A field Study Report on

Current Status of Poultry Nucleus Herd Management at National Livestock Breeding Office, Pokhara

Prepared for Internal Evaluation of In-Service Training for Livestock and Fisheries Officers of Bagmati Province

Submitted To:
Livestock Service Training Center
Lagankhel, Lalitpur

Submitted by:
Dr. Nitesh Karki
Dr. Sabina Mishra
Mr. Palat Chaudhary

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Abbreviations

%	: Percentage
°C	: Degree Celsius
DoLFD	: Directorate of Livestock and Fishery Development
et. al	: Et alia
etc	: Et cetera
MoALD	: Ministry of Agriculture and Livestock Development
NLBC	: National Livestock Breeding Centre
NLBO	: National Livestock Breeding Office
SWOT	: Strengths Weaknesses Opportunities Threats
ToR	: Terms of Reference

Executive summary

This study was conducted to obtain ideas about the current status of poultry nucleus herd management at NLBO, Pokhara organized by the Livestock Service Training Centre, Lagankhel, Bagamati Province for the purpose of In-service officer level training from 1st Poush to 2080 B.S. to 7th Magh 2080.

During this study queries were focused on Production of day old poultry chicks of Australorp and New-Hampshire breeds, nutrition management, health management and housing management of poultry nucleus herd through the methodology of interview, secondary data from web of National Livestock breeding Office and annual progress report, 2079/80.

According to Fiscal Year 2079/080 total number of chicks distributed was 72146 in 12 district's farmers, groups and co-operatives. In the same way, in fiscal year 2079/080, 27500 Kg of pellet feed was fed to starter group, 19000 Kg to grower and 84500 Kg was fed to breeder group of poultry.

The vaccines used by NLBO Poultry unit was Marek's, Ranikhet, Gambaro, Coccidiosis and Fowl Pox and Albendazole was used for deworming purpose. For housing management, there were 3 brooding house, 7 grower house and 1 isolation house (closed housing).

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CHAPTER -I

1. Introduction

1.1General background

Under, the Ministry of Agriculture and Livestock Development (MoALD), Directorate of Livestock and Fishery Development (DoLFD) of Bagmati Province there is Livestock Services Training Center in Lagankhel, Lalitpur. The Term of Reference (TOR) of this office is to provide training to farmers, Veterinary Technician and Doctors Livestock service training center, Lagankhel, Lalitpur. From 1st Poush 2080 BS to 7th Magh 2080 (total 31 working days) this office has run In Service Officer Level Training where there is participation of 18 Veterinary Officer. As a part of training from 26th Poush to 1st Magh exposure visit was organized by this office at National Livestock Breeding Office, Pokhara, Nepal Among 18 participants we 3 participants; Dr. Nitesh Karki, Dr. Sabina Mishra and Mr. Palat Chaudary were appointed to study and to obtain ideas about the current status of poultry nucleus herd management at National Livestock Breeding Office, Pokhara.

1.2Contextual Prospective

National Livestock Breeding Center (NLBC), located in Khumaltar, Lalitpur since last 18 years was relocated to Lampatan, Pokhara in the year 2058/59 BS (2001/02 AD), and has been functioning to achieve and meet its vision, goal and objectives. Recently, after the country entered into the federal system, the office has been functioning as National Animal Breeding Office since 2075/76 B.S. (2019 A.D.) with the mandate of overall "Animal Breed Improvement & Breeding Policy Formulation" under the Department of Livestock Services which also integrates the then Livestock Development Farm, Pokhara to achieve the common goal of national Livestock Breeding Office, Pokhara.

On the other hand, the then Livestock Development Farm, Pokhara (locally popular as Bhedi Farm) was established in 1960 (2017/2018 BS) as Sheep Breeding Farm with the help of New Zealand Government. The project started crossbreeding Local Baruwal with exotic Polworth breed of sheep, but discontinued the practice as Baruwal from high hills could not thrive well at Lampatan, Pokhara. Then, Kage, another native breed of sheep was chosen for

upgrading and attempts to improve quality and yield of its fleece and body weight were made. The New Zealand assistance ended in 1964.

In 1969, buffalo, pig, goat and poultry production units were initiated in addition to the sheep production unit and the farm was renamed Livestock Development Farm, Pokhara. The farm continues all the units, though the goat production unit was discontinued for a long period after few years. A financial and technical support by GTZ (German agency for technical co-operation) was provided through GADP (Gandaki Anchal Agriculture Development Project) for a period of six years from 1975 to 1980. All existing major farm facilities were developed during this period. The project helped to construct farm infrastructures and import farm machines, tillage equipment and exotic breeding animals from overseas. Objective of the farm then was research on production and production technologies and production and supply of improved genetic resources of livestock and forage planting materials.

The farm remained a research farm under NARC (Nepal Agriculture Research Council) administration since 1987 to 1989 and was brought back under the Department of Livestock Services (DLS) as a production as well as resource farm in 1990. The farm received financial support from GTZ again through PLBP (Promotion of Livestock Breeding Project) from 1990 to 1994 and during this period renovation of sheds and buildings was carried out and some of the farm machineries and animal resources were procured from abroad during this period.

The farm included poultry development activities in its program in year 1973. Brooding and distribution of poultry chicks was the initial program. The day old chicks of New Hampshire and White Leghorn breeds were brought from Central Hatchery, Parwanipur, brooded up to the age of four to six weeks and supplied to various districts of Western Development Region. The year 1980 (2037/38) was very important for poultry unit, as two layer houses, one growers house and one hatchery building were constructed with financial and technical support from GTZ/GADP in that year. Similarly, incubators, hatchers and generator also were imported and installed. Parent stocks of New Hampshire, Black Australorp and White Leghorn breeds of poultry were imported and reared as breeding stocks. The activities of poultry unit like supplying day-old chicks, brooded poultry chicks, fertile eggs, cockerels and

dissemination of poultry management knowledge/skills to farmers have been significantly contributing to poultry development in this region.

1.3 Objectives

1.3.1 General Objectives

a) To explore the current status of poultry nucleus herd at NLBO.

1.4.2 Specific Objectives

a) To study about Production of day old poultry chicks of Australorp and New-Hampshire breeds.
b) To study about the nutrition management of poultry nucleus herd.
c) To study about the health management of poultry nucleus herd.
d) To study about the housing management of poultry nucleus herd.

1.4 Limitations

During the exposure visit to poultry nucleus herd, National livestock breeding office, Pokhara due to biosecurity reason we were not allowed to enter physically to the farm yards. Due to this issue we were unable to explore about the housing, feeding and caring management of nucleus herd of poultry practically.

CHAPTER-II

2. Review of Literature

2.1 Poultry can be classified in four classes

1. American Class:

These chickens originally bred in America.

a) Rhode Island Red

b) Plymouth rock

c) New Hampshire

d) Wyandotte

2. Asiatic Class:

These chickens originally bred in Asia.

a) Brahma:

b) Assel

c) Karaknath

d) Chittagong

e) Cochin

3. English Class:

a) Sussex- i. Light ii. Red

b) Australorp

c) Orpington

d) Cornish

4. Mediterranean Class:

a) Ancona

b) Minorca

c) Leghorn (G.C.Banerjee op.cit, Footnote)

2.2 Three types of poultry breeds are raised in Nepal:

- Local breed: Shakini, Ghanti khuile, Pwankh Ulte.
- Pure breed, and

- Synthetic breed.

2.3 Description of exotic poultry breeds:

- **New Hampshire:** It is an American breed, brown in colour. The average body weight of adult male is 3.8kg and female is 2.9kg. The egg production potentiality is 200eggs/year. At present the breeds are raised at Brooder Farm, Banke, Livestock Development Farm, Pokhara, Agriculture Centre, Khulmaltar, Agriculture Research Centre, Tarahara and Parwanipur.
- **Austrolorp:** The breed is developed in Australia. The breed is black in colour. The average body weight of adult male is 3.8kg and female is 2.9 kg. The egg production potentiality is 200eggs/year. At present the breeds are raised at NARC research centre, Khumaltar, Tarahara and Parwanipur.
- **Giri Raja:** It was introduced and tested by Pakhribas Agriculture Centre. At present the breeds are raised at NARC Research Centres, Pakhribas.

2.4 Important economic traits:

Egg production:

Egg production is the most important economic trait in chickens. A modern layer starts laying around 20 weeks of age and continues till it dies. Egg production drops sharply below the economic level after the first laying cycle. Commercial layers therefore are rarely maintained after first laying cycle i.e. after 72 weeks of age. Peak production is reached about 5 to 6 weeks after the first egg is laid, stays only for a few weeks after which it gradually declines.

Egg weight:

Egg weight or egg size being a highly heritable trait can be improved by selection. The first egg laid is usually smallest and is about 75% of the maximum weight that can be reached. Final egg weight is influenced by age at puberty, body weight and rate of lay. Birds which mature earlier and those with high production potential tend to lay smaller eggs. Egg weight is high for heavy breeds than light breeds. Other factors affecting egg size are nutrition, season and disease conditions. Birds housed in cages may lay larger eggs than those housed on floor. Egg weight may be influenced either by maternal or sex linked effect depending upon the strain.

Egg quality:

External quality of the egg is judged from its color, shape, texture and breaking strength (or shell thickness). The internal quality is assessed from the quality of albumen, yolk and the presence or absence of blood and meat spots. Most of the egg-quality traits, whether exterior or interior, are highly heritable and respond to selection quickly. White and brown are the most common egg colours. Tinted eggs are sometimes discriminated against white varieties, but it fetches a premium price and is very popular in this country as it resembles the eggs from indigenous chickens. Colour does not make any difference in the nutritive value. As egg colour is a characteristic of a breed, the breeding material has to be different depending upon the preference of the shell colour.

Body size and conformation:

Body size is usually measured by weighing the birds. Large body weight is very important in broilers. Small or intermediate body weight is preferred in layers. Optimum body size is very essential in laying chickens to obtain eggs of satisfactory size. Body weight at all ages is highly heritable and can be improved by simple mass selection. Conformation refers to body proportions and is more important if broilers are not sold as whole birds. Conformation is determined both by bone structure and fleshing.

Feed efficiency:

Feed efficiency is a ratio of feed consumption to weight gain in broilers. Feed efficiency in broilers has improved considerably in recent years as a correlated response to high growth rate. Better understanding about the nutritional requirements and formulation of high energy rations have also contributed significantly for improving feed efficiency. Feed efficiency although moderately heritable is laborious to measure. Most of the improvement in feed efficiency in commercial ck has been achieved as a correlated response to selection for high growth rate or egg production. Feed efficiency in layers is measured either as amount of feed consumed in kg/dozen eggs or as amount of feed consumed in kg/kg egg mass. Small bodied birds are most

efficient for egg production as they consume less feed. Selection for high egg production improves efficiency through increase in egg mass output.

Fertility and hatchability

Fertility and hatchability for a flock are expressed as percentage in relation to total eggs set. Hatchability can also be expressed in percentage as a production of fertile eggs set. Breeds, strains, family as well as individuals within a family differ with respect to fertility and hatchability. Inbreeding depresses those while outbreeding increases. Age of birds, season , nutritional status of flock, diseases and management conditions affect both fertility and hatchability. To improve fertility in a flock the ratio of males to females should be kept optimum. This ratio should be narrow for heavy breeds than light breeds. Artificial insemination and mating in single sire pens is advocated when infertility is due to preferential mating or social order among the males, respectively. Flocks in high rate of lay have better fertility and hatchability than poor producing flocks.

Size and shape of the eggs, and conditions of egg shell are important for hatchability. Very large or very small eggs do not hatch well. Eggs having abnormal shapes show low hatchability. Condition and duration of storage of eggs prior to incubation as well as incubator and hatcher environment affect hatchability. Breeder flocks need special attention. Their rations should be fortified with minerals and vitamins for obtaining better fertility and hatchability. Very high or low temperature in the breeding house affect fertility and hence hatchability. Both fertility and hatchability are lowly heritable traits but can be improved by appropriate breeding methods. Rejection of males on the basis of test mating prior to taking hatches improves fertility.

2.5 Concept and aim of poultry breeder farm:

Breeder farm undertakes management of male and female breeding stock of poultry to produce young chicks. Breeder management refers to:

- pure line management
- parent stock management
- grandparent stock management

Breeder Farm aims to produce more number of fertile eggs per pullet and increasing the hatchability by hygienic handling of the fertile eggs.

Types of breeder farm

• Covering almost all domestic birds such as broilers, layers, ducks, guinea fowls, quails, turkeys etc.

• Commonly three types:

- White egg layer
- Brown egg layer
- Meat type broiler breeder

Management and rearing of breeder

Breeder flocks are managed basically by using the same technique that is applicable to layers. Their management from one day old to point of lay are also basically identical. The minor differences in practical details rest on the assumption that the breeders require more physical stamina and fitness to perform satisfactorily as breeder. It is sought to impart these qualities through feeding and physical exercises. Breeder stocks are given more floor, feeding and water space. However, culling of the breeders is more frequent than layers. To prevent precocious (early age) mating, males and females are managed separately till maturity.

Adult breeders are usually kept on the floor. Their maintenance in cages will necessitate artificial insemination. The mating ratio in case of breeder flock varies depending on the type of mating and type of breed. The males are introduced to the female flock at about 6 weeks after point of lay of the pullets. By then, the pullet breeders must have reached the egg size suitable for setting. Good quality eggs should be ensured through clean and adequate nesting facilities and frequent egg collection.

The efficient production of fertile hatching eggs, both for producing pullets for commercial egg layers as well as for the broiler chicks, depends on continuous and skilled management of the breeder birds. Although both types of breeders are kept for the same purpose (production of fertile hatching eggs), one must realize that the two types of birds are completely different. Commercial egg layers can be further divided into white-egg layers (White Leghorns) and brown-egg layers (Rhode Island Red). Likewise, meat-type broiler breeders parents can be

divided into normal or standard meat type breeders and mini or dwarf-type breeders. For commercial production, the mini type female is mated with standard male, thus producing standard broilers. Several different types of broilers are used in the industry, depending on the local market situation.

2.6 Rearing programme of the breeder flock:

Housing:

The breeder stock can be reared successfully on deep litter or in breeder cages. The minimum floor space required is 1860 cm2 in deep litter, 450 cm2 for females and 700 cm2 for male breeders in cages. About 15 cm feeder space and 2.5 cm drinking space with one nest for every four layers is required. It is always advisable to rear the cockerels separately from the pullets.

Flock uniformity:

It is important to maintain the flock with uniform body weight; that should coincide with the recommended weight of the particular strain. This will be more helpful in exploiting the genetic potential of the breeder especially for hatching egg production. Better the uniformity of growing birds, better the future egg production. From 4 weeks of age, breeder chicks should be grouped according to the body weight. The weak chicks should be taken extra care for attaining uniformity. At any stage, the breeder flock must be having at least 80 per cent uniformity. In general, breeders will be slightly heavier if raised during winter and slightly lighter if reared during summer.

Feeding programme:

Feed has direct effect on the productive and reproductive performances of the breeder flock and is considered as the most important single factor influencing the fertility and hatchability of hatching eggs. The development of embryo is entirely dependent upon the contents and structure of the egg for its supply of nutrients. Therefore, breeder flock must be fed rations (feed) that will supply adequate quantity of nutrients needed for the embryonic growth. Separate feeding of breeder hens and cock should be followed for obtaining proper fertility and hatchability.

Breeding programme:

The males are to be reared separately up to 21 weeks and then introduced into the breeder flock. To achieve maximum fertility in hatching eggs, maintain at least 12 per cent males in case of natural mating and 8 per cent in case of artificial insemination. At the beginning of breeding season (22 weeks) introduce 8 males per 100 females. Replace the weak, lame and sick males quickly. In case of artificial insemination, at any given time, at least 5 per cent males which can yield at least 0.5 ml semen per ejaculation (collection) with not less than 60 per cent motility (movement) should be utilized for breeding. Inseminate females once in 5 days with 0.03 to 0.05 ml of neat semen within 30 minutes of collection.

Health care programme:

This is more or less similar to the programme followed for commercial layers. These programmes vary from place to place and time to time depending on the prevalence of diseases in the area. The only difference in the vaccination programme will be that killed vaccines are given for diseases like Infectious Bronchitis, Infectious Bursal Disease, Mycoplamosis, Ranikhet Disease etc. Generally, these vaccines are repeated at 45 weeks of age in order to increase the maternal acquired immunity to the chicks. Fowl cholera vaccine will be given at 10 weeks of age in endemic area. Moreover, cock should be tested for mycoplasma and salmonella at around 16 weeks of age and the positive reactors should be eliminated. Deworming will be done every month or once in 6 weeks in deep litter system & once in two months in case of cage system and slat reared breeders.

Bio-security programme:

Bio-security is an integrated programme involving the expenditure for resources with an anticipation of return through enhanced productivity. Bio-security should be viewed as a comprehensive system to prevent disease outbreaks. Effective bio-security should be economically justified and should be consistent with the design of housing, layout facilities and the competence and capability of managers and workers.

Culling:

Culling of the breeders is more frequent than commercial layers. To prevent precocious (early age) mating, males and females are managed separately till maturity. Males are to be reared separately up to 21 weeks and then introduced into the breeder flock.

In addition to the regular recommended health care, feeding, watering, medication and vaccination programmes, adaptation of the following measures will help in improving the overall efficiency of the breeder farm:

Chapter-III

3. Methodology

3.1 Study period

The study was done from 26th Poush to 1st Magh 2080

3.2 Study Area

In poultry nucleus herd unit, of National livestock breeding office, Pokhara.

3.3 Data collection

- Field interview
- Secondary data from web of National Livestock breeding Office.
- Annual progress report, 2079/80.

3.4 Data analysis

For analysis of the data Microsoft excel and word was used.

Chapter-IV

4. Results

Table 1. Animal Distribution (FY 2079/80)

S.N	Type of Non-Ruminants	No. distributed	No. of districts	Beneficiary (No. of family)	Remarks
1	Poultry (chicks)	72146	12	68	Including farmer groups/Cooperatives

Table 2. Annual program and progress accomplished in FY 079/080

S.N	Details	Targets	Progress
1	Production of chicks	85000	85838
2	Maintainance of replacement stock	3000	4286
3	Supply of chicks	80000	72146

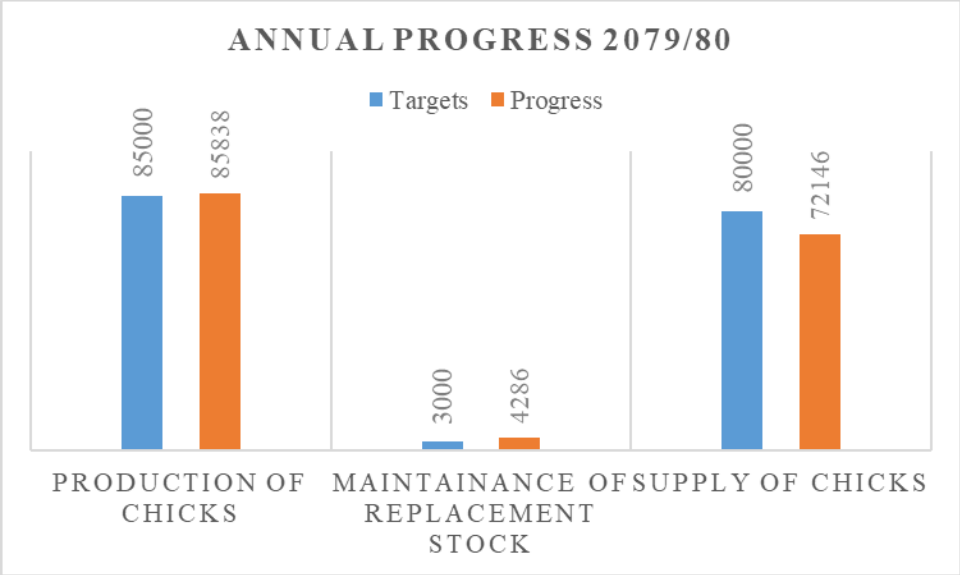

Figure 1. Annual Progress and progress accomplished

Table 3. Vaccination Schedule

Day	Vaccination	Route of Administration	Remarks
1	Marek's	S/C, 0.2 ml	Rispen
1	Ranikhet	Intra-ocular, 1 drop	F1 strain
10	Gumboro	Intra-ocular, 1 drop	IBD Intermediate
20	Gumboro	Intra-ocular, 1 drop	IBD Intermediate plus
27	Ranikhet	Drinking water	ND Lasota
42	Fowl Pox	Wing Vein	Scratch
62	Newcastle Disease	I/M	R2B
84	Fowl Pox	Wing Vein	
120	Newcastle Disease	Drinking water	ND Lasota

Table 4. Physical Facilities Available

S.N	Particulars	Number
1	Land Area	0.8 ha
2	Brooding	1
3	House Grower	1
4	House Layers	2
5	House	1
6	Layers House	1
7	Hatchery	2
8	Building	1
9	Incubators	1
10	Hatchery	1
11	General Set	2
12	New Poultry House	1
13	Free Range Poultry House and Fence	1

Table 5. Allocation of Human Resource

S.N	Designation	Responsibility
1	LDO	Unit in charge
2	LST	Supervision, Reporting
3	JLST	Recording, Sales, Hatchery operation
4	Workers/daily wage based- 6 poultry boys	Cleaning, Feeding and Helping

Table 6. Flock composition at the beginning and end of (079/080)

At the beginning of FY 2079/80		
Breed	Male	Female
Australorp	57	471

New Hampshire	222	1844
Total	2592	
At the end of this F.Y. 2079/80		
Breed	Male	Female
Australorp	22	219
New Hampshire	112	1084
Total	1437	

Table 7. Age at first egg lay

Year	067/68	068/69	069/70	070/71	071/72	072/73	073/74	074/75	075/76	076/77	077/78	078/79	079/80
Age	146	130	134	145	138	140	142	139	138	132	135	141	144

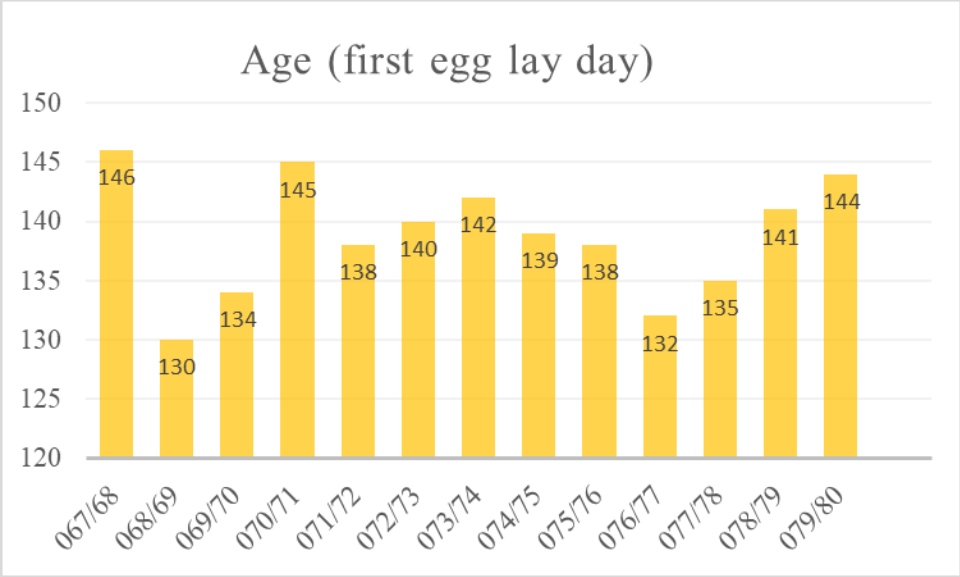

Figure 2. Age at first egg lay

Table 8. Age at 50 % egg lay

Year	068/69	069/70	070/71	071/72	072/73	073/74	074/75	075/76	076/77	077/78	078/79	079/80
Age	*165*	*166*	*170*	*167*	*165*	*170*	*168*	*169*	*167*	*165*	*171*	*168*

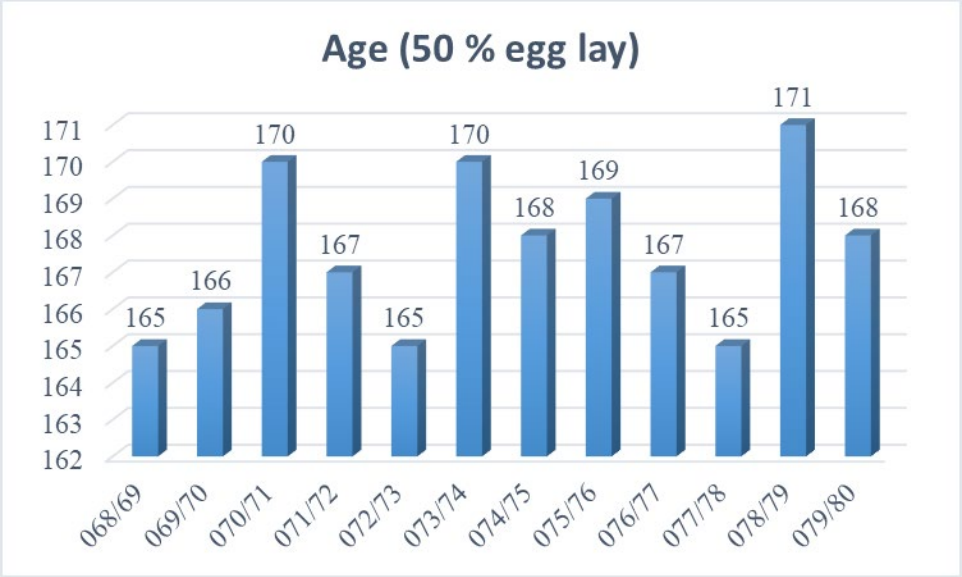

Figure 3. Age at 50 % egg lay.

Table 9. Hen Day Laying Percent

Year	068/69	069/70	070/71	071/72	072/73	073/74	074/75	075/76	076/77	077/78	078/79	079/80
%	48	48.61	53.81	55	54.1	54.8	55	54.4	55.1	54.1	56.2	54.3

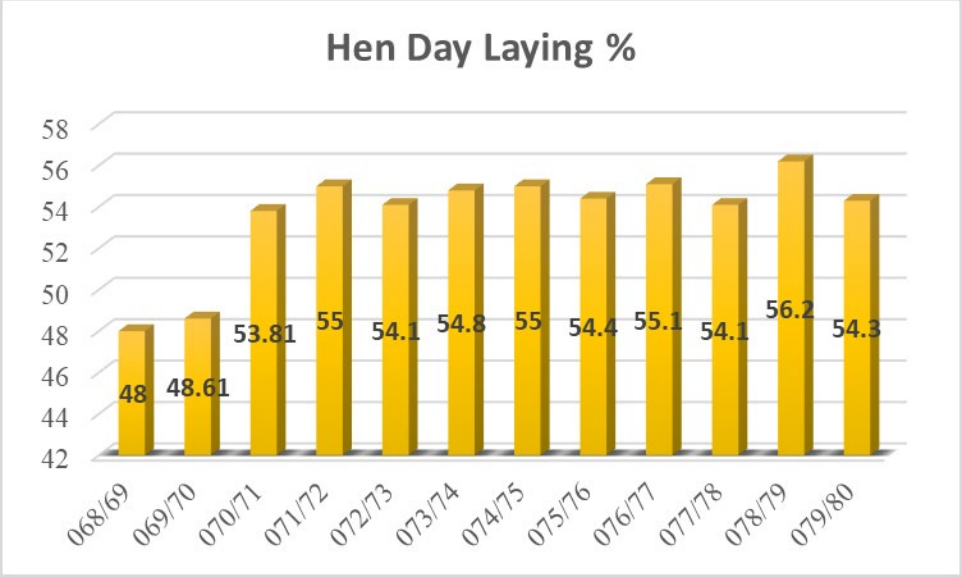

Figure 4. Hen Day Laying Percent

Table 10. Feed Produced and Sold at NLBO, Pokhara During FY 2079/080

S.N	Feed Production	Unit	Qty
1	Poultry Feed (Starter)	Kg	27500
2	Poultry Feed (Grower)	Kg	19000
3	Poultry Feed (Breeder)	Kg	84500

Fertility, Hatchability and Mortality:

- Fertility of eggs set in incubators for the FY 079/80 is 86.2 percent which is slightly lower than that of previous years (87.4%).
- Farm performance on hatchability is satisfactory and has improved upto 85.5% in comparison to 84.6% of the previous years for the eggs set in the incubator.
- Mortality in the farm during brooding (0 to 8 weeks), growing (9 to 20 weeks) and laying (21 weeks onwards) in various age groups in the last fiscal year is 2.2,10.3 and 2% respectively.

CHAPTER- V

5. Discussion

5.1 SWOT Analysis

Strength

- Production of pure day old chick of Austrolop and New Hampsire.
- Close housing system
- Feed production within the farm

Weakness

- Less production of day old chick (only 72000/year) according to public demand
- Limited floor space in close housing system
- Raw material for feed production comes from outside

Opportunity

- Disease screening can be done with collaboration of laboratory
- New parent stock can be brought from collaboration with poultry development farm Khajura, Nepalgunj
- Advance Poultry training for Staff of this poultry unit

Threats

- Bio-security challenge
- Wildbirds, rhodents
- Poultry disease outbreak (Bird- flu,Ranikhet etc.)

The age at first egg lay study was performed from year 2067/68 to 2079/080 in nucleus herd of poultry unit in NLBO where fastest egg lay day was in 130th day in FY 2068/69 and in year 2067/68 the first egg production was on 146th day. Similar finding was observed in the study done by (Waleed et al., 2020) where he found first egg production was on 132th day in the year 2018 and the delayed egg production was on 149th day which was in the year 2019.

Fertility of eggs set in incubators for the FY 079/80 is 86.2 percent which is slightly lower than that of previous years. According to the research performed by Abudabos et al., (2019) true fertility was found 84.65 % in egg collected in week one and declined to 71.14 % in week four. Age has been shown to affect the fertility of layers breed (Brotherstone et al., 2000). This effect is more pronounced in female than in male breeders (Brommer and Rattiste, 2008).

Farm performance on hatchability is satisfactory and has improved upto 85.5% in comparison to 84.6% of the previous years for the eggs set in the incubator. Egg collected in week one presented the highest performance in hatchability (79%) and the lowest hatchability performance

was found in eggs collected in 3rd week (Tullet and Burton, 2009). This may be due to changes in environmental temperature. The temperature of the egg must be reduced from body temperature (37-40^{0}c) to physiological zero (26-27^{0}c) within 6 hours to decrease early embryonic mortality (Lourens et al., 2006)

Mortality in the farm during brooding (0 to 8 weeks), growing (9 to 20 weeks) and laying (21 weeks onwards) in various age groups in the last fiscal year is 2.2,10.3 and 2% respectively. Similar finding was found on research done by (Caglayan and Inal, 2006) where mortality of brooding parent chicks was 3.1%, growing (16%) and laying was 1.9 %. The possible causes of higher mortality in parent layers could be due to severe outbreak of infectious and non-infectious diseases, accidental death, sub-standard hygiene/managemental conditions, poor quality chicks and feed (Christensen & McCorkle, 2001).

CHAPTER- VI

6. Conclusion and Recommendation

6.1 Conclusion

This study was conducted to acquire the knowledge about the poultry farming management and profitable operation as well as the problems faced by the organization.

6.2 Recommendation

The following recommendation will be supportive to increase the efficiency, income and sustainability of poultry farming:

- NLBO should give priority to the poultry sector in its annual programme plan considering the significant role of poultry farming in poverty alleviation, women employment and promotion of agriculture enterprises.
- NLBO should focus on technology generation related to production management, marketing and diagnostic service.
- Trained veterinarians and technicians should be assigned to work in nucleus poultry breeding unit.
- Research on avian disease and management aspect should be conducted by NLBO to the poultry farmers.
- Training opportunities to hatchery owners and commercial poultry farmers should be provided to upgrade their skills and knowledge on breeding, feeding and marketing by NLBO.
- The price of product and demand situation should be made available through the medium of radio, television and local newspaper.

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ANNEX-I


(चलवा)
ब्रुडिङ्ग हाउस