

EVALUATION OF THE ROLE OF PLANT QUARANTINE SERVICES  
IN THE CONTROL OF PESTS AND DISEASES IN NIGERIA

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**ABSTRACT:** This study was conducted to evaluate the role of plant quarantine services in the control of plant pests and diseases in Nigeria. The South-West zone of the country consisting of Lagos, Oyo, Ogun, Edo, Osun and Kwara states was the area of study. By purposive sampling, Lagos, Oyo and Ogun states were considered because of availability of seaport, airport and general post offices. Ogun state was chosen because of the land border while Oyo was chosen because of the location of the post-entry station. Random sampling was used in the choice of respondents while the sample size was one hundred and twenty respondents. Data were collected from the seaport, airport, post offices and land borders. All information was supplied by staff of the plant quarantine service.

The study revealed that the plant quarantine service is involved in a lot of activities to protect plants against pests and diseases. Any failure on its part to carry out such duties might lead to the ruin of the nation's economy through crop devastation which may cause the nation billions of Naira due to crop losses like the case of the cassava blight of 1972.

In view of the above, policy recommendations are made to improve the performance of the plant quarantine services so as to be able to effectively carry out their activities.

**1. INTRODUCTION:** Plant quarantine can be defined as a legal restriction on the movement of agricultural (plant) commodities for the purpose of exclusion or prevention of the establishment of plant pests and diseases in areas where they are not known to occur. It can also mean the use of legislation and technical expertise to control the spread of plant pests and diseases from one country to another. The service is significant because many dangerous diseases and pests exist in other countries which are not yet present in Nigeria and, which if introduced, could jeopardise the agricultural economy of the nation as well as that of other member countries on the African continent. Certification schemes and control measures geared towards eradication and control of pests and diseases are supported by legislative measures.

The plant quarantine service of Nigeria was established under the Agriculture (control of importation) Act of 1959. The act, among other things, empowers the Federal Ministry of Agriculture to make regulations

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from time to time for the control of the importation of plants, plant products, soil etc. by manning all the 42 points of entry - airports, seaports and land-border stations-all over Nigeria. The regulation became effective since 1964 and was reviewed in 1970. The regulation defines the category of officers that can enforce the law, and gave them the power to search travellers, ships, aircrafts, vehicles, shops, warehouses, as well as private premises, and stipulate penalty for contravention.

The International Plant Protection Organisation (IPPO) of the United Nations coordinates efforts to prevent the movement of weeds across international boundaries. Regional organisations support and supplement the work of the International Plant Protection Organisation. The Nigerian plant quarantine services have been particularly involved in the development of phytosanitary certificates which are required by most countries with regard to importation of plants and plant products. The certificate defines the country of origin of the plant materials and specifies that, at the time of inspection, the inspector did not find plant diseases or pests in the portion of the consignment examined.

The benefits a nation derives from plant introduction are enormous. Most of the early plants introduced were made with minimum precaution. The Nigerian plant quarantine service measures are aimed at providing protection to the agricultural sector of a country or region against introduction of exotic pests and weeds, and at eliminating, preventing or reducing the spread of these organisms within the country, should they get introduced.

In recent years, government has made a lot of efforts in increasing the productivity of farmers through supply of inputs, credit facilities, improved varieties of seeds and exotic breed of livestock, and introduction of a number of agricultural programmes which are aimed at achieving higher productivity. Farmers alike are known to move to neighbouring countries to obtain seeds, seed cuttings and parent stock for propagation with the aim of increasing productivity but unwittingly introduce pests and diseases into the country.

This study was therefore conducted with the following broad objectives in mind: To analyse the activities of plant quarantine services in the control of plant pests and diseases in Nigeria.

The specific objectives are:

- To identify the methods used by plant quarantine service in the control of plant pests and diseases.
- To identify various penalties imposed on defaulters
- To identify problems encountered by Quarantine Services staff in carrying out their activities.
- To identify various ways of improving the performance of their activities, and

- To recommend possible ways of improving their services.

**2. METHODOLOGY:** Purposive sampling technique was applied to select the states in the South-West zone. Considering the location and the type of point of entry for the study, Lagos, Oyo and Ogun were selected.

Forty respondents were interviewed at each point of entry for the information. The sample size was one hundred and twenty respondents.

Data were collected from seaport, airport and land border. All information was given by staff of the Nigerian Plant Quarantine Services.

Simple descriptive statistics was used to analyse the data.

**3.0 RESULTS AND DISCUSSION:** The study revealed that both male and female staff are employed by the organisation with varied educational backgrounds, and the males outnumbered the females.

**3.1 Methods used in the Control of Plant Pests and Diseases:** Plant quarantine activities in Nigeria are divided into two: pre-entry quarantine and post-entry quarantine inspections.

The pre-entry quarantine procedures are:

- **Seaport (ship inspection):** This is for the purpose of determining whether a vessel has on board any crew or passenger baggages, cargo, store or furnishing which might be subject to restriction or prohibition by quarantine laws of Nigeria.
- **Airport (plane inspection/passenger baggage inspection):** The plane is first inspected, followed by inspection of baggage by men of the quarantine service. At this juncture, the quarantine inspector pays attention to any plant material or product in the baggage. Any plant material that carries any disease will be destroyed by burning, and the healthy and permitted plants will be released to the owners.
- **Land border (vehicle inspection):** All vehicles are subjected to rumaging while the passenger luggages are also checked at the baggage hall. Attention is paid to any plant materials or products in the luggages. If any prohibited material is intercepted by the inspector, the plant material will be detained and a detention certificate would be issued to the importer. Any plant material carrying diseases will be destroyed by burning while healthy ones are released to owners.

- **Mail Inspection:** This is carried out at the general post offices. Here, the plant quarantine inspector must be capable of making decisions on all plants or plant products be it seed, bulb or cutting, and on insects or any other living organisms that can be found in the mail, and which can adversely affect the agricultural economy of the country. In the case of any plant material intercepted, which needs to be retained by the plant quarantine service, a certificate would be issued to the consignee by the inspector.

**Post-Entry Quarantine:** Plant materials screened and allowed into the country are still subjected to further inspection, i.e. post-entry inspection.

At the post-entry station located at Ibadan, for example, the activities include the use of glasshouse, seed health testing of imported plant materials, and issuance of import permits. The general procedures at the post-entry station include the registration of incoming consignment (from inspectorate) on arrival at the post-entry station. For this exercise, the plant pathologist, entomologist, virologist and horticulturist are all involved. All packages are opened, all the packaging materials are removed and incinerated, and the imported materials are fumigated. The outcome of the investigations by the plant pathologist, entomologist, virologist and horticulturist determines whether the plant is released or sent to the glasshouse for further observation. From the glasshouse, healthy plant materials are released, or destroyed if found infected. The post-entry quarantine procedures also include direct inspection of dry seeds, seed washing, and incubation.

**Record of Plant/Disease Interception:** The organisation makes a record of all plant materials intercepted on account of the disease factor observed in them. Below are a few examples of such plants that have been so intercepted.

- Maize from Yugoslavia affected by maize streak virus
- Maize from U.S.A infested by mite
- Rice from the Phillipines infested by leaf spot disease
- Apple from the Phillipines infested by leaf blight disease
- Cowpea from India infested by leaf spot (*Septeria* spp).

**Penalty for Importing Unintercepted Infected Plant Materials:** The study shows that charges are levied against clients who escape inspection and are found guilty of importing infected plant materials. Such clients are liable to a fine of N500 or six months imprisonment or both. In addition, such clients can be made to pay for the cost of chemicals and labour used in eradicating such pest and disease in the affected area.

**3.2. Prohibited Crops:** The findings from the study show that the underlisted crops are prohibited, and hence should not be imported into the country because of the associated pests/diseases. The crops are: Plantain sucker/Siga toka, apple/friut flies, mango/ Mango mealy bug, and avocado pear/avocado sunblock; the relevant disease is listed against each crop.

Finally the study also revealed that apart from the aforementioned activities of plant quarantine services, they are also involved in the training of personnel both within and outside the country especially from Organisation of African Unity (O.A.U.) member states. The staff are also trained abroad to gain more knowledge on quarantine policy so as to create efficiency in the performance of their jobs.

**4. PROBLEMS ENCOUNTERED BY THE WORKERS IN CARRYING OUT THEIR DUTIES:**

During the course of the study, some problems were discovered to be militating against the organisation. These problems are listed as: Inadequate public awareness, disturbance from other security agents, lack of arms and amunitions, slow promotion of staff, and disturbance from the Nigerian Ports Authority.

**5. RECOMMENDATIONS:** Plant quarantine services can be improved in the following ways:

- Equipment needed for optimum efficiency should be supplied. Sophisticated machines should be installed at each point of entry, and trained staff should be employed to operate and monitor them.
- Government should make enough funds available for the purchase of needed materials.
- Training centres should be expanded and made functional to accommodate more staff.
- The plant quarantine services should establish public enlightenment divisions charged with the responsibility of advertising their activities. This will educate the public about the activities of the organisation, thus making the organisation more friendly with the clients.

**6. CONCLUSION:** The study showed that the Nigerian plant quarantine service is an organisation performing a lot of activities to prevent importation of plant pests and diseases. Any failure on its part to effectively carry out such duties might lead to the ruin of the nation's economy through crop devastation which will cost the nation very heavily in crop losses, as in the case of cassava blight of 1972. In addition, it can lead to serious famine and national disaster through complete crop failure.

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