
RESEARCH ARTICLE

EMPLOYMENT GENERATION FROM APICULTURE FOR SCIENTIFIC BEEKEEPING BY APIARIST IN NORTHERN HILLS ZONE OF CHHATTISGARH, INDIA

Ankita Singh¹, M.A. Khan² and Sachin Kumar Jaiswal^{3*}

¹Department of Agricultural Extension, CoA, Indira Gandhi Krishi Vishwavidyalaya, Raipur, (492012) Chhattisgarh, India.

³All India Coordinated Research Project on Honey Bees and Pollinators, IGKV, Department of Entomology, Raj Mohini Devi College of Agriculture and Research Station, Ambikapur, Surguja, 497001(Chhattisgarh) India
Email: ankita4akki@gmail.com

Received-29.01.2023, Revised-10.02.2023, Accepted-22.02.2023

Abstract: Apiculture is a significant sustainable, and environmental sound activity involving integration of forestry, social forestry and Agricultural supporting activity since it provides nutritional, economic, and ecological balance, while providing employment and income. India has a good potential for beekeeping and to become a major honey exporting nation. Apiculture is an engrossing off farm practice for low-resource people that provide employment opportunities to rural youth. The study aimed to improve income through apiculture. A study was conducted at three districts of Northern Hills Zone of Chhattisgarh namely Surguja, Surajpur and Balrampur during the year 2021 and 2022. From each district 50 respondents were selected randomly thus sample comprised of 150 beekeepers. The data was collected through pre - structured schedule, analyzed by using SPSS program and interpreted subsequently.

Keywords: Beekeeping, Honey bees, Beekeeper, Employment generation, Chhattisgarh

INTRODUCTION

Beekeeping is the art of managing honeybee colonies for economic benefits (Ahmad *et al.*, 2007). It is particularly suitable for landless, low-income, low-resource individuals and groups. Researchers reported that beekeeping requires minimal start up investment and generally yields profits within the first year of operation. It contributes significantly to securing sustainable livelihoods by assisting in transforming vulnerabilities into security (Ahmad *et al.*, 2007). In addition to the direct income from bee products, beekeeping enterprise stimulates various sectors within a society like hive carpentry, honey trading, and hiring of bee colonies for pollination, and other bee value addition (Chazovachii *et al.* 2012 and Singh *et al.* 2016). As a result, this study aimed to improve income through beekeeping. In India, Honey bee farming is commonly done by the people in the hilly region, but nowadays, this business has also started in the plains by the local people to earn more money. Since, there is no need to engage full time labourers in this business, it is increasing day by day in rural areas. Bee keeping can profitably be

pursued by men, women and children, by farmers, orchardists, and by those who are landless or underemployed. Bee hives can be kept to the backyard or on house tops. A subsistence farmer can get higher income from bee keeping than from other avocations. Presently beekeeping industry is facing many challenges throughout the world.

MATERIALS AND METHODS

The study was conducted at Surguja, Surajpur and Balrampur districts of Northern Hills Zone of Chhattisgarh state during year 2021-2022. Fifty beekeepers were selected randomly from each of the selected district, thus in total 150 beekeepers were incorporated as respondents for in-depth study. The data were collected through personal interview with the help of pre-tested interview schedule from all beekeepers. Information on occurrence of bee enemies as perceived by the beekeepers such as name of enemies, activity period, severity level and method adopted for controlling bee enemies were assembled during the study period.

*Corresponding Author

Employment opportunities in apiculture

Employment generated for all the selected beekeepers is presented in table . It can be known from the table that normal employment generated per year per family was 100.67 days. The data showed that maximum employment generated per year per family through marketing was 40.03 days, followed by hive inspection 16.63 days, hive cleanliness 14.40 days, honey extraction 8 days, smoking 6.57 days, water management 4.42 days and packaging 3.91 days.

With regard to employment generation @ 6 hour/day/year, the findings revealed that marketing generated maximum employment 20.25 man days per year to each family who involved in selling of honey. The employment generated by remaining beekeeping activities were 1.44 man days, hive inspection and 1.10 man days hive cleanliness. The data showed that total employment generated per family engaged in beekeeping activities was 25.08 man days/family/year and employment generated per person was 18.88 man days/person/year.

Table 1. Employment generated from different activities of beekeeping.

S. N.	Activity	Average family members involved in particular activity	Average no. of days devoted in particular activity(per /year)	Normal employment generated (days/year /family)	Average time devoted in activity		Generated man days employment (@ 6 hr/day/year)	
					(hrs/ day/ person)	Total hrs/year/family	Per family	Per person
1	Hive making	1.00	1.23	1.23	0.29	0.35	0.058	0.058
2	Smoking	1.00	6.60	6.57	0.19	1.25	0.21	0.21
3	Hive inspection	1.54	10.80	16.63	0.52	8.64	1.44	0.93
4	Hive cleanliness	1.38	10.41	14.40	0.46	6.62	1.10	0.79
5	Swarm capturing	1.00	2.16	2.16	0.52	1.12	0.18	0.18
6	Migration	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Water management	1.94	2.28	4.42	0.53	2.34	0.39	0.20
8	Food management	1.46	1.66	2.42	0.39	0.94	0.15	0.10
9	Processing	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	Extraction of honey	1.06	8.38	8.90	0.61	5.42	0.90	0.84
11	Packaging of honey	1.02	3.84	3.91	0.52	2.03	0.33	0.32
12	Marketing of honey	1.39	28.80	40.03	3.03	121.29	20.25	14.56
	Total		76.16	100.67			25.08	18.88

Overall employment generation from apiculture

Table 2 revealed the overall employment in beekeeping. The data describe that majority of the beekeepers 46.00 per cent were indulge in beekeeping activities for 60 to 80 days. 34.67 per

cent of beekeepers were indulge for less than 60 days in beekeeping and only 19.33 per cent of the beekeepers were indulge for more than 80 days in beekeeping activities.

Table 2. Distribution of beekeepers according to overall employment generation from apiculture.

S.N.	Category	Frequency	Percentage
1	Less than 60 days	52	34.67
2	Between 60 - 80 days	69	46.00
3	More than 80 days	29	19.33
Overall average = 67.49 days			

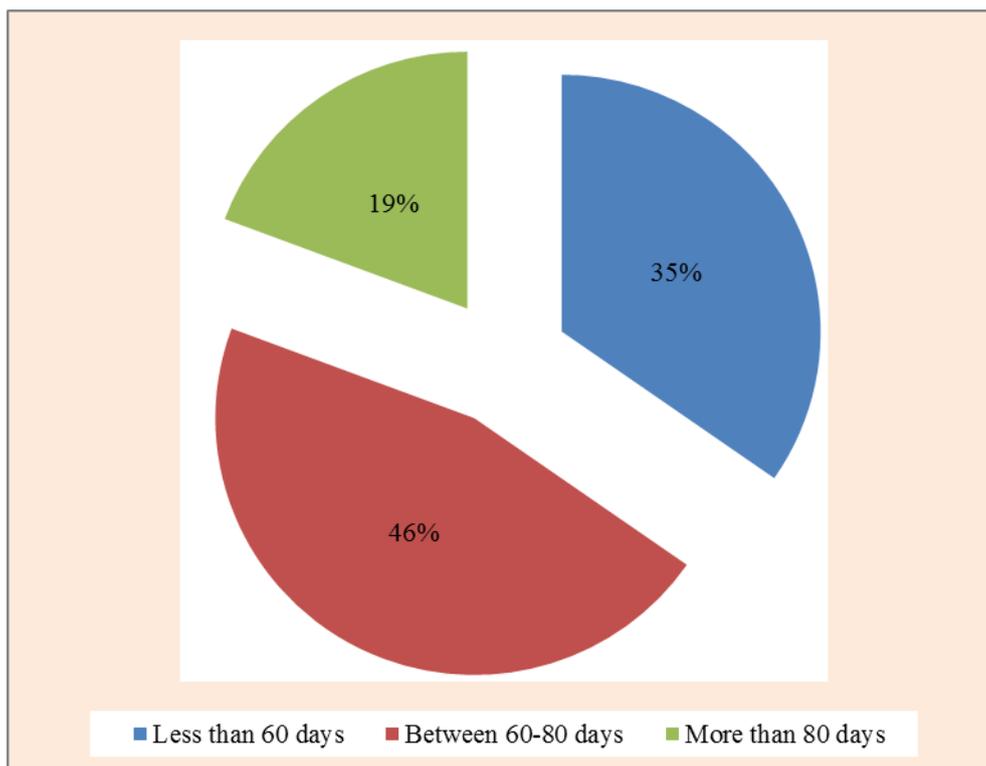


Fig. 2: Distribution of beekeepers according to overall employment generation from apiculture

CONCLUSION

The result describe that normal employment generated per year per family from different activities was 100.67 days. With regard to generated man days employment (@ 6 hourr/day/year) was 25.08 per person and 18.88 per family. The overall average employment generated in apiculture was 67.49 days.

ACKNOWLEDGEMENT

The authors would like to extend their sincere thanks to Dr. M.A Khan, Department of Agricultural Extension, IGKV, Raipur (Chhattisgarh), India, and Dr. Sachin Kumar Jaiswal, ICAR- Apiculture Research Station, Ambikapur, (AICRP on Honey Bees & Pollinators), for providing the facilities and technical advice.

Conflict of Interest/Competing Interest: The authors declare they have no competing interests.

REFERENCES

Ahmad, D.F., Sr J. and Gurung, M.B. (2007). Beekeeping and rural development (Kathmandu, Nepal) 36-36.

[Google Scholar](#)

Chazovachii, B., Chuma, M, Mushuku, A., Chirenje, L., Chitongo, L. and Mudyariwa, R. (2012). Livelihood Resilient Strategies through Beekeeping in Chitanga Village, Mwenzi District, Zimbabwe. Sustainable Agriculture Research 2(1):124-124. url: [https://dx. doi.org/10.5539/sar.v2n1p124](https://dx.doi.org/10.5539/sar.v2n1p124). doi: 10.5539/sar.v2n1p124.

[Google Scholar](#)

Singh, P., Singh, K.M and Shahi, B. (2016). Role of Honey Bee Pollination in Quality Seed Production of Cauliflower for Scaling up of Livelihood in

Vaishali District of Bihar. *Journal of AgriSearch* 3(2):115-118. url: <https://dx.doi.org/10.21921/jas.v3i2.11271>. doi: 10.21921/jas.v3i2.11271.

[Google Scholar](#)

Dorosh and S.E. (2010). The Rural-Urban Transformation in Ethiopia (Addis Ababa, Ethiopia).

[Google Scholar](#)

IPMS (2007). Gomma Pilot Learning District Diagnosis and Program Design (Addis Ababa, Ethiopia) 85-85.

[Google Scholar](#)

Kiros, W. and Tsegay, T. (2017). Honey-bee production practices and hive technology preferences

in Jimma and Illubabor Zone of Oromiya Regional State, Ethiopia. url: <https://dx.doi.org/10.1515/ausae-2017-0003>. doi: 10.1515/ausae-2017-0003.

[Google Scholar](#)

Mcs, L. and Machangu, J.S. (2008). Analysis of Beekeeping Potential in Income Generation and Coastal Forest Conservation in Lindi Region. Tanzania. *Asian Journal of African Studies*, 24:85-107.

[Google Scholar](#)