

REPORT

Visit to GKVK, Hebbal, Bangalore ,Karnataka .

I visited the GKVK campus in connection with introduction of APIS MELLIFERA bees for experimental purpose. Out of the eleven colonies of Mellefera introduced in December 1990, only three colonies are surviving. The rest of it have died due to various reasons including European Foulbrood.

I met Dr Veeresh, Head, Department of Entomology who is incharge of this Bee Research Programme. The main points of our discussion are :

- The reasons for death of colonies is due to the weak colony being bought from Hissar, Haryana. There was extensive robbing of the weak colony by Apis Indica and Mellefera colonies.
- The mite disease is present but it can be kept under control by using medicines. If the mellefera colonies are strong then it can face the mites
- In order to conduct more experiments they are importing ten more colonies of mellefera from north India in August 1991. Last time the colony consisted of four frames (so they were weak) this time they are planning to get colony consisting of ten frames (strong colony).
- The European Foulbrood disease will not spread to indica cerena species So there is no fear of spreading of this disease to cerena or other species.
- In Punjab the cerena was not there, and the mellefera has helped to produce five thousand tonnes of honey. The success is due to availability of foraging crops and pollen and nectar. But in south India it is difficult there are foraging plants but no nectar.
- Due to the severe opposition of people from Coorg and south Kanara he is not willing to carry the experiment in Malenad areas. But he is hopeful of increasing the mellefera yield in the experimental colonies (They could not get a single kilogram of honey from eleven colonies).
- There will not be any competition among the various species of bees as they observed that on a single sunflower plant all the three species of bees, cerans, mellefera and dorsata were seen foraging together.
- In Dharwad one Mr Bhat from Agricultural University introduced mellefera and it failed. In Bangalore One Mr Vekataramani from HMT brought mellefera to Bangalore from Ranikhet but this colony also failed.
- This is the first time that in India a systematic research is conducted to study various behavioural aspects of mellifera

Comments of a researcher who is doing his Ph D on Mellefera in GKVK

- It is essential to bring mellefera to increase the yield of honey, it has disease problems but one can treat them through medicines
- As hybrids have helped in agriculture to increase production, it is necessary to bring mellifera to increase production of honey in India
- If local species of bees get extinct, then we can bring mellefera and teach local people to manage mellefera
- The scientists in the campus feel that the foreign expert who oppose introduction of mellefera in India are doing so with the vested interest of maintaining their honey production high and to export them. They do not want India and the poor people in India to produce more honey as this will harm honey production in Europe.
(Please note that this researcher has never done beekeeping)
- There will be no harm to cerena species, even if cerena is wiped out it will not have any effects on pollination in forest ecosystems.

Reported by Pandurang Hegde after visiting GKVK on July 24, 1991

SAVE BEES CAMPAGIN

Report II

The campagin to save the indogenous honey bee species in south India is catching momentum. A letter was sent to Department of Ecology and Environment Government of Karnataka to take up the issue. The officer incharge said that he is very much concerned about the whole experiment and has asked the Vice Chancellor, University of Agricultural Sciences, Bangalore to send his comments.

- I met Basavalingappa, the minister for Ecology and Environment (on Sept 3) and brifed him about the issue. He asked whether there is any concrete evidence to prove that the disease from exotic bees has spread to the local bees. As usual he assured to do something in this matter.

Seeking Support: At an workshop on organic agriculture organised in Bangalore I raised the issue of exotic bees. In this meeting there were some scientists from University of Agricultural Sciences who promised to arrange for a dallouge between the scientists and people from save bees campagin. But it did not materilaise.

Present status of the research at GKVK: Out of eleven bee colonies of A.M. only three survive (on Sept 6 1991). Outa of this only one is developing well but other two colonies are weak. The research personnel do not know whether the dwindling of the colonies is due to the disease or due to absconding. ~~The~~ Robbing of A.M. by A.C. ~~and it~~ must have led to carrying the disease to indogenous species.

THERE ARE REPORTS OF DWINDLING OF APIS CERANA COLONIES IN THE UAS, CAMPUS AND IN THE AIS CERANA APIARY IN THE CAMPUS. But one does not know whether it is possible to link this with the introducing of exotic species in the campus.

The plan is to bring in more colonies of the exotic species in future.

Opinion of Devaih, Apiculture Development Officer, Bangalore:

- He was concerned about the introduction of exotic bees but he was of the opinion that the research should continue to explore the possibility of finding out whether the exotic bees can co exist with indogenous bees. He pointed out that in Northern India they co exist together and that it has been found that A.M. colonies yield more honey than local bee colonies. He also said that A.M. bees being bigger and it has the higher capacity to collect honey in comparison with local bees. (These statements are supported by Mishra's paper).
- Another point was that the Thai Sackbrood disease has destroyed the bee colonies in northern India and the A.M. is the only species resistant to this disease. This is the main reason for propagation of exotic bees in northern India.
- He invited the experinced beekeepers in his department to comment ~~af~~ on the statement of Dr Veeresh about the observation that Apis cerana, Mellifera and Dorsata species were seen foraging on one single sunflower. All the bee keepers said that they have never seen other species of bees foraging on a single flower. Thus it is difficult to belive the statement.

Scientific support: At present we have received letters from bee experts ~~in~~ from Denmark, Poland, ~~Assizazana~~ Nepal, and Austria supporting our case and expressing their opinion against the introduction of exotic bee species. On the basis of this scientific evidence there is a need to raise the issue at natioanal level and to bring pressure on the government to save the indogenous bee species.

Reported by Pandurang Hegde
September 7, 1991
Bangalore

Pandurang Hegde
7/9/91

Aug. '93

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SEPTEMBER

6

MONDAY

Oct. '93

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SURYANARYANA. M.C.

7 GURUKRUPA , 365/2 EKBOTE

COLONY

PUNE 411 042

PH (0212) 658570

PRK
714

NATIONAL BEE BOARD

Conf. on June 29, 1993 Agr Min. Delhi
Chandigarh collaboration with
Dir. Horticultural Board.

All India Bee Keepers Ass.

Aug. '93

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SEPTEMBER

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TUESDAY

Oct. '93

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→ MISHA - ICRAP -

Veeresh - BBA - President

Agr Univ - ICAR

AICRP ↑

ICAR

Veeresh + Mishra + ICAR group.

Bee researchers - Mylar - AM - good honey bee
per year 200 kg per year.

A Census - Natural hr. 6 kg. per year.

Why not to introduce AM to South India

Veeresh Talked to MISHRA - C. ICAR

INTRODUCTION OF APIS MELL IN SINDH

HISSAR

MISHRA

GKVK - Colours eml.

→ GKVK - Changanappa inbye for

A.M. Research

Aug. '93

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SEPTEMBER

8

WEDNESDAY

Oct. '93

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- No recorded disease. (before introduction)

4 yrs project closed.

Min of Coun & Industries Meeting called.

- KVIC - provided 40,000 Rs

Venesh utilize 1000

Feb 93

2 2nd week of 93.

Venesh has realised that AM has not been useful - confession.

Aug. '93

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SEPTEMBER

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THURSDAY

Oct. '93

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SACK BROOD in A Melliteva etc. 28 1990.

VIRUS - get transferred
Mutation?

Indian Bee Journal. - NOT published
my paper from DN AM.?

NO SLINTS OUTSIDE INDIA.

INTRODUCTION of AM

- Individual
- Bee Association
- GOVT →

SHR SHAGH K. S. I HAG

Editor of Indian Bee Journal
Har Aar Varsik.
HISSAR 125004

DR. O. B. ~~AN~~ OBRAL
JAMMU.

JAIN
HISSAR

1993

Aug. '93

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SEPTEMBER

10

FRIDAY

Oct. '93

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Symposium on

INT. Congress on ~~Bee~~ Pollination in Tropics

(8-13) Aug 1993 BKR - Ashoka Hotel.

wanted to pass resolution
to stop introduction of AM in
India but Veeresh said it is
not the forum.

① → Canna has adapted for centuries.
if it has a disease - can
you abandon this? Yellow's
Resistant

→ Susceptible to research

RESEARCH

→ Research - on evolving resistant
varieties to TSBV. welcome.

② AM. SACK BROOD.1990 WHITE identified sack brood
virus

AM-Resistant

VIRUS - resistant virus
is quite natural.

VIRUS - 100% mortality for new

2/15/93
2/20/93
1993

Aug. '93

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SEPTEMBER

11
SATURDAY

Oct. '93

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PUTUR 5/2 Colony introduced with 8^o

Kerala Garden 4 colonies 5/2
9 wasps.

A.M is temperate bee - cold

Tropical — hot.

Any animal chye - ~~wasps~~ Insects

12 SUNDAY

- Survival / Development

AM Bee

but not as efficient as local bees.

AM - survive in a Box
(HOME)

AM can't exist as wild bee

AC - ↓ (Box Bee)

Aug, '93

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SEPTEMBER

13
MONDAY

Oct. '93

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- AM - Mangrove Asepet is difficult

↓ followed their strategy

+ To Survive - guarantees it can adapt

↳ what is guaranteed that it will give
more honey than Acenna?

- foraging is essential.

yield - Mangrove is important.

than M or C.

- if you keep AM as kept by Acenna

then yield will not be not only yield.

Aug. '93

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SEPTEMBER

14

TUESDAY

Oct. '93

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→ Mishra/Venesh has not published a single paper on A.M. ?

→ Articles ? - publicity is more
→ heavy field → why not published
→

Information is ORAC
NOT published in research journal
exaggerated version.

Dr. Laxshmi Menon
Regional Manager
SEAD.

CARE

B-28, Greater Kailash I
Post Box - 4220
NEW DELHI.

Ranchi, Bihar

Aug. '93

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SEPTEMBER

15

WEDNESDAY

Oct. '93

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AM - all deadly disease in M.

3

(C)

(M)

-TSBV.

No other Myxomatosis

↓ (rest. after 4 yrs)

NO Medicine -

develop resistance

→ Resistant

(C)

→ (NOT IFU)

→ Not there
(Resistant)

→ Sex Brood

(Resistant)

→ Fowl Brood

AFB

EFB

→ CHALK BROOD

→ Mites.

(Tracal)

↓

lived with disease

AM - family of same people.

Aug. '93

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SEPTEMBER

16

THURSDAY

Oct. '93

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- Grassy Stunt virus

- Indica Hi tEI 'E' - Indica. Other early severe crushes

- Breeder-work - material resistant

ORYZA NIVARA - U.P. / wild rice

- collection 1 plant has resistant

IR11

↳ multiplied - gene transfer -

IRIRI - 1960 - IR-8

↳ U.P. gene - incorporate in all its release.

Gray-stunted -

virus - hamphus ligeroses growth

Jul. '93

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AUGUST

30
MONDAY

Sep. '93

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Gopal Palival
 Centre of Science for Villages
 Dattapur -
 Wardha - 442001
 (Maharashtra)

Mohan Hirabai Hirabai (आविता + मिहिर)
 Vaidya's House
 Rampuri Ward No. 8
 Gadchiroli - 442605
 (Maharashtra)

Jul. '93

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AUGUST

31

TUESDAY

Sep. '93

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Suresh Chergappan Celbu dt. 11 No 93

AM in Kerala - Makusta were not getting enough pollen & hence they were not growing

↳ shifted to govt. apiary at

KEDANALLUR near VIKASPET

Darabik says 'they (AM) robbed'

disease effected colonies in Makusta.

Aug. '93

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SEPTEMBER

1

WEDNESDAY

Oct. '93

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H.L. Nagegunda

ಶಿಕ್ಷಣ ಮತ್ತು ಸಾಂಸ್ಕೃತಿಕ

ಒಳಗಿನ ವಿಷಯ

ಇ

ಫ

School of Art - Opp. Court
Dharwad

ಇ

Govt. School of Art
Govt. TTI for Men
Dharwad.

ಶಿಕ್ಷಣ ಮತ್ತು ಸಾಂಸ್ಕೃತಿಕ

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Aug. '93

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SEPTEMBER

2

THURSDAY

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Dr. Keddy

Dr. Veeresh - Not a bee scientist - No experience.

1980 - Apiculture - started → 100 copies

Keeping Bees - becomes scientist?

Banglore Bee Keepers Assoc. BBA

Prof. Channabasavanna. Chairman (BBA) (HMT)

Dr. - Prebhunwang.

→ NEWBY -

10 day course - on beekeeping

Entomology Head - Dr Veeresh - BBA

Rotary Club - meets - with obj.

ICAR - Veeresh - connection. - Project

All India Coordinated Project

1978 - Delhi - IBRA - Int. Conf on

TROPICAL APICULTURE

IARI - Ind. Agr. Research Institute

organise IBRA.

↓ Ent. Dept. Head - Melrothra K. N.

M. S. Swaminathan IBRA

Int. Bee Research Ass

President for 2 yrs

↓ Mari Pearson

↓ Fung frans

1993

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SEPTEMBER

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FRIDAY

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M. S. Swaminathan

Let us have a Program

} suggested

AICRP = All India Co-ord. Res. Project

Honey Bees

ICAR -



started

Coordinator

- Reddy Interview

- Mishra. 1987

(Guide - Dogra) 1988

Selected

Hindi novel - Post -

Influence. G. S. Mishra Selected

1990 Appointment

11 Projects Head. - Chelikkatti

ICAR Institute - I Scientific ICAR

is supposed to be Authority

he is the head for policy

Univ.
or Series

} for all Academic Purposes
he is the head

Aug. '93

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SEPTEMBER

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SATURDAY

Oct. '93

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- He is the person who advises the govt.
- Virtue of his activity.

- Responsible for - Management
- Research
- Teaching
- Academic

MISHRA

CAR
ICRA

1990

MISHRA → Shimla (Solam)
(DOGRA)

5 SUNDAY

LR Verma → Shimla - selfish
do not done da
↓
RA. SHUL
↓
Matter verma student
↓
Shimla

CBRI - Pune - (KHA v i comm.)

Research work
Padke Res. going
Saranarayana Dir per
Remya Aer

Voluntary Ret-

Dir ~~Shimla~~

KHVC

1993

INACTIVITY - Shergilas MISHRA

PR
P-129

SAVE HONEY BEE CAMPAIGN

REPORT IV

Thai Sack Brood disease and its effects on bee keeping in South India: The arrival of Thai Sack Brood (TSB) disease was identified in March 1992. The death of hundreds of bee colonies in South Kanara district attracted the attention of Bee experts. J.Olsson, an expert from Denmark was in Coorg during that time and he toured the region affected by the disease. He took the sample of brood and sent them to the laboratories in Europe. The results showed that the brood was affected by TSB.

This disease has spread to various parts in South India. It has already destroyed bee keeping in Kerala. We are unaware as to whether it has affected the wild (Dorsata) colonies and other species. The death of bee colonies will lead to reduction in yield of horticultural crops due to lack of pollination. In addition to this, non availability of honey will reduce the cash income of bee keepers and of those tribals who collect honey from the forest.

Controlling TSB: There is no medicine to control TSB. The only alternative is to take up breeding programme to rear Queens that are resistant to TSB. The Government has to take immediate action and the work should be started on a war footing to rear the TSB resistant bee colonies. However, the State Government in Karnataka is still inactive and it has taken up decision which can cause further destruction of indigenous honey bees in western ghats.

Introduction of A.Mellifera in Coorg:

After the debate over introduction of A.Mellifera and the experiment in U.A.S. Bangalore it was decided that A.Mellifera colonies will not be introduced in western ghats. However, this decision was changed and the Mellifera colonies have been introduced in western

ghats. After a meeting of scientists and the bee keepers the state government has given permission to transfer eleven Apis Mellifera (exotic honey bee) colonies from, University of Agricultural Sciences, Bangalore to Maakkuta in Coorg. The Government & scientists are keen to test exotic bees for their resistance to TSB. But it may boomerang and many lead to more complicated problems, like virus being passed on to local honey bees.

We have to think on following points before banking on exotic bees:

1) The experiment ~~on~~ U.A.S. Bangalore has revealed that A.Mellifera is not able to adjust to tropical climate (eg. in Coorg the bees were so excited that they went out on full moon night).

2) On economic grounds A.Mellifera requires more inputs like sugar and regular medication to keep it alive and it is not cost effective in terms of honey production.

Under such circumstances was its a right decesion to have introduced A.Mellifera in midst of forest in Coorg?

Pandurang Hegde.

Feb 10, 1993.

The threat of extinction of indigenous honey bees is taking place at a faster rate. The deadly Thai Sack Brood (TSB) has already destroyed nintey five percent of bee keeping in the states of Kerala and Tamil Nadu. In Karnataka it has affected many districts in western ghats. In Kodagu and South Kanara districts it has created disaster for the small farmers and forest dwelling tribals, as a major source of cash income from the sale of honey is not available to them. In Puttur, South Kanara, the Bee Keepers Society has passed a resolution to introduce exotic Apis Mellefera bees in western ghats.

INTRUCTION OF EXOTIC BEES IN WESTERN GHATS :

In March 1992 the scientists at University of Agriculatural Sciences, Bangalore agreed that it is premature to introduce exotic mellifera bees in western ghats. While disussing with J.Olsson, the scientists became aware of the problems with exotic bees in the tropical region. It was agreed that the University will take up breeding programme of local indigenous bees in order to increase the honey yield.

However, with the onslaught of TSB disease and death of hunderds of colonies in Karnataka, the attention is again to introduce mellefera bees in western ghats. Unfortunately the government department involved in bee keeping has taken the responsibility of introducing exotic bees in western ghats. They have introduced five mellifera colonies in Maakkuta, Kodagu.

We, (J.Olsson) visited this place in the second week of March 1993. The colonies are kept in Mini Rubber Estate (Kerala). Olsson inspected all the four colonies. In the height of honey season the exotic bees were not collecting honey. The area is full of flowering plants and even in this state of abundance the bee colonies were getting weak. They were not producing enough worker bees. In future it will be difficult for these colonies to survive.

THE ONLY ALTERNATIVE :

One of the main reason for introducing exotic bees is that they are resistant to TSB disease. These exotic bees may survive but they will not be able to yield honey. Similarly they will not pollinate the crops and forest trees. Under such circumstances they will, be economically not viable in western ghats. The only alternative is to find out the bee colonies (indigenous) that are resistant to TSB and breed new colonies from these local bees. Breeding of indigenous bees is very crucial for the survival of bee keeping in south India. But the scientists and the governemnt is bent upon propagating that exote bees.

It seems that the government and the scientists are not willing to learn from the available evidence but they are interested in only exotic bees. A vested interest seems to have developed among these people who are willing to sacrifice the interest of bee keepers as well as the diversity of this region.

LOSS :

The death of bees in western ghats is going to cause enormus damage to the plantation economy of the southern states. Hunderds of crores of ruppees will be x lost due to lack of pollination. The real threat is the total destruction of diversity in the region.

Before it is too late we have to launch a strong campaign to press the government to start breeding programme of local bees and to stop the introduction of exotic bees.

Pandurang Hegde

Pandurang Hegde
March 14, 1993

Hulemalgi Bldg
Sirsi 581 401, karnataka

White sheet
Single spacing
bto.
(1+4)

JK F 14

The campaign to save the indigenous honey bees in India is at a crucial stage. Due to our efforts the state government of Karnataka assured that it will not introduce the exotic A. mellifera in the western ghats. However, at present ~~this state~~ ^{the state} government is one of the main agency propagating the exotic bees. What is the status of these exotic bees in the state?

In south Kanara district the bee keepers society distributed the colonies of exotic bees ^{(purchased from West Bengal).} In most of the cases it is a failure. Only in one place there is report of success (Puttur).

In Kodagu district the efforts by individual bee keepers and the government ^{to introduce A. mellifera} is a failure. In the second week of October ¹⁹⁹⁵ Dr. Suryanarayana, ^(ex CBRTI, PUNE) an expert on honey bees ^{Theri Satta Bavad} visited Coorg to look at the impact of ^(TSBV) TSBV. In Chettalli (Central Horticultural Research Station) ^(CHRS) we observed that the colonies of exotic bees do survive but do not produce honey. In the same area the local bees are able to produce honey. At Honey Valley (Suresh Chengappa) the local bees ^{that are resistant to TSBV} are gradually coming back. ^{This is a positive sign.}

In Chettalli, CHRS is able to develop a treatment to solve TSBV. They have succeeded in controlling TSBV by RIVBAVIRIN compound. Colonies have recovered after the use of this compound.

Inspite of all these failures the state government of Karnataka is propagating the exotic bees in new areas. The reason behind this decision seems to be the pressure from National Bee ^{keeping Development} Board that gives financial assistance to those projects which explicitly favour A. mellifera.

Introduction of exotics in other parts of India and the status: (According to Dr. Suryanarayana, Pune)

- Kerala : Total failure in rubber estates and the farmers reverting for local bees
- Tamila Nadu ; Failure but the government is pushing exotics (Coonoor in Ooty and in Marthandam)
- Andhra Pradesh : Reported failure
- Orissa : Is surviving but not able to produce honey. But the local bees in the same area is able to produce honey.
- Madhya Pradesh : Failure in Indore region
- Maharashtra : Failure in hill region like Mahabaleshwar but successful in Latur region (irrigated area)
- Kashmir : Failure, local bees are emerging that are resistant to TSBV.
- Himachal Pradesh : Success in the Shivalik hill areas and plains but there is apprehension of *A. mellifera* driving away local bees in apple orchards leading to fall in production of apple ^{yields}. Local bees survive and traditional beekeeping exists in interior regions.
- Uttar Pradesh : *A. mellifera* is successful in Gangetic Plains and foot hills of Himalayas. Down ⁿfall of ^{A.}Cerana bee keeping.
- Punjab and Haryana: *A. mellifera* doing well and producing honey. But the claim that exotics yield upto 40-60kg of honey per box per year is yet to be confirmed. Reports reveal stagnation in average honey yield or even reduction. This needs further cross checking. Is it due to inbreeding?
- West Bengal : *A. mellifera* is successful (due to ^{cultivation of} mustard monoculture?)
- Assam : ^{A.}Melli^fvera introduction is a failure.

The above picture shows that there are serious problems with exotic honey bees. There is urgent need to review the introduction of exotic honey bees. This will help the country to decide a clear out policy

on beekeeping in India.

Inspite of the failure of A.mellifera the government is determined to propagate exotics all over India. At this juncture we need to address following questions.

- Should we allow introduction of A.mellifera to new areas?
- Is ^{A.}mellifera, the solution to fight against TSBV?
- What are the possibilities of spreading of TSBV to A.Dorsata and A.Flora?

Can anyone help to find the answers?

October 20, 1995

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PKK F14

STATUS OF APIS MELLIFERA IN ORISSA

Date: 16/04/1996

Met. Dr. Premanand Panda, Head Department of Entomology, University of Agriculture and Technology, Bhubaneswar. He is the project Co-ordinator of All India Co-ordinated Honey Bee Project of ICAR.

Dr. Panda said that in 1990 8 *A.mellifera* colonies were brought to Bhubaneswar from Hissar (Dr. Mishra). However they did not survive, and in 1993 they brought 15 more colonies from Hissar. At present they have been able to multiply 100-150 colonies. It performs well in regions of mustard field. He has got an average yield of 25-30kg/per box per year. Highest yield was 60kg.per box.

He said that the colonies he is maintaining is purely for research. They face severe problem of aphids. Extensive use of pesticides in the University campus is also one of the reason for failure of *A. mellifera* in the campus. The limited foraging availability is also another problem.

The sugar syrup has to be given in lean season especially during the monsoon. On an average one kg of sugar per box is to be given every 15 days. On an average six times the sugar syrup needs to be given (about 6kg per box per lean season). The problem in Orissa is of extension. The government is not interested in extension activities. Though the research has proved to be a success he is unable to extend it to other areas. Already many farmers have sought *A.mellifera* colonies from him. He has supplied 50 *A.mellifera* colonies to an NGO (AGRAGAME) in Koraput District.

The main honey in the market comes from *A.dorsata*. In the forest

tribals harvest *A.dorsata*. He or his department has not done studies on *A.dorsata*.

He feels that there is enormous potential for bee keeping in the state but the beekeepers need to learn the management technique of *A.mellifera*. In Orissa the Sarvodaya groups in Koraput and Phulbani are still practicing *A.cerana*. *A.mellifera* has been supplied by him in Mayurbanj and Kheojar districts (15 and 10 colonies). The intensity of Thai Sack Brood is very less in Orissa.

Their department is conducting research on *A.mellifera* funded by the Bee Board. He also gave a paper in which the results of pollination by *A.mellifera* seemed to have helped in higher yield of sunflower by 30% in comparison to the pollination of the sunflower by *A.dorsata* and *A.floria*!!!

Dr. Panda also gave me the address of Bee keepers in 24 Paragana (south) in West Bengal who have succeeded in keeping *A.mellifera*. The main foraging is Leechi.

The honey is sold at Rs. 50/-per kg. The Leechi honey is very much in demand. He said that the beekeepers migrate the boxes to forest areas where there is forage. On an average they get 90 kg per box per year (too high to believe?)

Mites is a problem and regular use of pesticides is very essential to keep the mites away.

The address in W.B. is: B. MONDAL
BEE KEEPERS SOCIETY
VILLAGE: SHASAN
BARUIPUR, 24 PARAGANA SOUTH
W. BENGAL 743 302

He is of the opinion that in North India the in breeding of *A. mellifera* has started affecting the yields.

- Mellifera

Body size / weight 405

flightless / more strength

- Multiplication Problem
മൂലം കൂടാതെ.

- കൂടെ മറ്റൊരു - സമീപത്തു കൂടെ.
കൂടെ കൂടെയ്ക്കു കൂടെ കൂടെയ്ക്കു.

- Radium. കൂടെ.

- Contact \bar{c} local bees - spread
of disease

കൂടെ കൂടെ DISEASE 20.

Prof. Chandhry
Senior. Sc. df.

CBRI

KVIG, 1153 Ganeskhind Rd

PUNE

B/5/91

SHETTY. KVIC. Block

Phase I

(1)

ಪೊನ್ನಾಂ ಲೇವಿ ಕೋಮುನಿಟಿ

Entomology

ಸಂಕ

- Dr. Veeresh Lewis, ಸಂಕ
Introduce 4-5 colonies ತಂಪಾಪ್ಪೆ.

Aug / Sept 1990

GKVK Campus ನ್ನಾ

ಸಂಕ ಪಾನ್, ಗಾಂವಾ / ಕಿಲ್ಲಾಂವಾ
ತಂಪಾಪ್ಪೆ.

- ವೈದ್ಯಾಂಕ. ಆಸಿ. ಲೈಟ್ ಕೊಮು.
↓ 10 colonies ಕಿಲ್ಲಾಂವಾ ನ್ನಾ, 1991
ರಾ. ತಂಪಾಪ್ಪೆ.

- Research ನ್ನಾಡಿ - ಎಲ್ಲಾ ಕೊಮುನಿಟಿ.

- ಊಣಿಂ: Entire Colony will Perish

C B R I - Introduction Large scale

ನ್ನಾಂಪಾಪ್ಪೆ.

~~WFC~~ VFC - 2018 (2018)

80% ವ್ಯಯ ವಿಸ್ತರಿಸಿ : 40% ಕೆಲವು ಸರ್ಕಾರದಿಂದ
to MINOR Forest Produce

- VFC ಗೆ ಸಂಪನ್ಮೂಲ / ವಿಸ್ತರಿಸಿ ವಿಸ್ತರಿಸಿ ಉಪಯೋಗಿಸಿ
- tender 2018 VFC ವಿಸ್ತರಿಸಿ ಸರ್ಕಾರದಿಂದ
- to ವಿಸ್ತರಿಸಿ ಸರ್ಕಾರದಿಂದ ?
- 336 VFC / ಸರ್ಕಾರದಿಂದ 2018 MFP ಸಂಪನ್ಮೂಲ

ಸರ್ಕಾರದಿಂದ 92% VFC ಸರ್ಕಾರದಿಂದ

98% - dissatisfied

27% - 2.5% - ವಿಸ್ತರಿಸಿ VFC

- VFC. ವಿಸ್ತರಿಸಿ - ಸರ್ಕಾರದಿಂದ ಸರ್ಕಾರದಿಂದ
(ಸರ್ಕಾರದಿಂದ) ಸರ್ಕಾರದಿಂದ

25% To Govt.
+ 25% Tax

2018 Market Rate 50
VFC - 30

(+ve)

ವಿಸ್ತರಿಸಿ ಸರ್ಕಾರದಿಂದ ಸರ್ಕಾರದಿಂದ
to ವಿಸ್ತರಿಸಿ / ವಿಸ್ತರಿಸಿ
ವಿಸ್ತರಿಸಿ / ವಿಸ್ತರಿಸಿ

Rani Prasad

raniprasad@yahoo.com

Ranjeta —

ସେଟ୍ ଅପ୍

ସେଟ୍ ଅପ୍

River Valley

ସମସ୍ତ କ୍ଷେତ୍ରରେ ସେଟ୍ ଅପ୍ କରାଯାଇ
ସମସ୍ତ କର୍ମଚାରୀଙ୍କୁ ସେଟ୍ ଅପ୍ କରାଯାଇ

WB - 1200 ଟଙ୍କା
ଅର୍ଥ - 1200 ଅର୍ଥ ଥିବୁ

NCOs work - ବର୍ତ୍ତମାନ Motivation
ଅର୍ଥ ଅର୍ଥ (ସେଟ୍ ଅପ୍) କରାଯାଇ
100000

↳ ସମସ୍ତଙ୍କୁ ସେଟ୍ ଅପ୍ କରାଯାଇ

↳ 15 ଟଙ୍କା ବର୍ତ୍ତମାନ
କର୍ମଚାରୀଙ୍କୁ ସେଟ୍ ଅପ୍ କରାଯାଇ
କର୍ମଚାରୀଙ୍କୁ ସେଟ୍ ଅପ୍ କରାଯାଇ

30% ବ୍ୟୟ (Clvarine) (ସେଟ୍ ଅପ୍)
ସେଟ୍ ଅପ୍

Clvarine

→ 'N/A' / N/A
K.50-100

MCA / ... / ...
...

- ...
- Commission ...: Eng / ...

...

MYRADA /

Mandya / ...

RK ... / ...

ICDSS / ...

Jagadgurum Shivacharya Sanithi → ...

JSS
STEM

Jain ...

Vijay Kumar Dorethra IAS

Andhra ... Contractor

SAVE HONEY BEES CAMPAIGN

by Pandurang Hegde

INTRODUCTION

Beekeeping in India-A.cerana/A.dorasata/A.floria.

Honey hunting in the wild by Tribals.

Beekeeping as a small scale income generating industry.

Modern bee boxes and systematic development of beekeeping.

S.India honey comes from A.dorasata and A.cerana.

Coorg-Western Ghats-ideal for bee keeping. Dwindling forest resources has adverse impact.

One colony an yield of 40kgs in a year.

Cash Income + Economic benefit in terms of pollination.

INTRODUCTION OF EXOTICS

By Europeans, Britishers

Karnataka-1990 At GKVK(12 colonies) ACIRP The Scientists claimed that they are only doing "controlled" experiment. Beekeepers threatened and contacted us. Debate on AM/AC

Dangers of Experiment: OPINION OF EXPERTS

Expert	Can experiment be done in controlled situation?	Threat of spread of disease to AC.	Can it be controlled?
Ruttner (Austria)	No. Due to experiments disease has spread in Asia.	Yes,definatly.	Very difficult all boxes, colonies need to be destroyed.
Yoke (Polland)	Only in an Island.	Disease will be passed from AM to AC.	Can be controlled.

Nicola Bardber IBRA England (U.K.)	Not possible	Yes	Disease in wild colony is very difficult to control. Possible in boxes.
Verma (India)	Not possible	100% definite	Terramycin 25mg
Olsson (Denmark)	Not possible	Possibility in high.	All species might be affected. So it becomes difficult.

SHBC (SAVE HONEY BEES CAMPAIGN)

- With scientific support SHBC launched- Pressure on scientists, policy makers. Argued for inspection, testing. Not to take to Western Ghats, State Government also agreed on this.
- Creation of awareness.
- Support of people from general public
- In spite of this Govt., decides to propagate AM.

AM Vs AC

AM: is it a success?

Yes, in some parts of India where monoculture fields (Arahar Mustard) Management skills is learnt has to be done on large scale-Guilt of honey from AM. AM Disadvantages-Monoforaging, disease mites-chemicals required-higher skills-higher capital costs-Queens to be imported not suitable in the forest region?

AC

- In spite of the neglect AC is still only species suitable in our situation because it is hardy, suits to forest region, is socially appropriate with less costs and material inputs reasonably good yield with adoption of management practices.

TSBV is a temporary phase. Solution is not propagation of AM. But to support AC in breeding and research.

It is not the perfect honey bee but it is the perfect environment with ample natural resources for foraging the bees that can bring honey revolution in India.

Pandurang Hegde
SHBC, C/o Prakruti, Chowkimath, SIRSI 581 401, Karnataka
PH: 08384-75139, FAX: 08384-75131

SAVE HONEY BEES CAMPAIGN

In south India, in Kerala, Karnataka and Tamil Nadu the spread of Thai Sack Brood Virus (TSBV) has destroyed beekeeping. Thousands of bee colonies (*Apis cerena*) have been wiped out due to TSBV. The disease started in December 1992. It is still ravaging many parts of south India.

As a response to the TSBV the government is propagating the exotic honey bees (*Apis mellifera*). However, it has been found that in southern states, with tropical climate the exotic bees have not been able to survive, let alone produce honey. These exotic bees are also a drain on resources as they have to be medicated and the management practices is entirely different from indigenous honey bees.

The exotic bees, though resistant to TSBV, can be carrier of the virus. These exotic bees find it difficult to live with Asian mite (*Varroa jacobsoni*). They are also not suitable in the heavy rainfall zone of western ghats with tropical forests. There are no large monoculture fields for foraging. Under these conditions the introduction of exotic honey bees has resulted in failure affecting bee keepers and ecology in south India. Instead of learning from this failures, the government and scientists are propagating exotic honey bees as an answer to deal with TSBV.

We need assistance from bee scientists, bee keepers from all over the world who can inform us;

- Whether *A. mellifera* can perform well in tropical regions? If so where it has performed well?

- Is there difference between honey produced by mellifera and cerana?
- Is indigenous (A.cerana) bees inferior, producing low yields of honey?
- How to tackle the problem of TSBV? (local strains that are resistant to TSBV is gradually emergining).

QUESTIONS: A. mellifera/A.cerana

1. What affect will A.mellifera have no local A.cerana bees when A.mellifera is introduced on a large scale?
 - a. Will it affect the local bees and other pollinating agents? (eg. In Himachal Pradesh, Himalayas there are reports that introduction of A.mellifera has driven away other pollinating agents, reducing apple yield).
 - b. Is it true that in Japan introduction of A.mellifera has led to extinction of local A.cerana bees? If true, has it led to any problems in pollination of tree/forest species? Is there a study?
2. a. Can A.mellifera be a medium that carries TSBV (Thai Sack Brood Virus)?
 - b. Is A.mellifera resistant to TSBV?
3. In south India, the scientists, and the government is pushing exotic A.mellifera as a solution to TSBV (that has affected A.cerana). Is this a wise judgement?
4. What are the possibilities of TSBV spreading to A.dorsata and A.floria?
5. How do we deal with TSBV? Are there any medicine? Is it effective?
6. Is there any breeding technique developed for A.cerana? Is this technique used? In which country?
7. In south India, if more colonies of A.mellifera is introduced what are the changes of introducing more disease or pests' (mites)? There is a belief that already the TSBV and all other

diseases associated with A.mellifera has come to stay in south India, so there can be no harm if more A.mellifera colonies are introduced? What is your opinion?

8. There are reports that the quality of honey collected by A.cerana is much better than A.mellifera. How scientific is this statement? (eg. A.mellifera tends to go for foraging monoeculture crops and A.cerana forages on diverse crops)?
9. There are reports that in China has introduction of A.mellifera has revolutionised beekeeping by increasing the honey yield. What are the main reasons for this success? Can India/other countries in south Asia follow this model?
10. Is there any study which shows the interlinkage of:
 - A. Bees and crop yield
 - B. Bees and biodiversity of forests

Kindly help us to find answer to above questions.

Thanking you in advance

SAVE HONEY BEES CAMPAIGN

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8. Artificial materials for keeping the colony fed during lean months will be studied.

Part II - Wild bee fauna of Western Ghat

The Wild bees or giant rock bee (Apis dorsata) is a good honey gatherer. Fifty percent of total honey production is obtained from wild bees.

The taxonomy and distribution of wild bees prevalent in Western Ghat region will be studied under the project. The information obtained from the studies will be of considerable scientific value and practical utility in augmenting the income of the beneficiaries by recommending scientific and improved methods for the exploitation of wild honey and wax, an important forest produce.

Methodology

1. Survey on the wild bee fauna, their taxonomy and distribution in Achencoil, Idukki and Attapady regions of Kerala.
2. Details on the comb size, distribution of brood, pollen and honey in the comb, and the quality and quantity of honey collected during different seasons of the year will be studied.
3. The incidence and distribution of natural enemies and diseases associated with the various life stages of wild bee colonies and their role in inducing frequent swarming will be investigated.
4. The quality and nutritional aspects of honey collected by wild bees will be assessed.
5. Evaluating available equipment for the hives of wild colonies for collection of honey. Their modifications and improvements for large scale adoption also will be attempted.

Statement - II

Part I - Biometrics and colony characteristics of different types of hive bees in Western Ghat region.

The information obtained by the investigation will be of considerable scientific and practical utility. It will help in identifying types of hive bees with more desirable characters and their popularisation will improve the return from this subsidiary source income, to the inhabitants of the locality. Honey being highly nutritive will also help to improve health standards of the population.

Objectives:

The project aims at gathering information on the biometrics and colony characteristics of types of hive bees prevalent in Western Ghat region of Kerala.

Methodology

1. The colony characteristics viz. nectar and pollen collecting ability, brood nature, bee temper as well as the quality of honey produced by different types of hive bees will be studied in detail.
2. Occurrence and distribution of natural enemies and diseases in the hives kept in various localities will be assessed.
3. Biometric studies of different types of hive bees collected from various localities will be undertaken.
4. The flowering pattern of trees in forest areas will be studied in collaboration with the Department of Botany, University of Kerala and Forest Research Institute, Peechi.
5. If desirable sources of good pasturage is identified, the merits of adopting migratory bee keeping in such areas in comparison with migratory bee keeping now adopted in rubber plantation will be assessed.
6. Hives of alternate materials for bee colonies will be studied and the possibilities of improving local practice if any will also be explored.
7. Biochemical studies on honey collected from different pasturage, their processing techniques, chemical composition and keeping quality will be studied.

NOTE ON SAVE THE BEES CAMPAIGN :

Geographical Area : Bee keeping is mainly done in hill districts of Malnad region in Karnataka. The districts in which it is carried on are Kodagu, South Kanara, North Kanara, Shimoga, and Chikkamagalur. The Save Bees Campaign activities will be spread in all these districts.

Target Group :-

The Major component of the target group is tribals living in these hilly region. About 20,000 tribals are earning some cash income through gathering honey. In addition to these there are small and marginal farmers who are engaged in bee-keeping activities.

Situation :-

The collection of honey from forests in these regions is done in hapazard way. Many times the tribals destroy the beehive to get the honey. There are ways in which honey can be harvested on sustainable basis.

The bees play a very important role in maintaining the ecological balance and genitic diversity. They help to pollinate agricultural crops and also in forestry. Their contribution in economic terms, pollinating fruit and horticultural crops is very high.

~~Badly~~ Broadly there are two types of bees from which honey is collected. The rock-bee (*Apis Dorsata*) and the asian bee (*Apis Cerena*). The rock bee is a wild colony that lives in forest areas. It is difficult to domesticate them because of migratory nature. The other asian bee can be kept in bee boxes and honey can be collected on a regular basis.

Problem:-

The problem is basically the threat to both rock bees and asian bees due to introduction of exotic european bees for the first time in South India. This introduction will probably introduced unknown diseases, destroying the indegenious bees.

This may lead to irreversable damage to the ecosystem. Mainly the destruction will hinder the pollination process in agriculture horticultural and forestry crops. It will also deprive tribals of their meagre cash income through collection of honey.

Action :-

There is an urgent need to stop the introduction of exotic bees into Karnataka. In order to do this there is a need to collect a scientific data basis to support the cause for saving indegenious bees.

In order to study the impact of exotic bees, it is possible to visit areas in north India where exotic bees are introduced. We can observe the impact from their experience. Secondly a visit to Central Bee keeping Research & training Institute at Pune will help to exchange ideas with expert scientists.

At grass-roots level it is essential to create awareness among the people. In order to create awareness, a number of awareness camps are planned in various regions. A slide series will be developed for this awareness work. Booklet in Kannada will also be brought out for general people.

SAVE BEES CAMPAIGN :

Bees play a very important role in pollination of agriculture and forest crops. In addition to this it provides employment to thousands of families through honey production. There are special tribes known as "Jenu Kurubas" in Western Ghats Hills. Their traditional occupation is collecting honey and wax from the tropical dry deciduous forest areas.

THREAT :- The local bees (APIS CERANA) is threatened due to introduction of exotic European bees (APIS MELLIFERA). For the first time in South India the European bees were introduced by the Entomology department, University of Agricultural Sciences, at its Gandhi Krishi Vigyan Kendra in Bangalore. The scientists brought 15 colonies of European bees from Hissar, Haryana in December, 1990. By the end of May 1991 only 2 colonies have survived and the rest got destroyed due to mite attack and European Foul Brood disease. The scientists are planning to import more colonies of European bees for this experiment.

THE ISSUE : Though the introduction of European bees is for experimental purpose, the experiment cannot be conducted under controlled conditions. The European bees interact with local bees. This interaction increases the possibility of passing on the disease from exotic bees to local bees. The local bees do not possess the resistance to these diseases and there is every possibility of local bee colonies getting destroyed and eventually become extinct.

The European bees are introduced with the objective of increasing the yield of honey. But these exotic bees are genetically not suited to tropical hot climate of South India and it might pose a severe death blow to local bees and indigenous bee keeping industry. This opinion is confirmed by many well known international bee experts like Jan Olsson from Denmark, Prof. Woyke from Poland, Prof. Rutter from Austria and Shri. K.M. Joyappa from Kodagu, India.

AFFECT : The experiment with bees is always very risky. In 1956 African bees were brought to Brazil for breeding experiment. This has led to creation of Africanised bees that has threatened bee-keeping upto U.S.A. Even in Kashmir and Himachal Pradesh introduction of European bees has led to destruction of local bees. Based on these experiences it is possible that the same will be repeated in South India leading to extinction of various indigenous bee species. The affect will be :-

ON TRIBALS :- : About 10000 tribal families will loose employment and income.

ON ECOSYSTEM : The Pollination of Agriculture and forest crops will affect the total ecosystem in the region leading to extinction of many valuable species.

ON GENETIC DIVERSITY :- It will destroy the genitic diversity of the area, leading to introduction of single bee species - a genitic uniformity - leading to vulnarability.

THE NEED : The need at present is to stop the experiment at University of Agricultural Sciences, GKVK, Bangalore. And in future to stop introduction of exotic bees in South India.

: To pressurise the government for a bee research policy that aims at breeding from local bees that can raise the yield. There are bee colonies in Kodagu that can raise honey yield equal to or more than European bees.

Please support this campaign to save indegenious bees. These bees give us sweet honey and help us to pollinate our crops. At present they are under grave threat of getting extinct by an hasty act of few scientists.

Bees can not protect themselves from this threat. So we request you to come out in support of bees.

Join the campaign to save the bees.

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SAVE HONEY BEES CAMPAIGN

REPORT FROM KODAGU (THROUGH SURESH CHENGAPPA)

The mellefera colonies (5) were introduced in Makkuta- Coorg Kerala border in Jan 1993. In March (7) they were moved from Makkuta to KEDANULLUR near Virajpet. It was kept here till April 10, 1993.

Kaveriappa, the beekeeping organiser informed that out of 5 colonies brought from Makkuta one colony was without Queen. They were not getting pollen in Makkuta as it was rubber season. Hence Kaveriappa suggested that they be shifted to Kedanallur. One week mellefera colonies were robbed by Apis Indica, Now they have shifted the three surviving colonies to Makkuta around 10th April.

After bringing mellefera colonies the disease (Thai Sack Brood) is rampant in Kedanallur and nearby areas. Probably disease must have reached Virajpet.

