

Pollination services by honey bees for food security

BEEKEEPING in India has been mentioned in ancient scriptures and is as old as human civilizations. The honey bees are one of the few insects directly beneficial to man. The product 'honey' is highest valued food produced by them, along with other useful beehive products like beeswax, royal jelly, propolis and bee venom. However, more than the value of beehive products, bees provide wonderful pollination services while collecting nectar and pollen from the flower for enhanced fruit and seed setting, ultimately leading to high crop yield and food quality.

To enhance the income of farmers', beekeeping has been identified as an agro-based activity to be undertaken by farmers/land less labourers in rural areas as an integrated farming practice. The call of the Hon'ble Prime Minister to double farmers' income has generated so much of positive buzz around the subject. He called upon in a farmers gathering on 17 September, 2017 at Amreli in Gujarat to take up honey farming for bringing Sweet Revolution in the country on the lines of White Revolution and Green Revolution; and suggested the farmers to have 50 beehives in their fields for honey production as this would give additional income of about ₹ 2 lakh per annum. Beekeeping supplements income generation and nutritional intake of rural population. It is being increasingly realized that bees could be less expensive and valuable input for promoting sustainable and eco-friendly agriculture, and enhancing the crop productivity. Crop-wise yield increase has been reported by a factor of 2 to 300 times depending upon crop, season and location.

Keeping in view the importance of beekeeping as a part of the Integrated Farming System as well as on the basis of recommendations made by the Taskforce chaired by the undersigned, the then Agriculture Commissioner, Government of India, launched National Beekeeping and Honey Mission (NBHM) as a part of the *Atma Nirbhar Bharat* scheme with the aim of overall promotion and development of scientific beekeeping in the country to achieve the goal of 'Sweet Revolution'. This mission promotes holistic growth of beekeeping industry for income and employment generation for farm and non-farm households, to enhance agriculture/horticulture production, empowerment of women and developing infrastructural facilities, and technology generation in beekeeping through three Mini Missions.

India is among the world's top five honey producers. With the concerted efforts of Government of India, honey production has increased from 76,150 MTs (2013-14) to 1,25,000 MTs (2020-21), whereas export of honey has increased from 28,378 MTs (2013-14) to 59,999 MTs (2020-21), taking the revenue earned through export to more than ₹ 700 crore.

Madhukranti portal for online registration/traceability system for source of honey and other beehive products has also been launched. More than 10,000 Bee-keepers/Beekeeping and Honey Societies/Firms/Companies with 16 lakh honey bee colonies are registered with NBB and linked to *Madhukranti* portal. In order to ensure availability of quality honey, country shall be having 5 regional labs and 100 mini honey testing labs in the different agro-ecological regions. Formation of 100 FPOs of Beekeepers/Honey Producers is in process and NAFED has developed 14 Honey Corners in their stores to provide market support. Twenty nine Bee Breeders have been developed for multiplication/production of quality honey bee colonies along with queens and each Bee Breeder will produce at least 2,000 bee colonies every year. Sixteen Integrated Beekeeping Development Centers (IBDCs) as role model of beekeeping have been commissioned in 16 States.

In this editorial, the undersigned who was the Mission Director of NBHM has shared the initiatives made in the recent past where he was instrumental in development and implementation of new schemes and establishment of 16 IBDC's in the country. Indian Council of Agricultural Research also promotes location specific research on regional researchable issues through All-India Coordinated Research Project on Honey bees and Pollinators (26 centers) spread over different agro-ecological regions of the country. The ICAR is catering to the needs of enhancing quality through Regional Honey Testing Lab at IARI, New Delhi; IIHR, Bengaluru and IBDC's at IIVR, Varanasi.

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