TECHNICAL REPORT ON STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES)

Siwes Report

UNDERTAKEN AT

IRORUN AGBE FARM BOOSTER

IRORUN AGBE FARM BOOSTER, CARETAKER AREA, OGBOMOSO, OYO STATE

By:

OJETAYO NATHANIEL OLUWASEGUN

ND/23/AGT/PT/0228

SUBMITTED TO:
DEPARTMENT OF AGRICULTURAL TECHNOLOGY, INSTITUTE OF APPLIED SCIENCES (IAS) KWARA STATE POLYTECHNIC, ILORIN
IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF NATIONAL DIPLOMA (ND) IN AGRICULTURAL TECHNOLOGY

AUGUST – DECEMBER, 2024

CERTIFICATION

This is to certify that this SIWES was carried out by OJETAYO, Nathaniel Oluwasegun with Matric Number: ND/23/AGT/PT/0228 in the Department of Agricultural Technology, Institute of Applied Sciences (IAS), Kwara State Polytechnic, Ilorin.

DEDICATION

This SIWES is dedicated to Almighty God, the Author and Finisher of my faith.

ACKNOWLEDGEMENTS

First and foremost, I appreciate Almighty God for giving me the privilege to partake in the Students Industrial Work Experience Scheme (SIWES).

I acknowledge my amiable and dynamic parents Mr. and Mrs. Ojetayo, for their financial, moral and spiritual caring and support during the course of my SIWES programme.

I also appreciate my Industrial based supervisor for their patient, endurance, courage and kind support during the course of my stayed in the organization.

I wish to also acknowledge my school based supervisor, for their support, encouragement and kind during their visitation.

Finally, I appreciate my colleagues in the same industrial based training, I pray Almighty Allah will grant us success in all our endeavor (Amen).

TABLE OF CONTENTS

CHAPTER ONE

1.1 Introduction to SIWES

The Student Industrial Work Experience Scheme (SIWES) exposes students to industry based skills necessary for a smooth transition from the classroom to the world of work. It affords students of tertiary institutions the opportunity of being familiarized and exposed to the needed experience in handling machinery and equipment which are usually not available in the educational institutions and seeing firsthand the practical experience of some theoretical knowledge gained in the course of study.

Participation in SIWES has become a necessary pre-condition for the award of Diploma and Degree certificates in specific disciplines in most institutions of higher learning in the country, in accordance with the education policy of government.

1.2 Background to the SIWES

The Student Industrial Work Experience Scheme (SIWES) is an initiative which was established in 1973 by the Industrial Training Fund (ITF) to help bridge the gap between acquired classroom education and skills necessary for work in the industry.

Before the inception of the scheme in 1973, there was glaring evidence that inadequate practical exposure of students in tertiary institutions posed serious challenges to both the quality and standard of engineering and technological education in our nation. This resulted in half-baked engineering graduates who needed to undergo a form of training (Industrial Training) to be suitable for employment in industries and firms.

In order to forestall this threat that could bring about industrial regression, the Federal Government through the Industrial Training Fund (ITF) which was established by decree 47 of 1971 introduced the Student Industrial Work Experience Scheme (SIWES) in 1973.

SIWES exposes students to machines and equipment, professional work methods and ways of safe guarding the work areas and workers in industries and other organizations. It helps the student to know the link between what is

learnt in the university and what is actually practiced on site. It further helps students to appreciate their field of study better, thereby also determining which area of specialization to go into to contribute to technological development of this nation.

The scheme involves the students, the universities and the industry (employers). It is funded by the Federal Government of Nigeria and jointly coordinated by the National Universities Commission (NUC) and the ITF.

SIWES orientation is usually done to intimate students with the rudiments of industrial training before they are being employed. At the end of the industrial training (IT), successful students whose log books were verified and approved by ITF officials are paid SIWES severance allowance.

1.3 Objectives of SIWES

i. Provides the student with an opportunity to apply their theoretical knowledge in real work situation thereby bridging the gap between theory and Practical.
ii. Provides an avenue for students in tertiary institutions to acquire industrial skills and experience in their course of study.
iii. Expose students to work methods and techniques in handling equipment and machinery that may not be available in universities.
iv. Familiarizing the student for the working conditions they are likely to meet after graduation; and
v. Make the transition from the university to the world of work easier and thus enhance student's contacts for later job placement.

CHAPTER TWO

2.1 Pest Control

Pest can be defined as a plant, animal or micro-organism whose associate with human has negative effect which result in economy damage. Pest can also be define as any organism which causes damage to our crops and livestock.

2.1.1 Classification of Pest

- ❖ Key pest (Major pest)
- ❖ Occasional pest
- ❖ Migrant pest (outside their local habitat or boundary)

2.1.2 Classification of Pest According to their Control

Pesticides	Pest
Fungicide	Fungus
Insecticide	Insect
Rodenticides	Rodent
Aphidcide	Bird

2.1.3 Method of Control

- ❖ **Cultural method:** this is the appropriate of farming operation or practice such as:
  1. Crop rotation
  2. Planting resistance variety
  3. Ploughing and tilling
- ❖ **Natural method:** this can primarily occur due to natural phenomena such as temperature and lire outbreak etc.
- ❖ **Biological method:** this involves the use of an organism to control other organisms on the farm e.g the use of cat on control rats.
- ❖ **Chemical method:** the primary aim of this is to protect crops from being attack by the pest using chemical pesticide.

2.1.4 Economic Importance of Pest

- ❖ Pest serves as vector of disease
- ❖ Pest can also cause death to plant
- ❖ Pest reduce quality and availability of farm produce

- ❖ Pest cause damage to plant and animal
- ❖ It reduces the yield of crop germinated

What are Essential Safety Precaution when Handling Chemical

1. Gloves
2. Shoes
3. Mask
4. Respirators

2.1.5 Pest and Produce Division

Pest and produce was made known to me that produce inspection unit is different from pest and control unit and also pest and control unit both have similar goals in production of quality produce (graded goods).

2.2 Produce Inspection Division

This division is majority based on three distinction roles:

- ❖ Data gathering for government budgeting
- ❖ Analysis collection of information for public on agricultural matters
- ❖ Determination of quality agricultural produce through inspection and grading.

Produce Inspection Unit: This is the unit that supervises the quality of agricultural produce and satisfaction of goods or crops. This unit is mainly concerned with the cash crop.

What is Cash Crops?

This is the crop that is mainly produce to income e.g cocoa, timber, coffee, tuber etc.

2.3 Types of Sprayer

1. Boom sprayer
2. Knapsack sprayer

Essential Safety Precaution in Applying Pesticide

1. Read the to know what and how to make USC of the chemical.
2. Glove most be put on.
3. Respirator is applicable to be put on to avoid the chemical odor.

2.4 Horticulture Division

Department of horticulture division was explained as a branch of agriculture concerned with growing of plants that are used by people for food, medical purpose and aesthetic gratification.

2.4.1 Branch of Horticulture

i. Landscaping
ii. Olericulture
iii. Pomology
iv. Floriculture

2.4.2 Horticulture Tools and Equipment Used in Nursery Garden

Hoe

Hoe can be defined as metal blade which is either be rounded or slight rectangular in shape with a wooden handle which can be either long or short.

Function of Hoe

i. For hoeing
ii. For planting of seeds
iii. For cultivation

Maintenance

i. Always keep the hoe clean
ii. Always sharpen the hoe blade regularly
iii. Keep the hoe in a termite free environment

A Hoe

Watering Can

Watering Can is a metal or plastic can which is fitted with a spout and also has a perforated metal sheet called ruse, over its mouth.

Function of Watering Can

i. It is used for light irrigation application of water to crops during dry season
ii. It is used for applying liquid fertilizers
iii. It used for carrying water to the nursery/garden field

Maintenance

i. Wash and keep in a dry or clean place after used to prevent rusting
ii. Store or keep upside down

A Watering Can

Cutlass

Cutlass is a tools used by farmers. There are two main types. It has a slightly curved blade with a short wooden handle while there are others that has a straight metal blade and short wooden handle with one edge of the metal blade which is sharp and other are blunt.

Function of Cutlass

i. For plan ting seeds
ii. For harvesting crops
iii. For weeding farmland

iv. For cutting down and clearing bushes and trees

Maintenance

i. Cutlass should be sharpened regularly

ii. Keep in a dry and cool place

Farm Knife

A farm knife is a tool with a cutting edge or blade, hand-held or otherwise, with most having a handle. Some types of knives are used as utensils, including knives used at the dining table (e.g., butter knives and steak knives) and knives used in the kitchen (e.g., paring knife, bread knife, cleaver).

Function of Farm Knife

i. Used for digging small holes in the furrow

ii. For cutting tubers in the farm

iii. For pilling cassava in the farm

Maintenance

i. Do not expose knife to rain

ii. Always keep the knife clean after used

Wheelbarrow

Wheelbarrow is a small hand-propelled vehicle, usually with just one wheel, designed to be pushed and guided by a single person using two handles at the rear, or by a sail to push the ancient wheelbarrow by wind

Function of Wheelbarrow

i. By a wheelbarrow, you can move mulch, compost, debris, dead leaves of garden.

ii. If you are using a heavy duty wheelbarrow, you can move broken bricks, concrete, topsoil.

iii. Some wheelbarrow have multi-functional ability. These are called aerocart . You can use it as plant mover, rock mover, dolly and hand truck.

Knapsack Sprayer

Knapsack sprayer is one of the important tools needed in the farm for spraying of chemical to the crops, knapsack sprayer has a long pipe where chemical passes out to the desired crops.

Uses of Knapsack Sprayer

i. It is used for spraying chemical to the diseases affected crops

ii. It is used for fumigation of crops/weeds

Maintenance of Knapsack Sprayer

i. Always Unblocking the nozzle.

ii. Always Cleaning after use/work

iii. Greasing the pumping handle.

iv. Proper storage.

v. Repair the broken parts.

CHAPTER THREE

3.1 Definition of Pesticides

The Food and Agriculture Organization (FAO) has defined pesticide as: any substance or mixture of substances intended for preventing, destroying or controlling any pest, including vectors of human or animal disease, unwanted species of plants or animals, causing harm during or otherwise interfering with the production, processing, storage, transport, or marketing of food, agricultural commodities, wood and wood products or animal feedstuffs, or substances that may be administered to animals for the control of insects, arachnids, or other pests in or on their bodies.

3.2 Types of Pesticides

These are grouped according to the types of pests which they kill:

Grouped by Types of Pests They Kill

Insecticides – insects

Herbicides – plants

Rodenticides – rodents (rats & mice)

Bactericides – bacteria

Fungicides – fungi

Larvicides – larvae

Based on how biodegradable they are:

Pesticides can also be considered as:

Biodegradable: The biodegradable kind is those which can be broken down by microbes and other living beings into harmless compounds.

Persistent: While the persistent ones are those which may take months or years to break down.

Another way to classify these is to consider those that are chemical forms or are derived from a common source or production method.

3.3 Chemically-related pesticides:

Organophosphate:

Most organophosphates are insecticides, they affect the nervous system by disrupting the enzyme that regulates a neurotransmitter.

Carbamate:

Similar to the organophosphorus pesticides, the carbamate pesticides also affect the nervous system by disrupting an enzyme that regulates the neurotransmitter. However, the enzyme effects are usually reversible.

Organochlorine insecticides:

They were commonly used earlier, but now many countries have been removed Organochlorine insecticides from their market due to their health and environmental effects and their persistence (e.g., DDT, chlordane, and toxaphene).

Pyrethroid:

These are a synthetic version of pyrethrin, a naturally occurring pesticide, found in chrysanthemums(Flower). They were developed in such a way as to maximise their stability in the environment.

Sulfonylurea herbicides:

The sulfonylureas herbicides have been commercialized for weed control such as pyrithiobac-sodium, cyclosulfamuron, bispyribac-sodium, terbacil, sulfometuron-methyl Sulfosulfuron, rimsulfuron, pyrazosulfuron-ethyl, imazosulfuron, nicosulfuron, oxasulfuron, nicosulfuron, flazasulfuron, primisulfuron-methyl, halosulfuron-methyl, flupyrsulfuron-methyl-sodium, ethoxysulfuron, chlorimuron-ethyl, bensulfuron-methyl, azimsulfuron, and amidosulfuron.

Biopesticides:

The biopesticides are certain types of pesticides derived from such natural materials as animals, plants, bacteria, and certain minerals.

CHAPTER FOUR

CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

In Conclusion, the little time spent at the organization has helped a lot to know more about Agricultural Engineering and also it has helped to impact knowledge about machineries and implements as well as irrigation system which were used on the field to make agricultural practice easier.

4.2 Personal Impression about the Organization

Ministry of Agriculture and Natural Resources has various equipment and machines used during harvesting and post harvesting period. Also there are many engineers at the local government who are ready to impact knowledge on student of various institutions.

Ministry of Agriculture and Natural Resources is an impressive place that carried out their day to day activities, they always work with time and the staff is also discipline and accommodating. The organization was so impressive that I as a person can apply to the organization for my Industrial Training.

4.3 Recommendations

The following or recommendations is for the industrial training coordinating unit and to the National Board for Technical Education.

A comprehensive and detailed directory who accept student for SIWES urgently required to facilitate placement for students in the industry.

Tertiary institutions need to double effort in securing quality place of industrial attachment for student's participation in SIWES.

The ITF should ensure that the back log payment of student allowance is clear urgently to remove the negative image being created by SIWES.

4.4 Suggestion and Recommendation to the Polytechnic

The SIWES coordinator of the polytechnic should try and write to various organizations for placement of their student for SIWES or I.T program.

The polytechnic should ensure that the allowance given to the student is increased and paid promptly.