The Complete Book on Beekeeping and Honey Processing (2nd Revised Edition)

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Beekeeping is the maintenance of honey bee colonies, commonly in hives, by humans. Bees are accommodated in artificial lives where they live comfortably within easy reach of the bee keeper for examination and extraction of surplus lovely, after keeping of sufficient lovely in the combs for the bees. Honey is a part of bees, which gather sugar containing nectars from flowers. Honey should be processed as soon as possible after removal from the hive. Honey processing is a sticky operation, in which time and patience are required to achieve the best results. Careful protection against contamination by ants and flying insects is needed at all stages of processing. Bee honey is natural, unrefined food consumed as much in fresh or canned state. It is readily assimilated and is more acceptable to the stomach, particularly in the case of ailing persons, than cane sugar. It is an antiseptic and is applied to wounds and burns with beneficial results. Honey collection and its marketing in India are still not fully organised. The main uses of honey are in cooking, baking, as a spread on breads and as an addition to various beverages such as tea and as a sweetener in commercial beverages. Honey is the main ingredient in the alcoholic beverages mead, which is also known as honey wine or honey bear, honey is also used in medicines. A number of small scale industries depend upon bees and bee products. Honey and bees products finds use in several industries which are under; pharmaceuticals, meat packing, bees wax in industries, bee venom, royal jelly, bee nurseries, bee equipments and hives etc. There is considerable demand for the honey and other products. Outside the thousands of homemade recipes in each cultural tradition, honey is largely used on a small scale as well as at an industrial level.

Some of the fundamentals of the book are history of beekeeping in India present, all India co ordinate research project on honey bee research and training, future plan for development, the pattern of beekeeping today, development of beekeeping equipments, beekeeping industry and honeybee species, bee hive products, medicinal properties of honey, bees and agriculture, pesticidal poisoning to honeybees, handling bees, queen rearing and artificial queen, beekeeping and ancillary industries, honey based industries, honey in pharmaceuticals, honey in meat packing, beeswax in industries, bee stings precautions and treatment.

The book contains the steps of bee keeping in proper manner and details of honey processing. This book is an invaluable resource for new entrepreneurs, technocrats and also for established enterprises.

STATUS AND FUTURE HISTORY OF BEEKEEPING IN INDIA **Beekeeping Extension** Khadi and Village Industries Commission State Khadi and Village Industries Board **Directly Aided Organisation** All India Beekeepers' Association (AIBKA) **BEEKEEPING RESEARCH** Department of Agriculture and Colleges Apicultural Research Laboratory, Mahableshwar (M.S.) Central Bee Research and Training Institute (KVIC) All India Co-ordinated Research Project on Honey Bee Research and Training Punjab Agricultural University Other Apicultural Departments TRAINING IN BEEKEEPING MARKETING OF BEE-PRODUCTS PRESENT STATUS Extension Research Training Marketing CONSTRAINTS FUTURE PLAN FOR DEVELOPMENT The Changing Scenario Under KVIC Indian Council of Agricultural Research NATIONAL BEE BOARD Action Plan Extension Research Training and Education Marketing 2. WORLD SCENARIO IN BEEKEEPING THE PATTERN OF BEEKEEPING TODAY RACE OF HONEYBEES Dark bees, A. mellifera mellifera L. Italian bees, A. mellifera Ligustica Spin Carniolans. A. mellifera carnica (Pollmann) Caucasian, A. mellifera caucasica Gorb HONEY PRODUCTION **BEEKEEPING IN EUROPE** GRADING. PACKING AND MARKETING OF HONEY INJURY TO HONEYBEES BY POISONING 3. BEEKEEPING IN INDIAâ€"ROLE OF KVIC **KVIC GROWTH OF BEEKEEPING UNDER KVIC** Organisational Set Up of Beekeeping Under KVIC Growth of Beekeeping in Different States/Areas DIRECTORATE OF BEEKEEPING ORGANISATIONAL SET UP UNDER CBRTI, PUNE Apiculture **Development of Beekeeping Equipments:** Role of RBRCs/FOS Introduction of Exotic Bees

Entomology **Bee Pathology** Bee Botany and Melletopalyonology **Bee Pollination** Queen Rearing and Bee Breeding **Rock Bee** Bee Chemistry Training **Bee Library** 4. BEEKEEPING RESEARCH SET-UP, ACHIEVEMENTS AND FUTURE STRATEGIES RESEARCH ACHIEVEMENTS AND FUTURE **STRATEGIES** Beekeeping Industry and Honeybee Species **BEE FLORA** EQUIPMENT AND MANAGEMENT GENETICS AND BREEDING **DISEASES & ENEMIES** POLLINATION OF CROPS HONEYBEE PRODUCTS PESTICIDAL POISONING 5. MAJOR CONSTRAINTS IN BEEKEEPING BEEKEEPING WITH APIS CERENA INDICA AND **APIS MELLIFERA** THE MAJOR CONSTRAINTS FOR THE DEVELOPMENT OF BEEKEEPING IN INDIA **ARE AS FOLLOWS** Using the Correct Species for Beekeeping Availability of Genetically Superior Queens for Increased Honey Production Lack of Technical Knowledge for Efficient Management of Colonies for High Honey Yields Lack of Infrastructure at the Grass Roots and National Level for Beekeeping Poor Quality Control for the Production of Honey Emphasis on Production of Honey Instead of other Bee Products **Bees Wax** Pollen Propolis Bee Venom **Royal Jelly Disease Prevention, Control and Analysis** Lack of Sufficient Financial Help from Government and Lending Institutions for the Development of Beekeeping No Tax or Other Monetary Benefits for Beekeeping No Control on the Use of Pesticides by Farmers Leading to Death of Bee Colonies in Field Locations Pricing Structures for Honey Lack of Finances for Packers or Beekeepers to be Able to Store Honey Beekeeping Being not Recognized as a Priority Agricultural Activity and Getting Governmental Support

There is No Promotion of Mass Planting of

Bee Flora Apiculture not Being Recognized as a **Specific Field** Lack of Consumer Awareness of Honey and its Products Beekeeping not Being Considered as an Employment Generation Activity CONCLUSION 6. BEES AND THEIR ECONOMIC IMPORTANCE WILD BEES SPECIES OF HONEYBEES 7. MORPHOLOGY, ANATOMY, COLONY ORGANIZATION AND LIFE CYCLE MORPHOLOGY ANATOMY COLONY ORGANIZATION DEVELOPMENT POINTS OF CASTE DISTINCTION 8. BEEKEEPING EQUIPMENTS LANGSTROTH TEN-FRAME HIVE **NEWTON HIVE** OTHER BEEKEEPING EQUIPMENTS EQUIPMENTS FOR HANDLING BEES 9. SEASONAL ACTIVITIES AND SOCIAL **BEHAVIOUR OF HONEY BEES** SOCIAL BEHAVIOUR OF HONEYBEES SEQUENCE OF ACTIVITIES IN THE LIFE OF BEES **DIVISION OF LABOUR** COMMUNICATION AND MEMORY OF HONEYBEES Dance Language CHEMICAL COMMUNICATION PHEROMONES WORKER PRODUCED ODOURS **QUEEN - PRODUCED ODOURS** Inhibition of Queen Rearing and Swarming Prevention of Worker Ovary Development Attraction of Drones for Mating Attraction of Swarms and their Stabilization Stimulation of Nasonov Pheromone Release and Worker Foraging QUEEN ATTRACTIVENESS AND RECOGNITION **Other Pheromones** CONTROL OF REPRODUCTION IN HONEYBEE COLONIES **Foraging Activities** Nectar Pollen Water Propolis Maintenance of Nest/Hive Temperature FORAGING RANGE WORKING HABITS OF FIELD BEES SPEED OF FLIGHT COLONY DEFENCE ACTIVITIES

10. FOOD OF THE HONEYBEES, BEE FLORA AND HONEY FLOW PERIODS FOOD OF THE HONEYBEES **BEE FLORA** NATURAL AND ORNAMENTAL FLOWERS **PROPAGATION OF BEE PLANTS 11. SEASONAL MANAGEMENT OF HONEYBEE COLONIES** WINTER MANAGEMENT Adequate Population of Young Bees Stores of Food in a Colony Protection from the Humidity and Cold (a) Reduced Entrance and Adequate Ventilation (b) Winter Packing SPRING MANAGEMENT **SWARMING** CATCHING THE SWARM PREVENTION OF SWARMING MANAGEMENT DURING HONEY FLOW HONEY EXTRACTION SUMMER MANAGEMENT MONSOON MANAGEMENT POST-MONSOON MANAGEMENT CONTROL OVER DESERTION OF BEE COLONIES **12. MIGRATORY BEEKEEPING** TRANSPORTATION OF BEE HIVES 13. DISEASES OF BEES AND THEIR ENEMIES VIRAL DISEASES Thai Sac Brood Virus Apis Iridescent Virus Kashmir Bee Virus Bee Viruses not Found in India **BACTERIAL DISEASES** American Foul Brood **European Foul Brood PROTOZOAN DISEASE** Nosema Apis FUNGAL DISEASES MITES Acarapis Woodi Varroa Jacobsoni **Tropilaelaps Clareae** INSECT ENEMIES OF BEES Wax Moths **Greater Wax Moth** Lesser Wax Moth **Predatory Wasps** Black Ants **BIRDS AND OTHER ENEMIES 14. BEE HIVE PRODUCTS TYPES OF HONEY** CHEMICAL COMPOSITION PHYSICAL PROPERTIES OF HONEY **HYGROSCOPICITY**

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About NIIR

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