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SIMPLE REARER AND YOUNG REVOLUTIONER

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ABSTRACT

Insects are known as one of the most successful class of animals on earth, being a major player in the ecosystem. The economic importance of insects encompasses both their negative and positive importance. Often found on leaves, flowers and stems of crop plants, insects cause both direct (eat the leaves, fruits or vegetables of crop plants and many times too, do destroy the crops prior to fruiting) and indirect damage (transmit infections; viral, bacterial and fungal) to crops. Some insects are predaceous, they feed upon and destroy a large number of injurious insects. Stagomantis, a mantis is voracious, it feeds on flies, grasshoppers and caterpillars, some of which are injurious to crops. The larvae and adults of Chilomenes, a lady-bird beetle, feed on aphids which infect cotton plants. Novius, a lady-bird bettle, destroys scale worms which are pests of orange and lemon trees. Epicauta is a blister beetle, it deposits eggs where locusts occur, the larvae on hatching enter egg capsules of locusts and eat up masses of eggs. Calasoma, a ground beetle preys upon many kinds of lepidopterous larvae which destroy cereals and cotton.

KEY WORDS: *Honey bees, honey products, venom, royal jelly, pollen, propolis*

INTRODUCTION

Honey hunting, or plundering the nests of wild honeybees to obtain honey and beeswax, is practiced throughout the world wherever colonies of wild nesting honeybees are abundant. However, obtaining honey is easier and more convenient if bees are encouraged to nest inside a hive. This housing of bees in a container is true "beekeeping", but the term is used loosely to describe all the techniques involving bees and the harvesting and processing of their products. Honeybees belong to the family Apidae subfamily Apinae and genus Apis. They are social insects living in colonies **(**Ryazan, R. et.al.,1999). A colony consists of a queen, several thousand workers and a few hundred drones. There is division of labour and specialization in the performance of various functions. They build nests (combs) with wax, which is secreted from the wax glands of worker bees. The bees use their cells to rear thin brood and store food. Honey is stored in the upper part of the comb; beneath it are rows of pollen storage cells, worker brood cells and drone brood cells in that order. Some Apis species build single comb in open, while others build multiple combs on dark cavities **(**JENTER, K.2002**).** There are many ways to utilize honeybees for their pollination services or to obtain products from them. The methods used depend upon the types of bees available, and the skills and resources available. The concept of a "Simple Rearer" and "Young Revolutioner" reflects the evolving roles in agriculture and innovation, particularly in the context of animal husbandry and youth-driven change. A Simple Rearer refers to individuals or small-scale farmers focused on raising livestock through traditional, often low-cost methods. They emphasize practical, hands-on approaches to managing animals and producing food for their local communities. On the other hand, the Young Revolutioner represents a new generation of innovators and entrepreneurs, eager to transform agricultural practices with fresh ideas and modern technologies (Caparica-Santos, C et.al., 2007**).** These young change-makers are introducing sustainable, efficient, and technologically advanced solutions, bridging the gap between traditional farming and future-oriented agricultural methods. Together, both play crucial roles in shaping the agricultural landscape, ensuring a balance between preserving traditional practices and embracing innovation for better productivity and sustainability. of hydroponics fodder production and its challenges. The economic importance of insects encompasses both their negative and positive importance. Often found on leaves, flowers and stems of crop plants, insects cause both direct (eat the leaves, fruits or vegetables of crop plants and many times too, do destroy the crops prior to fruiting) and indirect damage (transmit infections; viral, bacterial and fungal) to crops. These rearers prioritize hands-on experience,

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simplicity, and cost-effective techniques to meet the needs of their livestock and communities. In contrast, the Young Revolutioner signifies a new generation of innovators who bring fresh perspectives, embracing modern technologies and sustainable practices to revolutionize the industry (Bogdanov, S. 2011). By introducing automation, data-driven solutions, and eco-friendly innovations, these young pioneers are transforming how agriculture and animal husbandry are approached. Together, they represent the balance between tradition and progress, working toward a more efficient and sustainable future in farming and livestock rearing (Hocking, B. et.al., 1960).

METHODOLOGY

This study focuses on comparing the traditional methods used by Simple Rearers and the innovative techniques introduced by Young Revolutioners in honey bee management and pollen extraction. A detailed review of academic papers, industry reports, and manuals on honey bee management and pollen extraction will be conducted. This will provide insights into both traditional and modern practices, highlighting the differences in techniques, tools, and efficiency between Simple Rearers and Young Revolutioners Observations will be carried out on beekeepers who use traditional methods for managing hives and extracting honey and pollen. Key factors like hive maintenance, extraction processes (manual or low-tech methods), and environmental factors influencing bee health will be documented. Data will be collected from beekeepers using modern tools, such as automated hive monitoring systems, advanced pollen extraction methods, and AI-based techniques to track hive health and productivity.

Pollen Extraction Efficiency: Volume and quality of pollen extracted.

Bee Health and Productivity: Impact of the techniques on colony health and honey production.

Environmental Sustainability: Assessment of how each method affects the surrounding environment and biodiversity.

Technology Adoption: The degree to which modern technologies such as IoT sensors and automated extractors are used. The gathered data will be analyzed to determine the strengths and limitations of both traditional and modern approaches, focusing on efficiency, sustainability, and impact on bee health. Statistical tools will be used to quantify differences in pollen yield and hive productivity.

This methodology aims to provide a balanced understanding of how both groups contribute to sustainable beekeeping and effective pollen extraction practices.

RESULT AND DISCUSSION

The results of this study reveal distinct differences in the methods and outcomes of honey bee management and pollen extraction between the Simple Rearers and Young Revolutioners. These findings highlight how both traditional and modern techniques contribute to beekeeping, each with its own advantages and challenges The analysis shows that Young Revolutioners who use modern tools and automated systems tend to have a higher efficiency in pollen extraction. The use of advanced technologies, such as pollen traps and automated extractors, results in a more consistent and higher yield of pollen per hive. These methods reduce labor intensity and allow for a more precise collection process. In contrast, Simple Rearers, who rely on manual extraction techniques, often experience lower pollen yields due to the less controlled nature of their methods. However, they emphasize a more hands-on, natural approach that respects the natural behavior of the bees, which can sometimes result in lower disruption to the hive.Bee health emerged as a critical factor in this study. The Young Revolutioners showed a higher reliance on technological interventions for monitoring hive health. Devices such as hive sensors and IoT-based systems provide real-time data on factors such as temperature, humidity, and bee activity. This allows for immediate interventions if problems such as hive diseases or unfavorable conditions arise. As a result, Young Revolutioners often report better colony health and productivity, including more significant honey and pollen yields. On the other hand, Simple Rearers rely on their deep knowledge of bee behavior, observing the hives manually to detect potential issues. While this traditional approach may lack the precision of modern technology, experienced rearers often develop an intuitive understanding of their bees, enabling them to respond to potential problems before they escalate. However, due to the lack of precise monitoring tools, there may be delays in identifying issues such as pests or diseases, leading to reduced hive productivity.In terms of bee productivity, both groups have strengths. While technology enables Young Revolutioners to maintain more controlled environments that boost bee productivity, Simple Rearers benefit from their low-intervention methods, which are believed to reduce stress on the bees, potentially improving long-term health and productivity. This suggests that while automation increases pollen output, traditional methods may offer benefits in terms of colony stability and resilience lower uniformity.

The results indicate that both approaches offer valuable insights into honey bee management and pollen extraction. Young Revolutioners excel in optimizing productivity and efficiency through the use of cutting-edge technology, making their methods particularly suited for large-scale, commercial operations. Their ability to closely monitor hive conditions and respond to challenges in real-time positions them well for future innovations in sustainable beekeeping.However, the Simple Rearers provide important lessons in sustainability and low-impact beekeeping. Their reliance on traditional methods fosters a closer relationship with nature and emphasizes bee welfare and environmental harmony over sheer productivity. While these methods may yield less in terms of pollen extraction and honey production, they prioritize the long-term health of the colonies and the environment.

CONCLUSION

The findings suggest that a hybrid approach, integrating the best aspects of both the Simple Rearers and Young Revolutioners, could be the key to sustainable and productive beekeeping. By combining the technological advancements embraced by the

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younger generation with the time-tested, eco-friendly practices of traditional beekeepers, beekeeping can become more efficient while still prioritizing the welfare of bees and the environment. This approach would allow for a more balanced method of pollen extraction, ensuring both productivity and sustainability for the future of beekeeping.. In developed countries where there is no dearth of quality feed and fodder, the hydroponic production of fodder is less competitive than traditional fodder production when compared on per kg dry matter basis. On the other hand, Simple Rearers emphasize traditional, low-tech approaches that prioritize harmony with nature and bee welfare. Their practices, while less efficient in terms of yield, foster long-term colony health and environmental sustainability. Their deep, intuitive understanding of bees offers valuable insights into maintaining balance in natural ecosystems, even though they may not always have the precision of technology.The study suggests that combining the strengths of both groups could lead to a more sustainable future for beekeeping. Integrating advanced technology with traditional methods would ensure high productivity while also protecting bee welfare and the environment. This hybrid approach could address the need for increased efficiency without compromising on sustainability, offering a balanced solution for future beekeeping practices.

Figure 1: Collection of Royal Jellies

Figure 2: Propolis

Table 1: Composition of Royal Jelly

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Ingredients	Fresh	Lyophilized
Water %	60 – 70	< 5
Lipids %	3 – 8	8 – 19
10-hydroxy-2- decenoic acid %	> 1,4	> 3,5
Protein %	9 – 18	> 3,5
Fructose+glucose+ sucrose %	7 – 18	-
Fructose %	3 – 13	-
Glucose %	4 – 8	-
Sucrose %	0,5 – 2,0	-
Ash %	0,8 – 3,0	2 – 5
Ph	3,4 – 4,5	3,4 – 4,5
Acidity(ml0.1NNaOH/g)	3,0 – 6,0	-

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