REPORT OF THE STUDENTS INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES)

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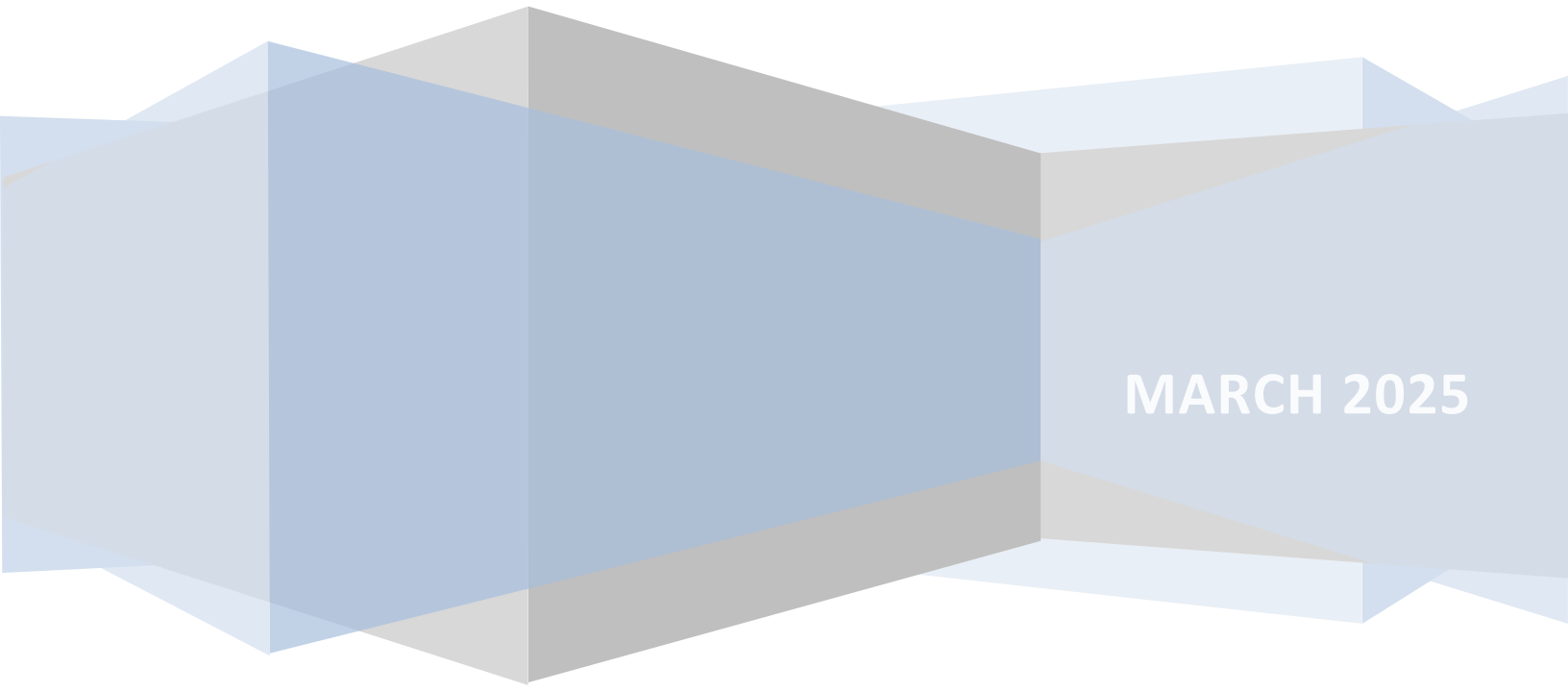
ND/23/AGT/PT/0100



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KWARA STATE POLYTECHNIC, ILORIN, KWARA STATE

DEPARTMENT OF AGRICULTURAL TECHNOLOGY

A TECHNICAL REPORT OF THE STUDENTS INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES)

UNDERTAKEN AT:

UNILORIN GG MAX FARMS LIMITED

AMOYO, IFELODUN LOCAL GOVERNMENT AREA, KWARA STATE

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CHAPTER ONE

1.0 INTRODUCTION

1.1 STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES) BACKGROUND

In the earlier stage of science and technology education in Nigeria, students were graduating from their respective institutions without any technical knowledge or working experience. It was in this view that students undergoing science and technology related courses were mandated for students in different institution in view of widening their horizons so as to enable them have technical knowledge or working experience before graduating from their various institutions.

The Student Industrial Work Experience Scheme (SIWES) was established by the Industrial Training Fund (ITF) in 1973 to enable students of tertiary institution have technical knowledge of industrial work base on their course of study before the completion of their program in their respective institutions. The scheme was designed to expose students to industrial environment and enable them develop occupational competencies so that they can readily contribute their quota to national economic and technological development after graduation. The major background behind the embarkment of students in SIWES was to expose them to the industrial environment and enable them develop occupational competencies so that they can readily contribute their quota to national economic and technological development after graduation. The major benefit accruing to students who participate conscientiously in Students Industrial Work Experience Scheme (SIWES) are the skills and competencies they acquire. The relevant production skills remain a part of the recipients of industrial training as life-long assets which cannot be taken away from them. This is because the knowledge and skills acquired through training are internalized and become relevant when required to perform jobs or functions.

1.2 OBJECTIVES

The Industrial Training Funds policy Document No. 1 of 1973 which established SIWES outlined the objectives of the scheme. The objectives are to:

1. Provide an avenue for students in higher institutions of learning to acquire industrial skills and experiences during their course of study.
2. Prepare students for industrial work situations that they are likely to meet after graduation.
3. Expose students to work methods and techniques in handling equipment and machinery that may not be available in their institutions.
4. Make the transition from school to the world of work easier and enhance students' contacts for later job placements.
5. Provide students with the opportunities to apply their educational knowledge in real work situations, thereby bridging the gap between theory and practice.
6. Enlist and strengthen employers' involvement in the entire educational process and prepare students for employment in Industry and Commerce (Information and Guideline for SIWES, 2002).

1.3 BODIES INVOLVED IN THE MANAGEMENT OF SIWES

The bodies involved are:The Federal Government,Industrial Training Fund (ITF). Other supervising agents are:National University Commission (NUC), National Board for Technical Education (NBTE)and National Council for Colleges of Education (NCE)

The functions of these agencies above include among others to:

- Ensure adequate funding of the scheme;
- Establish SIWES and accredit SIWWES unit in the approved institutions;
- Formulate policies and guideline for participating bodies and institutions as well as appointing SIWES coordinators and supporting staff;
- Supervise students at their places of attachment and sign their lob-book and IT forms;
- Vet and process student's log-book and forward same to ITF Area office;
- Ensure payment of allowances for the students and supervisors.

Therefore the success or otherwise of the SIWES depends on the efficiency of the Ministries, ITF, Institutions, Employers of labour and the general public involved in articulation and management of the program. Thus the evaluation of SIWES in tertiary institutions in meeting up with the needs for the establishment of the program is necessary.

CHAPTER TWO

2.0 BACKGROUND OF ESTABLISHMENT

The establishment being a poultry farm majors on the rearing of birds for the sole aim of egg production. It resides on about 6acres of land and has a branch in a neighbouring village. The establishment has a total flock capacity of 20, 000 commercial layers and rears a special breed - ISA Brown. It however has staff strength of 19 members of staff. Amidst these are skilled and unskilled all having specific areas of assignment.

The Board of Controllers

They are two in number. These people are directly responsible for the financing of the farm. They are not present here in the county but have a representative who is more inclined in the agri-business. They sporadically visit the country and hence the farm to ensure that activities are on-going as planned.

The Director

He is the trustee. He is charged with the duty of overseeing the farm activities and effective management of farm finance and other funds wired to him. He collects reports daily from the farm supervisor, hence,makes and takes decisions based on the gathered reports.

The Farm Manager/Supervisor

He is responsible for the daily administration of farm activities. He ensures members of staff attend to their duties in time and inquire from them incongruity in the behaviour of the birds and other things. He opens up the mortalities to see the causative agent. He makes requisition for medications (antibiotics, vaccines, tonics etc.) ahead of time to ensure that the birds are not in any form of discomfort which would hinder their production as a result. He ensures that the birds are not stressed in whatsoever form especially in the aspects of feed and quality water. He compiles all these in a report and hands it over to the Director at the closing of the day.

The Feed Mill Supervisor

She is charged with overseeing of the feed mill activities. She is to supervise the production of the feed and ensure that the feed is mixed aptly based on the feed formula of the company. She however is to make requisition of feed ingredient before the exhaustion of the stored one's. Consequently, she reconciles the available credit to the total production of feed and ensures all outstanding debts from the supply of feed are received before dispatching another batch. This is to ensure self-sustainability of the feed mill.

Other members of Staff

The other members of staff include: the secretary, the attendants (pen and feed mill attendants), the driver and the security guards. Each of these member of staff have their designated duties which is known to them and is been judiciously carried out.

2.1 THE FARM LOCATION AND BRIEF HISTORY

The UNILORIN GGMAX Integrated Poultry Farm, a commercial poultry farm, is located in Amoyo, Ifelodun Local Government Area of Kwara State and was commissioned on July 21, 2022.

Here's a more detailed breakdown:

Location: Amoyo, Ifelodun Local Government Area, Kwara State.

Type: Commercial poultry farm.

Establishment: Established through the Central Bank of Nigeria (CBN) Tertiary Institutions Poultry Revival Scheme (TIPRES) in partnership with Zenith Bank Plc.

Financing: Financed by a N600 million loan facility from the Central Bank of Nigeria (CBN).

Purpose: To revive the poultry sub-sector, reduce importation, and close the existing demand and supply gap.

Key Features: Layer cages and wire mesh supplied and installed by Caretech division of Animalcare Services Konsults Ltd**.** The farm started activities in late August 2011 and housed its first batch of commercial layers in September 2011. The farm started with 5000 day-old chicks and steadily increased its capacity to a present 20,000 commercial laying birds. The farm practices two types of method in rearing its birds – the battery cage and the deep litter systems of management.

The Battery Cage: Depending on the quality, the battery cage can accommodate between 3birds per cell for the local cages and 4birds per cell for the imported. This variation however puts the farmer on a very difficult decision making side. It is true that the locally fabricated cages would consume more space as compared to the imported one but what of the cost of purchase, that's one more thing to worry about. For the same amount of cells, the imported cages cost twice as much as the locally fabricated ones. But whichever one is used, the caged pens have greater advantages over the floor rearing pens. This would be discussed in later sections of this report.

The Deep litter: This does not involve any speciality in its design except that the sides of the building has to be raised at least two foot from the ground level to prevent escape of litter into the surroundings of the pen. Most importantly, the pen to face the right direction which is the East-Western Hemisphere as this caters for the rising and setting of the sun. While the sides of the pens be fitted with gauze to prevent externalities (rodents, reptiles etc.) from infesting the pens. This preparation is also used in the caged pens as they have to face the East-Western Hemisphere and their sides be fitted with gauze as well.

2.2 ORGANIZATIONAL STRUCTURE

Due to the newness of the farm, it could not afford to pay too many staff and hence each department did not have a departmental head instead, it had a central head in the position of the farm manager/supervisor. All departments except the feed mill are supervised by the farm manager/supervisor who communicates directly to the director who in turn is responsible to the other partners (Board of Controllers). The director presided over the whole affairs of the farms.

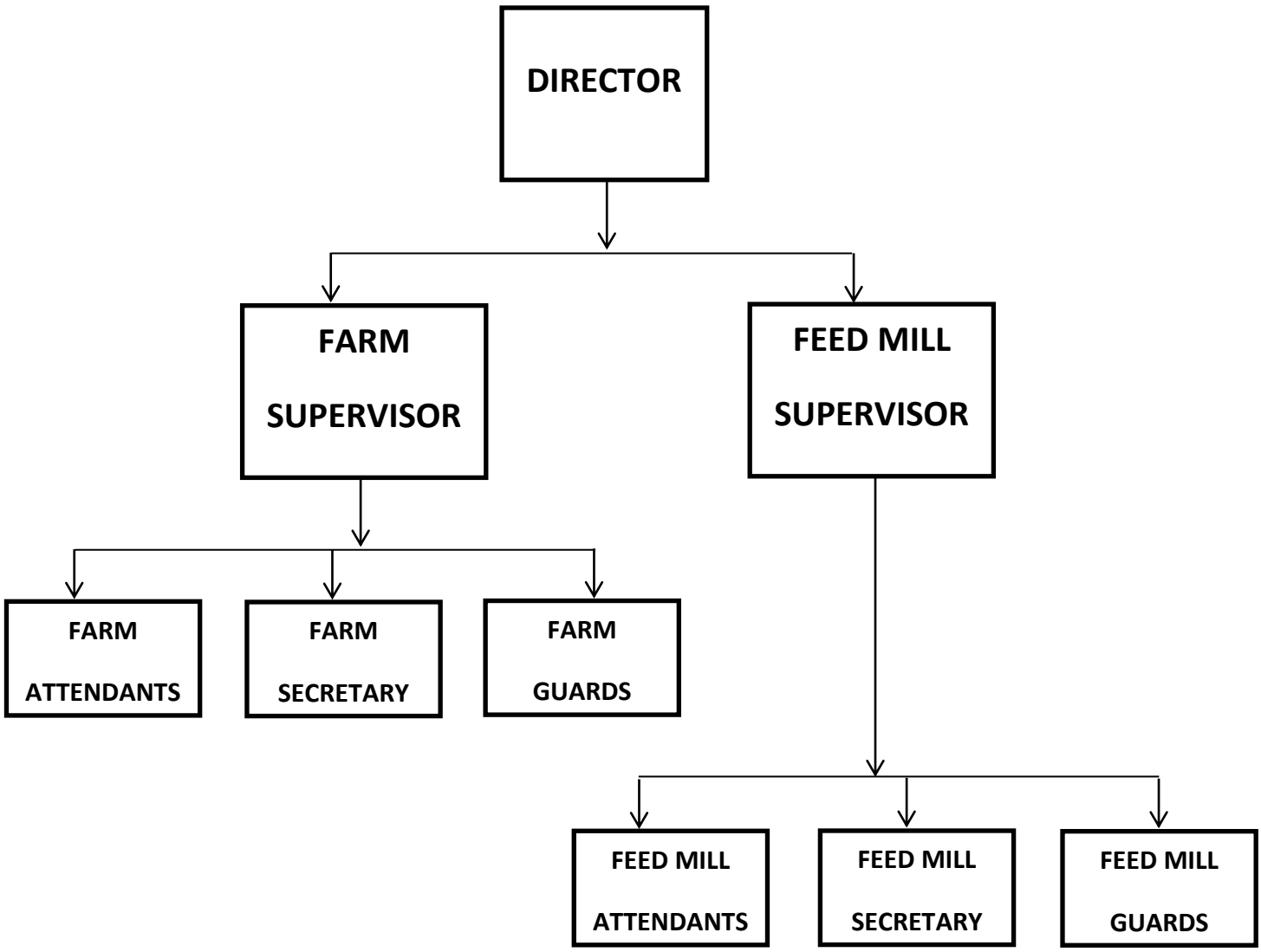

Fig 1: ORGANIZATIONAL CHART FOR UNILORIN GG MAX FARMS LIMITED

2.3 THE LIVESTOCK TYPE, STRENGTH AND EMPLOYMENT SIZE OF THE FARM

As earlier mentioned, Unilorin GG max farms houses 20,000 commercial layers on both farms and rears only ISA Brown breed.

The number of professional workers numbered three while the population of unskilled numbered fourteen to exclude driver and security.

CHAPTER THREE

3.0 NATURE OF WORK, ACTIVITIES, SKILLS AND EXPERIENCE GAINED ON SIWES SITE

UNILORIN GG MAX FARMS operation was divided into four departmental units:

1. Brooder Unit
2. Layers Unit
3. Feed mill Unit
4. Sales and Marketing

The description of the various department in which I was engaged and exposed to during my six months industrial training are highlighted below and experience gain summarized in various department.

3.1 BROODER DEPARTMENT/UNIT

Brooding section of the farm specialized on management procedure of rearing chicks to grower. Brooder unit cater for chicks from day old to about 8 weeks of age as chicks and beyond to point of lay as growers (8 – 20 weeks).

This section is located at the branch farm. Unilorin GG max farm brooder unit started since in early November 2011 with the rearing of day-old chicks sourced from ZARTECH in the same year.

This department is one of the most sensitive units of the farm that commands a great deal of management procedures because of fragility of the birds and its vulnerability to diseases and infections.

The outline of brooder management operation exposed to in course of my training includes:

1. Daily observation of birds for comfort, activeness, feeding and other responses.
2. Frequent supply of feeds and watering routinely.
3. Removal and replacement of litters.
4. Daily supply and regulation of heat.
5. Sanitary procedures – cleaning, washing and disinfecting.

Occasionally, the following management practices are essential:

1. Removal of heaters
2. Replacement of feeders
3. Debeaking
4. Deworming
5. Delousing
6. Medication and vaccination
7. Transferring and receiving of birds.

The brooding programme and activities in fresh field farms can be summarized below:

DAY	DESCRIPTION
1 - 2	Upon chick arrival, they are sprayed with IO (Intra-Ocular)

	Administration of Vitamin Supplement as anti-stress
	Supply of sufficient heat.
3	Administration of H120 Vaccine
	Administration of Vitamin Supplement as anti-stress
4	Administration of Coccidiostat Vaccine
	Administration of Vitamin Supplement as anti-stress
7	Administration of first LaSota Vaccine
	Administration of Vitamin Supplement as anti-stress
10	Administration of first Gumboro Vaccine
	Administration of Vitamin Supplement as anti-stress
18	Administration of second Gumboro Vaccine
	Administration of Vitamin Supplement as anti-stress
	Reduction of heat
23	Administration of second LaSota Vaccine
	Administration of Vitamin Supplement as anti-stress
28	Administration of third Gumboro Vaccine
	Administration of Vitamin Supplement as anti-stress
Week 4	Heat is completely removed
Week 5	Administration of H120 Vaccine
	Administration of Vitamin Supplement as anti-stress
Week 6	Administration of Fowl Pox Medication
	Administration of Vitamin Supplement as anti-stress
Week 8	Administration of LaSota Vaccine
	Administration of Vitamin Supplement as anti-stress
Week 9	Deworming
	Administration of Vitamin Supplement as anti-stress
Week 10	Debeaking
	Administration of Vitamin Supplement as anti-stress
Week 12	Administration of Egg Drop Syndrome (EDS) and Infectious Bursal (IB) Medications and Vaccines
	Administration of Vitamin Supplement as anti-stress
Week 13	Administration of Newcastle Disease Oil
Week 16	Deworming
Week 19	Administration of LaSota Vaccine
	Administration of Vitamin Supplement as anti-stress

After the nineteenth week, the birds are transferred to the layers department or section.

Brooder section of the farm records much less mortality due to the proper management structure put in place and strict adherence to the management policies but the following could have caused high mortality or a combination of the following:

1. Poor quality chicks (the deformed, weakling and sick day-old chicks): Poor quality chicks are sorted out upon receipt of the chicks and are not counted as part of the delivery.
2. Inadequate feeding and watering: The feeding and watering of the chicks are programmed to ensure sustainability and continuity even in times when the management experiences difficulties.
3. Inadequate housing facilities: Before the arrival of the chicks, the brooding houses have been repaired and all facilities optimized and supplied in excess in advent of unforeseen circumstances.
4. Overcrowding and Stampeding: This is as a result of insufficient heat supply hence they tend to crowd up to increase the temperature and in doing so, they step one on another and the chick at the bottom level suffocates to death or may not be able to sustain the weight of all other chicks on it and would dies as a result of this.

   However, this was combated by close observation of the attitude of the birds and heat was supplied and removed according to the reactions of the chicks to the temperature of the brooding house per time.
5. Seasonal Factors: Seasonal factors cannot be controlled and this results in either high or low humidity or favourable weather conditions for the chicks. The management ensured that the mitigating effects of seasonal factors are combated per time.
6. Brooder Troubles: Excess smoke and fire outbreak are inevitable in the brooding houses especially if the brooding equipment is charcoal. The inexperienced lighting of charcoals would cause too much smoke and this has an adverse effect on the chicks. The management ensured that the lighting of the charcoal is done only be an experienced personnel to reduce the occurrence of smoke and eventually fire outbreak.
7. Poor Sanitation: thought the pen walls have been properly sealed to prevent the access of predators into the brooding house, it is still in practise to keep the surroundings of the brooding house clean and clear to not give room for predators loitering around the brooding house. The management ensured that the surroundings are cut low, sprayed with weed killers and also fumigated intermittently.
8. Disease and Infestation: To mitigate these, the management ensured strict brooding policies and a comprehensive brooding/vaccination programme that would strongly cater for all diseases and infections.

During the course of my training in the brooding department, I was majorly involved in the inventory and record keeping. In most cases, the collection and recording of mortality data, inventory of feed consumption and transfer of birds. Some of the records types in brooding section of the farm include:

1. Mortality Record: This accounts for daily records of the number of dead chicks. Statistics of birds are taken twice in a day. The first data collected in the morning when work resumes and the latter data in the evening at closing hour.

2. Inventory Records: this gives account of stock at any point in time, the population of birds in various pens, the receipt of new chicks and dispatch of old as well as the feed consumption
3. Brooder's Comprehensive Report: This record summarizes other brooding records. This record is specifically handled by thee farm supervisor and used to generate a comprehensive farm report for the director.

3.2 LAYERS DEPARTMENT/UNIT

The layers department is the largest unit of the farm. It consists of 14 pens housing Twenty thousand (20,000) layer stocks. The raising methods used are battery cages and deep litter system of layers management. Each compartment of the cage accommodates 4 birds. Attached to the cage "cell" is drinker and feeder, these are troughs for feed and nipple line for water.

Layer Facilities and Operation:

1. Battery cages
2. Chicken coop
3. Bucket, bowl, knife, and scoop
4. Broom and sponges
5. Wheel barrow, shovel, and rakes
6. Egg tray and crates
7. Vaccination kits and other appliance.

Layers rearing management is a more tedious operation of the farm being one of daily productive units. Therefore, management of layers is considered important and demand careful handling and supervision.

Daily layers routine management are:

1. Watering: Fresh water is supplied to the birds regularly to ensure its availability daily. This is done by adding to the volume (topping) whenever dry or low in volume. For the deep litter system of management where automatic drinkers are used, the drinkers' needs to be cleaned regularly to ensure the birds have access to clean and fresh water always. The drinkers are said to be automatic because water flows into the drinking alley unattended but due to the raising of poultry dust and defecation into the drinking alley, the water becomes not too good for consumption of the birds. The birds either would not take the water which would eventually tell in their production or would take the contaminated water out of no choice and become sick hence management incurring additional expenses on treating the birds and keeping them healthy. The drinking system implored in the battery cages is the nipple line system but occasionally check if the nipples are in adequate condition.
2. Feeding: The birds are fed *"adlibitum"* – made available in adequate quantity and sufficiently. Rations are given to the birds three times daily, in the morning, afternoon and sufficient supply in the evening to sustain birds till the next morning. The feeding of both systems of management is similar and not a difference between them.

3. Sanitary Practices: As important for every poultry management practice, layers attendants' first assignment in the day is removal or mortality, culling of the moribund and the sick birds to prevent infestation of diseases. While other sanitary measures includes sweeping(for battery cages), disinfecting and environmental sanitation.
4. Egg collection: Eggs are collected continuously and as soon as laid to avoid peaking and egg eating a trait developed by layers due to the following
    a. Access to eggs which is synonymous to deep litter system of management
    b. Lack of some ingredients in their feed.

    Hence, eggs are collected are collected five times daily at (8:30am, 10:00am, 12noon, 2:00pm and 4:00pm) and all collected eggs are transfer to the office for sales. The transferring of eggs are done by each attendants allocated to respective pens, they are expected to carry the total production from their pens to the office.
5. Daily record keeping: Daily records as number of bags served per pen, number of mortality per pen, number of eggs for the day's production per pen are kept for assessment.

3.3 LAYERS OCCASIONAL MANAGEMENT PRACTICES

1. Vaccination: Successful vaccination results in healthy birds thereafter improved results in terms of percentage production. For this reason, the vaccination process is a very crucial one its precept must be strictly adhered to. All steps should be aptly followed with compromise.

    Materials required for the vaccination process are the vaccine, buckets, scoops, drums etc.

    Vaccination should be carried out early enough in the morning at least before sunrise; all preparation should have been set. In order for the birds to earnestly drink the vaccine completely, they must be starved for at least two (2) hours. Hence the vaccination process begins this way:

    Step 1: All water entries to the drinkers should be locked and birds should not be allowed access to water. This should be done at around 7pm or latest 8pm prior to the vaccination day.

    Step 2: In the early hours of the morning, the normal feed ration should be serve.

    Step 3: All drinkers should be washed, rinsed and suspended to free them from dirt and sometimes drugs applied prior to vaccination.

    Step 4: Mixing of the vaccine

    a. The vaccine should be mixed in a big container (black drum is best), big enough to contain the total amount of water required to sufficiently cater for the total bird population in one pen.
    b. The quantity of water consumable per bird is dependent on its age. Based on this, the total quantity of water required for the whole flock is calculated. A bucket of known volume should be used to measure clean water from a direct water source such as borehole into the container.

c. For ease of knowing, the water should be mixed with milk to serve as diluent before adding the vaccine.
d. Once the vaccine is introduced, the solution should be mixed thoroughly but very gently. This is to avoid destroying the vaccine.

Step 5: Serving the vaccine content.

After all is done, the vaccine is distributed in a bucket to the attendants who in turn serve the birds. The process of distribution should be a very careful one as not to destroy the vaccine. At this point, the birds will rush the vaccine content because they have been starved of water hence making the vaccination programme a success.

NB:

a. Vaccine should be stored where a temperature between 2^0C and 8^0C can be maintained.
b. Never bath/wash with any kind of soap or chlorinated substance
c. Never was the materials with soap instead, rinse thoroughly with fresh running water.
d. Never vaccinate moribund; this is because their immune system is weak to fight the virus and would not provide the necessary antibody hence they will become infected and this could spread to the other healthy birds.
e. Never expose vaccine to direct sunlight.
f. Never store vaccines in the freezer while it is on power.
g. Excess vaccine should be buried and not discarded abruptly. This is because the virus can attach itself to a live host thereby resulting in epidemic outbreak.
h. Never open a vaccine outside its diluent. This way, the virus would not escape into the atmosphere resulting in the same problem highlighted in point 7.

2. Deworming and Delousing: The birds are dewormed in order to get rid of the worms every three months. The deworming medication commonly administered is KEPRO ORAL. It is applied in their drinking water for eradication of roundworms and other worms. The same medication for deworming is used for delousing. The medication is a hybrid that serves both purposes.
3. Debeaking: this is the act of reducing the length of the bird's beak by cutting, usually done to prevent or stop pecking and other poultry vices like pulling of feathers. Though commonly done in brooders but can be done when need arises.
4. Removal of Litter and Dungs: Since it is not only battery cage system of management that is used, the removal process should be identified differently.

   For the battery cages, the fowl droppings (dungs) are expected to be removed (packed or scrapped) weekly. The attendant who handles the pen is charged with the responsibility of removing the dungs.

   For the deep litter, the litters are not removed unless there is a need to do so. Such need is in the advent of "wet litters". This is done by scrapping the wet litter and replacing it with dry wood shavings and handled by the attendant in charge of the pen.

5. Culling: This is the removal of undesirable birds from the flock – those that exhibit bad trait such as pecking, runts, sick, deformed and layer exhibiting broodiness.
   Mass culling is done for spent layers (i.e. out of age). This type is usually done seasonally – during festivals and on demand.

3.4 TYPES OF RECORD KEEPING IN LAYERS

1. Population Record: This provides column for pen number, age and population on a daily basis.
2. Mortality Record: This provides column for pen number, mortality today, mortality yesterday and production today compared with production yesterday.
3. Production at a glance: This is a summary record of layers. It denotes pen number, production yesterday in crates, production today in crates and the name of the supervisor.
4. Layers daily first hand record and reference data book: This provides the following information; pen, 1st picking, 2nd picking, 3rd picking, 4th picking, 5th picking and the total production for the day.
5. Feed Record: This provides column for pen number and number of bags of feeds served (25kg) on a daily basis
6. Comprehensive weekly report: This denotes the date, age in week, initial population, addition mortality, mortality to date, culls, culling to date, net population, production in crates, percentage production, feed consumed, remarks and comment.

During my six months Industrial Training, my attachment to layers covered more than half of duration of my training. Here I participated in all management procedure as attendant (feeding and watering of birds, picking of eggs, cleaning of the environs of the pen, packing of litters etc.), I was also trained to supervise layer routine practices and administration of drugs and vaccine. I was finally attached to the management unit where I acted as the recorder.

UNILORIN GG MAX FARMS LIMITED

LAYERS DAILY FIRST HAND RECORD AND REFERENCE DATA BOOK

AMOYO FARM RECORD

PEN NUMBER	NUMBER OF EGGS					TOTAL
	8:30AM	10:00AM	12NOON	2:00PM	4:00PM	
1	20	15	10	10	5	**60**
2	10	10	6	4	2	**32**
3	12	10	7	3	3	**35**
4	11	10	6	4	2	**33**
5	10	5	10	5	2	**32**
6	7	10	7	4	2	**30**
7	12	10	6	5	1	**34**
8	8	9	6	5	2	**30**
9	15	10	10	10	5	**50**
10	10	10	10	10	5	**45**
TOTAL PRODUCTION FOR THE DAY						**381**

Table 1: LAYERS DAILY FIRST HAND RECORD AND REFERENCE DATA BOOK

UNILORIN GG MAX FARMS LIMITED

COMPREHENSIVE WEEKLY REPORT FOR COMMERCIAL LAYERS

AMOYO FARM RECORD

PEN NO.	AGE	INITIAL POPULATION	ADDITION MORTALITY	MORTALITY TO DATE	CULLS	CULL TO DATE	NET POPULATION	PRODUCTION	PERCENTAGE PRODUCTION	FEED CONSUMED	REMARK
1	55	2500	5	150	-	-	2200	60	72%	84 bags	
2	55							32	64%	49 bags	
3								35		49 bags	
4								33			
5								32			
6								30			
7								34		49 bags	
8								30		42 bags	
9	50	1600	-	50	-	-	1550	50	93%	56 bags	
10		1500	-	100	-	-	1400	45	90%	35 bags	

Table 2: COMPREHENSIVE WEEKLY REPORT FOR COMMERCIAL LAYERS

This table is intentionally left uncompleted

3.5 FEED MILL DEPARTMENT/UNIT

The feed mill department of Unilorin Gg Max farms is a recent development. This is the unit where poultry feeds for chicken are formulated, computed and milled into mashes. The feed mill is considered the backbone of the farm because here is the “life wire” for the entire farm. The milling compartment is located at the entrance of the farm for ease of offloading of raw materials from the trucks.

FEED PROCESSING AND MILLING REQUIREMENT

The major milling operations and facilities available are:

1. Store: For the storage of raw materials such as maize, wheat offal, soya meal, bone meal, limestone, etc.
2. Mixer: This is the machine that mixes various feed ingredients and components. Feeds are uniformly mixed in mixer before racking and bagging.
3. Grinders: These are grinding machines that grind feed components like maize, soya meal and bone meal.
4. Scales and Weighing machine: These are used for the accurate weight and measurement of feed components and especially useful in bagging.
5. Conveyor: This is a simple machine that transports crushed items from the grinder to the mixer.

GRINDING WEIGHING AND MIXING OF FEED INGREDIENTS

The various feed ingredients that require grinding such as maize, soya meal and bone meal, are first measured based on the formulated composition, grinded and crushed to required sizes during which strange objects are removed. After which mixing are done with chemicals, premixes and other feed additives.

The method of feed mixing is only mechanical. The farm had in its feed milling department one vertical mixer of 1ton capacity. Attached to it is an automatic electric motor and conveyor that transfers maize and other grinded ingredients from the grinder. The mixer has an average daily capacity of 7 tons.

Having attained uniformity in the mixer, bagging is done immediately. This is done by inserting bags at the outlet of the lever and then opened to fill the bag with 25kg of the content as designed. The feed is usually under-discharged or over-discharged hence, a need to weigh the content of the bag to ascertain its content – whether it needs more feed content or some needs to be removed from it to get the desired weight.

Three categories in which poultry feed components can be grouped are:

1. Feed Additives: These are essential materials added up to form the main feed or other feed ingredients to preserve the quality and flavour of the feed. Examples include: Carotenoids, pigments, flavouring agents.
2. Feed Concentrates: These are very high in protein, mixed with grain (maize) in poultry feeds as feed concentrates to supply protein requirement.
3. Feed Premixes: Usually two or more micro-nutrients mixed in small quantity with formulated feed as required. Examples include: vitamin premixes to supply vitamin requirements of the birds.

THE SOURCES OF FOOD SUBSTANCES IN POULTRY FEEDS

ENERGY	Maize and wheat, compounded as granulated maize and wheat offal.
PROTEIN	Soya meal and fish meal.
MINERALS	Limestone, bone meal, and industrial salt.
AMINO ACID	Methionine is one of essential amino acid, important mostly in layers mash to improve feed utilization efficiency, egg size and prevent accumulation of excess fat deposit.
VITAMINS	Feed premixes added.
PRESERVATIVE AND FLAVOURING	Carotenoid and floromycin

3.6 EFFECTS OF FEED ON GROWTH AND PRODUCTIVITY OF FARMS

The quality of the feed is a strong determinant of growth and egg production of poultry. The size, quality of shell, albumen and yolk of eggs are strongly dependent on feed quality and components. For example:

1. Size of Eggs: The marginal deficiency of protein in layers' diet results in the production of smaller size eggs while adequate protein and essential amino acid in feed gives larger size of eggs.
2. Quality of Shell: The shape and thickness of egg shell is a factor of limestone quantity and proportion in feed.
3. Quality of Albumen: The colour of egg' albumen depend on the riboflavin content in the diet.
4. Quality of Yolk: The proportion of yellow maize, the carotenoid pigment consumed in feed is used in yolk formation.

Plate1: EGG WITH POOR SHELL QUALITY

THE FORMULATED COMPOSITION OF FEED INGRIDIENTS IN USE ON UNILORIN GG MAX FARMS

INGREDIENTS AND ADDITIVES	CHICK MASH(Kg/ton)	GROWERS MASH(Kg/ton)	LAYERS MASH(Kg/ton)
1. Industrial Salt	2.5	2.5	2.5
2. Feed Premix	2.5	2.5	2.5
3. Fish Meal	5	5	5
4. Soya Meal	200	200	150
5. Maize	450	400	350
6. Wheat Offal	219	345	445
7. Limestone	-	25	25
8. Bone Meal	40	20	20
9. Methionine	1.6	0.5	0.5
10. Carophyll	0.02	0.02	0.02
11. Florom yam	0.1	0.1	0.1

CHAPTER FOUR

4.0 PROBLEMS AND DISEASES EXPERIENCED AND OPINED SOLUTIONS DURING THE SIWES TRAINING

There were quite a number of problems identified on the farm staring from the management to the staff and staff health, to mortality rate due to diseases outbreak, and pen orientation.

4.1 PROBLEMS EXPERIENCED AND OPINED SOLUTION

4.1.1 PROBLEM 1: THE MANAGEMENT

The management of the farm is basically handled by the Director. He decides what price the product should be sold, to whom it should be sold, and the quantity that must be sold. Due to this, he handles the entire farm account and all its finances leaving the secretary with little and sometimes nothing to keep as record. Since no one else but him knows how much the farm is generating as well as its total expenditure, we are forced to believe funds are being misappropriated. This assumption is made manifest each time we have any project that requires finance such as purchase of feeds, payment of staff salaries, only but to name a few.

Opined Solution:

It was suggested to the Director that accurate and regular record keeping of all incomes and expenditure of whatsoever amount should be done. This way, it is possible to know where the farm is over-spending and hence cut down expenditure on such to have enough finance to embark upon equally as important projects. This suggestion was accepted only but a few days to my rounding up of the SIWES program hence not too sure of the results achieved thereafter.

4.1.2 PROBLEM 2: STAFF

There are varied problems attributed to the staff from their attitude to work to their health.

To begin with, the staff attitude to work is sometimes below expectations. This however was linked to delayed salaries, denial of benefits/entitlements and empty promises.

a. Delayed Staff Salaries: Once salaries are delayed due to the “no money” syndrome by the Director, the staff develops a negative attitude towards work with grumbling all-over the place.
b. Denial of Benefits/Entitlement: Entitlement such as over-time payments and off-job assignments (fixing of damages that should have been contracted out) are not given to the staff. This influences negatively their work performance thereby becoming nonchalant and inconsiderate. They would not do more than they are paid for and would quickly turn down request for help from the management.

c. Empty Promises: This is apropos to the Director. He makes promises to entice the staff and ginger them to outperform what is expected of them but in the end, he does not fulfil his promises. This breaks the heart of the staff and hence causes a steady decline in their attitude to work.

Next is the issue of the staff health. Attendants who are assigned to the deep litter system of management are faced with great health issues; according to research, ammonia volatilization from poultry litter which causes a build-up of ammonia in the atmosphere of the pen can contribute to the formation of fine Particulate Matter (PM 2.5) that may cause respiratory illness in humans (Fierro, 2000) and contribute to problematic environmental issues such as an increase in the development of atmospheric haze (ApSimon *et al*., 1987; NRC, 2003). Another health problem causative is poultry dust. This constitutes of the chicken droppings/dungs, wasted feed and wood shavings. Dust is raised when birds run and squeak around from one part of the pen to the other. A constant occurrence of this results in serious health problem for the attendant.

Opined Solution:

It was suggested to the Director a management practise that would enable in-time payment of staff salaries. It was suggested that a certain amount should be set aside on a daily basis in a separate account of which at the end of the month would be accruable to the total amount needed to settle staff salaries. This idea worked for the first one week but did not live to see the following week. If this suggestion was carried out to till thee month end, the organization would have experienced a new era of ease in term of payment of salaries.

It was also suggested to the management that a means of reducing the ammonia build-up in the pen especially in the dry season should be sourced. The management was advised to make use of Superabsorbent Polymers (SAP) as a poultry litter amendment but wishfully declined to.

4.1.3 PROBLEM 3:MORTALITY RATE

The farm was leased to UNILORIN GG MAX FARMS with all its far-from-being-standard designs. This caused a lot of problems as regards mortality rate. Some of the pens are facing the North-South instead of the East-West.

Climate on the other hand is known for being dynamic and unpredictable. The climatic condition of the farm area with respect to sunshine and rainfall is of undesirable characteristics. During the sunshine period, the intensity of the Sun is directly felt as the inside of the pen becomes very hot. This high temperature causes discomfort for the birds and results in a steady decline in the production rate and sometimes if care is not taken, high mortality rate. During this period too, the ammonia level in the pen becomes so much and its effect is felt by both the birds and the attendants.

On the other hand, the rainfall coupled with high wind velocity during this period causes rainfall to get blown into the pen. This however causes massive wet litters. This becomes a great

problem if not removed and replaced. However, the removal process is tiresome coupled with farm routine activities for that day.

Opined Solution:

Since these are environmental hazards with dynamic nature, it is difficult to suggest a most suitable approach to the problem. But instead of nothing at all; it was suggested that during the dry season when the temperature is very high, the roof tops of the pen should be sprayed with water to reduce the heat that gets transferred into the pen house.No idea was suggested for the rainy season.

4.2 DISEASES EXPERIENCED DURING THE SIWES TRAINING

4.2.1 INFECTIOUS BRONCHITIS

The condition has a morbidity of 10-100% and mortality of 0-1%. Infection is via the conjunctiva or upper respiratory tract. There is rapid spread by contact, fomites or aerosol. A few birds are carriers up to 49 days post infection. The virus is moderately resistant and may survive 4 weeks in premises. Poor ventilation and high density are predisposing factors.

Signs

Drop in egg production (20-50%).
Soft-shelled eggs.
Rough shells.
Loss of internal egg quality.
Coughing, sneezing.
Rales may or may not be present.

Plate2: SHELL-LESS EGG

Plate3: ROUGH SHELLED

Treatment

Sodium salicylate 1gm/litre (acute phase) where permitted - antibiotics to control secondary colibacillosis (q.v.).

Prevention

Live vaccines of appropriate sero-type and attenuation, although reactions can occur depending on prior immunity, virulence, particle size (if sprayed) and general health status. Maternal immunity provides protection for 2-3 weeks. Humoral immunity appears 10-14 days post vaccination. Local immunity is the first line of defence. Cell-mediated immunity may also be important.

4.2.2 MAREK'S DISEASE

Marek's disease is a Herpes virus infection of chickens and has various manifestations:

a. Neurological - Acute infiltration of the CNS and nerves resulting in 'floppy broiler syndrome' and transient paralysis, as well as more long-standing paralysis of legs or wings and eye lesions;

b. Visceral - Tumours in heart, ovary, tests, muscles, lungs; c) Cutaneous - Tumours of feather follicles.

Morbidity is 10-50% and mortality up to 100%. Mortality in an affected flock typically continues at a moderate or high rate for quite a few weeks. In 'late' Marek's the mortality can extend to 40 weeks of age. Affected birds are more susceptible to other diseases, both parasitic and bacterial.

The route of infection is usually respiratory and the disease is highly contagious being spread by infective feather-follicle dander, fomites, etc. Infected birds remain viraemic for life. Vertical transmission is not considered to be important. The virus survives at ambient temperature for a long time (65 weeks) when cell associated and is resistant to some disinfectants (quaternary ammonium and phenol). It is inactivated rapidly when frozen and thawed.

Figure 4: BIRD INFECTED WITH MAREK'S DISEASE

Signs

Paralysis of legs, wings and neck.
Loss of weight.
Grey iris or irregular pupil.
Vision impairment.
Skin around feather follicles raised and roughened.

Treatment

None.

Prevention

Hygiene, all-in/all-out production, resistant strains, vaccination generally with 1500 PFU of HVT at day old (but increasingly by in-ovo application at transfer), association with other strains (SB1 Sero-type 2) and Rispen's. It is common practice to use combinations of the different vaccine types in an effort to broaden the protection achieved. Genetics can help by increasing the frequency of the B21 gene that confers increased resistance to Marek's disease challenge.

4.2.3 HEAT STRESS

A condition seen in chickens, and turkeys caused by high environmental temperature, especially associated with high relative humidity and low air speed. Ducks are relatively resistant to heat stress. Predisposing factors include genetics, feather cover, high stocking density, nicarbazin in feed, acclimation, drinking water temperature and availability.

Signs

Panting.
Increased thirst.
Reduced feed consumption.
Reduced egg production.

Legs and wings outstretched.

Prostration.

Diagnosis

Temperature records, signs, lesions, exclusion of other conditions, pattern of losses.

Treatment

Cool water, maximise airflow, if relative humidity is low then wet the roof and fog.

Prevention

Houses of optimal height and insulation, painted white to reflect heat, evaporative coolers, feed with a reduced protein to energy ratio. Feeding during cooler hours may be beneficial. Reductions in stocking density of meat poultry may be quickly achieved by partial depletion ('thinning').

RECOMMENDATION

In order to improve on the expected results of the Student Industrial Work Experience Scheme and for progress in subsequent programmes, I want to offer the following recommendation to my Student Industrial Work Experience Scheme site, School, Industrial Training Funds and the Government:

1. The management of UNILORIN GG MAX FARMS LIMITED should try to encourage workers initiatives and contributions for this will help a long way in allowing workers put on their best to enhance the efficiency of the farm.
2. The management of UNILORIN GG MAX FARMS LIMITED should endeavour to see to workers welfare in terms of incentives to motivate them for best input.
3. If the management of UNILORIN GG MAX FARMS LIMITED can create and organise a special forum for students on attachment, this will help in discovering students potentials and to appropriately use them effectively.
4. The Industrial Liaison office and Students' Departmental Supervisor(s) should endeavour to regularly visit students on site to solve some relevant problems and for adequate evaluation.
5. The University's Departments-in-charge of student Industrial Training programme can acquaint themselves to various company and establishment of Student Industrial Work Experience Scheme. This will contribute to the success of the program as students could be offered placement from school instead of them seeking for months before finding a suitable organization.
6. Industrial Training Fund as a body responsible to Federal Government should create time to visit students on-site to evaluate the success of the scheme.
7. The Federal Government should provide industries and organizations with incentives to encourage and solicit for their cooperation and contribution to the programme.

REFERENCES

UNILORIN GG MAX FARM NIG. LTD “A PRACTICAL GUIDE FOR POULTRY PRODUCTION AND HATCHERY MANAGEMENT