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PROSPECTS AND CHALLENGES OF HONEY PRODUCTION, MARKETING AND USES IN ONDO WEST LOCAL GOVERNMENT AREA OF ONDO STATE

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Abstract
This study examined the prospects and challenges of honey production, marketing, and usesin Ondo West Local Government Area, Ondo State. Four research questions were answered for the purpose of the study. The research involved 175 honey marketers from five locations. A structured questionnaire was used to collect data, analyzed using descriptive statistics, including and mean scores and standard deviation. Mean scores of 2.50 and above was considered as agreed, while any mean below 2.50 was considered as disagreed. The results revealed that protective clothing prevents bee stings (X=3.17), smoking bees aids production (X=2.55), and fire during harvesting optimizes honey yield (X=2.72). Honey was found beneficial for skin growth (X=3.16) and has the potential for employment (X=2.54). However, lack of modern equipment and deforestation were identified as major challenges. The study concluded that honey production provides income and diversification opportunities. It recommended that the government support beekeepers through extension services, practical training, and soft loans, while also providing modern beekeeping equipment at subsidized rates to boost productivity.

Keywords: Prospects, challenges, honey production, marketing,.

Introduction
Apiculture, commonly known as beekeeping, is the science and art of rearing, breeding, and managing honeybee colonies within artificial hives for economic purposes. It has gained popularity due to the significant benefits associated with honey and other by-products of beekeeping. Apiculture can be practiced as a hobby, a part-time activity, or even a full-time occupation, making it versatile for individuals and communities. Bees thrive best in natural, undisturbed environments, such as forests, and on integrated farms where there is abundant water and flowering plants. These environments support bee colonies as bees, being social insects, live and work in groups. Excessive noise and disturbances can negatively impact their productivity and well-being: this implies that they need little or no noise and no disturbance to be productive and healthy (Goulson, 2003).

The demand for honey continues to rise, and this natural product is often referred to asa "money spinner" due to its high market value and widespread applications. With over 20,000 known species of honeybees, the majority are found in Asia, though only a small number are spread across other regions of the world. Among these species, two stand out for beekeeping: *Apiscerana*, commonly found in Southeast Asia, and *Apis mellifera*, which is widely distributed and used in beekeeping worldwide (Seeley, 2011). In addition to honey and beeswax production, honeybees play a crucial role as primary pollinators for a variety of agricultural and forest crops. This pollination not only boosts crop yields but also enhances the quality of seeds and fruits. As a result, apiculture has the potential to

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provide food security and livelihood opportunities, especially in rural areas, all while promoting ecologicalsustainability (Moniruzzaman& Rahman, 2009).

Despite the clear advantages of honey production and beekeeping, the factors influencing the volume of honey supplied to markets in specific regions, such as the study area, have yet to be fully analyzed. The target area holds great potential for honey production, primarily focusing on natural honey and its associated by-products, including beeswax, royal jelly, and pollen. Honey is well-regarded not only for its high nutritional value but also for its medicinal properties. As a rich source of carbohydrates, honey provides essential energy and sustenance. Additionally, it contains antibacterial, anti-inflammatory, and antioxidant properties, which may prove useful in combating multi-drug-resistant bacteria and in preventing chronic inflammatory conditions such as atherosclerosis and diabetes mellitus (Adeola, Bifarim, & Folayan, 2011).

Honey production has substantial potential for economic growth and human health, yet significant challenges remain. A better understanding of the constraints faced by local farmers, as well as the untapped opportunities in honey production and marketing, could lead to improved strategies for increasing honey yields and market presence. By focusing on these issues, the study seeks to explore both the prospects and challenges of honey production, marketing, and its uses within the Ondo West Local Government Area of Ondo State.

Statement of the Problem

Despite honey's economic potential, honey production in Nigeria faces significant challenges. Many farmers find it difficult due to the labor-intensive nature of the work, which includes building hives, sourcing wax, and maintaining and harvesting bees. Additionalproblems include protecting bees from predators and preventing theft. Disease infestations pose a serious threat to honeybee colonies, causing partial or total losses that can spread quickly and are difficult to treat (Ahmad, Joshi, & Gurung, 2007).

Inadequate funding and lack of knowledge about beekeeping further hinder honey production. While the honey market has potential, many people are unaware of honey's nutritional value, and the prevalence of fake or adulterated honey undermines market confidence. Additionally, premature harvesting using fire at night poses challenges to honey marketing.

This study aims to examine the prospects and challenges of honey production, marketing, and uses in Ondo West Local Government Area of Ondo State.

Purpose of the Study

The purpose of the study was to investigate the prospect and challenges of honey production, marketing and uses in Ondo West Local Government Area (OWLGA). Specifically, the objectives of the study were to:

i. determine the processes involved in honey production in Ondo West Local Government Area of Ondo State
ii. examine the prospects involved in the production and processing of honey among respondents in the study area.
iii. Identify the possible challenges involved in the marketing of honey among respondents in the study area.
iv. examine the possible challenges involved in marketing of honey among respondentsin the study area.

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Research Questions

The following research questions were raised for the purpose of this study.

i. What are the processes involved in honey production in Ondo West Local Government Area of Ondo State?
ii. What are the prospects involved in the production and processing of honey among respondents in the study area?
iii. What are the possible challenges involved in the marketing of honey among respondents in the study area?
iv. What are the possible challenges involved in marketing of honey among respondents in the study area?

Methodology

Descriptive survey design was employed for this study. Descriptive research design induces collection of data in order to answer research questions raised in the study. This design was adopted because descriptive studies make no attempt to manipulate variables. (Taherdoost, 2021)

The research was carried out in Ondo West Local Government Area (OWLGA) of Ondo State, Nigeria. OWLGA is a Local Government Area in Ondo State, Nigeria. Its headquarters is Ondo city. It has an area of 970 km^2 and a population of 283,672 at the 2006 census.

The population for the study comprised of 175 honey farmers and marketers in Ondo West Local Government Area of Ondo State, Nigeria.

The sample size of the study consisted of 175 honey marketers in Ondo West Local Government Area, Ondo State. Simple random sampling technique was used to select respondents that constituted the sample for the study.

The research instrument that was used for this study was a structured questionnaire. This questionnaire was developed on the basis of reviewed literature to obtain the respondents information for the study. The instrument was employed because it is the most appropriate, less time consuming and easy to construct and get information. The questionnaire comprised of two sections: section A and section B. Section A contained personal data while section B was based on formulated questions. Respondents were required to express their degree of agreement or disagreement on four (4) point scale which were developed using rating scale of Strongly Agree (SA), Agree (A), Strongly Disagree (SD) and Disagree (D).

The research questionnaire for the study was validated by three experts in the Department of Home Economics, Adeyemi Federal University of Education, Ondo. Their observations, suggestions and comments were used to refine the final copy of the questionnaire.

175 copies of the questionnaire were produced and administered personally to the respondents and the filled copies of the questionnaire were collected immediately to avoid loss in transit.

The responses to the questionnaire items were collated and analyzed using frequency counts, percentage, mean and standard deviation. The mean of the questionnaire items was used and interpreted based on the statistical real limits. A cut-off point (COP) was used to determine accepted or rejected items. The cut-off point was obtained by adding up

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all the items. The formula for obtaining the cut-off point is totalling the nominal values divided by the number of nominal values/ that is,
The decision rule is that any mean of 2.50 and above was considered as agreed, while any mean below 2.50 was considered as disagreed.

Results

Research Question 1: What are the processes involved in honey production?

Table 1:
Mean rating and standard deviation of the respondents on processes involvedin honey production in OWLGA

		N=175	C = 2.50	
S/N	**Items**	$\bar{X}$	**SD**	**Decision**
1	Wearing of protective clothes helps to prevent the processor from bee sting	3.17	0.46	Agreed
2	Engaging in smoking of bees is one of the vitalprocess in the production of honey	2.55	0.16	Agreed
3	Harvesting of bees with the use of fire enables the processors to get optimum production of honey	2.72	0.01	Agreed
4	The use of fire to harvest honey is the most appropriate process to get maximum harvest	2.41	0.30	Disagreed
5	Chemical substances canbe used for the harvesting of honey	2.73	0.02	Agreed
6	Honey is extracted from bee pollen, venom,royal jelly among others	2.64	0.07	Agreed
7	Storage of honey after production and marketing is an essential of process production	2.78	0.07	Agreed

Key: N = Total number of respondents, C = Cut-off point, $\bar{X}$ = mean of response of all respondents, SD = Standard deviation.
The data presented in Table 1 shows the mean rating and standard deviation on level of involvement of male and female respondents in honey production in OWLGA. Responses revealed that respondents agreed with the items 1, 2, 3, 5, 6 and 7 with mean 3.17, 2.55, 2.72, 2.73, 2.64 and 2.78 respectively which were all above the cut-off point of 2.50. The standard deviation ranged from 0.01to 0.46 and was relatively low. This indicates that the responses were clustered around the mean. However, responses revealed that respondents disagreed with the item 4 with mean 2.41 which is below the cut-off mark 2.50. The standard deviation was 0.30 and was low. This indicates that the response was clustered around the mean.
One research question and two hypotheses were answered using correlation and multiple regression analyses respectively. The summary of the findings are presented as follows:

Research Question 2: What are the prospects involved in the production and processing of honey among respondents in the study area?

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Table 2:
Mean rating and standard deviation of the respondents on the prospects involved in the production and processing of honey among respondents inthe study area.

S/N	Items	N=175 $\bar{X}$	C = 2.50 SD	Decision
1	Honey is beneficial to the body by enabling skin growth	3.16	0.49	Agreed
2	Honey helps in skin growing	2.57	0.01	Agreed
3	Honey is an essential product for makinghair creams	2.34	0.33	Disagreed
4	Honey is medicinal for treating wounds	3.01	0.34	Agreed
5	Honey is used as raw material for makingcosmetic	2.57	0.10	Agreed
6	Honey production is a source of income tothe farmer	2.48	0.19	Disagreed
7	Honey has potential for sustaining humanlivelihood	2.67	0.01	Agreed

Key: N = Total number of respondents, C = Cut-off point, $\bar{X}$ = mean of response of all respondents, SD = Standard deviation.

The data presented in Table 2 shows the mean rating and standard deviation on the prospects involved in the production and processing of honey among respondents in the study area. Responses revealed that respondents agreed with items 1, 2, 4, 5, 7 and 8 with mean 3.16, 2.57, 3.01, 2.57, 2.67 and 2.54 respectively which were all above the cut-off point of 2.50. The standard deviation ranged from 0.01 to 0.49 and was relatively low. This indicates that the responses were clustered around the mean. However, it was also revealed that respondents disagreed with items 3 and 6 with mean 2.34 and 2.48 respectively which were all below the cut-off point of 2.50. The standard deviations were 0.19 and 0.33 respectively. This indicates that the responses were clustered around the mean.

Research Question 3: What are the possible challenges involved in the marketing of honey among respondents in the study area?

Table 3:

Mean rating and standard deviation of the respondents on the possible challenges involved in the production and processing of honey among respondents in the study area

S/N	Items	N=175 $\bar{X}$	C = 2.50 SD	Decision
1	Financial constraint leads to breakdown orshut down of the enterprise	3.34	0.62	Agreed
2	Inadequate storage system leads to spoils andpest infestation of honey	2.59	0.13	Agreed
3	Low demand of honey leads to frustrationamong producer	2.68	0.04	Agreed
4	Inadequate technical skills leads to lowproduction of honey	2.49	0.23	Disagreed

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5	Application of insecticide and pesticide byfarmers leads to the killing of bees	2.72	0.01	Agreed
6	Lack of flowering plants associated with deforestation leads to low production ofhoney	2.55	0.17	Agreed
7	Lack of modern beekeeping equipment such as modern beehive, smoker, honey extractor, bee suit etc. leads to low productivity	2.69	0.03	Agreed

Key: N = Total number of respondents, C = Cut-off point, $\bar{X}$ mean of response of all respondents, SD = Standard deviation.

The data presented in Table 3 shows the mean rating and standard deviation on the possible challenges involved in the marketing of honey among respondents in the study area. Responses revealed that respondents agreed with items 1, 2, 3, 5, 6 and 7 with mean 3.34, 2.59, 2.68, 2.72, 2.55 and 2.69 respectively which were all above the cut-off point of 2.50. The standard deviation ranged from 0.01 to 0.62 and was relatively low. This indicates that the responses were clustered around the mean. However, respondents disagreed with item 4 with mean 2.49 and standard deviation 0.23.

Research Question 4: What are the possible challenges involved in marketing of honey among respondents in the study area?

Table 4:
Mean rating and standard deviation of the respondents on the possible challenges involved in marketing of honey among respondents in thestudy area

		N=175	C = 2.50	
S/N	**Items**	$\bar{X}$	**SD**	**Decision**
1	Distance barrier	2.94	0.60	Agreed
2	Lack of cooperation and active participation among the producer of honeyhinders honey marketing	2.55	0.21	Agreed
3	High marketing demand for honey	2.41	0.07	Disagreed
4	Lack of credit sources by honey farmers	2.47	0.13	Disagreed
5	Lack of packing and storage facility	2.61	0.61	Agreed
6	Presence of illegal traders who producefake or bad honey	2.72	0.38	Agreed
7	Presence of adulterated honey in themarket	2.50	0.16	Agreed
8	Unstable market price of honey	2.77	0.43	Agreed
9	Transportation problem	2.59	0.25	Agreed
10	Poor policies from government towardsthe use of adulterated honey	2.41	0.07	Disagreed

Key: N = Total number of respondents, C = Cut-off point, $\bar{X}$ mean of response of all respondents, SD = Standard deviation.

The data presented in Table 4 shows the mean rating and standard deviation on the possible challenges involved in marketing of honey among respondents in the study area. Responses reveal that respondents agreed with items 1, 2, 5, 6, 7, 8 and 9 with mean

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2.94, 2.55, 2.61, 2.72, 2.50, 2.77 and 2.59 respectively which were all above the cut-off point of 2.50. The standard deviation ranged from 0.16 to 0.60 and was relatively low. This indicates that the responses were clustered around the mean. However, respondents disagreed with items 3 and 4 with mean 2.41 and 2.47 respectively which were all below the cut-off point of 2.50. The standard deviations were 0.07 and 0.13 respectively and were relatively low. This indicates that the responses were clustered around the mean.

Discussion of Findings

This study offers a comprehensive analysis of honey production processes, marketing challenges, and prospects in OWLGA, shedding light on various dimensions of the apiculture industry. The data reveals several key processes involved in honey production and highlights the discrepancies between current findings and previous studies.The study found that protective clothing is crucial for preventing bee stings during honey production. This protective gear is essential for ensuring the safety of beekeepers as they engage with the bees. The use of smokers is also identified as a vital process in honey production. Smokers calm the bees and make them less aggressive, thereby facilitating safer and more efficient harvesting. Furthermore, the study highlighted the use of fire in the harvesting process as a method to achieve optimal honey yields. By using fire to drive bees away, beekeepers can more easily collect honey. However, this finding contrasts with Onyekuru (2014), whoargued that using fire for honey extraction is not the most effective method. Onyekuru suggested that safer and more effective practices involve wearing protective clothing, gloves, and using smokers, rather than relying on fire. This discrepancy underscores the need for further research to reconcile methodologies and develop best practices for honey harvesting.

The study also explored the multiple benefits associated with honey production. Honey is found to be beneficial for skin health, aiding in skin growth and healing. Its medicinal properties extend to treating wounds, making it a valuable resource for both health and cosmetic applications. Honey's role in the production of cosmetics highlights its versatility and economic potential. Additionally, the study found that honey production has the potential to sustain human livelihoods and create employment opportunities, particularly in rural areas. These findings are consistent with Babatunde Olorunsanya, Omotesho & Alao (2007), who highlighted honey production as a viable means of livelihood and poverty reduction in Nigeria. Babatunde *et al*. (2007) emphasized that honey production can be a successful venture due to the rich flora available, which supports the high potential for honey yield.

Despite these benefits, several challenges in honey marketing were identified. Financial constraints emerged as a significant barrier, with limited funding leading to the breakdown or shutdown of honey production enterprises. Inadequate storage systems contribute to spoilage and pest infestations, further complicating the marketing of honey. Additionally, low demand for honey can lead to frustration among producers, affecting their willingness to continue in the industry. The study also identified issues related to the use of insecticides and pesticides, which can harm bee populations and negatively impact honey production. Deforestation and the resulting lack of flowering plants were also noted as factors contributing to low honey production. Furthermore, the absence of modern beekeeping equipment, such as advanced beehives, smokers, and honey extractors, was found to limit productivity. However, the study found that inadequate technical skills do not necessarily correlate with low honey production, suggesting that other factors may

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play a more significant role in determining production levels.These findings align with Haftu*et al*. (2015), who identified opportunities for honey marketing in the study area. Haftu*et al*. (2015) noted that stable honey prices, access to market information, proximity to markets, and availability of credit are key factors that support honey marketing. The existence of good market infrastructure, such as roads and mobile networks, can facilitates honey distribution.

In addition to these challenges, the study highlighted other barriers to honey marketing, including distance barriers, lack of cooperation among producers, and inadequate packing and storage facilities. The presence of illegal traders producing fake or adulterated honey and the issue of unstable market prices were also noted as significant challenges.

Despite these obstacles, the study found that high market demand for honey and the lack of credit sources or government policies addressing adulteration were not identified as primary challenges. These findings align with Onwumere *et al*. (2012), who described honey marketing as a profitable enterprise but one characterized by constraints such as honey adulteration and limited access to finance. Onwumere *et al*. (2012) also observed that while honey marketing offers substantial economic opportunities, the market structure is affected by imperfect competition due to these constraints.

In summary, this study provides valuable insights into the processes, benefits, and challenges associated with honey production and marketing in OWLGA. The findings underscore the importance of safe and effective honey harvesting practices and highlight the economic potential of honey production for improving livelihoods and reducing poverty. However, significant challenges remain, including financial constraints, inadequate infrastructure, and issues related to honey quality and market stability. Addressing these challenges through improved practices, better access to resources, and supportive policies could enhance the viability and sustainability of the honey production industry in the region. Further research and intervention are needed to optimize honey production processes and overcome the barriers to effective marketing and distribution.

Conclusion

The study concluded that while technical skills are beneficial, they are not the sole requirement for honey production. It was found that wearing protective clothing is essential for preventing bee stings, which is a significant aspect of safe honey production. Additionally, honey production offers considerable economic potential, serving as a viable source of income for many. Respondents indicated that diversifying into other enterprises could further enhance their income, reflecting the broader economic opportunities availablewithin the honey industry.

Recommendations

Based on the findings of this study, the following recommendations are proposed:

1. Government and policymakers should enhance extension services to support honey production and marketing by providing comprehensive training and resources to help maximize the sector's potential and improve overall industry standards.
2. The government should implement a full package of improved honey production technologies, accompanied by practical skill training to ensure that beekeepers can effectively utilize these advancements in their operations.
3. Financial assistance in the form of soft loans should be made available to aspiring

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beekeepers as well as modern beekeeping equipment, such as movable frame hives, bee suits, and honey extractors, at subsidized rates would support the growth and efficiency ofhoney production.

4. Non-governmental organizations (NGOs) should focus on training programs for beekeepers to improve technical skills, ensure best practices in honey production, and enhance overall industry knowledge.
5. The Export Commission should work towards showcasing Nigerian honey in international markets so that the industry can expand its reach, improve production standards, and provide greater economic opportunities for local beekeepers.
6. Further studies should be carried out on:
   a. How honey can be used in production of cosmetics and medicine due to its benefits inskin health, growth and healing.
   b. How to optimize its economic potential in job creation and employment opportunities.
   c. Best practices for honey harvesting.

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