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Ants and their Societal Structure: Understanding Population Control, Ecological Significance, and Comparing with Close Relatives - A Comprehensive Review

A.L.Kokilamani, Shobha P.N. , Vanitha N. and Latha V.

Abstract

Ants are one of the most interesting and diverse group of eusocial insects. A typical colony contains an egg-laying queen and many adult workers together with their brood - eggs, larvae and pupae. Their population is regulated based on availability of resources and mortality based events triggered by aggression or environmental changes. Ants are guarded with specialised glands and capable of secreting pheromones to defend themselves from enemies. They acts as both beneficial and harmful agents. Though at times ants are misrecognised with their resembling species like bees, wasps and spider, knowing their differences would help for proper identification of ant species. Ants are important ecologically, because they function at many levels in an ecosystem as predators and prey, as detritivores, mutualists and herbivores. Ants are indicators of impact of anthropogenic activities and environmental changes.

Key words: Colony structure, Population regulation, Ecological Importance and similarities.

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Tiny Titans: A Critical Appraisal of Gold Nanoparticles and their Revolutionary Impact

Navya V K and Preeti Mangala

Abstract

Nanoparticles, spanning 1 to 100 nanometers, exhibit distinct physical and chemical properties, serving as foundational elements in nanostructures. Gold nanoparticles (AuNPs), with sizes ranging from 1 nm to 8 μm and diverse forms, including sub-octahedral, spherical, octahedral, icosahedral, and more, showcase unique attributes, deviating from their larger counterparts. These distinctive features find applications in renewable energy, nanomedicine, catalysis, information technologies, and more. Recent advancements empower control over size, shape, and optical properties, unlocking novel capabilities. This review explores gold nanoparticles' properties, synthesis methods, physiochemical attributes, pharmacokinetics, and applications across biomedical fields.

Key words: Nanoparticles, Gold Nanoparticles, Physiochemical Properties, Synthesis Methods, Pharmacokinetics, Biomedical Applications.

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The Impact of the Arka Microbial Consortium on Seed Growth and Germination in French Bean and Amaranthus Plants

Priyadarshini Pillai

Abstract

Composting offers an eco-friendly solution for recycling biodegradable organic waste, converting it into organic fertilizer for agricultural purposes, thus eliminating the need for landfill disposal. This study investigated the composting of kitchen waste from Jyoti Nivas College Hostel using the Arka Microbial Consortium (AMC). The aim was to assess its impact on the germination percentage, seed vigor index, and plant growth parameters of French bean (Arka arjun) and Amaranthus (Arka arunima) seeds. The Arka Microbial Consortium is a carrier-based product containing nitrogen-fixing, potassium, and zinc-solubilizing plant growth-promoting microbes used for decomposition. The experiment was carried out in a greenhouse under a randomized block design with two treatments and three replicates. The evaluation of plant growth parameters revealed that utilizing Arka Microbial Consortium in conjunction with bio compost is beneficial for enhancing the production of French bean (Arka arjun) and Amaranthus (Arka arunima) seeds, ultimately contributing to improved soil fertility and enhanced crop production.

Key words: Kitchen waste, Arka Microbial Consortium, French bean, Amaranthus, Germination (%), Seed Vigour Index.

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Coordination Compounds and its Effect on Viral Myocarditis

Ramya Shree M and Preeti Mangala

Abstract

This academic paper discusses the complexity and increasing incidence of viral myocarditis (VMC), an inflammatory disease affecting the myocardium. The pathogenesis of VMC is still unclear, making it a hot topic for research. One potential avenue for studying the disease is through the use of coordination polymers, which have various potential applications including drug delivery. Biocompatible, efficient, and safe ligands are critical for designing such polymers. Acylamide functionalized carboxylic acid ligands have gained attention for their rich functional properties and coordination patterns. Cobalt coordination complexes have also been studied for their biological activity, including antitumor, antiproliferative, antimicrobial, and antifungal properties. Understanding the role of these complexes in VMC could lead to the development of new treatments to improve patients' quality of life and prolong survival rates.

Key words: Coordination compounds, Viral Myocarditis (VMC), coordination polymers (CP), Functional coordination polymers (FCP), Cobalt and Copper complexes polymers

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Reflections on Societal Upheavals during 2020 Indian Lockdown and Strengthening of Youth Online Learning Organization (YOLO): A Phenomenological Framework

Roseline Florence Gomes

Abstract

This study investigated the reflections of ten college students who participated in a youth-led organization. Ten students were recruited and their verbalization about inner capacities, societal traumas and actions was understood through thematic analysis. Five themes revolved around traumatic societal discrimination that raised issues of migrant workers and North East population, change of youth familial ties in the community, mental health outcomes of Indian lockdown, that was experienced through the internship developed by a futuristic strength-based program called Youth Online Learning Organization (YOLO), 2020 led by two Indians. This led to the understanding of a solution-oriented situational model to curb the outcomes of Indian lockdown through application of individualised youth strengths. YOLO emerged as a working model in bridging the resource gap through social media formulating a positive social change. This paper highlights the importance of social responsibility through merging of organizations in coming together for creating sustainable community goals.

Key words: Final Year University Graduates, Indian Lockdown, Situational Model, Youth Online Learning Organization.

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A Study of *Savi and The Memory Keeper* by Bijal Vachharajani as Climate Fiction

Variyata Vyas and Preetha Vasani

Abstract

Vachharajani, emerges as a compelling research focus within the burgeoning genre of climate fiction or “cli-fi.” This article explores the intricate interplay of environmental consciousness, societal dynamics, and the potency of collective action in the novel. Set in the fictional town of Shajarpur, the narrative follows the poignant journey of the grief-stricken protagonist, Savi, as she grapples with personal loss and societal conflicts amid a changing climate attributed to human-induced activities. Vachharajani expertly integrates scientific concepts, notably the Wood Wide Web—a network of interconnected trees, seamlessly blending them into a narrative enriched with elements of magical realism. The novel unfolds as Savi and her environmentally conscious peers, the Eco Ents, confront the capitalist TLEU[ATA] group, symbolizing the environmental challenges arising from deforestation. Furthermore, the narrative delves into complex social issues, including class, caste, and gender dynamics within Indian society, positioning the novel as a groundbreaking contribution that engages with significant societal problems. The intersection of scientific precision and fantastical elements, exemplified by the transformation of the Very Cool and Hip People into monstrous pigeons, enhances the narrative depth. Throughout the article, emphasis is placed on the pivotal role of youth as catalysts for change in the context of climate action, aligning with contemporary climate activism exemplified by figures like Greta Thunberg. This research delves into the novel’s exploration of loss, memory, and the harmonious coexistence of humans and nature, presenting “Savi and The Memory Keeper” as a compelling catalyst for instilling environmental awareness in young readers and inspiring contemplation of their roles in shaping a sustainable future.

Key words: Capitalism, Climate fiction, Wood Wide Web, Memory

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A Study on Marketing Strategy and Customer Satisfaction of Wintech, Hosur

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Abstract

Marketing is considered to be avoid area that grows simultaneously in spite of the dynamic changes. Developers of the market need to make decision regarding the product and services that need to satisfy the customers. Marketing strategy is said to be the fundamental tool that is planned to achieve the company's goals by developing competitive advantage. Marketing strategy includes the marketing mix which consist of price, promotion, product and place. Research on the customer satisfaction level regarding the product and services has become very important in making business decisions. The research project consists of both primary and secondary data sources which are collected and includes questionnaire, interviews, field work, books and journals, statistical tools, etc. The respondents were chosen on the basis of non-probability method of convenience sampling. Sample of 100 responds were taken for analyses. The analyses is made using graphs, table and statistical tools such as Chi Square.

Key words: Marketing Strategy, Customer Satisfaction, Marketing research

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