

A training workshop report



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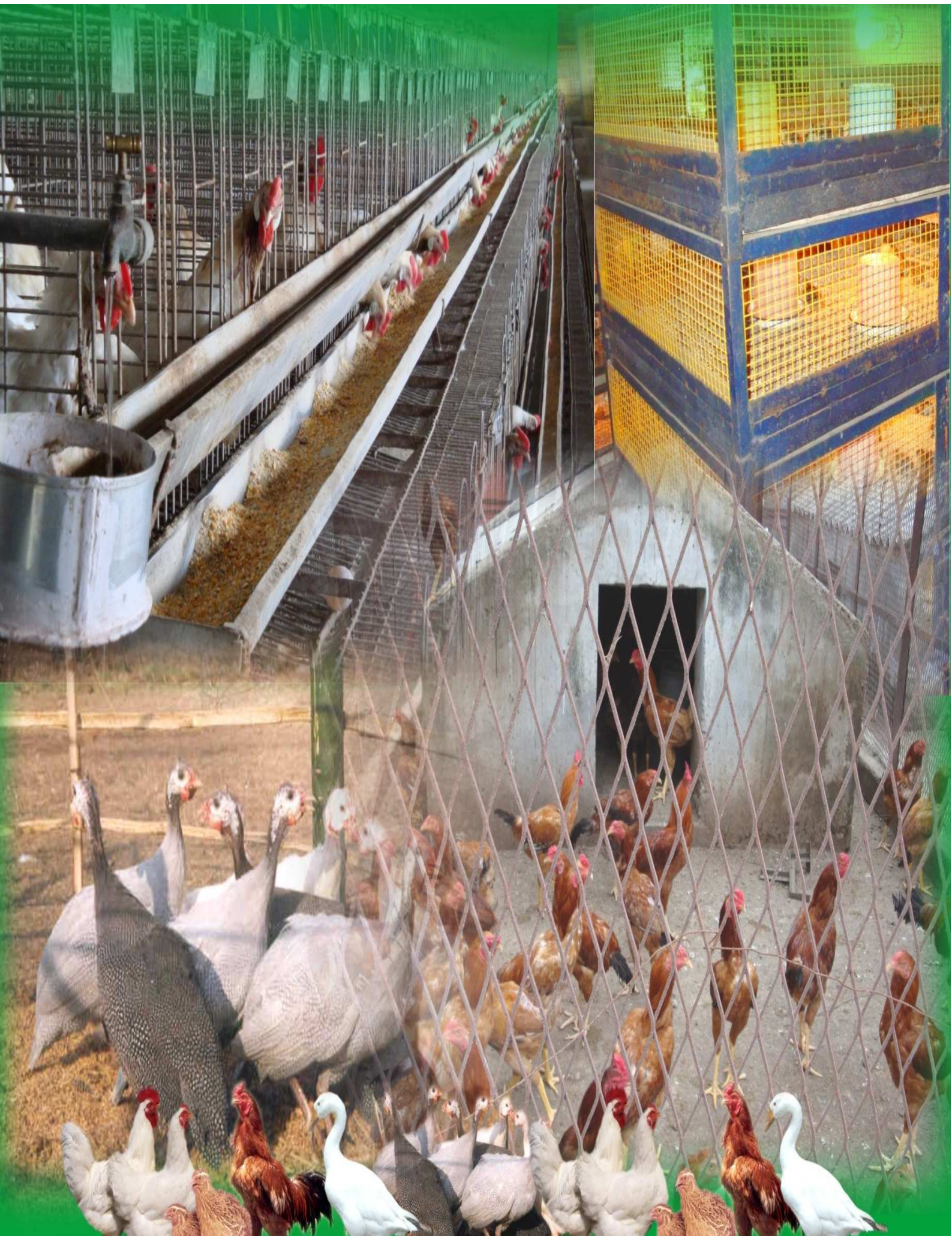


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1 OBJECTIVE OF THE WORKSHOP

The objective of this training programme is to bring together, under one roof, the poultry Entrepreneurs and the Poultry experts particularly those from the teaching, research and practioners to discuss on the advances in poultry farm management and marketing.

The focal endeavors of this training workshop are to:

- i) Train the participants on modern poultry farming practices and problems faced by the farm managers.*
- ii) Hands-on training on scientific processing/ preservation, packaging and marketing to maintain quality and increase shelf life of the products.*
- iii) Training on value addition and quality control for better economic gain from the produces by the farming activities.*

In order to achieve this objective, the theme was further broken down into six sub-themes designed to address specific issues. In short, the training deliberated in detail on how to address the following issues and problem faced by framers in their local conditions:

- **Theme 1** - Breeding Management
- **Theme 2** - Hatchery Management
- **Theme 3** - Poultry Feeding
- **Theme 4** – Bios-ecurity Measures
- **Theme 5** - Broiler and Layer Management
- **Theme 6** - Poultry Processing and Farm Economics



2 RECOMMENDATIONS

After deliberations and conclusions on a number of issues, the workshop made a number of recommendations for the MRRD and the World Bank to consider implementing.

■ Recommendation 1

Organizing similar training workshop in abroad as well in Afghanistan in order to sensitize poultry farmers and entrepreneurs regarding the latest advances in poultry farm management and marketing in order to improve the productivity of the poultry birds as well as increasing the net profit by effective marketing.

■ Recommendation 2

Establishment of Hatchery, feed mixing plant and Poultry Disease Diagnostic laboratory in Afghanistan with the financial support of Afghanistan Government and other international organization with technical consultancy from India and other neighboring countries.

■ Recommendation 3

Establishment of community enterprise development and poultry cooperatives for organized effective marketing which will benefit the producer as well as well the consumers. It is also recommended that Government of Afghanistan and other international donor may lend financial help to the farmers for developing basic infrastructure in poultry sector.

■ Recommendation 4

Establishment of primary processing units and value added poultry products enterprises which will increase the net profit of the farmers by manifold. In addition to this, it is also suggested to establishing cold storage units for effective storage and transportation of poultry products





3 WELCOME AND INTRODUCTORY SESSION

3.1 WELCOMING:

Professor MK Salooja, Director, School of Agriculture, Indira Gandhi National Open University welcomed all the delegates to the training programme. He noted that Poultry Industry in India is growing at a fast pace and the demand for poultry products i.e. eggs and meat are in increasing trend. He further informed Poultry Farming have been one of the most important subsidiary occupation of the farming community in many countries. Poultry Farming is a remunerative business both in rural and urban areas due to the requirement of small space, low capital investment and quick return throughout the year. It has a significant role in the eradication of malnutrition and poverty as well as eliminating of under-employment among the rural masses. However, due to lack of modern and updated method of farming, farmers are practicing traditional methods which have been found to be unproductive and not commercially viable. Hence, it is essential to organize such training programmes very frequently in order to sensitize the farmers about the latest advancement in the field of poultry science for improving the productivity of birds and also creating employment and income for farmers.

3.2 INTRODUCTION TO THE TRAINING

Dr. Asutosh Mohanty, Executive Director and Adviser, Centre for Environment and Economic Development emphasized the need for such training programmes for the capacity building of the poultry entrepreneurs in Afghanistan. He noted that MRRD, Afghanistan is focusing on developing capacity for its small and medium enterprises in different fields in India and other neighboring countries. Keeping in view the target group, the training focuses on imparting scientific knowledge and skills through deliberations and field visits. He further noted that the training programme has equal weightage for theory and practical classes. He further requested the participants to interact with the experts in solving the problems faced by them at the field level managing their farms.

3.3 KEYNOTE ADDRESS

Prof. M. Aslam, Vice Chancellor, Indira Gandhi National Open University, New Delhi, India welcomed the participants. After a brief introduction by the participants, he introduced the open and distance learning system to the participants and its role in reaching the unreached masses in India. He further stated that ODL system is democratizing education in the world and many Open University in the world are focusing more on vocational and entrepreneurial educational programmes for the benefit of the rural masses. He narrated the modus operandi of IGNOU in delivering education to doorsteps of all segments of the society. He stated that more emphasis is now being laid on developing interactive multimedia and online learning, and adding value to the traditional distance education delivery mode with modern technology-enabled education within the framework of blended learning. He introduced some of vocational educational programmes being offered by the Open Universities in the Asian region. He also noted that IGNOU also has a considerable international presence including Afghanistan. He also interacted with the participants and assured that IGNOU would like to collaborate with different agencies/ Institutions in Afghanistan in offering the IGNOU programmes and extending its reach in Afghanistan. Since there is a language barrier between the experts and the participants, he suggested focusing more on the important issues in poultry farming with the help of a translator for better interaction. He wished all the best for the training programme.



4 LINKING FARMERS TO BREDDING SYSTEM AND MANAGEMENT

4.1 SCOPE AND IMPORTANCE OF POULTRY FARMING: DR. P. VIJAY KUMAR

Vijayakumar emphasized the importance of poultry farming in order to solve the unemployment, scarcity of animal proteins such as egg and broiler meat for human beings and ultimately to support country's economy. He further stated that there is a common misconception that poultry means only broiler and layer chicken. He clarified that poultry includes different bird species like chickens, ducks, quails, turkeys, emus etc. which are reared by humans for consumption of egg, meat and other products. The different types of farms which can be established based on market demand were also discussed. The speaker also focussed on the advantages of rearing different types of poultry species. Dr. Vijayakumar also threw light on the different poultry farming systems being practised in India and other parts of the world. He stressed that it is better to practise intensive farming system for commercial broiler and layer farming to be highly profitable. He also introduced the concept of mixed farming to the participants and the explained its role in protection the farmers from financial losses due to various risks like drought, flood, diseases etc. He further reiterated that mixed farming is one of the best methods of getting continued income throughout the year. Classification of chicken based on their characteristics and utility were also discussed.

4.2 BREEDING SYSTEM: DR. PVK SASIDHAR

The importance of poultry breeds, breeding systems /methods and artificial insemination were presented. The basic differences between species, breed, variety and strain were discussed. Different

breeds of poultry and their classification as per place of origin and utility were deliberated with the help of high quality visuals. The different systems of breeding viz., random breeding, inbreeding and out breeding were discussed with their advantages and disadvantages. The video on artificial insemination of poultry was also screened. The trainees added to the deliberations by identifying some of the poultry breeds / varieties that are being reared in Afghanistan and their characteristic features.

4.3 BREEDING MANAGEMENT: DR. HP SHRIVASTAVA

The importance of poultry breeding along with systems of selection, selection addresses in broiler and layer breeding, judging and culling of poultry were presented. Differences between good and poor layers were also discussed. Recent developments in poultry breeding and on-farm strategies for improving egg and meat production formed the major part of interaction. The trainees added to the deliberations that they are importing broiler chicks from Pakistan and do not have much expertise in breeding of flock at their own farms. Since majority of trainees were from the broiler raising groups in different parts of Afghanistan they were expecting to learn more on broiler farming rather than layer farming. The trend of growth of broiler chicks in their farms is not very encouraging as they have to keep broilers for 50 days or so to get good bodyweight of 2 kg. The reasons they wanted to know which was further explained by Dr. Shrivastava and Dr. Vijayakumar that the slower growth of chicks may be co-related with genetic background of the broiler germplasm, feeding and management practices.

4.4 DISCUSSION OF THE ABOVE THREE PRESENTATIONS

Following the presentations the following discussion points were raised by participants

- *Whether mixed farming can be successful in Afghanistan?*
- *What are the different methods of breeding and importance of artificial insemination*
- *Whether to rear birds for 8 weeks or 6 weeks?*

Dr. Vijayakumar replied that mixed farming can be taken up successfully in Afghanistan without any problem and it will help the farmers in shielding against the risk like drought, flood etc. and can provide employment, nutrition and income to farmers throughout the year.

Dr. Sasidhar described the different methods of breeding commonly practiced in poultry. He further stated that artificial insemination in poultry is getting popular and is also beneficial for the farmers in preventing diseases as well as improving the productivity.

Dr. Srivastava clarified that the growth rate of birds is dependent on the genetics, feeding and management. Hence, it is advised to get the chicks and feed from a reliable source. If the growth rate is good, the birds can be kept to only 6 weeks. However, if the growth rate is slow, it is better to market the birds at 8 weeks of age.

Some of the other issues that were raised during the discussions were as follows:

- Good hatchery may be established in Afghanistan to reduce its dependence on chick imports.
- The need of establishing of breeder farm in Afghanistan to help farmers to increase their net profit





5 EXPERIENCES OF HATCHERY MANAGEMENT AND POULTRY DISEASES

5.1 HATCHERY MANAGEMENT - I: DR. H.P. SHRIVASTAVA

The differences between table and fertile eggs including natural and artificial incubation with incubation period of various types of poultry birds were presented. Factors affecting fertility and hatchability were also detailed. Hatchery design and layout with different types of incubators and management of hatching eggs starting from collection, storage, fumigation, candling and setting etc formed the aspects of presentation. Hatchery operations maintaining temperature, humidity and turning in the incubators were also discussed. The photographic presentations on infertile and dead embryos based on candling and removal of chicks from the incubator were very much interesting to the trainees. The trainees raised the query about the composition of fumigant and method of fumigation of fertile eggs in the storage. Dr. Shrivastava elaborated the details of fumigation of fertile eggs with the help of video presentation. They also questioned to know details of chick sexing which was resolved by the speaker with an illustrative video showing feather and vent sexing of day old chicks. The trainees wished to know the importance of sexing of broiler chicks. The trainees reported a common problem of retention of yolk in chicks being transported from Pakistan. Dr. Shrivastava emphasized its occurrence in India and suggested the remedial measures.

5.2 HATCHERY MANAGEMENT - II: DR. H.P. SHRIVASTAVA

Hatchery hygiene and sanitation, handling of hatchery waste including its disposal method were presented well. The care to be taken while packing of day old chicks for transportation from hatchery to the farm was explained. Various records to be maintained at the hatchery plant also formed the basis of presentation and discussion. The trainees were helped to understand some theoretical exposure on economics of breeder farm cum hatchery. Video films depicting hatchery operation,

sanitation and hygiene were screened to supplement the queries of the trainees. The trainees expressed their inability to establish the hatchery unit in their areas due to paucity of excess fund, heavy equipment and trained manpower as they are dependent on neighbouring country for each and every affairs of poultry farming. The current situation of indenting day old chicks from Pakistan has to be continued till they develop their own hatchery unit and be sufficient in chick production business. They wished to seek further R&D especially of technical consultancy from India to develop package of practices required for smooth running of poultry farm. They were also interested to know the name and address of the companies dealing with essential equipments and tools of broiler farming.

5.3 POULTRY DISEASES: DR. H.P. SHRIVASTAVA

Various threats to poultry causing diseases were described. The speaker clearly defined the ineffectiveness and transmissibility of infectious and non-infectious diseases including per-acute, acute, sub-acute and chronic forms of disease. Methods of spreading of diseases such as air-borne, egg and hatchery transmission and premises contamination were also discussed. Listing of various bacterial, fungal, parasitic protozoal and viral diseases including nutritional disorders were grouped involving circulatory, digestive, musculo-skeletal, nervous and respiratory systems. More emphasis was given on Bird flu and its management. Dr Shrivastava explained various lesions through pictures on immune system diseases such as avian leucosis complex, chicken anaemia, infectious bursal disease (gumboro) and marek's disease. Other disorders /syndromes such as ascites, breast blisters, heat stroke, leg disorders, fatty liver syndrome, rickets and slipped tendon were also detailed. The differentiation of various symptoms involving various body parts in different diseases also formed the part of

presentation. The trainees expressed their concern of not having any disease diagnostic laboratory in their area and wished to have detailed exposure on disease diagnosis.

5.4 DISCUSSION OF ABOVE THREE PRESENTATIONS

Following the presentations the following discussion points were raised

- What are the composition of fumigant and method of fumigation of fertile eggs in the storage
- What are methods to treat the problem of retention of yolk in chicks
- How to differentiate between male and female chicks?

Dr. Shrivastava elaborated the details of fumigation of fertile eggs with the help of video presentation.

Dr. Shrivastava also explained the method of chick sexing with an illustrative video showing feather and vent sexing of day old chicks.

Dr. Shrivastava suggested the remedial measures for problem of retention of yolk in chicks

Some of the other issues that were raised during the discussions were as follows:

- Difficulty in establishment of hatchery unit in their areas due to paucity of excess fund, heavy equipment and trained manpower.
- Need for a disease diagnostic laboratory in their area





6 PREVENTION AND CONTROL OF DISEASES AND BIOSECURITY OF POULTRY FARMS

6.1 POULTRY FARM BIOSECURITY: DR. PVK SASIDHAR

The bio-security of poultry in terms of isolation, disinfection, sanitation, and traffic control was discussed. The issues like quarantine, spreading of diseases, different disinfectants, sanitation procedures, human, animal and equipment traffic control, rodent and insect control as part of bio-security were also discussed. Several visuals related to the topics covered have been presented to make the trainees grasp the issues quickly. The trainees informed that though some of the bio-security measures are very simple, they are not following them in their farms largely due to lack of awareness. It is recommended to develop extension material in local language for bringing awareness on bio-security measures.

6.2 PREVENTION AND CONTROL OF DISEASES: DR. H.P. SHRIVASTAVA

Various points were presented to recognize different diseases based on salient signs, symptoms and lesions. The horizontal and vertical spread of disease and their control methods formed the major aspect of presentation. Different steps of prevention and elements of biosecurity including risk from human movement to birds, segregation and traffic control with description of common disinfectants were also presented. The trainees showed their interest in understanding formaldehyde fumigation of sheds and store houses of the farm. The speaker also described use of common medicines and vaccines to control various bacterial and viral diseases. Video films showing different routes of vaccination were also screened. A question was raised on hydropericardium syndrome and its vaccine was a trainee and answered well by Dr. Shrivastava and Dr. Vijayakumar.

Broiler vaccination schedule was discussed in detail. The trainees were clearly apprised not to use any vaccination when the birds are ill or under medication and also immediately after shipment. Pest control and disposal of dead birds were also discussed. The spray method of vaccination was also explained with the help of video film to their request. One of the participants requested for suggestive measures to solve wet litter problem keeping climate of Afghanistan into account. Dr. Shrivastava explained different measures to be taken at the farm level for litter management supported by a video film. They informed that they are getting vaccines from Pakistan and raised query how to assess the quality and storage condition of vaccine being supplied. While relying to query Dr. Shrivastava suggested to check for physical quality of vaccine such as discoloration, turbidity, proper sealing status, expiry date and storage condition at the time of receipt. He further suggested that in case of any discrepancies in the quality the vaccine should not be used.

6.3 POULTRY FEED AND ITS PROCESSING: DR. H.P. SHRIVASTAVA

The classification of feedstuff and types of poultry feeds such as all grains, grains plus mash, all mash, crumbles, pellets etc. were presented. As per trainees' request plus points of pellets over mash were detailed. Different types of feedstuffs such as cereals, cereal by-products, animal and vegetable proteins, calcium and phosphorus supplements, feed additives, nutraceuticals were presented. Identification of different feed compounding and processing at the farm were also discussed but Dr. Shrivastava suggested not to prepare broiler feed at their farm unless they have a comprehensive training on feed compounding. The trainees reported that there is no feed analytical laboratory in

their country and wished to have future collaboration with India for R&D of poultry feed technology. Factors influencing the feed quality including physical, chemical and biological evaluation were also discussed. They also reported that they are not sure of the quality of feed what they are getting from local market in the absence of feed analytical laboratory. One of the trainees queried whether he can make use of human pathology laboratory to take poultry feed sample for analysis, the speaker suggested that the human pathology unit may not be having analytical expertise for poultry feed as the constituents of feed need specific machines and methodologies.

6.4 DISCUSSION OF ABOVE THREE PRESENTATIONS

Following the presentations the following discussion points were raised

- Importance of biosecurity measures in poultry farm
- Whether the birds can be vaccinated when ill or diseases?
- Whether we can feed pellets to chicks?

Dr. Sasidhar emphasized the need for proper biosecurity measures to be practiced in the farm in order to prevent the entry of disease causing organisms into the farm as well as to prevent the spread of diseases within the farm. He also emphasized the importance of practicing all-in all-out type of rearing birds for preventing the spread of diseases within and between the flocks.

Dr. Shrivastava clearly apprised not to use any vaccination when the birds are ill or under medication and also immediately after shipment.

Dr. Shrivastava clarified that it is better to feed mash to the chicks as it will be easy for the chicks to consume mash rather than pellets since they are very small in size. Later, when the chicks grow older, they may be fed crumble or pellets depending on the size of the bird.

Some of the other issues that were raised during the discussions were as follows:

- Difficulty in establishment of hatchery unit in their areas due to paucity of excess fund, heavy equipment and trained manpower.
- Need for a disease diagnostic laboratory in their area



7 POULTRY FARM MANAGEMENT AND FEEDING SYSTEM

7.1 FEEDING STANDARDS AND FEED FORMULATION: DR. H.P. SHRIVASTAVA

The factors influencing dietary requirements for broilers and egg type chickens were narrated. Different types of bird different quantity of nutrients. The dietary requirements of energy, protein, minerals and vitamins for broilers and egg type chickens were presented in tabular form based on NRC and BIS standards. Effect of calorie-protein ratio was also explained in comparative manner. The trainees again reported that in the absence of feed analytical laboratory they are not in a position of preparing feed at their farm and therefore they are dependent on ready-made broiler feed marketed locally.

7.2 POULTRY FARM ECONOMICS AND MARKETING: DR. H.P. SHRIVASTAVA

Requirements for viable poultry project were discussed. Emphasis was given to have basic exposure on poultry farming through specialized training. They also should have feasibility report on area specific demand of poultry markets before entering in the area.

The benefits of co-operatives were explained to the trainees. The existing co-operatives on egg and meat production in India were described. Some details of poultry organizations in India were also given before the participants. The trainees reported that they do not have such organizations in Afghanistan. Dr. Shrivastava suggested that they should approach the policy maker and the government to look forward to establish poultry institutions in their country. The markets and marketing channels for egg, meat and their products were also

discussed. The benefit cost ratio was explained through formula and the trainees were suggested to calculate the benefit cost ratio at their farm to predict the performance of their farm on profit scale. Hen housed and hen day egg production, feed conversion ratio for broiler and layers were also discussed. The trainees understood the calculation of feed conversion ratio for body weight gain in broiler farming.

7.3 POULTRY FARM MANAGEMENT: DR. PVK SASIDHAR

Management of other species of poultry, management during extreme weather conditions like winter and summer, routine farm management, farm records, carcass disposal and record keeping were discussed. Birds' response to heat stress, litter management including commonly used litter material, litter thickness, compost litter, litter fermentation and litter quality testing were also discussed. Several visuals related to the topics covered have been presented to make the trainees grasp the issues quickly.

The trainees were more interested to know about winter management of poultry as the average temperatures in Afghanistan is around 13°C. It is recommended to develop extension material in their local language for bringing awareness on various issues of poultry farm management.

7.4 DISCUSSION OF THE ABOVE THREE PRESENTATIONS

Following the presentations the following discussion points were raised

- What are the benefits of cooperatives?
- How winter and summer management of poultry is done?

Dr. Sasidhar emphasized the need for management of poultry birds in extreme weather conditions as they high very sensitive birds. The poultry sheds should be protected well enough to prevent the entry of cool air into the shed. Curtains can be used. Heat source should be provided inside the poultry shed to provide warmth to the birds. Care should be taken to provide ventilation to avoid accumulation of gaseous substances inside the poultry shed which may be harmful for the birds.

Some of the other issues that were raised during the discussions were as follows:

- ☐ Absence of feed analytical laboratory.
- ☐ Absence of poultry cooperative system





8 PRINCIPLES OF HOUSING SYSTEM, POULTRY EQUIPMENT AND BREEDER STOCKS

8.1 POULTRY HOUSING: DR. PVK SASIDHAR

Principles of housing, housing systems and poultry equipment were discussed. The issues covered includes SWOT analysis before starting a poultry farm, need for housing, importance of housing, basic housing requirements, extensive, semi-extensive and intensive systems of poultry and different poultry farm equipment used in broiler and layer farms. Several visuals related to the topics covered have been presented to make the trainees grasp the issues quickly. The trainees were more interested to know about intensive broiler housing. They said getting suitable poultry equipment is also a problem. It is recommended to encourage poultry entrepreneurs to start manufacturing of poultry farm basic equipment to cater to the local needs of Afghanistan.

8.2 POULTRY FEEDING: DR. PVK SASIDHAR

Feeding methods and feeding of different poultry species were discussed. The issues covered includes *Ad libitum* Feeding, Controlled Feeding, Restricted Feeding, Phase Feeding and Supplementary Feeding. Several visuals related to the topics covered have been presented to make the trainees grasp the issues quickly. The trainees were more interested to know about *Ad libitum* Feeding and Phased feeding for broilers and layers, respectively. The trainees are not aware about preparing their own feed to reduce the cost of production. It is recommended to develop extension material in their local language for bringing awareness on feeding methods. It is also recommended to conduct a separate training

programme on Poultry Feed Preparation. These trainees can start their own feed processing and manufacturing units for entrepreneurship.

8.3 BROILER AND LAYER MANAGEMENT: MR. SHABBIR AHMAD KHAN

Focus was given on broiler management as most of the participants were involved in rearing broilers. The speaker elaborated the routine management procedures to be followed in a broiler farm right from raising of chicks till it is marketed. The major focus was given on feeding, housing and biosecurity since they contribute to major part of the profitability of the farm. The speaker also emphasized on maintain the records in the farm as well as on calculating the feed conversion efficiency of the birds in order to assess the performance of the bird as well as the farm. Brooding management was dealt in detail especially with respect to the temperature and comfort of the birds. Measures to be taken to reduce the mortality of birds particularly during brooding were also presented for the benefit of the participants. The speaker also elaborated on the different equipment used in the broiler and layer farm and their maintenance and sanitation. Management of litter in proper dry state was given major focus as can help in preventing spreading of diseases within the flock. Prevention and control of diseases also formed part of the presentation. Layer farming was also touched upon though most of the participants were rearing broilers. Basic information about layer farming was discussed for the benefit of the farmers. Housing, feeding, chick, grower and layer management were discussed during the presentation.

8.4 DISCUSSION OF THE ABOVE THREE PRESENTATIONS

Following the presentations the following discussion points were raised

- Whether broilers and layer can be reared together?
- Why it is necessary to feed the broiler birds *ad libitum*?
- Why broilers are reared in floor and layers in cages??

Mr. Shabbir Ahmad Khan clarified that broilers and layer should not be reared together or in the same farm due to biosecurity issues. If it is essential to rear both in the same farm, then they should be reared far from each other in order prevent spread of diseases amongst the flock.

Dr. Sasidhar clarified that it is essential to feed broiler *ad libitum* since they are reared for meat purpose and hence in order to gain rapid weight, the birds should consume as much feed as possible in order to about market weight in 6-8 weeks.

Dr. Sasidhar clarified that both broilers and layers can be reared in floor/Deep litter system. However, in commercial layer farming, they are reared in cages in order to reduce labour cost and easy collection of eggs.

Some of the other issues that were raised during the discussions were as follows:

- Housing management of birds during extreme weather conditions.
- Need for setting up of feed mill in Afghanistan.
- Need for extension/training material in local language for bringing awareness on feeding methods.





9 PROCESSING AND MARKETING OF POULTRY PRODUCT

9.1 PRIMARY PROCESSING OF POULTRY: DR. MITA SINHAMAHAPATRA

Dr. M. Sinhamahapatra emphasized the importance of primary processing of two main poultry products i.e. egg and meat (chicken). She explained how hygienic and wholesome eggs and chicken can be produced for human consumption. She discussed all the steps of primary processing of eggs viz. collection, handling, washing, grading, preservation, packaging, storage, transportation and distribution to retail stores. She also explained different steps of primary processing of poultry i.e. catching of birds in farm, transportation of live birds to processing plant, their pre-slaughter care, slaughter and dressing, grading, cutting, packaging, storage and transport of chicken to retail store. She focused on mechanized poultry processing and showed video film to explain the activities associated with mechanized poultry processing in a semi-automatic poultry processing plant. The speaker also replied to the queries of the trainees about grading systems of eggs and chickens in India; types of sanitizers used for eggs and chicken; availability of mineral oil for egg preservation; use of Muslim butcher for killing of birds for "Halal meat" production; and export of Indian chicken to other countries etc.

9.2 VALUE ADDITIONS AND QUALITY ASSURANCE: DR. MITA SINHAMAHAPATRA

Dr. M. Sinhamahapatra explained the importance of value addition and quality assurance in egg and poultry industry. She first discussed on developments of various egg products and showed video films on processing of pasteurized liquid egg and egg powder. Then she focused on the preparation of traditional and western chicken products. She explained the steps of different meat product preparation while showing the video films on meat

Processing. She enlightened the trainees about the concept of hygiene and quality assurance in the egg and chicken processing. She explained why quality assurance is important at each level starting from layer/broiler house, egg/meat processing plant and upto the consumer's kitchen level. She mentioned all the essential steps for quality assurance at different level of egg and chicken production and processing. She also emphasized on the importance of personal hygiene in poultry farm and processing plant. The trainees had some questions regarding the pest control in poultry farm/processing plant, economics of egg and meat product processing, use of egg liquid and powder, storage life of different products etc. The speaker addressed all the questions.

9.3 BREEDER MANAGEMENT: MR. SHABBIR AHMAD KHAN

Mr. Shabbir Ahmad Khan focused on the management practiced to be followed in the breeder farm. He emphasized that the breeder stock are very important since they are responsible for the quality of future generation. Hence, their management is vital. He further stated that care should be taken to maintain the breeder stock in comfortable environment. Their feeding should be controlled since it is essential to maintain the breeder stock in proper condition. Overweight and underweight may affects the performance of breeder stock. Proper vaccination and control of diseases of the breeder stock is also vital since many diseases spread to chicks via eggs/embryo. Mr. Khan also narrated the different factors which affects the fertility of birds like environmental conditions, diseases, feeding etc. The participants informed that there is a need for establishment of a good breeder farm in Afghanistan. Since most of the inputs for poultry farming comes from neighbouring countries.

9.4 DISCUSSION OF THE ABOVE THREE PRESENTATIONS

Following the presentations the following discussion points were raised

- What is the importance of grading of eggs and meat?
- What is the scope of value addition of poultry products in Afghanistan?
- Why controlled feeding is practiced in breeder stock?

Dr. Mita stated that grading of eggs and meat helps in fetching good price. Commercially, grading of egg, meat and their products is an important step to assess the quality of product. This will also help evaluate the product for its price and storage stability. Grading is universally accepted and considered useful in marketing of any product.

Dr. Mita clarified that value addition of egg and meat which help in fetching two to three times more price when compared

to the live bird with minimal cost and labour. The demand for value added products are on rise especially in India. It also helps to promote employment, entrepreneur ventures and exports and also minimizes imports.

Mr. Shabbir Ahmad Khan informed the participants that in order to maintain the breeder stock in healthy condition, it is essential to practice controlled feeding. If the breeder stock are fed *ad libitum* or restricted feeding, it may result in overweight or underweight, respectively which will affect the performance of the birds.

Some of the other issues that were raised during the discussions were as follows:

- Need for setting up a basic primary processing unit in Afghanistan
- Need to promote value added poultry products in Afghanistan.
- Setting up of breeder farm in Afghanistan.



6.3 SWOT ANALYSIS

Strengths	Weakness	Opportunities	Threats
<ul style="list-style-type: none"> • high demand of egg and meat in the country • availability of fresh egg and meat • Conducive climate for rearing poultry • employment and income generating capabilities • easy management of birds and • low investment with high income 	<ul style="list-style-type: none"> • import tax on chicks, feed etc. • no proper road, pricing/marketing, electricity etc. • need for basic infrastructure like feed plant, hatchery, disease diagnostic lab • lack of veterinary services, skilled labour and training 	<ul style="list-style-type: none"> • outside funding for popularizing poultry farming • commercialization of poultry • contract farming • cooperatives, • processing and value addition capabilities, • community enterprise development and • rearing of other poultry species like emu 	<ul style="list-style-type: none"> • major disease outbreaks like Bird Flu, Gumboro, Newcastle disease, Coccidiosis and Chronic Respiratory Diseases and • risk involved in rearing poultry due to diseases



11 FIELD TRIP FEEDBACK AND CONCLUSIONS

As a part of field visit, the participants were taken to 6 poultry farms, one feed mill and one processing unit for hands-on experience.

8.1 EMU FARM, BREEDER FARM CUM HATCHERY AND FEED MILL

The participants visited three institutions viz. Emu Farm, Poultry Feed Mixing Plant and Breeder Farm and Hatchery in Gurgaon (NCR) region. The participants were excited to see the Emu birds being reared as a commercial entity and they interacted with the caretaker of JVH Organic Farm, District Gurgaon, Haryana. They gathered detailed information about the routine activities being performed at the farm including breeding, feeding and other management aspects. The participants were accompanied by Mr. Shabbir Ahmed Khan who also explained about the nitty-gritty things about emu farming. Later, the participants were taken to Ami Chand Makhan Lal Feeds Private Limited, Kadipuram Pataudi Road, Gurgaon in Gurgaon, Haryana who are manufacturing different types of feed including poultry feed with a capacity of 25 tonnes/day. They were introduced to different feed ingredients used, types of feed being manufactured and equipment used for the feed manufacturing. The participants also had an interaction with the incharge of the feed plant. In the afternoon, the participants visited Madina Poultry Breeding Farm, Wazirpur, Gurgaon, Haryana. They are maintaining about 20,000 poultry parent stock of coloured mini broiler. Demonstration of the incubation and hatching of eggs and fumigation of poultry equipment were performed. The incharge of the hatchery also showed the packing of chicks in packaging boxes. The participants also visited the breeder stock where semen collection and artificial insemination technique were demonstrated to them. Mr. Shabbir Ahmad Khan also performed post-mortem of two dead birds which died

due to heat stroke and also explained how to diagnose different diseases based on the changes in the internal organs.

8.2 BROILER FARM

The participants were taken to a medium sized broiler farm (Yadav Poultry Farm, Jivda Road, Gurgaon who are rearing about 25,000 birds) and a large broiler farm (SK Breeding Farm and Hatchery, Jivda village, Gurgaon with a capacity of 1 lakh birds every alternate month). Demonstration of different farm management activities will also be performed. Major emphasis was given to the housing of the birds. The participants interacted with the caretaker of both the farms. The participants were informed that these farms have their own breeding farm and feed mixing plant which helps them save at least Rs. 20 per bird. By following this practice, the owner who started with a small broiler farm has progressed greatly and now owns 12 broiler farms.

Later in the day, the participants visited Dua Poultry Health Labs, Bhim Nagar, Gurgaon. Dr. Dua who is the proprietor of the lab described about the different activities being performed in the lab. He described the method of estimation of different ingredients in the poultry feed. He also described about the disease diagnostic techniques and culture drug sensitivity testing performed in the lab. Later, Dr. Dua performed post-mortem of birds received in the lab and explained the method of identification of different diseases based on post-mortem.

8.3 LAYER FARM

The participants were taken to Bajaj Sanjay Poultry Farm, Gurgaon which is an ISO 9001 certified layer farm. They are maintaining 45,000 grower and layer birds with an egg production capacity of 30,000 eggs/day. They cater to the needs of high end

customers and are producing customized brown eggs which costs 2-3 times the cost of normal white eggs. Demonstration of different farm management activities including packaging eggs were undertaken. The participants were introduced to cage system of rearing birds with nipple drinker. Use of foggers and sprinklers were also demonstrated to provide relief during very hot climatic conditions. They are also specialized in production of antibiotic free eggs and by use of feed additives like pro-biotics, pre-biotics etc. which helps in preventing diseases as well as help in improving the digestion. Later, they were taken to a Kadaknath Research and Development Farm, Dhumuspur, Gurgaon which is undertaking Research and Development activities in Kadaknath (desi poultry bird). The egg and meat of the Kadaknath bird is having medicinal properties.

8.4 OTHER POULTRY SPECIES FARM

Most of the participants are involved in broiler farming. Hence, based on the request of the participants, the other poultry species farm visit was cancelled. They suggested for an interactive session with Mr. Shabbir Ahmad Khan who is doing consultancy service in Gurgaon region and has vast field experience and knowledge. The participants interacted with the expert in various issues related to broiler farming like feeding, housing, routine farm management and diseases.

8.5 POULTRY PROCESSING UNIT

A visit was organized to the Ghazipur poultry Mandi which is the largest market in Asia dealing live birds. The participants went around the market and visited many shops where trading was taking place between the trader and procurer through auction. The participants also interacted with a trader, Mr. Salim, owner of Bombay Poultry Market, Shop No. 82, Poultry Market, Ghazipur, Delhi and obtained information

about the method of transaction. He informed that market opens early in the morning and all the transactions are over by 11 am. The birds come from distant places (even 600 km far places) from the neighboring states. He further informed that in Delhi, major demand is for live birds and hence this market is the largest in Asia dealing with live birds. Later they visited the Fish, Poultry and Egg Marketing Committee office which is situated adjacent to the market and interacted with the officials. The committee and its board are managing the poultry, egg and fish market. The participants asked why the market is not clean. The chairman of the committee Mr. Riyasat Ali informed the participants everyday, the market handles more than 2 lakh birds and it will be difficult to maintain hygiene at the time transaction. He further stated that after the market is closed, the market place is cleaned thoroughly and sanitized. One of the participants raised a query that as per the market rate, it seems there is very limited profit for the farmers. The chairman informed that they are charging only market commission and it is profitable for the farmers as the market rate is based on demand and supply. Hence, the profit and loss is always fluctuating. One of the participants asked whether the market prices are stable throughout the year. The chairman informed that the market prices keep on fluctuating day-by-day. Prices fall during the summer and festival seasons, and increase during winter. Later in the day, the participants visited the Shivam Incubators Private Limited, Jhilmil Industrial Area, G. T. Road, Shahdara, Delhi who are the manufacturers and suppliers of poultry equipment. Different equipment like feeder, drinker, nipple drinker, vaccinator, incubator, thermometer etc. were displayed.



12 WHERE DO WE GO FROM HERE?

In final discussions, participants stressed the following:

- Customized training package specifically on Broiler Farming/Feed Formulation/ Disease diagnosis etc.
- Establishment of Feed Mill.
- Setting up of Poultry Diseases diagnostic laboratory
- Setting up of Breeder Farm and Hatchery
- Development of poultry cooperative, community enterprise Development etc. for better marketing.
- The need for clearly defined roles for all players in poultry farming has been emphasized.
- Trust emerged as a major sticking point between parties and its development was highly recommended and encouraged by all participants.
- Shelf help groups and learning programmes emerged as some of the ways of successfully equipping smallholder farmers.
- Participants agreed that some type of platform should be created between research communities to share their experiences, knowledge and materials. Suggestions included a form of International forum, a newsletter, a website, information hub and a learning alliance.

Dr. Mohanty reiterated the importance of keeping alive the linkages and relationships formed during the workshop, beyond the training period and into the future. He also reminded the participants of the CEED's continued availability for the provision of technical support to SME of Afghanistan.



13 APPENDIX

Details of the participants from Afghanistan recommended by Ministry of Rural Rehabilitation and Development, Afghanistan for Training Programme on “Advanced Poultry Farm Management and Marketing” scheduled from 9th to 20th May 2013 at IGNOU, New Delhi, India:

Sl. No.	Participant's Name	Father's Name	Passport Number	Poultry Farm Name/Occupation
1)	Mohd Yaqub	Mohd Nassim	OR1112755	Mir Ahmmad Agha Poultry
2)	Mahmood Shah	Mohammad Dawood	OA336949	Mohammad Hashim Poultry
3)	Hidayattullah	Obaidullah	OR167023	Hidayattullah Poultry
4)	Naqibullah hadi	Haji Abdul Hadi	OR166282	Al-hadi Poultry
5)	Abdul Sameh	Haji Abdul Qadus	OA1289549	Abdul Sameh Poultry
6)	Mohammad Nabi	Haji Ali Mohammad	OA1463979	Mohammad Nabi Poultry
7)	Aziz Rahman	Saleh Mohammad	OA1463832	Nazarjan Poultry
8)	Abdul Baqi	Fazal Haq	OA1057735	Hekmat Poultry
9)	Mohammad Omer	Haji Mohammad Shah	OA1289619	Mohammad Omer Poultry
10)	Basir Ahmad	Bakht Jamal	OA1691642	BDS- Officer
11)	Hamid Ahmadi	Hazrat Shah	OA 695481	Operation Officer

Training Programme Schedule

Day	Date	Time	Topic	Areas Covered	Resource Person
1	Thursday, May 09, 2013	1000-1630 hrs	Field visit to Emu Farm, Feed Mixing Plant, Breeder Farm and Hatchery		Mr. Shabbir Ahmad Khan & Dr. Vijayakumar
2	Friday, May 10, 2013	0930-1000 hrs	Inauguration		
		1000-1030 hrs	Registration of Participants		
		1030-1130 hrs	Scope and Importance of Poultry Farming	Scope of poultry farming, Avenues in poultry farming, Poultry farming systems, Classification of chicken	Dr. P. Vijayakumar
		1130-1145 hrs	Tea		
		1145-1300 hrs	Breeding System	Important poultry breeds, Breeding systems/methods, Artificial insemination	Dr. PVK Sasidhar
		1300-1400 hrs	Lunch		
		1400-1530 hrs	Breeding Management	Selection, Judging and Culling of Poultry, Recent developments in poultry breeding, On-farm strategies for improving egg and meat production	Dr. HP Shrivastava
		1530-1545 hrs	Tea		
		1545-1630 hrs	General Discussion about the day's topic		
3	Saturday, May 11, 2013	1000-1130 hrs	Hatchery Management-I	Hatchery design and layout, Hatchery operations, Hatchery equipments, Factors affecting Hatchability, Hatching egg management	Dr. HP Shrivastava
		1130-1145 hrs	Tea		
		1145-1300 hrs	Hatchery Management-II	Hatchery sanitation and hygiene, Hatchery waste disposal, Packing and transportation of chicks, Record keeping and economics	Dr. HP Shrivastava
		1300-1400 hrs	Lunch		
		1400-1530 hrs	Poultry Diseases	Different diseases of poultry and their control, Bird flu	Dr. HP Shrivastava
		1530-1545 hrs	Tea		
		1545-1630 hrs	General Discussion about the day's topic		
4	Sunday, May 12, 2013	1000-1130 hrs	Poultry Farm Biosecurity	Cleaning, disinfection, sanitation of poultry farm and equipments, Poultry farm waste disposal, Biosecurity measures in a poultry farm	Dr. PVK Sasidhar
		1130-1145 hrs	Tea		
		1145-1300 hrs	Prevention and Control of Diseases	Vaccination, Deworming, Medication, Pest control, Strategies for prevention/control of diseases	Dr. HP Shrivastava

		1300-1400 hrs	Lunch		
		1400-1530 hrs	Poultry Feed and its Processing	Classification of feedstuff, Types of poultry feeds, Feed supplements, Additives and nutraceuticals, Feed compounding and processing, Storage and quality control of raw materials and feed	Dr. HP Shrivastava
		1530-1545 hrs	Tea		
		1545-1630 hrs	General Discussion about the day's topic		
		1000-1130 hrs	Feeding Standards and Feed Formulation	Nutrient requirements for different poultry species, Preparation of balanced ration and Mineral/vitamin mixtures	Dr. HP Shrivastava
5	Monday, May 13, 2013	1130-1145 hrs	Tea		
		1145-1300 hrs	Poultry Farm Economics and Marketing	Markets and marketing channels for egg, meat and their products, Poultry cooperatives, Poultry farm economics, Preparation of viable project	Dr. HP Shrivastava
		1300-1400 hrs	Lunch		
		1400-1530 hrs	Poultry Farm Management	Management of other species of poultry, Management during extreme weather conditions, Routine Farm Management, Farm records and Record keeping	Dr. PVK Sasidhar
		1530-1545 hrs	Tea		
		1545-1630 hrs	General Discussion about the day's topic		
		1000-1130 hrs	Poultry Housing	Principles of housing, Housing systems, Poultry equipments	Dr. PVK Sasidhar
6	Tuesday, May 14, 2013	1130-1145 hrs	Tea		
		1145-1300 hrs	Poultry Feeding	Feeding methods, Feeding of different poultry species	Dr. PVK Sasidhar
		1300-1400 hrs	Lunch		
		1400-1530 hrs	Broiler and Layer Management	Brooder management, Management of broiler and layer Chicken	Mr. Shabbir Ahmad Khan
		1530-1545 hrs	Tea		
		1545-1630 hrs	General Discussion about the day's topic		
		1000-1130 hrs	Primary processing of poultry products	Collection, grading, packing, storing, transportation and preservation of eggs, Handling and transportation of live birds, Primary processing live birds, Mechanized Poultry Processing	Dr. Mita Sinhamahapatra
7	Wednesday, May 15, 2013	1130-1145 hrs	Tea		

		1145-1300 hrs	Value Addition and Quality Assurance	Value addition of eggs and meat, Value added egg and meat products, Quality control of egg, meat and their products, Hazard analysis and critical control points (HACCP) in egg and poultry processing	Dr. Mita Sinhamahapatra
		1300-1400 hrs	Lunch		
		1400-1530 hrs	Management of Breeder Stock	Management of breeder stock, Factors affecting fertility	Mr. Shabbir Ahmad Khan
		1530-1545 hrs	Tea		
		1545-1630 hrs	General Discussion about the day's topic		
8	Thursday, May 16, 2013	0900-1700 hrs	Field visit to a Broiler Farm		Mr. Shabbir Ahmad Khan & Dr. Vijayakumar
9	Friday, May 17, 2013	0900-1700 hrs	Field visit to a Layer Farm		Mr. Shabbir Ahmad Khan & Dr. Vijayakumar
10	Saturday, May 18, 2013	0900-1700 hrs	Field visit to Other Poultry Species Farm		Mr. Shabbir Ahmad Khan & Dr. Vijayakumar
11	Sunday, May 19, 2013	0900-1700 hrs	Field visit to Poultry Processing Plant and local market exploring the different poultry products availability		Mr. Shabbir Ahmad Khan & Dr. Vijayakumar
12	Monday, May 20, 2013	0930-1000 hrs	Feedback from participants		Dr. P.Vijayakumar
		1000-1030 hrs	Valedictory function and distribution of certificates		





Picture from Valedictory function and distribution of certificates