INTRODUCTION
Cocoa Research Institute of Nigeria was established in 1964 amongst its objectives is the identification of the ecology and methods of control of pests and diseases affecting her mandate crops which include; cocoa, cashew, coffee, tea and kola. These cash crops are among the most important commodity crops in Nigeria, providing sizable percentage of national income from Agriculture. Adejumo, 2005 observed that yields of these crops are lower than those recorded in other countries where they are cultivated. Nigeria has witnessed a downward trend since early 1970’s due to numerous factors eg ageing trees, shortcomings in applying recommended agronomic techniques by farmers, and the effects of pests and diseases (Okeniyi et al., 2009). In Nigeria, different tree crops are found in areas with annual rainfall range of 1200-2500 mm with the dry season lasting from three to four months. The average daily temperature varies from 23oC to 30oC while the relative humidity is always high. The soil of tree crop belt is fertile paving way for crops are conducive to incidence and spread of plant disease. Disease is define as deviation from the normal healthy conditions; which is expressed in form of different symptoms, malformation, malfunction or total death of plant (Agrios, 2005). For a plant disease to occur, at least two of the three components must come into contact and interacts. Agrios, 2005, visualize the components as a disease triangle which consists of the host, pathogen and environment. High crop yields can be achieved with sustainable agriculture if plants are protected from disease and pests which will make plant to grow well, take up nutrients, compete with weeds and yield to the limit of the environment (Adejumo, 2005).

Cocoa
Cocoa (Theobroma cacao) is a perennial tree crop majorly grown in the rain forest belt of Nigeria. Cocoa belongs to the family Malvaceae and genus Theobroma. It is an important commodity crop for the production of chocolate a very popular and important food item especially among Europeans and Americans. Nigeria is currently the fourth largest world producer of cocoa with 200,000 metric tonnes in 2015/2016 behind Ghana, Cote ‘d’ Voire and Cameroon (ICCO, 2017). Globally there are several pathogenic organisms recorded on cocoa; of these only a fraction is economically important, depending on where the cocoa is grown. In Africa, Brazil and Asia black pod disease reduces production by 450,000 tonnes costing about $423 million (Taylor, 1998). Phytophthora pod rot (black pod) and cocoa swollen shoot virus (CSSV) are the two disease considered most important and have received great attention in Nigeria (Adejumo, 2005).

Phytophthora pod rot (Black pod)
Pod rot also known as black pod is caused by Phytophthora spp. Three fungal species of the same genus are responsible – P. palmivora, P. megakarya and P. capsici. The palmivora causes global yield of 20-30%
and tree deaths of 10% annually. P. megakarya is the most aggressive of the pod rot pathogen causing significant losses in favourable environment (ICCO, 2017).

**Symptoms**

It starts with a brown dots on the pod, which later expand and become black with whitish fungal spores on the entire pod. At the advance stage, the cocoa bean inside get damaged and black losing its quality.

**Control**

- Use of resistant varieties
- Protectant spray of copper based fungicides, combined with the systemic fungicides metalaxyl under high disease pressure, at three of four weekly intervals are frequently recommended (ICCO, 2017)
- Cultural control involves modification of farm management practices to optimize shade and aeration through appropriate spacing and pruning to reduce surface wetness should be effective (ICCO, 2017).
- Frequent and complete harvesting, sanitation and appropriate disposal of pod mummies, infected pods and pod husks can reduce the disease.
- The use of botanicals.

**Cocoa Swollen Shoot Virus (CSSV)**

Cocoa Swollen Shoot Virus was first reported in West Africa and in Nigeria in 1926 and 1944 respectively (Murray 1945; Adegbola, 1971). Among all the regional diseases of cocoa, CSSV is probably of greatest importance (Adejumo, 2005). In Nigeria, large areas have been abandoned due to the devastation by CSSV in places referred to as area of mass infection. CSSV are found only where trees are attacked simultaneously by mirids (capsid) that the virus infection accelerate the decline and occasional death of the trees. Mealybugs including Planococcoides njalensis, Ferrisiana virgata and P. citri transmit the disease. Soil inhabiting nematodes have also been reported as active transmitting agents (Lana and Adegbola, 1977; Afolami, 1980).

**Symptoms**

It includes vein-banding, inter veinal chlorosis, immature flush leaves, leaf mosaic, development of swelling of nodes, inter-nodes, apex of stems and root, malformation in some of the pods produced by infected trees and in cases of severe virus attack, death of infected trees.

**Control**

- The use of resistant varieties
- Rehabilitation of cocoa farms by eradicating/removal of infected trees. This is done by uprooting all the obviously infected trees and replanting with improved virus tolerant/resistant varieties.
- Control of carrier (mealy bug with insecticide).

**Cashew**

Cashew (Anacardiun occidentale, L.) evolve from the Northern part of South America. It is a crop with high potential for foreign exchange and a source of raw materials for Nigeria and other tropical countries (Adejumo, 2005). The fruit is used for the manufacturing of cashew-based beverages, animal feed, spirits, pharmaceutical, plastics, vitamin C and the kernels when roasted is used for the production of cashew butter, sweet and confectionery. It can also be eaten just like roasted groundnut.

**Inflorescence Blight**
The disease is caused by a fungus *Lasiodiplodia theobromae* which is a limiting factor affecting Cashew nut production in Nigeria, causing 40-45% crop loss annually.

**Symptom**
Symptoms include withering of petals and other parts of the flower, followed by a progressive die-back of the small peduncles from the tip downward to the main flora shoots. The plant is pre disposed to the pathogen when insect (*Heliopethis antonii*) first inflict wound on the susceptible plant. When immature nut and apples were infected they become black and fluffy.

**Control**
- Spraying the combination fo insecticide and fungicide to kill vector and the pathogen better control the disease. (A spray program consisting of a pre-bloom and after bloom application).
- Proper weeding and removal of alternate host like tree that can provide abode for the vector.

**Twig die-back**
The disease was first reported by Olunloyo (1976) who observed that the die-back was as a result of exudation of gum from the bases of the twigs where injuries were located. The causal organism is *Lasiodiplodia theobromae*.

**Symptom**
The symptoms include withering of cashew twigs followed by a progressive die-back of shoot as the twigs turn dark brown causing abscissions of the vegetative part. The fungus penetrates into deeper tissues and causes the death of the shoot from the tip downward.

**Control**
- The disease is best controlled by a combination of approaches including cultural, resistance and use of fungicides.
- Removal and burning of all infected organs before the start of cashew season.

**Pseudo-apple Spot**
The disease is caused by *Colletotrichum gloeosporiodes* Penz. The disease is more important after rainfall and fruiting period. Dispersal mechanism is basically the rain splash and free running water.

**Symptom**
After fruit setting, infection of older nuts results in characteristic ‘tar spot’ like lesion on the Pseudo apple.

**Control**
- Planting resistant varieties
- Use of fungicides
- Cultural practices.

**Cashew Leaf rust**
Caused by *Cephaleuros virescens*

**Symptom**
The disease symptoms on leaves show patches with brownish colour. Lesion subsequently multiplied, covering the entire leaf.

**Control**
Combination of approaches including cultural and use of fungicides

**Cola**
*Cola*, a tropical African genus of the family Sterculiaceae, comprises about one hundred and
twenty five species. *Cola* species are evergreen, mostly small or moderately sized trees although a few grow to 25 metres. A number of species are widely cultivated in tropical countries, especially in Africa. The most commonly used are *C. verticillata* (Thonn.) Stapf, *C. acuminata* (Pal. de Beauv.) Schott and Endl. and *C. nitida* (Vent.) Schott and Endl., with the latter two having the greatest economic importance (Lovejoy, 1980).

**Pests and diseases**
*C. nitida* and *C. acuminata* were believed to be resistant and biologically robust species and to have no important diseases associated with them (Russell, 1955). On the contrary, publications have shown that *Cola* species are vulnerable to a host of fungal diseases that can attack all parts of the crop (Oludemokun, 1979). He emphasised that, many fungi are capable of infecting kola fruits at an early stage of development, but the disease symptoms will only develop when conditions are favourable.

Many diseases that kola is susceptible to can easily attack related agriculture crops or other tree species.
*Fomes lignosus* (Klotzsch) Bres. and *Fomes noxius* (Corner) may affect kola, cacao, rubber, coffee and other tree crops (Adebayo, 1975). Care should therefore be taken with a suitable combination of crops to minimize disease attack as well as for optimum yield.

**Fruit and seeds**
Kola nuts are vulnerable to various fungi diseases. *Botryodiplodia theobromae* Pat has been found to be the most common single species of pathogen associated with kola (Oludemokun, 1979). *Botryodiplodia theobromae* can also attack other parts of the kola tree. Publication have shown that, storage of kola nuts in baskets lined with fresh leaves at a high temperature and high humidity provokes development of various parasitic fungi, especially wet rots caused by *Fusarium* and *Penicillium* species (Oludemokun, 1979; Opeke, 1992).

**Symptom**
It has been identified infesting the follicles, which develop a black rot and subsequently affect the nuts. Rusty brown spots develop on the nuts, which later turn black and become hard and dry. The tissues may fall out, living small pits in the surface.

**Black, hard rot and pink soft rot**
Caused by *Aspergillus niger*. The extent of loss in storage assessed in northern Nigeria was estimated as high as 30% (Oludemokun, 1979). Olunloyo (1979) found that the rate of development of fungi actively growing on nuts of *C. nitida* depended more on the ambient relative humidity than on nut moisture content. The principal postharvest pathogens were found to be *Botryodiplodia theobromae* and *Fusarium* spp.

**Control**
- Milton (1% sodium hypochlorite) sol. was slightly fungicidal at 0.5 and 0.75% and highly so at 0.95 and 1%, depending on exposure period.
- Substantial reduction postharvest rot (particularly in nuts stored in baskets lined with polyethylene sheet over banana leaves) was achieved when the nuts were soaked in 1% Milton for 30 min before storage.
- Milton solution and Ash treatments @ 3kg of kolanut
- Storing the kola nuts at the appropriate temperature and relative humidity could prevent nut rot diseases.

Leaves and twigs
Leaf disease is very common in young leaves and usually occurs in the latter part of the rainy season, seriously affecting many of kola shoots, and leaving them leafless (Opeke, 1992).

Tip dieback diseases of kola
Caused by *Phomopsis* species.
*Guignardia citricarpa* Keily is associated with yellow or orange discoloration of leaves while *Botryodiplodia theobromae* causes a twig blight and a brown coloured blight of leaves (Adebayo, 1975).

Symptom
The infected leaves turn brown, and start to die back from the tip to the petiole and from the margin to the midribs before they finally drop. The diseased twigs die and turn black with leaves remaining attached. *Glomerella cingulata* causes greenish spots with a mouldy appearance on kola leaves (Oludemokun, 1979).

Roots
In nurseries, seedlings are often infected with fungal diseases. Common among them are *Botryodiplodia theobromae* and *Fusarium* species

Symptom
that cause the roots of the infected seedling to rot and turn their leaves brown. In the field, infected roots often cause yellowing of leaves before eventually killing the plant.

Control
Aldrex T, pesticides containing 25% aldrin and 50% thiram.

Coffee

Coffee Leaf Rust

- Coffee leaf rust (CLR), caused by the fungus *Hemileia vastatrix*. It is the most important disease of *Coffea arabica*, the most susceptible of the three coffee species, and affects both yield quality and quantity.

Symptom
- Yellow to orange powdery spots appear on the underside of leaves, with corresponding chlorotic patches on the upper side

Coffee Leaf blight
- Symptoms begin as a necrotic spotting of young leaves that expands to form brown leaf lesions covering much of the lamina. Older lesions exhibit round, black pycnidia in the necrotic tissue, and the disease develops into a general blight of young shoots; affected shoots appearing brown and scorched.

Coffee Berry Disease
• The characteristic symptom of CBD is the development of small, water-soaked lesions on young, expanding berries that rapidly become dark brown or black and slightly sunken. They enlarge to cover the whole berry within about a week, which eventually rots
• Lesions may also occur on young berry stalks, causing them to be shed before lesions appear on the berry itself

Brown Eye Spot
The highest risk of highest risk of infection occurs when the temperature range is 20-28°C and when there are from 36 to 72 hours of continuous environmental wetness.

Symptoms
The classic leaf symptom is circular spots with tan, gray or white centres; Lesion begin as small, chlorotic spot that expand to become deep brown on the upper leaf surface.

REFERENCES


