

1. TITLE OF THE PROJECT & DST NO. : JAPANESE QUAIL DEMONSTRATION
CUM PRODUCTION CENTRE ;
SP/RD/055/2000

2 PI : Dr. L. Minaketan Singh
Manipur Science & Technology Council
Central Jail Road, Imphal – 795001
Phone : 0385-2230037, 2443451
Fax : 0385-2230037
E-mail ; mastec@ sancharnet.in

3. DATE OF START: February 24, 2003 SCHEDULED DATE OF
COMPLETION : November 23, 2005

4. INTRODUCTION

Manipur is an economically backward region consisting of 90% of the geographical area by hills and the rest by plains. The transport and communication systems are poor and industrial advancement is slow. Unemployment problem is high.

The present scale of poultry industry in the state is far below the potential. The poultry meats and eggs available in pockets in the market are not adequate to meet the increasing demand of the people. Poultry eggs are imported from the states like Andhra Pradesh, Haryana, Punjab etc. There is heavy demand for meat (animal proteins) in the local market as majority of the people are fond of meat and eggs There is a need to think of other ways and means to find a solution so that minimum requirement of animal proteins will be available in the market.

Japanese Quail is a good source of meat and egg. The small size eggs of quail are within the purchasing limit of the small and marginal farmers, landless labours and other rural poor or a common man. While quail farming has reached the international markets, the awareness of it is yet to be spread in the state of Manipur. There is a need to promote quail production programmes in this region. Promoting quail farming in the rural area will not only supplement the shortages of animal proteins but will also generate supplemental income for improvement of their socio-economic status.

The ongoing project is an attempt to cause a sustainable Quail industry in the region by creating awareness among the farmers and providing sustained technical support system

5. OBJECTIVES OF THE PROJECT

- i) Popularisation of quail farming techniques among farmers in Manipur.
- ii) To provide hatching and incubation facility to quail farmers consistently to sustain the industry in the state.

- iii) To provide periodic training to farmers.
- iv) To provide quail eggs and quails to the farmers

6. METHODOLOGY & APPROACH

- (i) Review of existing literature/ report
- (ii) Consultation with the local scientists/ consultants. Consultants are involved in all the stages of project implementation
- (iii) Construction of rearing sheds
- (iv) Procurement of equipment by consulting local consultants.,
- (v) Purchase of fertile quail eggs from CARI, Bareilly, U.P.
- (vi) Incubation of procured fertile quail eggs and rearing of the chicks under battery type cages.
- (vii) Awareness training programme about quail farming and its importance for improvement of socio-economic condition
- (viii) Distribution of quails to the trainees /farmers / unemployed youths. Distribution of quails to the interested persons / farmers/ entrepreneurs will be continued in the post project period also. The awareness programme is planned to be organised in all districts.
- (ix) Extensive monitoring work by visiting the farmers places who are involved in the quail farming practices.
- (x) Extending incubation services to the farmers.
- (xi) Preparation of final report in the 24th month of the project for submission to the sponsoring authority.

7. Work so far done :

7.1 Construction of rearing shed

The demonstration center / rearing shed of the Japanese quail has been constructed at the plot of Manipur Science & Technology Council at Takyelpat, at a distance of about 4 km. in the west from the Capital town Imphal. The shed is a wooden concrete floor. The shed consists



Japanese Quail demonstration centre

ent

of two rooms viz, project office / staff room and quail rearing room where there is space for installation of cages for a capacity of about 10000 (ten thousand) quail birds

7.2 Construction of multi layer quail rearing cages and procurement of brooder

The three layer quail rearing cages have been constructed by engagement of local artisans. All the cages are of wooden structure with wire mesh wall. Chicken brooders are procured from the brooder manufacturing agencies. (N.B.:- The iron poles or iron items available in the market are very costly since the items come from outside the state. Hence, instead of using irons, good quality wood available in the region have been used to construct the cages)



Multi layer quail rearing cages

7.3 Incubation and Hatching :

The Principal Investigator and the Project Assistant paid a visit to the Experimental Quail farm of the Central Avian Research Institute (CARI), Barielly, U.P. to see their rearing facility, learn the techniques of the rearing and also expert consultation. One thousand number of fertile hatching eggs of quail were procured from CARI for incubation at Imphal. The eggs were incubated and hatched at the hatchery of State Veterinary Department. Out of 1000 eggs incubated, we could get 700 number of quail chicks i.e. @ 70%. The chicks were reared at the Quail demonstration centre of the Council as parent stock. A mortality rate of about 8% was observed while rearing the quails.



Adult Japanese Quails in the shed / demo. centre

While counting the number of female and male birds, it was found the male birds more in number than the female birds. Hence, keeping the male and female in an appropriate ratio of 1:3, the male birds in excess were sold @ Rs 15/- per adult bird and the demonstration centre has, now stock of 336 parent quails (male 84 and female 252)

N.B. *Literature survey indicated that the maturity period of quails is 45 days. However, it was interesting that some of the female quails started laying eggs when they become 35 days old and out of the remaining, most of them also started laying eggs from 40th day of their birth. A study is required how quails have early maturity in this hilly region.*

A new batch of 2000 hatching eggs collected from the Quail demonstration center has been incubated at the hatchery of State Veterinary Department on payment basis out of which 1200 quail chicks only were obtained showing hatchability rate of 60%. The quail chicks after rearing about one week have been sold to the interested farmers/ ex-trainees @ Rs 5/- per bird on the first come first served basis. The process is becoming a regular activity of the project implementation.

7.4 Electrification : The demonstration center / rearing shed is well electrified.

7.5 Availability of quail eggs :

The center is collecting about 150 - 170 eggs in average daily and on the basis of size, the eggs were classified into two categories viz,

- i. Hatching eggs (which were meant for incubation and hatching)
- ii.) Commercial eggs.



10 gm. weigh quail egg

The hatching eggs are made available to the interested farmers/ individuals @ Rs 0.75 per egg and commercial eggs @ Rs 0.50 per egg. The weight of the eggs ranges from 10 gm to 12 gm. The response from the people has been overwhelming. They keep on visiting the center to have look at quail birds and also buy eggs or live birds.

7.6 Training for farmers

The First phase State level training for farmers on quail rearing was organized on November 12, and 19, 2003. Altogether selected forty farmers /entrepreneurs have been trained in quail farming The publicity of the programme was made through media

organizations such as Local News Papers agencies, Local Cable Network, All India Radio, Imphal Station , DDK, Imphal etc and state organizations.

7.6.1 Report of the Training in Japanese Quail rearing

A two day training in Japanese Quail production was organised by Manipur Science and Technology Council (MASTEC) during November 12 and 19, 2003 at the Youth Centre, Imphal.. The training was organized as part of implementation of the project “ Japanese Quail

Demonstration cum production Centre being catalysed and supported by Science and Society Division, DST, GoI, The target participants were farmers, entrepreneurs, qualified unemployed youth, interested individuals. The main objective of the training was to popularize and introduce quail farming in the state and make aware of the participants about rearing of quails for income generation.

The training was inaugurated by S. Madhu

Sudan Singh, Director, Department of Science and Technology (DST), Govt. of Manipur and presided over by Shri Th. Surendranath Singh, Executive Director, MASTEC. Dr. S. Joykumar Singh Director, Veterinary and Animal Husbandry Services, Govt. of Manipur attended the inaugural function as the Guest of Honour.

In his inaugural address, Shri Madhu Sudan Singh mentioned about the needs for introduction of Japanese Quail farming to the farmers, entrepreneurs etc. as a source for generating income. In his presidential remarks, Shri Surendranath Singh asked the participants to work sincerely and become a successful entrepreneur.

In the speech by Guest of Honour, Dr. S. Joykumar thanked the MASTEC ‘s initiative on introduction of Japanese Quail farming in the state at right time. He further expressed that he would extend all the possible co-operation in implementing the project for the benefit of the people of the state.

Earlier Dr. L. Minaketan Singh, Scientific Officer (Project PI), while welcoming the guests deliberated in brief upon the goal of the programme.



Inaugural function of the training :

At the dias from right ,1. Executive Director, MASTEC, 2. Director, Veterinary Dept, & 3. Director. DST Govt. of Manipur.

Three resource persons from various organizations such as 1. Dr. M. Dhaneshwor Singh, Head, Department of Animal Sciences, Central Agricultural University, Imphal, 2. Dr. Ksh. Pabitra Singh, Officer In-charge, Central Poultry Farm, Directorate of Veterinary and Animal Husbandary, Govt. of Manipur, 3. Dr. K. Rajbihari Singh, Poultry Specialist, State Veterinary Department imparted in depth training to the participants. The training included series of lectures, slide shows accompanied by discussion/interactions etc. **Altogether forty participants** including three lady participants attended the training. The following topics were covered during the course of the training.



A section of the participants

- i. Quail industry and its prospects
- ii. Breeding and Management of quails
- iii. Feeding and Nutrition of quails
- iv. Diseases of quails
- v. Marketing

All the participants along with some journalists/reporters who attended for coverage of the training were taken to the recently constructed Quail Demonstration Centre at Takyelpat where adult quails were kept. The participants also visited the Hatchery of the State Veterinary Department. on the second day of the training



Participants visiting quail centre

District Level Awareness Programmes on Quail Farming

Training for Imphal West and East District

Training Workshop on Japanese Quail Farming for Imphal West and Imphal East Districts was organized at the Science and Technology Complex, Takyelpat, Imphal on February 17 and 18, 2005. Shri S. Madhu Sudan Singh, Director, S&T, Govt. of Manipur and Shri Th. Surendranath Singh, Executive Director, MASTEC were the Chief Guest and the president of the Inaugural Function respectively. Dr. M. Dhaneshwar



Inaugural function of the training workshop

Singh, Head, Animal Science Department , Central Agricultural University, Imphal, Dr. Ksh. Pabitra Singh, Poultry Development Officer, Central Poultry Farm, Imphal and Dr. Kh. Somorendro Singh, Poultry Specialist, State Veterinary and Animal Husbandry Services,



A section of the participants

Imphal were the resource persons and delivered lectures on various aspects of quail farming and interacted with the participants. The demonstration (practical) of quails including identification of male or female by various techniques was conducted by Dr. Rabi Sarangthem, Project Asst. and shared his experience with the participants. Altogether thirty two (32) farmers including five lady entrepreneurs attended the two day programme.

Training for Ukhrul district

The Training Workshop on Japanese Quail Farming for Ukhrul District was held on February 21, 2005 at the Little Angels' English School Campus, Ukhrul. Mrs. SOSO Saiza, a reputed Social Worker cum Principal, Little Angels' English School, Ukhrul attended the one day training workshop as the Chief Guest. Altogether 26 participants attended the training. Dr. Pabitra Singh and Dr. Somorendro Singh conducted the training as resource persons. They delivered lectures covering the aspects such as quail industry for income generation, feeding and nutrition, management, diseases, marketing etc. and interacted with the farmers.



Distribution of certificates by the Chief Guest

Training for Thoubal District

An awareness Workshop on Japanese Quail Farming for Thoubal District was organized on July 12, 2005 at Khangabok, Thoubal District, Manipur. Shri Menjor Singh, Principal, K.M. Blooming School , Khangabok inaugurated the training as the Chief Guest and Dr. L. Dinachandra Singh, Senior Scientific Officer, Manipur Science and Technology Council, Imphal presided the inaugural function. Dr. L. Minaketan Singh, Scientific Officer, MASTEC while welcoming the guests, invitees and participants highlighted in brief the objectives of the training. Dr. Ksh. Pabitra Singh, Poultry Development Officer (PDO) delivered lectures on the topics 1. Quail Industry & need for its popularisation for income generation and 2. Management of quails. Dr. Kh. Somorendro Singh delivered the topics entitled 1. Feeding, Nutrition and diseases of quails. He also covered the aspects on marketing of quails. In total, twenty five participants including a self help group of females consisting of nine ladies attended the programme. quiet successfully.

Report of the training in Quail farming held at Lukhambi (Khumji) , Tamenglong District, Manipur.

A one day training in Quail farming was organised by Manipur Science & Technology Council (MASTEC) on October 6, 2005 at Lukhambi (Khumji) part – II town of Tamenglong District, Manipur. The town authority led by the Chairman, Lukhambi – II provided the local support.

The training was inaugurated by Shri Lunglin Kamei , Chairman, Lukhambi Part –II, Tamenglong District, Manipur. Dr. L. Minaketan Singh, Scientific Officer and Project PI presided over the training. Invited experts Dr. Ksh. Pabitra Singh, Poultry Development Officer and Deputy Director and Dr. Kh. Somorendro Singh, Poultry Specialist of State Veterinary and Animal Husbandry Services, Government of Manipur attended the inaugural function as the guests of honour. The inauguration was followed by technical sessions. Dr. Ksh. Pabitra Singh delivered lecture on the topic “ Quail farming for income generation and its management” . The lecture was followed by interaction with the participants. The expert answered the questions put by the participants. Dr. Kh. Somorendro Singh spoke on the topic “ Feeding, Nutrition and marketing of quails” and also interacted with the participants. Most of the participants were found quite enthusiastic in quail farming. Altogether 35 farmer participants including 12 lady participants attended the programme.

The session on sex identification of quail birds was held separately in two groups. The male participants formed one group and lady participants constituted one group. During the demonstration session, each participants was given opportunity to identify male or female birds from a group of mixed birds. The experts explained in brief about how to identify male birds or female birds. He asked the participants to always remember the following points while identifying male or female bird.

1. The female birds are slightly bigger in body size than male birds
2. The Male birds have slightly reddish colour in their chess whereas female have brownish colour
3. The male birds produce a solution while pressing at the anus whereas the female birds failed to produce

Before concluding session, a group discussion in the form of feed backs was held. The following points were noted down out of the comments suggested by the participants.

1. The farmers living in the hill districts would find difficulties in farming of quails due to lack of Incubation facilities in the hills. Imphal is far from district Head quarters.and carrying of quail eggs from hill districts to Imphal city for incubation would face problem since quail eggs are fragile in nature. Hence, it was suggested to have hatchery unit each in all the hill district Head quarters.

2. It was suggested to organise such training programmes separately in all the Sub – Divisions of the hill districts to give awareness to the maximum number of tribal population in the district

3. Since the experts in poultry areas are not available in the tribal dominated hill areas, MASTEC should make necessary arrangement to provide technical guidance as and when required.

The training ended with a vote of thanks by Mr. Sk. Adipou, Secretary, Socio Economic and Relief Society, a Non Government Organisation, Lukhambi, Tamenglong District.

List of farmer participants of the training in Quail farming held at Lukhambi (Khumji), Tamenglong District, Manipur.

Sl. No. Name

Sl. No.	Name	Location/Address	District
1	Ajim Kamei	Lukhambi Part – II	Tamenglong District
2.	Pouragong	Khumji – II village	Tamenglong District
3	P. Blessing	Lukhambi – II	Tamenglong district
4	B.T. John	Lukhambi – II	Tamenglong district
5	P. Thiujinang	Khumji – II	Tamenglong district
6	K. Gaireilung	Khumji – II	Tamenglong district
7	M. Athui	Khumji – II	Tamenglong district
8	SK. Hupenlak	Lukhambi – II	Tamenglong district
9	P. Jianpunah	Lukhambi – III	Tamenglong district
10	Jk. Langongba	Nungtek – II Village	Tamenglong district
11	B. Bajolinang	Nungtek – II Village	Tamenglong district
12	K. Gaijonlung	Lukhambi – II	Tamenglong district
13	Miss Rodaliu Kamei	Lukhambi – II	Tamenglong district
14	Mrs Alunglei	Lukhambi – III	Tamenglong district
15	Jianthailiu Kamei	Lukhambi – III	Tamenglong district
16	Gaichuiniliu Kamei	Lukhambi – III	Tamenglong district
17	Achamliu Kamei	Lukhambi – III	Tamenglong district
18	Ngamlungliu Gonmei	Lukhambi – II	Tamenglong district
19	Toshingliu	Lukhambi – II	Tamenglong district
20	Thonkinlak	Lukhambi – III	Tamenglong district
21	Agong	Lukhambi – III	Tamenglong district
22	S.K. Lureiliu	Khumji	Tamenglong district
23	R. Lumthai	Nungtek	Tamenglong district
24	Ik. Peijoklung	Nungtek	Tamenglong district
25	Rajenlung Kamei	Khumji - III	Tamenglong district
26	K.Lumgailung	Khumji - II	Tamenglong district
27	G. Akham	Khumji - III	Tamenglong district
28	Keirijinang	Khumji - III	Tamenglong district
29	Achunliu	Khumji - II	Tamenglong district
30	Jianthailiu	Khumji - II	Tamenglong district
31	Lungthuan	Khumji - II	Tamenglong district
33	Akeiliu	Khumji - II	Tamenglong district
34	K. Gangongliu	Khumji - II	Tamenglong district
35	Sk. Adipou	Khumji - III	Tamenglong district

Training in Japanese Quail Farming for Thoubal District, Manipur

(Date : July 12 , 2005 ; Venue : Khangabok, Thoubal District)

Programme :

July 12, 2005

- 1000 hrs – 1100 hrs : Registration of participants
1100 hrs – 1130 hrs : Inauguration
1130 hrs – 1220 hrs : Lecture -1
- (Name of speaker : Dr Ksh Pabitra Singh, Poultry Development Officer,
Central Poultry Farm, Mantripukhri, Imphal
- Topic : Quail Industry & Need for its popularization
for income generation
- 1220 hrs – 1310 hrs : Lecture – II (Topic : Management of quails)
Speaker : Dr Ksh Pabitra Singh
- 1310 hrs – 1320 hrs : Tea Break (15 minutes)
- 1320 hrs – 1410 hrs : Lecture -III
Topic : Feeding, Nutrition & Diseases of Japanese Quail
Speaker : Dr. Kh. Somorendro Singh,
Veterinary Department, Govt. of Manipur
- 1410 hrs – 1500 hrs : Lecture- IV
- Topic : Marketing of quails
Speaker : Dr. Kh. Somorendro Singh, Poultry Development
Officer, Veterinary Department, GoM
- 1500 hrs – 1530 hrs : Demonstration/ Identification of male and female quail birds
(Dr. Ksh Pabitra Singh and Dr. Kh. Somorendro Singh)
- 1530 hrs – 1600 hrs : Feed Back Session / Group Discussion, Distribution of certificates,
Concluding remarks

Ukhrul districts
Training Workshop on Japanese Quail Farming

Venue : Little Angels' English School Campus, Ukhrul
February 21, 2005 (11 a.m.)

Objectives :

The main objective of the programme are

1. to impart training to the participants about rearing of quails for income generation
2. to popularise quail farming in the state.

The training forms part of the implementation of the ongoing project entitled “**Japanese Quail Demonstration Centre**” catalysed and supported by **Department of Science and Technology (DST), Govt. of India** and implemented by this Council.

Target Participants :

The target participants are farmers, entrepreneurs, educated unemployed youths, interested individuals etc. Delivering lectures and interactions about quail farming and demonstrations will form the main activities of the programme.

About Japanese Quail :

Japanese quails are good source of meat and egg. The small size eggs of quail are within the purchasing limit of the small and marginal farmers, landless labours and other rural poor or a common man. The quails has been very popular in eastern Asian Countries like Japan, Singapore, Malaysia, Hong Kong, Korea etc. and I has got commercial status in the international market.

Japanese quails have been in use as laboratory animals in the field of education and research during last few decades because of its short generation intervals, high rate of lay, good growth, low feed, small space requirement and less rate of mortality etc.

In India, the Japanese quail farming has been recently taken out from the purview of the Wild Life Protection Act 1972 by Govt. of India vide its order No.1-22/72-FRY(WL) dated July 9, 1979 and this has given a catching opportunity to the farmers to start with farming of quails for commercial purpose. Promoting Quail farming in the rural area will not only supplement the shortages of animal proteins but will also generate supplemental income for improvement of socio-economic status.

Quail farming occupies a separate and distinct sector of economic activity which the conventional chicken farming can not replace for the following reasons.

1. Disease resistant and easy to rear
2. Shorter generation cycle
3. Consumption of less feed per body weight than chicken
4. Less space in rearing
5. Low monitoring input and hence suitable for farmers
6. Tasty and fancy food

7. High nutritive value

Previous works : State Level training was organized last year. Since then, Quail eggs and chicks have been made available in the rearing centre for

8.. TECHNICAL BACK-UP SUPPORT & LINKAGES WITH NEARBY INSTITUTES

The Central Poultry farm, Department of Veterinary and Animal Husbandry Services, Govt. of Manipur are providing full co-operation by providing incubation facilities and also other technical guidance for rearing the quails. The Animal Sciences Department of Central Agricultural University, Imphal is also extending expertise as well as technical guidance as and when required. Both the Poultry specialist and Professors from the above organizations keep on visiting Quail Rearing Centre for observation of the health care of the quails and sharing their expertise for successful implementation of the project.

9. SCIENCE AND TECHNOLOGY COMPONENT

a) Giving technical training to the farmers about (i). rearing of quails, (ii) feeding & nutrition, (iii) breeding and management of quails, (iv) medical measures to protect from diseases etc. have been major S&T components of the project.

b) Introduction of low cost rearing cages : Almost all the iron based items are imported from other states. And imported items are all very costly in this region. Besides, transportation and communication system is very poor. Hence, instead of using iron cages to be imported from other states, the quails for the ongoing project, are reared in a multi tier battery type cages made of locally available wood and wire mesh. The 3 or 4 tier wooden mixed with wire mesh cages are low cost and it is observed that such cages are also highly appropriate for keeping quails in the hilly region like Manipur

10 EOPLES PARTICIPATION

The Council is receiving overwhelming response from farmers/interested unemployed youths etc Many entrepreneurs are in line to join the next phase trainings. Response is also received in the form of queries through telephone from interested persons living in the far flung areas in the hill districts of the state about rearing of quail. Farmers including self help groups from various sections of the Manipuri Community have started visiting Quail Rearing Centre/ Demonstration Centre where adult quails are being reared. People in and around the centre make regular visits to the centre for eggs and live birds

11. PROGRESS INDICATORS FOR MONITORING :

- I) Personnel trained : 40 (forty) persons / entrepreneurs /farmers have been trained
- II) Income : The Council have started collecting money by selling hatching eggs to the public @ Rs 0. 75 per egg and domestic eggs @ Rs 0.50/- per egg.
- III) Skill Upgradation : The Project staffs such as Project Assistant (1) and Helper (1) have been very much improved and become quiet familiar with the techniques of rearing of quails.

12. SPECIAL FEATURES / HIGHLIGHTS

- i) Since the ongoing project is first of its kind so far implemented in this region, encouragement is being received from various state organizations including Academic Institutions
- ii) The ongoing project is becoming very much academic oriented in the sense that some scholars belonging to the Zoology discipline of Manipur University have shown their interest to persue advanced research (on quail) leading to Ph.D.
- iii) It appears that the quail farming has not been properly started in other parts of the North Eastern Region. The reason being that some students of Assam Veterinary College, Khanapara, Guwahati (Assam) had recently visited the Quail Centre and also approached to MASTEC to provide them minimum facility for research on the Topic “ **Nutrition of Japanese Quails** “.
- iv) A documentary film entitled *Japanese Quail Farming* in Manipur has been developed by a team of DDK, Imphal and it has been telecast at the DDK, Imphal.

13 Establishment of a Hatchery.

The Implementing Agency (MASTEC) did not have the facility for incubation and hatching. The hatchery of State Veterinary Department was used for incubation of the eggs on payment basis. Considering the above constraints, the SSD, DST, GoI vide their letter No. SP/RD/055/2000 dt. 12 Feb. 2004 provided Rs 95, 000/- (Rupees ninety five thousand) for for setting up a hatchery unit. The hatchery unit has been established with procurement of an Incubator cum hatcher from the firm M/s Hyderabad Poultry Equipments, Miyapur, Near J.P.Nagar X Road, Hyderabad and the technicians of the manufacturing agency installed it at the project centre making the hatchery functional.

Slide 7

A.



Quail Rearing Shed

B.



Three layer quail rearing cage (600 birds)



Adult quail in the cage

C.



Fertile Japanese Quail hatching Eggs



Quail eggs of different colour



Hatchery unit installed at MASTEC Complex, Takyelpat

Slide 8 **Project Benefits**



Quail Meat available at a Rice Hotel near Tourist Bus Stop



Quail Meat available at a Rice Hotel near Tourist Bus Stop

Successful entrepreneur



Four tier rearing cage made of bamboo constructed and used by one lady farmer



Low cost three layer wooden cage for keeping quails used by local farmers