

Proceedings of Skill Development Training on “Beekeeping”



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Acknowledgement

This report pertains to the two days skill development training for beekeeping farmers on “Beekeeping” organised under capacity building activity under the “National Agricultural Higher Education Project (NAHEP)” Centre for Advanced Agricultural Science and Technology (CAAST) project titled “Establishment of Secondary Agriculture Unit for Skill Development in Students and Farmers at NAU, Navsari”. We would like to express our gratitude to the Indian Council of Agricultural Research and Government of India as well as World Bank for funding the project. We would also like to thank all the participants, beekeeping farmers and resource persons. We are grateful to the staff members of ASPEE College of Horticulture, NAU, Navsari for providing necessary infrastructure and support in organising this training.

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Date of Training: 21-22 January, 2021

Venue – Swami Vivekanand Hall, ASPEE College of Horticulture, NAU, Navsari

Programme Elucidation :

A Centre for Advanced Agricultural Science and Technology (CAAST) is a new initiative and student centric sub-component of “National Agricultural Higher Education Project (NAHEP)” implemented by Indian Council of Agricultural Research and funded by Government of India as well as World Bank. The Navsari Agricultural University, Navsari, Gujarat bagged a CAAST project entitled “Establishment of Secondary Agriculture Unit for Skill Development in Students and Farmers” on competitive basis during 2017-18. Under this project a two days on-campus skill development training on “**Beekeeping** - મધમાખી પાલન અંગેની બે દિવસીય કૌશલ્ય વિકાસ તાલીમ” was organised by Unit-2 (Scientific Utilization of Non-Timber Forest Products and Medicinal and Aromatic Plants) NAHEP-CAAST sub-project, NAU, Navsari.

Introduction :

A Training programme on beekeeping for farmers was held on 21-22nd January, 2021 at NAU, Navsari. This training programme was organized by NAHEP- CAAST, NAU, Navsari in association with Department of Horticulture, Govt. of Gujarat, Navsari. Dr. Z. P. Patel, Hon'ble Vice-Chancellor of NAU, Navsari graced this event as the president of the inaugural programme. Other dignitaries present on the dais were Mr. D. K. Padaliya, Deputy Director of Horticulture, Navsari, Dr. P. K. Shrivastava, Principal and Dean, ACHF, NAU, Navsari and Dr. T. R. Ahlawat, PI & Nodal officer, NAHEP- CAAST & ADR (Hort.), NAU, Navsari. Other faculty members of NAHEP- CAAST project like Dr. R. P. Gunaga, Dr. M. S. Sankanuar, Dr. A. A. Mehta and Mr. Ankur S. Patel and other officials of Horticulture department were also present in the inauguration programme. The programme was launched with lighting of lamp by dignitaries on the dais followed by floral welcome. Dr. T. R. Ahlawat welcomed all dignitaries and farmers for the training programme. He briefed the participants about the NAHEP-CAAST project, its activities and achievements. Dr. Z. P. Patel, Hon'ble, Vice Chancellor, NAU, Navsari, delivered his presidential speech and elaborated on his vision for Navsari Agricultural University and NAHEP - CAAST sub project. He appreciated the efforts made by NAHEP-CAAST team members in organizing the programme as well as requested the farmers to grasp the technology and other advances in beekeeping farming systems. Mr. D. K. Padaliya, emphasized the importance of beekeeping and its potential benefits to farmers. While, Dr. P. K. Shrivastava, encouraged the participants to adopt beekeeping and prepare value added products from honey. At last, the inaugural session ended with a vote of thanks by Dr. A. A. Mehta.

Glimpses of Inaugural Session



Concept:

Beekeeping has become an important secondary source of income for millions of rural families and has assumed an important role in providing employment and income generating opportunities particularly for marginal farmers. The by product of honey bee like honey, bee wax, royal jelly etc are very useful and economically significance for small, marginal beekeeping farmers. The benefits of honey are many, starting with the fact that it is an excellent natural sweetener and full of nutrients including niacin, riboflavin, pantothenic acid, calcium, copper, iron, magnesium, manganese, phosphorus, potassium and zinc. While, bee wax use for making candles, cosmetics, creams, lipstick and lip balm. But there are many factors that are killing honeybees and bee hives. If farmers take up bee keeping it would not only ensure proper pollination in their crops but would also conserve bees and protect their habitat. Hence, a training on scientific beekeeping farming practices and mechanization in bee farm management would go a long way in ensuring the financial and technical viability of beekeeping activity amongst the farming community.

Objectives:

- ✦ Economic Significance of Beekeeping
- ✦ Mechanization in Beekeeping
- ✦ Pest and Disease Management in Honeybees
- ✦ Value Addition in Bee Products

About the Training:

This two days skill development training was attended by 61 farmers of South Gujarat particularly from Navsari district and status of participants by Gender and Social Inclusion is given in **Annexure 1**.

Programme Schedule (કાર્યક્રમની સમય સારણી)		
Two Days Skill Development Training on “Beekeeping” (મધમાખી પાલન અંગેની બે દિવસીય કૌશલ્ય વિકાસ તાલીમ)		
Time (hrs.)	Session	Speaker
21/01/2021 (Day-1)		
10:00 to 10:50	Inauguration of Training Programme (તાલીમ વર્ગનું ઉદઘાટન)	-
10:50 to 11:00	Breakfast and Tea Break	
11:00 to 12:00	Introduction of Beekeeping and Economic Significance of Beekeeping (મધમાખી પાલન અને તેના આર્થિક મહત્વનો પરિચય)	Dr. A. A. Mehta
13:00 to 14:00	Lunch Break	
14:00 to 14:30	Introduction to Bee Equipment and Bee Hives (મધમાખીનો મધપૂડો અને ઉપયોગી સાધનોનો પરિચય)	Dr. Satish K. Sinha
14:30 to 15:00	Bee Foraging Plants (મધમાખીને ઉપયોગી ફૂલવાળા છોડ અને વૃક્ષો)	Dr. L. K. Behera
15:00 to 16:00	Queen Rearing and Role of Supplemental Feeding (રાણી મધમાખીનો ઉછેર અને પૂરક ખોરાકની ભૂમિકા)	Dr. A. A. Mehta
16:00 to 17:00	Bee Hive Inspection - Practical (મધમાખીના મધપુડાનું નિરીક્ષણ)	
22/01/2021 (Day-2)		
9:30 to 10:30	Colony Capturing of Stingless Bee Colonies (Practical) (ડંખ વગરની મધમાખીના કુદરતી વસાહતનું બોક્સમાં સ્થળાંતરણ)	Dr. A. A. Mehta
10:30 to 11:30	Seasonal Management of Bees (મધમાખીનું મોસમી સંચાલન)	Mr. Bhagubhai Patel
11:30 to 12:30	Importance of Bee in Pollination and Pest and Disease Management in Honeybees (પરાગનયનમાં મધમાખીનું મહત્વ અને મધમાખી ઉછેર દરમિયાન રોગ અને જીવાતનું વ્યવસ્થાપન)	Dr. J. J. Pastagia
12:30 to 13:00	Details of Horticulture Dept. Schemes for Farmer's (ખેડૂતોને ઉપયોગી બાગાયત વિભાગની વિવિધ યોજનાઓ વિશે માહિતી)	Mr. Ankur S. Patel
13:00 to 14:00	Lunch break	
14:00 to 14:30	Marketing of Honey and Other Bee Products (મધ અને મધમાખી ઉત્પાદનનો વ્યાપાર)	Dr. H. T. Hegde
14:30 to 16:30	Demonstrations	

Core Session 1: Following tea break, technical sessions started with a lecture on

Title: Introduction of Beekeeping and Economic Significance of Beekeeping
(મધમાખી પાલન અને તેના આર્થિક મહત્વનો પરિચય)

Expert: Dr. A. A. Mehta, Assistant Professor (FPU), ACHF, NAU, Navsari



Dr. A. A. Mehta delivered a lecture on introduction and economic significance of beekeeping which included introduction to bee colony, life cycle and work distribution of different caste and aged group bees, type of honeybees, sting less bees, bee products, its value addition and utilization etc.

Core Session 2:

Title: Introduction to Bee Equipment and Bee hives
(મધમાખીનો મધપૂડો અને ઉપયોગી સાધનોનો પરિચય)

Expert: Dr. Satish K. Sinha, Assistant Professor (FPU), ACHF, NAU, Navsari



Dr. Satish K. Sinha introduced bee equipment and bee hives, spoke about the general principle of honey processing, importance and uses of different bee tools and equipment like bee veil, honey extraction, pollen trap, queen rearing kit, bee venom extractor, hive stand etc.

Core Session 3:

Title: **Bee Foraging Plants**

(મધમાખીને ઉપયોગી ફૂલવાળા છોડ અને વૃક્ષો)

Expert: Dr. L. K. Behera, Assistant Professor(FPU), ACHF, NAU, Navsari



Dr. L. K. Behera interacted with farmers about the importance of bee foraging plants, pollen and nectar producing plants in different seasons, preparation of bee floral calendar, honey flow season, dearth season and bee flora and growing bee floral plants for maintaining bee colonies.

Core Session 4:

Title: **Queen Rearing and Role of Supplemental Feeding**

(રાણી મધમાખીનો ઉછેર અને પૂરક ખોરાકની ભૂમિકા)

Expert: Dr. A. A. Mehta, Assistant Professor (FPU), ACHF, NAU, Navsari



Dr. A. A. Mehta discussed the types of queen reared in colony, swarming season and importance of queen rearing for colony multiplication, role of supplemental feeding, bee health and bee nutrition, nutrition for larvae and adult, importance of carbohydrate and protein supplemental diet, preparation of supplementary feeding for bees etc. He also demonstrated the cleaning of bee hives, different parts of bee hive, general care and precautions while handling bee hives, identification of worker bees, drone bees and queen, honey sealing etc.

Core Session 5:

Title: Colony Capturing of Stingless Bee Colonies
(ડંબ વગરની મધમાખીના કુદરતી વસાહતનું બોક્સમાં સ્થળાંતરણ)

Expert: Dr. A. A. Mehta, Assistant Professor (FPU), ACHF, NAU, Navsari



Dr. A. A. Mehta conducted practicals on colony capturing of stingless bee which includes colony strength indicators, observation of sealed and unsealed brood, changing the frames in the colonies and union/separation of honey bee colonies.

Core Session 6:

Title: Seasonal Management of Bees
(મધમાખીનું મોસમી સંચાલન)

Expert: Mr. Bhagubhai Patel, Experienced beekeeper, Billimora



Mr. Bhagubhai Patel shared his knowledge about seasonal management in beekeeping, colony management and precautions during different season, migratory beekeeping and its importance for management of bee colonies in dearth and honey flow period.

Core Session 7:

Title: Importance of Bee in Pollination and Pest and Disease Management in Honeybees

(પરાગનયનમાં મધમાખીનું મહત્વ અને મધમાખી ઉછેર દરમિયાન રોગ અને જીવાતનું વ્યવસ્થાપન)

Expert: Dr. J. J. Pastagia, Principal, College of Agriculture, NAU, Waghai



Dr. J. J. Pastagia shared his experience of beekeeping with farmers especially about the importance of honey bees, role of bees in pollination and fruit setting, requirement of bee hives in pollination of some important crops, income from pollination services and pest & disease managements in honeybees.

Core Session 8:

Title: Details of Horticulture Dept. Schemes for Farmer's
(ખેડૂતોને ઉપયોગી બાગાયત વિભાગની વિવિધ યોજનાઓ વિશે માહિતી)

Expert: Mr. Ankur S. Patel, Horticulture Officer, State Horticulture Department, Navsari



Mr. Ankur S. Patel sensitized participants about the different schemes of horticulture department for farmers, procedures for availing benefit from these schemes and special schemes for beekeeping in different categories.

Core Session 9:

Title: Marketing of Honey and Other Bee Products
(મધ અને મધમાખી ઉત્પાદનનો વ્યાપાર)

Expert: Dr. H. T. Hegde, Assistant Professor (FPU), ACHF, NAU, Navsari



Dr. H. T. Hegde delivered a lecture on value addition and marketing opportunities for bee products i.e. honey, bee wax, royal jelly, bee venom propolis and bee pollen.

Demonstrations:

At the end of the training programme, demonstrations were held on identification of worker bees, drone bees and queen, box management, handling of boxes etc.



Annexure : 1

Status of participants by Gender and Social Inclusion in two days on-campus skill development training for **Beekeeping** Farmer's held on January 21-22, 2021

Participants	General	SC	ST	OBC/SEBC	Total
Male	06	01	14	25	46
Female	02	02	02	09	15
Total					61



Group photo of participants in the training on Beekeeping



THANK YOU



NOTES



Value Added Innovative Products of Secondary Agriculture Available for Sale

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