

# **BEEKEEPING FOR FARMERS ENTERPRENUERSHIP DEVELOPMENT**

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# INTRODUCTION

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India has four Indigenous honeybee species- *Apis cerana*, *Apis dorsata*



# Apis dorsata

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Natural Rock bee colony on tree branch

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- Only *A. cerana* and *A. mellifera* are kept and maintained in movable frame hive by beekeepers
  - European honeybee *Apis mellifera* is introduced in India 1962 successfully



# ROLE OF HONEY BEES IN AGRICULTURE

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It is estimated that about one third of all plants or plant products eaten by humans are directly or indirectly dependent on bee pollination.

# WHY HONEY BEES?

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- Most important natural pollinator.
- Plants and honeybees are symbiotically related
- Plants supply nectar and pollen.
- While bees helps plant in pollination
- Social insect
- Can be nurtured.
- Can be transported from one place to another easily.
- Can be multiplied-Bee rearing



# BENEFITS FROM HONEY BEES

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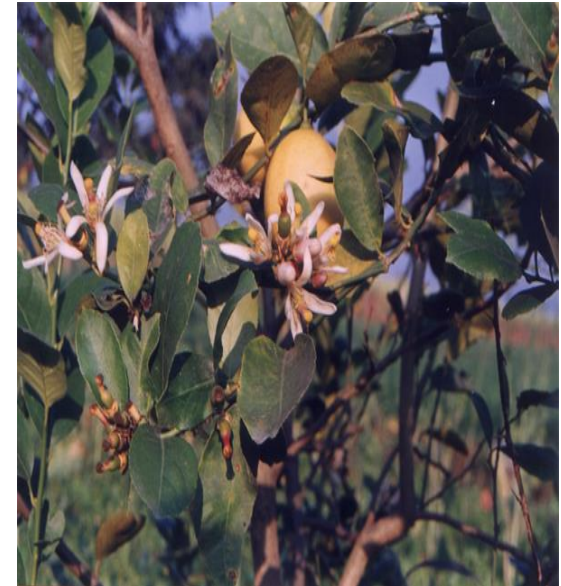
- Increase crop yield through pollination
- Honey bee produces -

Products	Uses
Honey	Nutritious whole food with medicinal property
Bee venom	Used for treatment of arthritis, rheumatic and pains (treatment known as Apitherapy)
Royal jelly	Nutritious, increase vigour and vitality/fertility
Propolis	Resinous substance uses as gum
Honey and hive products	source of income to the farm family, helps employment generation. Bee's Wax Pollen Royal Jelly
Bee Pollen	Rated as Super Food
Bees wax	More valuable, used in candle, pharmaceutical and cosmetic industry

# FRUIT CROPS BENEFITED BY HONEY BEES

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- Coconut-26%
- Guava – 26%
- Litchi- 150%
- Citrus spp-153%
- Santra, Orange-25%
- Sweet Lime, lemon
- Kenow, Malta – 25%
- Watermelon-86%

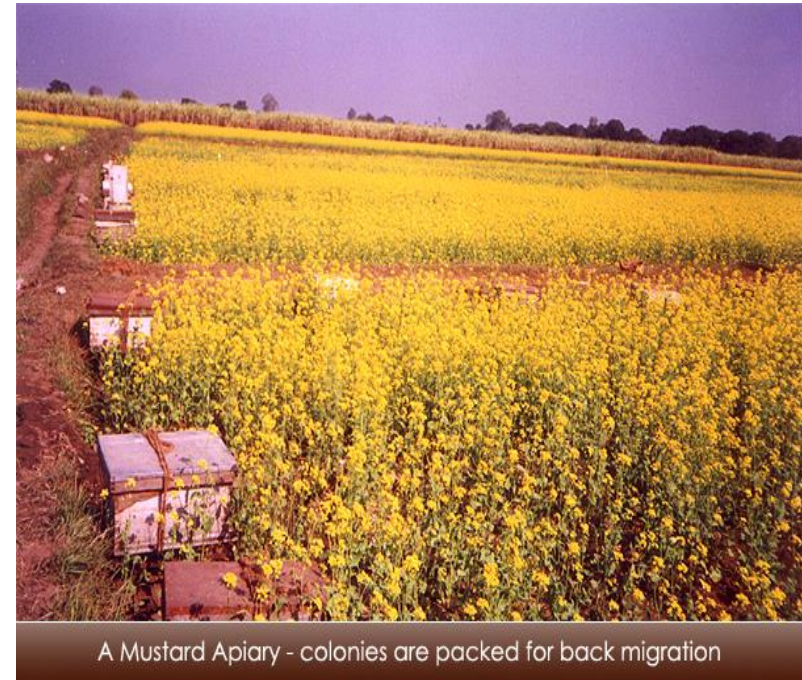




# OIL SEED CROPS

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- Til – 36%
- Niger -139%
- Rapeseed-46%
- Mustard -43%
- Safflower-28%
- Sunflower-38%



# VEGETABLE CROPS

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- Ash guard-46%
- Bitter guard-66%
- Broad bean
- Cucumber-62%
- French Bean
- Little Gourd
- Musk Melon
- Onion-93%
- Pumpkin
- Radish-70%



# ADVANTAGES OF BEE POLLINATION

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- Increases viability of seeds, embryos and plants
- More nutritious and aromatic fruits are formed
- Increases number and size of seeds and yield of crops
- Enhances juice/pulp content
- Increases fruit set and reduces fruit drop
- Increases oil content in oil-seed crops



# BEE HIVE PRODUCTS-ADDITIONAL INCOME

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- BEE POLLEN
- BEES WAX
- PROPOLIS
- BEE VENOM
- ROYALJELLY
- QUEEN

# SUGGESTIONS TO FARMERS

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- For better crop yield protect natural pollinating insects.
- Provide hedges, nesting sites, forage etc. near the crop field.
- Encourage the beekeepers to keep colonies in the fields for pollination.
- Insecticides should not be applied during blooming of crop.

THANK YOU!

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