Method, Bi-lingual Method, Direct Method, Grammar-translation Method, etc. These are mostly used methods or practices while English teaching in the classroom because a method is more than a single approach or methodology, however ill-defined it may be. These methods arose largely from social, economic, political, or educational contexts, probably in part from contextual understanding (novel variations in English dialectical concepts and behavioural components insights on reading comprehension), and partly from actual skills, empiricism, and creativeness as part of language analytical frameworks. In short, ultimately they characterize complex principles of English language teaching towards various degrees, although it is apparent that they are distinguished by a compulsive focus on specific features as the fundamental problem of language learning and teaching in English in the Indian classroom.

2. Limitations and Efficiency Approaches and Techniques of English Language Teaching in the Indian Classroom.

2.1 Communicative Teaching Approach of English Language Teaching

The communicative mechanism was proposed in English language teaching under the influence of British applied linguists (such as John Firth and M. A. K. Halliday, who stressed language's functional and communicative potential), sociolinguistics (Dell Hymes and W. Labov), and some philosophy (J. Austin and J. Searle). It recognised the need of emphasizing language proficiency above structural mastery.

This constructivist English teaching technique attempts to make communication skills as the primary intention of teaching English and provides English language teaching processes for the basic linguistic practises that recognise the connection of verbal and nonverbal communiqué. It encourages activities that necessitate authentic correspondence and the accomplishment of essential activities. It thinks that learning English is dependent on learners

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understanding. To use such strategies efficiently and successfully in practice of English language teaching, specialists ought to believe the subsequent interrogation: who the students are, what their existing ability to acquire expertise in foreign tongue is, what sorts of tongue having interest to learn, and in which conditions they want to use the English language in the future perspective, and so forth. In a nutshell, no any particular approach can ensure success in the scenario of teaching the English language in the Indian classroom.

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Patriotism in World's Literature in English



Editors

Dr. Rupesh P. Rede

Dr. Rajesh G. Maske

Dr. Manohar A. Wasnik




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Dr. Rajesh G. Maske

Dr. Manohar A. Wasnik

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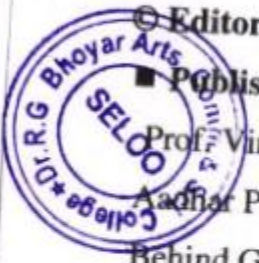
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PREFACE

On the great occasion of 75th year of India's Independence Day, it is really a matter of pride and great pleasure for us to write a preface to the edited book "Patriotism in World's Literature in English"

George Orwell, in his famous essay Notes on Nationalism, distinguished patriotism from the related concept of nationalism by saying...

"By 'patriotism' I mean devotion to a particular place and a particular way of life, which one believes to be the best in the world but has no wish to force upon other people. Patriotism is of its nature defensive, both militarily and culturally. Nationalism, on the other hand, is inseparable from the desire for power."

The abiding purpose of every nationalist is to secure more power and more prestige, not for himself but for the nation or other unit in which he has chosen to sink his own individuality.

Several surveys have tried to measure patriotism for various reasons, such as Correlate of War project which found some correlation between war propensity and patriotism. The results from different studies are time dependent. For example, patriotism in Germany before World War I ranked at or near the top, whereas today it ranks at or near the bottom of Patriotism survey.

An excess of patriotism in the defense of a nation is called chauvinism; another related term is jingoism.

Various academicians and research scholars have contributed their research papers in this chapter in book. They have taken great efforts to give justice to their topics. It means they have highlighted different perspectives of the same issue in their own way. It will open vistas in this domain and widen the scope of the study. The book may also be helpful to the new researchers and the learners of the topic to improve their thinking potential.

The present study beams the imprint of many intellectuals who have directly or indirectly made a significant contribution to its completion. First and foremost is the management of the three colleges for their continuous inspiration and moral support. Then last but not the least all the honorable Principals who gave their kind and helpful hand and guided us at every step without whom this work could not have been completed

Dr Rupesh Prakash Rede
 Dr. Rajesh G. Maske
 Dr. Manohar A. Wasnik



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Class Identity: A Marxist Re-reading of Vikas Swarup's *Six Suspects*
Dr. VAIBHAO BHUMESH PIMPALE

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Abstract:

Vikas Swarup is a well-known modern Indian English writer who rose to international prominence after winning several prizes for his debut novel Q&A (2005). *Six Suspects* (2008) Swarup's second novel, has received a lot of positive feedback from critics. In his second work, he slammed India's current governmental and societal corruption, as well as economic injustice. *Six Suspects* offers a sophisticated plot in which one of the six protagonists achieves economic freedom through shady methods. The class identity of a society that abuses the underprivileged at many levels is examined in this study. Munna Mobile, who represents the impoverished in this tale, lives in a slum outside Delhi with his mother and blind sister. Projects him as an infamous guy known for stealing cell phones, who has a lot of goals and is a firm believer in getting money since he believes that money always gives him the power to have everything. Munna Mobile comes from a poor household and has had to face several obstacles before settling down in life. So through this paper tries to examine, how Marxism approach shows class identity consciousness in Viaks Swarup's *Six Suspects*.

Introduction:

Marxism holds that current societal class divisions are artificial and that they are utilised to oppress those in the under classes. Raman Selden, in his book *A Reader's Guide to Contemporary Literary Theory* briefs this principle of Marxism as follows: "People have been led to believe that their ideas, their cultural life, their legal systems, and their religions were the creations of human and divine reason, which should be regarded as the unquestioned guides to human life. Marx reverses this formulation and argues that all mental (ideological) systems are the products of real social and economic existence" (23). True, in the guise of caste, religion, and economy, an illusory wall is erected around the subjugated. The struggle for survival makes the poor people forget even their family and everyday life. Through day to day life, poor people hardly fulfil their fundamental needs. They have no economical, social or political rights to

think beyond that. Their inner consciousness always deprived by the rich consciousness. In that concern, all novels of Vikas Swarup find plenty of incidents to have class conflict and identity.

About Author:

Vikas Swarup, a successful diplomat, has earned a name for himself via his writing. He has received several journalistic and literary honours, as well as a global reputation as a prolific writer of three novels, books, short stories, newspaper and magazine pieces, and book reviews in a wide variety of periodicals. Swarup's Q&A reveals that the protagonist is from the ghetto and has never been a father. Indians have a strong belief in fate as part of their culture. The tales are developed in an innovative structure by Swarup.

About Novel:

Six Suspects, Vikas Swarup's second novel, was released in 2008 and is a criminal thriller. He depicted it as a murder mystery explored via the life structures of a murder victim. This novel paints a colourful picture of modern India. It tells about the many divisions of national culture. It depicts a crooked governmental system that has subtle but major flaws. It dissects and condemns the corrupt governmental bureaucratic system, as well as the general public's displeasure with misconduct. It alludes to a have-not revolt that would eventually destroy constitutional frameworks. Swarup emphasises several issues in *Six Suspects*, including slums, poverty, and the difference between wealthy and poor, unemployment, begging, and so on, through Munna, one of the suspects in Vicky's murder.

Analysis Novel:

The first issue that Swarup addresses is the plight of slum dwellers in Indian cities. Indian cities gleam with high-rise palaces of the wealthy, yet there are also filthy slums hidden beneath these sky-touching structures, tarnishing the splendour of metropolitan India. These slum inhabitants are in deplorable circumstances, and they are little better than animals. As Munna says: "We lived in the Sanjay Gandhi slum in a makeshift hut made with corrugated metal sheets. We had no electricity and no water. Mother cooked with cow-dung patties on a mud hearth which used to fill the entire hut with smoke and make my eyes water. Now we have a pukka one-and-a-half room house, with a paved brick fireplace, a ceiling fan and even cable TV (Which I have siphoned off the temples connection) of


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their parents would object because they were from different castes. They consider eloping as an option, so they construct a marriage plan. Vicky Rai issued a threat to Munna. He says, "Listen to me carefully. My name is Vicky Rai. And you have dared to raise your eyes to my sister Ritu. Now I will carve you up like a pig, I will break every bone in your body and then I will feed your carcass to my dogs. Get it." (SS 218) Munna and Ritu were often threatened, but they were in love and didn't care about the repercussions. They had no choice but to elope. They make arrangements to flee, deciding to travel to Mumbai, which they believe is a safe haven for them. Ritu informs Munna that her brother, Vicky Rai, is throwing a big party on March 23 to celebrate his exoneration. She'll think up a way to get out of the homestead house, where there will be roughly 500 people. She claims she'll emerge at 11 p.m. at the entry gate, where she'll meet Munna, and the two of them will take a cab to Mumbai. Munna's mother, on the other hand, was terrified when she learned of their elopement plans since she despises Jagannath Rai's family. She is aware of that family's heinous acts. In front of Munna, she reveals the secret. After hearing of his father's murder, Munna was consumed by a vengeful rage. He also desired vengeance for Ritu's misery as Vicky Rai, whom he and his father tormented. Unfortunately, several hoodlums showed up at his house that night and snatched the briefcase of cash he discovered in a trash can. Brijesh, who was a well-known smuggler, was the owner of the suitcase. Munna couldn't elope since her briefcase had been taken. One thought persisted in his thoughts at all times, and that was "revenge." When the thugs arrived to collect their money back, they raped Champi, his blind sister, right in front of his eyes. This episode demonstrates slum dwellers' powerlessness, as their sisters and mothers are raped in front of their eyes, and they are forced to remain silent because they are weak and powerless. Unfortunately, this is the true face of metropolitan India.

In "Six Suspects," Swarup also addresses the issue of unemployment. Munna began his profession as a mobile thief alongside his friend Lallan to unemployment, earning the nickname Munna Mobile. For a period, he worked as a family servant for Mr Dinesh Pratap Bhusiya. Despite this, he was unable to survive for an extended period of time. In the piece, the author depicts the tense connection that exists in metropolitan culture between servants and bosses. Because servants are frequently exploited by their bosses and do not receive fair salaries, they seek vengeance.

Conclusion:

Vikas Swarup poses a serious inquiry concerning the possibility of a shift in the current social order. As a societal watcher, he appears gloomy about a probable rebound. As a result, Swarup highlights the various oppressive forces that further segregate individuals caste based, religion, and economics. In addition, the author cautions that if quick attention is not paid to the current class separation, economic injustice, political persecution, and judiciary failure, societal upheaval may result. As a result, a Marxist re-reading of Swarup's novel *Six Suspects* based on class identification may be found in *Six Suspects*.

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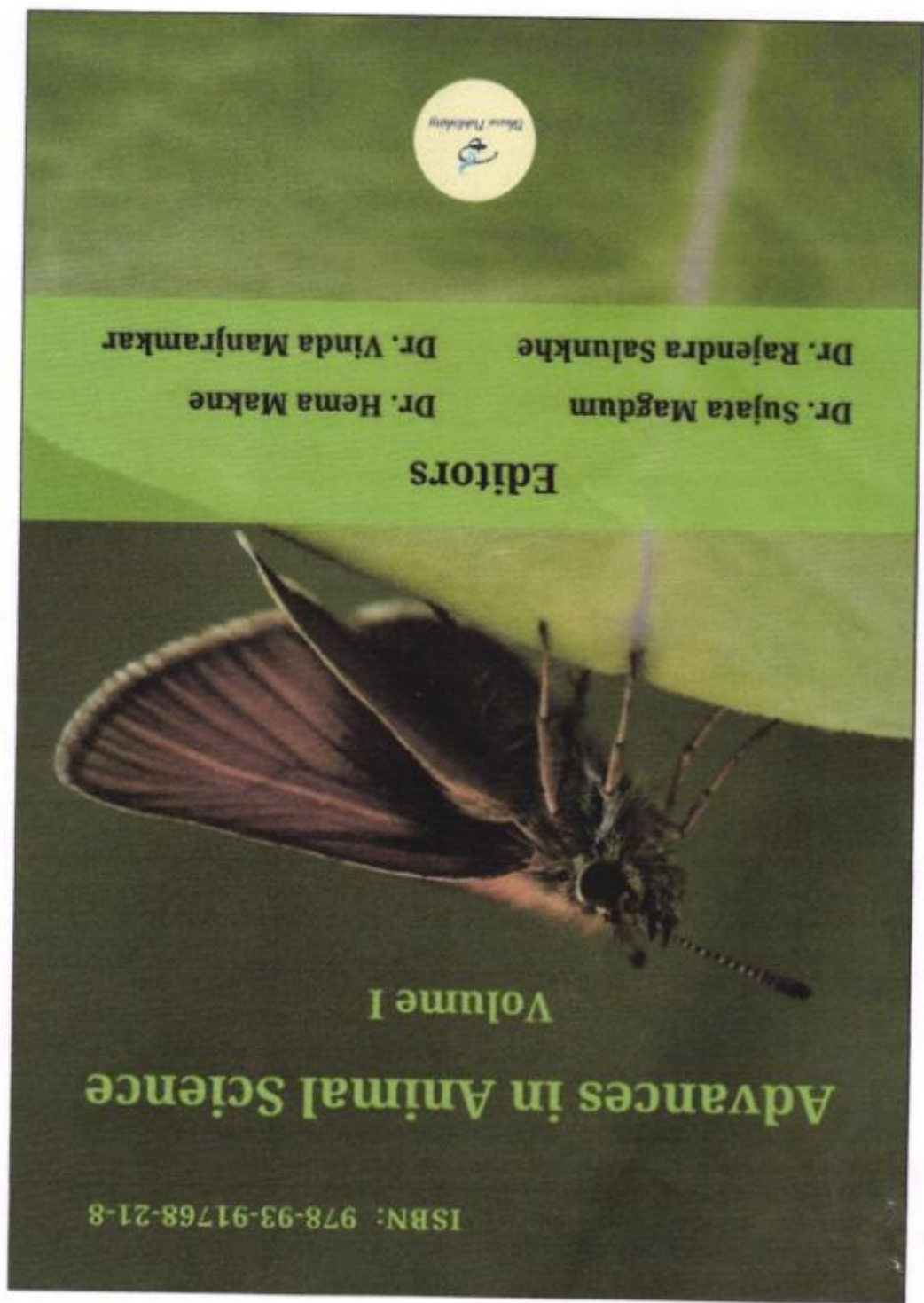
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Volume I

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BIOINSPIRED SYNTHESIS OF METALLIC NANOPARTICLES AND APPLICATIONS

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Corresponding author E-mail: vaishalijbadwaik@gmail.com

Abstract:

Bioinspired synthesis of metallic nanoparticles is an eye-catching approach towards green nanotechnology. Metallic nanoparticles and their synthesis have significantly increased, but involvements of toxic chemicals and energy requirement limits the alternative synthesis of nanoparticles (NPs). Whereas, a recent approach to synthesize nanoparticles from the microorganisms and plants have evolved greatly, as most of the biological entities are structurally similar to the nanomaterials (NMs). The NMs are very useful in various *in vivo* and *in vitro* biomedical research and applications, thus, the synthesis of those are in high demand. This chapter summarized the green synthesis of nanoparticles, its eco-friendly approach, along with antioxidant, antimicrobial, therapeutic and diagnostic applications.

Keywords: Green synthesis, Metallic Nanoparticles, Antimicrobial, Diagnostic Applications

Introduction:

Nanobiotechnology is a biology-based, application-oriented frontier field of a hybrid research of nanoscience and biotechnology disciplines. The nanobiotechnology has become an attractive focus in current green research towards sustainable development, but its simultaneous adverse impact needs to be studied on the same side. The various metal nanoparticles, synthesised by chemical and physical method have shown antimicrobial properties, include silver nanoparticles (AgNPs) (Duran *et al.*, 2007; Guzman *et al.*, 2009; Guzman *et al.*, 2012). Growth of Gram-positive and Gram-negative bacteria could be effectively inhibited by silver and gold nanoparticles (Lima *et al.*, 2013). Due to the optical property gold nanoparticles (AuNPs) have been used as photothermal agents for the thermal ablation of solid tumors. Gold nanorods (GNs) have also shown promising results in biosensing, drug delivery, photothermal therapy and imaging (Krishnaraj *et al.*, 2010).

In cancer therapy, ruthenium play a very important role as an anticancer agent, as it has the ability to cause apoptosis of tumor cell (Sava and Bergamo, 2009; Ang and Dyson, 2006).




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पोषकांचा

भारतामध्ये पीक विमा योजना लागू करण्याची सुरुवात स्वातंत्र्यपूर्व काळात करण्यात आली. मात्र स्वातंत्र्यानंतर प्राप्तीनंतर लगेच पीक विम्याच्या कामास सुरुवात झाली. पीक विमाविषयी संसदेमध्ये सन १९४७ ला वर्धा करण्यात आली. १९४८ मध्ये भारत सरकारच्या कृषी मंत्रालयाद्वारे भारतीयतील पशु विमा व कृषी विमा स्थितीचा अभ्यास करण्यासाठी श्री. जी. एस. ट्रिपोलकर यांना नियुक्त करण्यात आले. त्यांनी आपला अहवाल १९४९ मध्ये दिले. त्यांच्या अहवालानुसार पायालट पीक विमा योजना सर्व राज्यासाठी सुरू करण्यासाठी सुरुवात करण्यात आली. यानंतर सन १९६५ मध्ये भारत सरकारने एक पीक विमा विधेयक संसदेत मांडले आणि एक मॉडेल पीक विमा योजना सुरू केली. परंतु राज्याची आर्थिक कारणांमुळे त्या योजनेस पाऊलले. सन १९७२-७३ पासून वर्षाविरत स्वच्छता पीक विमा योजना भारतीय जीवन विमा महामंडळाच्या सर्व साधारण विमा विभागात ४४ कंपन्यांच्या जातीसाठी एक पीक विमा योजना सुरू केली. ही योजना सन १९७८-७९ पर्यंत देशात सुरू होती. खरीप १९७९ पासून पायालट पीक विमा योजना प्रायोगिक तत्वावर सुरू करण्यात आली. पायालट पीक विमा योजना ही १९८५ पर्यंत चालू होती. यानंतर १९८५ पासून व्यापक पीक विमा योजना सुरू करण्यात आली. सध्या संशोधन क्षेत्रात वर्धा जिल्ह्यातील शेती पीक विम्याच्या स्थितीचा अभ्यास करण्यात आलेला आहे.

बीजसंपद - मुद्रा, विमा, शेती, पशुपालन, अन्नधान्य व रोजगार.

प्रस्तावना

भारत देशातील मुख्य व्यवसाय कृषी हा आहे. भारतीय घटुघाणे उदरनिर्वाहाचे सर्वांत महत्त्वाचा व्यवसाय शेती हा आहे. कृषी क्षेत्रामध्ये शेती बरोबरच पशुपालन हा जोड व्यवसाय म्हणून केला जातो. भारतीयतील कृषी उत्पादनाचा सकल देशीय उत्पादनातील १६ टक्के हिस्सा हा कृषी क्षेत्राचा आहे. भारतीयतील ६० टक्के जमीन लागवडी योग्य आहे. जगातील एकूण लागवडीखालील क्षेत्राची भारतीय लागवडीखालील क्षेत्राचा दुसरा क्रमांक लागतो. सकल देशीय उत्पादनाचा कृषी क्षेत्राचा हिस्सा कमी होत असताना दिवस वेत आहे. परंतु कृषी देशातील अर्थव्यवस्थेचा मुख्य घटक आहे. भारत देशात मोठ्या प्रमाणात खाद्यान्न, नैऋत्यीय, दाळी, उत्पादन केल्या जाताना, परंतु त्यामध्ये मोठ्या हिस्सा १२२ करोड लोकंमध्ये पोटू उपभोगासाठी वापरला जातो. भारत देशातून अधिशेष भाव्य व कृषी उत्पादन निर्यात केले जाते. भारत देशातून मोठ्या प्रमाणात कृषी उत्पादन झुट, चहा, तंबाखू, कापूस, मसाले, साखर इ. निर्यात केले जाताना. त्यामुळे विदेशी मुद्रा वाढण्यास मदत होते. भारताचा कृषी उत्पादनाच्या निर्यातीबाबत जगात ७ वा क्रमांक लागतो.

व्यापक पीक विमा योजनेमधील समस्या आणि त्यामध्ये असणाऱ्या सुधारणेच्या संघेदून भारत सरकारने १९९८-१९९९ च्या अर्थसंकल्पात नविन पीक विमा योजनेची घोषणा केली. यानेच प्रधानमंत्री याने २२ जून १९९९ रोजी राष्ट्रीय कृषी विमा योजनेची घोषणा करून शेती उत्पादनाच्या जास्तिव व्यवसायातून इतिहासात एक नविन अध्याय जोडून ही योजना देशात सार्वत्रिक केली.



१९९९-२००० च्या रब्बी हंगामापासून विद्यमान व्यापक पीक विमा योजनेने विसर्जन करून राष्ट्रीय कृषी विमा योजना भारत सरकारने १६ जुलै १९९९ रोजी शासकीय अध्यादेश करून या योजनेची अंमलबजावणी सुरू केली.

संशोधनाची उद्दिष्टे

१) शासनाच्या पीक विमा योजनेची कृषी विभागातील स्थान जाणून घेणे.

२) शासनाच्या पीक विमा योजनेची अंमलबजावणी अभ्यास करणे.

जागतिक स्तरावरील पीक विमा योजनेचा

जागतिक स्तरावर पिकांच्या या क्षेत्राच्या अंमलबजावणी पीक विमा योजना चालू आहेत. पीक विम्यामध्ये रशिया, जपान, अमेरिका हा देश प्रामुख्याने अग्रगण्य आहेत. स्पेन देशात कृषी विमा योजना सन १९२० मध्ये सुरू करण्यात आली. या देशात सन १९७० पर्यंत वेगवेगळ्या विमा योजना लागू केल्या. स्पेन मध्ये सार्वजनिक क्षेत्र व खाजगी क्षेत्रातून पिकांतीवर विमा योजना लागू केली गेली. या

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१९९९-२००० या वर्षी टॅक्सासमध्ये विद्यमान व्यापक पीक विभा योजनेचे विस्तारित करून राष्ट्रीय कृषी विभा योजना भारत सरकारने १६ जुलै १९९९ येथी राज्यातील अध्यादेश काढून या योजनेची अंमलबजावणी सुरू केली.

संशोधनाची उद्दिष्टे

- १) शासनाच्या पीक विभा योजनेचे कृषी विकासाला महत्त्व जाणून देणे.
- २) शासनाच्या पीक विभा योजनेचा अधिकृत अध्याय करणे.

सांख्यिक तल्ल्यातील पीक विभा योजना

जागतिक स्तरावर कोणत्या वा कोणत्या स्वरूपात पीक विभा योजना लागू आहेत. पीक विभायामध्ये रशिया, जपान, अमेरिका हे देश प्रामुख्याने अग्रसर आहेत. त्यांचे देशात कृषी विभा योजना सन १९२० मध्ये सुरू करण्यात आली. या देशात सन १९७० पर्यंत वेळोवेळी विभा योजना लागू केल्या. त्यांचे मध्ये सार्वजनिक क्षेत्र व खाजकी क्षेत्रातील गुंतवणुकीवर विभा योजना लागू केली गेली. या पद्धतीमध्ये शेतकरी व्यवस्थापित किंवा सरकारी संस्था अशी व्यवसायिक संघटनांद्वारे पीक विभा योजना पेटू शकते. कायद्यात साहाय्य ऐच्छिक स्वरूपाचा असतो. रशियामध्ये पीक विभा योजना सन १९२३ पासून अंमलात आली. सन १९२९ मध्ये दक्षिण आफ्रिकेमध्ये शेतकरी समुहाने एक मंडळ स्थापन करून पीक विभा सुरू करण्यात आला. या पीक विभा योजनेत अनेक जोखमीचा समावेश करण्यात आला आहे. वैयक्तिक/प्राकृतिक, मानवनिर्मित इ. जोखमीचा समावेश केला गेला आहे.

राष्ट्रीय राज्य अमेरिकेमध्ये सन १९३८ मध्ये संघराज्य पीक विभा योजना अधिनियम मंजूर करण्यात येऊन संघराज्य पीक विभा महामंडळाची स्थापना करण्यात आली. या महामंडळामार्फत शेती उत्पादनातील आर्थिक संकटापासून शेतकऱ्यांचे संरक्षण केल्या जाते. जपानमध्ये पीक विभा योजनेची सुरुवात सन १९४९ मध्ये करण्यात आली होती. जपानमध्ये सर्व पीकसाठी अनिवार्य स्वरूपाचा पीक विभा योजना आहे. त्यामुळे तेव्हा काही प्रदेशांमध्ये संकटाचा प्रभाव झाल्यास त्या क्षेत्राचा मोठी मदत करणे शक्य होते. फिलीपाईन्स देशामध्ये पीक विभा योजनेची अंमलबजावणी सन १९७८ मध्ये सुरुवात केल्या फिलीपाईन्स पीक विभा महामंडळामार्फत केली जाते. श्रीलंका या देशात सर्वप्रथम १९५८ मध्ये प्राथमिक पीक विभा योजना घ्यायला सुरुवात करून भारताच्या पीकसाठी सुरू केली. नंतर पीक विभा योजनेत इतर पीकसाठी विभा संरक्षण देण्यात आले.

शेती व्यवसायाचे महत्त्व

भारतामध्ये पुरातन काळापासून व आजही कृषी क्षेत्राचा अत्यंत महत्त्व आहे. कारण भारताची राष्ट्रीय अर्थव्यवस्थाच कृषीवर आधारित आहे. अर्थव्यवस्थेचा कणा म्हणजे कृषी असे म्हटले जाते. राष्ट्रीय उत्पादनात भारतामध्ये शेती व इतर प्राथमिक व्यवसायातून मिळणारा हिस्सा सन १९७५-७६ मध्ये ४३.०१ टक्के इतका होता. वैयक्तिक आपली म्हणजे अर्थवर्ष, दुग्धाल, अतिवर्षात यापुढे शेती उत्पादनात फरकदार दिसतात. तरीही शेती हा राष्ट्रीय उत्पादनाचा सर्वात प्रमुख स्रोत आहे. प्रगत राष्ट्रात एकूण राष्ट्रीय उत्पादनातील वाटा २ ते ६ टक्केपर्यंत असतात. इंग्लंडमध्ये शेतीचा राष्ट्रीय उत्पादनातील कृषी वाटा ३.१ टक्के तर अमेरिकेत तो ३.२ टक्के, ऑस्ट्रेलियामध्ये हे प्रमाण ७.६ टक्के इतके आहे. भारताने आजही राष्ट्रीय उत्पादनातील कृषी क्षेत्राचा वाटा १४ ते १५ टक्केपर्यंत असतो. सन २०१०-११ मध्ये १४.२ टक्के इतका होता. २०१४-१५ मध्ये हा वाटा १७.४ टक्के इतका होता. म्हणजेच कृषी क्षेत्र देशाच्या अर्थव्यवस्थेत महत्त्वपूर्ण भूमिका बजावते. या क्षेत्राचे महत्त्व पुढीलप्रमाणे.

- १) भारतासारख्या अतिरिक्त लोकसंख्येला अन्नधान्याची उपलब्धता शेतीमधूनच होते.



- २) भारताच्या राष्ट्रीय औद्योगिक क्षेत्रासाठी लागणारा मोठ्या प्रमाणात कच्चा साठा हा शेतीमधूनच निर्मित होतो.
- ३) सार्वजनिक रोजगार निर्मिती क्षेत्र म्हणून कृषीकडे पाहिले जाते.
- ४) भारताच्या राष्ट्रीय उत्पादनात पूर्वी ४५ टक्के वाटा तर आजही २७ टक्के वाटा हा कृषी क्षेत्राचा आहे.
- ५) देशातील विद्युत वाजारापेक्षांचे अस्तित्त्व कृषी क्षेत्रावर आधारित आहे.
- ६) भांडवल निर्मितीसाठी अधिकडे कृषी क्षेत्राचा वाटा द्यायला येतो.
- ७) भारताच्या निर्यातीत कृषी क्षेत्राचा उच्च मोठा वाटा द्यायला येतो.
- ८) भारतीय लोकसंख्येतील ७२ टक्के प्रत्यक्ष व २५ टक्के अप्रत्यक्ष लोक या क्षेत्रावर अवलंबून आहेत.
- ९) भारतीय अर्थव्यवस्था अधिक गुंतागुंतीत राहण्यासाठी कृषी क्षेत्राची सार्वजनिक मदत होते.
- १०) देशाच्या आर्थिक विकासाला कृषी क्षेत्राचे विशेष महत्त्व आहे.
- ११) भारत देशातील प्रमुखीतून संयुक्तराज्यी कृषी क्षेत्राची महत्त्वाची कार्ये आहेत.

शेती क्षेत्राचा विकास करणे हे राष्ट्रीय कृषी क्षेत्रातील काही महत्त्वपूर्ण विषयांमध्ये अति उच्च निरक्षरतायुक्त पोषण


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- १७.४ टक्के इतका होता. म्हणजेच कृषी क्षेत्र देशाच्या अर्थव्यवस्थेत महात्त्वपूर्ण भूमिका बजावते. या क्षेत्राचे मातब पुढीलप्रमाणे.
- १) भारतासारख्या अतिरिक्त लोकसंख्येला अन्नधान्याची उपलब्धता रोलीमधूनच होते.



- २) भारताच्या संपूर्ण औद्योगिक क्षेत्रासाठी लागणाऱ्या मोठ्या प्रमाणात कच्चा माल हा रोलीमधूनच निर्मित होतो.
- ३) सर्वाधिक रोजगार निर्मिती क्षेत्र म्हणून कृषीकडे पाहिले जाते.
- ४) भारताच्या राष्ट्रीय उत्पन्नात पूर्वी ४५ टक्के वाटा तर आताही २७ टक्के वाटा हा कृषी क्षेत्राचा आहे.
- ५) देशातील विस्तृत वायारंगळीचे अस्तित्त्व कृषी क्षेत्रावर आधारित आहे.
- ६) चाँडवाल निर्मितीसाठी अल्पकडे कृषी क्षेत्राचा वाटा दिसून येतो.
- ७) भारताच्या निर्यातीत कृषी क्षेत्राचा चार मोठा वाटा दिसून येतो.
- ८) भारतीय लोकसंख्येसाठी ७२ टक्के प्रत्यक्ष व २५ टक्के अप्रत्यक्ष लोक या क्षेत्रावर अवलंबून आहेत.
- ९) भारतीय अर्थव्यवस्था अधिक यशियान होण्यासाठी कृषी क्षेत्राची सर्वाधिक मदत होते.
- १०) देशाच्या आर्थिक विकासात कृषी क्षेत्राचा विशेष महत्त्व आहे.
- ११) भारत देशातील पर्यावरण सन्तुलनासाठी कृषी क्षेत्राची महत्त्वाची कामगिरी आहे.

रोली क्षेत्राच्या विकासकारण जगातील वगळी राष्ट्र विकासाच्या अति उच्च शिखरापर्यंत पोहचले आहेत. इंग्लंड, जर्मनी, जपान व रशिया इत्यादी देशांच्या विकासांमध्ये रोली क्षेत्राने महत्त्वाची भूमिका बजावून आतम विकासासाठी सद्दुष्ट आधार निर्माण केला आहे.

वर्षा विलंबातील रोली व समस्या

महासमुद्र सान्याची निर्मिती सन १९५० मध्ये झाली तेव्हापासून वर्षा हा महासमुद्राच्या विदर्भ विभागातील एक भागास जिल्हा असून कृषीवर विस्तृत असणाऱ्या रोजकऱ्यांचे प्रमाण ७५ टक्के आहे. नैसर्गिक आपत्तमुळे रोली उत्पादनात अनिश्चितता आहेत. येथे रोली उत्पादनातील अनिश्चितता दूर करण्यासाठी पीक विभा योजनेची आवश्यकता आहे. या ठिकाणी पडणाऱ्या पावसाचे प्रमाण खूपच कमी असून येथील रोली ही पूर्वापणे निरसवीर अवलंबून आहे. रोजकऱ्यांकडे रोलीत सुधारणा करण्यासाठी पुरेसे चाँडवाल नाही. चाँडवालासाठी त्याचा खाजवी सावकासकडे जावे लागते. त्यास कर्जाची परतफेड करण्यासाठी त्यास काही जमीन विकासाची लागणे. अशा परिस्थितीत पूर्वीत हंगामातील पीन, खते, किटकनाशके वेग्यासाठी सुद्धा त्यांच्याकडे पुरेसे आर्थिक पाठबळ नसते. यसाठी पीक विभा योजना एक बरदान उरते. पीक विभा योजना रोली उत्पादनातील जोखिम कमी करण्याचे काम करत आहे. ग्रामीण भागातील समस्यांचे निराकरण करत त्यांचेच उपाययोजना या विविध सावकाशी योजनाद्वारे केल्या आहेत. परंतु प्रत्यक्षात या योजनेत लाभार्थी व योजनेतील अंमलबजावणीत अडथळी आहेत.

राष्ट्रीय पीक विभा योजनेची भूमिका

भारतातील कृषी उत्पादन आणि उत्पन्न सद्दुष्टिक प्राकृतिक आपदा म्हणजेच दुष्काळ, पूर, पावसादळ, वादळ, अपघव आणि चूकोप यावर अवलंबून आहे. तसेच काही मातब निर्मित आपदा सुद्धा आहेत. जसे, आग, बनावट पीन विझते, खते व किटकनाशके, किंमत सुद्ध इत्यादी हे सर्व रोजकऱ्यांच्या कृषी उत्पादन आणि उत्पन्न कमी करण्यावर प्रभाव टाकतात आणि पद्दुष्टपण हे रोजकऱ्यांची नियंत्रण (सर्वात) टाकतात. उत्पन्नातील अनिश्चिततेमुळे रोजकरी रोलीमध्ये रविन सुधारणा करू शकत नाहीत. रोजकरी आपल्या आर्थिक गरजांची पूर्तता करण्यासाठी कर्ज घेऊन कळत नकळत सावकाशी कर्जाच्या विळख्यात अडकले. म्हणून भारतीय रोजकऱ्यांच्या कर्ज विषयक जीवनाविषयी "भारतीय रोजकरी कर्जात जन्मले, कर्जात जगते, आणि कर्जात मरते," असे वर्णन केले आहे. या



विद्यतीतून रोजकऱ्यांची सुटका करण्यासाठी रोजकऱ्यांचा मदत करण्याच्या हेतूने भारतत पीक विभा योजना लागू करण्याची गरज भासू लागली.

रोली व्यवसायावर, नैसर्गिक वेगळ्याचा मोठ्या प्रमाणात परिणाम होतो. अनिश्चिततेमुळे रोलीच्या उत्पादनामध्ये अनिश्चितता येते. भारतीय जाली मान्यताचा जुगार आहे. महापूर, दुष्काळ, अतिवृष्टी, आग, वादळ, रोलीत इत्यादी घटकंही रोली उत्पादनावर प्रभाव पडतो. बऱ्याच वेळा रोजकऱ्यांचे मोठ्या प्रमाणात नुकसान होते. काही वेळा रोजकरी आपल्या उत्पादनाचा खर्च भरणे काद्दू शकत नाही त्यामुळे रोलीतील उत्पादन आणि उत्पन्नात अनिश्चितता होते. अशा वेळेस रोजकरी आर्थिक गरजेची

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राष्ट्रीय पीक विभा योजनांची भूमिका

भारतातील कृषी उत्पादन आणि उत्पन्न बहुतेक प्राकृतिक आपदा म्हणजेच दुष्काळ, पूर, पाणीबाधा, वादळ, अचानक आणि भूकंप यांचे अवलंबून आहे. सर्वेसकामी याच विविध आपदा युद्धा आहेत. जसे, आप, बनावट बीज विज्ञान, खत व किटकनाशक, किमान युद्ध इत्यादी हे सर्व रोजक्यांच्या कृषी उत्पादन आणि उत्पन्न कमी करणारे प्रभाव टाकतात आणि एकूणच हे रोजक्यांची नियंत्रण (सर्वांस) टाकतात. उत्पादनातील अनिश्चिततेमुळे रोजकरी रोजीमध्ये नविन सुधारणा करू शकत नाहीत. रोजकरी आपल्या आर्थिक गरजांची पूर्तता करणारासाठी कर्ज घेऊन काळत नकळत सावकारी कर्जाच्या बिलक्यात अडकतो. म्हणून भारतीय रोजक्यांच्या कर्ज विषयक जीवनाविषयी "भारतीय रोजकरी कर्जात जन्मतो, कर्जात जगतो, आणि कर्जात मरतो," असे वर्णन केले आहे. या

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विषयीचून रोजक्यांची सुटका करणारासाठी रोजक्यांच्या मदत करणाराच्या हेतूने भारताने पीक विभा योजना याचु करणारी गरज भासू लागली.

रोजी व्यवसायावर नैसर्गिक बदलांच्या मोठ्या प्रमाणात परिणाम होतो. अनिश्चिततेमुळे रोजीच्या उत्पादनामध्ये अनिश्चितता येते. भारतीय रोजी मानसूनचा जुगार आहे. महानगर, दुष्काळ, अतिवृष्टी, आप, वादळ, रोबगई इत्यादी घटकांचा रोजी उत्पादनावर प्रभाव पडतो. बऱ्याच वेळा रोजक्यांचे मोठ्या प्रमाणात नुकसान होते. काही वेळा रोजकरी आपल्या उत्पादनाचा खर्च भाग करू शकत नाही त्यामुळे रोजीतील उत्पादन आणि उत्पन्नाने अनिश्चितता होते. अशा वेळेस रोजकरी आर्थिक गरजेची पूर्तता करणारासाठी कर्ज घेऊन तो कर्ज जाळतात अडकतो. या विषयीचून सुटका करणारासाठी रोजक्यांच्या दिलासा देण्याच्या हेतूने भारताने राष्ट्रीय पीक विभा योजना महात्माची भूमिका बजावत आहे.

निष्कर्ष

भारतीय अर्थव्यवस्थेत कृषीला अतिशय महत्त्व आहे. प्राचीन काळापासून स्वतःच्या सुतभूत गरजांच्या पूर्ततेसाठी भारतीय लोक कृषीचा आधात घेत असल्याचे दिसून येते. परंतु रोजी क्षेत्रामध्ये कृषातील अनिश्चितता व मोठी जोखिम असते. अपुरे व अनिश्चित पर्जन्यमान, पूर, दुष्काळ व इतर अनेक कारणामुळे रोजीतील उभी पीके नष्ट होतात. त्यामुळे रोजक्यांचे अतोनात नुकसान होते. रोजीतील पीकासाठी रोजक्यांनी आपले पांढरेपण व क्षम लागून साहजिकेने पीके करणे ही संकल्पना घ्यावी लागते. याची शाश्वती कोणत्यासाठी देता येत नाही. अशा परिस्थितीत रोजक्यांचे आर्थिक नुकसान नष्ट होतच परंतु घेत उत्पादन घेण्यासाठी लागणारी मानसिक शक्ती देखिल रोजकरी घालवून बसते. कारण पुढा घेणे करत देखिल पीक हाती घेईलच याची खात्री त्याला नसते. या सर्व समस्यांचे आळा घालण्यासाठी पीक विभा योजना ही संकल्पना समोर आली. रोजक्यांच्या स्वाध्यायिकांवर संकटे आल्यास त्यांचाचून रोजक्यांच्या नुकसातीची भरपाई मिळवण्याची ही प्रत्येक शासनात रोजकरी पुढा नव्या उत्पादने रोजीची कामे करू शकतात. म्हणूनच पीक विभा उतरविणे हे आधुनिक युगात अत्यंत महत्त्वाचे मानले जाते. पीक विभायामुळे रोजकरी रोजकरी रोजी विभा कंपनी बनत देते. या पैशानुचून पुढा नवीन उत्पादन पीक घेण्याचा रोजकरी प्रयत्न करू शकतात.

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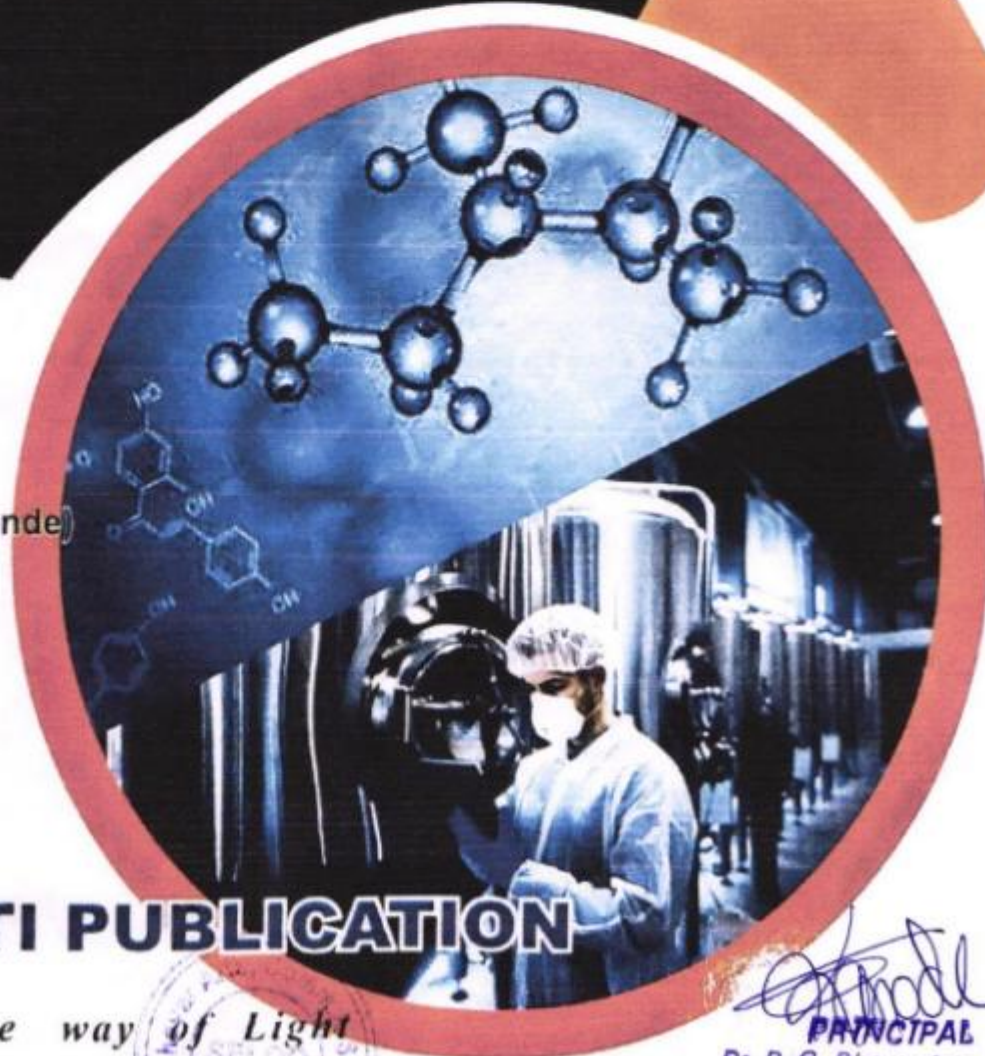
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Library and information science is an interdisciplinary field of study that deals generally with organization, access, collection, and protection/regulation of information, whether in physical or digital forms. Library and information science is an interdisciplinary field that implements information technology in library science. It includes practice, the study of principles and perspectives of library management. Advances in Library and Information Science provides an outstanding career option for the candidate who wants to be a researcher and lecturer of Library & Information Science. Library and information science is an interdisciplinary field of study that deals generally with organization, access, collection, and protection/regulation of information, whether in physical or digital forms. Library and Information Science is principally a social science accompanied by practical skills such as ethnography and interviewing. Historically, traditions of public service, bibliography, documentation, and information science have viewed their mission, their philosophical tools, and their domain of research differently. Still others deny the existence of a greater metropolitan Library and Information Science, viewing Library and Information Science instead as a loosely organized collection of specialized interests often unified by nothing more than their shared use of the descriptor information.



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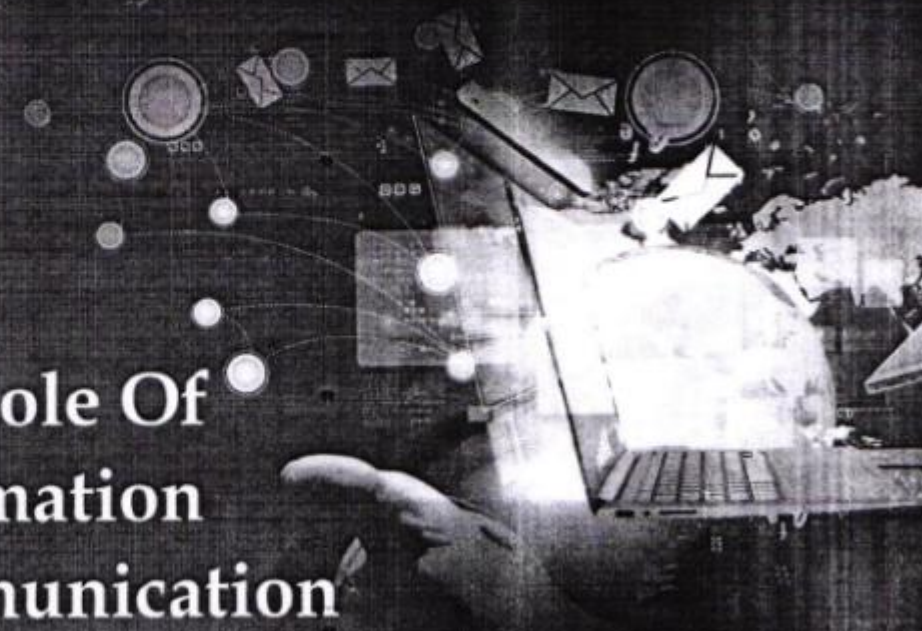
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BLACK SOLDIER FLY, *HERMETIA ILLUCENS* L.: A NUTRITIVE INSECT AND A SOLUTION TO LIVESTOCK FEED

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Abstract:

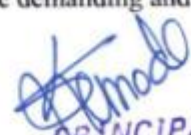
The food industries require new supportable sources of protein and fats which can be received by the use of insects like *Hermetia illucens* L. at an industrial scale. Black soldier fly larvae have a potential to feed on any organic waste matter and convert it into insect biomass so it can be utilised as a livestock feed. Livestock sector like poultry, aquaculture, piggery, duck culture etc. always struggling to fulfil the demands of nutritious feed. Insects like black soldier fly have been identified as potential alternatives to the predictably used protein sources in livestock feed due to their rich nutrient content and the fact that they can be reared on organic wastes streams. Products made from insect biomass resultant from the organic waste streams are better suitable for industrial large-scale production of insect meal, for this purpose systematic study of nutritive value of these larvae is needed. Present study confirmed that different nutritive parameters like crude protein, fats, amino acids, fatty acids, vitamins, flavonoids, minerals etc. gained by of Black soldier fly larvae fed on different organic wastecan be utilized as an alternative feed for livestock sector.

Keywords: Black soldier fly, *Hermetia illucens* L., livestock feed, nutritive value, organic waste, insect biomass

Introduction:

The food demand will probably increase by 70% by the year 2050 worldwide so as to meet the demands of 9.7 billion people who are expected to inhabit the world by that time (Tilman *et al.*, 2011). While the world population continuously growing along with resource consumption and waste generation, the food resources are becoming limited, causing various responses from different sectors of society (Paulin *et al.*, 2018). The use of livestocksectors like poultry, fish, shrimp, piggery etc. utilized as food is the solutionin the demanding and developing




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Chapter

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BLACK SOLDIER FLY BIOWASTE TREATMENT: A WAY TO GENERATE CIRCULAR ECONOMY FOR LIVESTOCK SECTORS

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ABSTRACT

Black soldier fly, *Hermetia illucens* (Order - Diptera, Family- Stratiomyidae) is very well known as a potential insect for biowaste management as the larval stages of this fly can consume any type of organic food waste and reduce the environmental pollution. By digesting the organic food wastes like fruit waste, vegetable waste, farm waste, poultry waste, industrial organic waste etc, this insect gains the biomass in the form of protein, fats, vitamins, minerals and all essential amino acids. Because rich nutrients present in in the larval stages, can be used as feed or used as a feed ingredient for livestock sectors. Circular economy has become one of the most important research areas worldwide, supporting sustainable and resource-efficient policies for long term socio-economic and environmental benefits. BSF can manage the circular economy system; maximize income by recycling organic waste combined with minimizing the environmental footprint. This chapter discusses the role of Black Soldier Fly for biowaste management and how it contributes for fulfilling the circular economy for livestock sectors.

KEYWORDS: Black soldier fly, *Hermetia illucens* L., circular economy, biowaste management, insect biomass, livestock sector

INTRODUCTION

The rise in urbanisation, expanding human population and changes in diet habits encourages livestock fields to increase its production, to upgrade food quality and to provide better hygienic food but still this sector is struggling to fulfil these demands from growing human populations. To nurture the livestock sectors high-cost protein supplement is needed which will create an environmental burden in the form of land, water and energy which are natural resources and are limited. For providing protein supplement to livestock sectors insects which can be grown easily and in enormous number, act as a gem as they are rich in protein, fats and several vitamins and minerals.

Number of insects are known like housefly, mealworm, grasshoppers and black soldier fly to be used as feed directly or used as a feed ingredient in some food diet formulations. Particularly insects used as feed for livestock like poultry, aquaculture, piggery etc. *Hermetia illucens* L., Black Soldier Fly (BSF) larvae are capable to digest various types of organic wastes which are routinely produced like vegetable or kitchen waste, farm waste,



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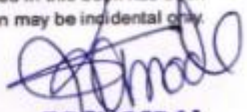
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INTRODUCTION TO RESEARCH METHODS

Research can be defined as the search for knowledge, or as any systematic investigation, with an open mind, to establish novel facts, usually using a scientific method. The primary purpose for basic research (as opposed to applied research) is discovering, interpreting, and the development of methods and systems for the advancement of human knowledge on a wide variety of scientific matters of our world and the universe. While engaged in his job, a researcher finds that, the systematic exploration of the relationship leads to finding relational statements which can be termed as laws. The laws in turn help in understanding phenomena or events in the environment. The laws may be integrated to constitute a theory. It is the theorisation process that contributes ultimately to the fund of knowledge.

Hence, research is an organised activity to find out answers to questions which contributes to knowledge generation process. Besides understanding the phenomena and events in the environment, as mentioned above, research provides clues for predicting the events of future.

Research supports further developing certain measures which result into desired effects or improvements. The above description of research is applicable particularly to the areas of scientific disciplines such as Physical Sciences where research




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