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# Disease and Yield Reaction of Some Groundnut Varieties to Benomyl Application

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**Abstract**
The study revealed varietal reaction of four groundnut varieties (i.e. Rmp91.M554.76, Ex – Dakar and R R B) to benomyl fungicide, in controlling leaf spot in the varieties. A2 x 4 factorial experimental design, in which fungicide treatment and control were applied to main plots and varieties to subplots in three replicates, was adopted. Data collected based on leaf spot infection and pod yield were subjected to Analysis of variance and Duncan Multiple Test. The result indicated that the groundnuts exhibited significantly differential varietal response ($p>3.40$) in leaf spot reaction and pod yield to benomyl application. It is recommended that RMP 91 groundnut variety produced for pod yield with benomyl application is more profitable than cultivation of the remaining three varieties with or without benomyl application.

## Introduction:

Groundnut (Arachis hypogeae L.) is one of the most widely cultivated commercial crops in Nigeria, and constitutes an important component of human and animal diet among other uses. Before the oil boom of the mind 1970s groundnut was a major source of cash income for farmers and contributed about 20% off the total annual foreign exchange earnings in the mid 1960's in the Country (Oyenuga, 1968).

However, several factors including the rosette epiphytotic 1975, early and late leaf spot diseases, rust diseases and the increased frequency of drought have contributed to the decline in its production in the past decade (Salako 1983, and Van and Colliers, 1998). Losses in groundnut production due to foliar infections, particularly the leaf spot diseases are probably the most frequent and serious (Yayock, 1978). In Nigeria, (Fowler 1970 and 1971), reported an average increase in groundnut yield of 23-56% when leaf spot diseases by mancozeb (Dithane M45). Thus, controlling leaf spot diseases were controlled by the use of chemical fungicides hold a good promise for enhance yield in groundnut production and hence a means by which increased profitability can be sustained in groundnut production. Nevertheless, differential yield response of different groundnut varieties to agrolyer treatment, for control of diseases, particularly rust infection in groundnuts has been reported by Salako (199

It may therefore be possible that differe groundnut varieties could exhibit differentia leaf spot reaction and pod yield response to fungicide treatments (Knox – Davies, 2001).

This study investigates the varietal response of four groundnut varieties (i.e RMP 91 M554.7 Ex-Dakar and RRB) to the use of benomy fungicide in controlling leaf spot diseases in the groundnuts.

The objective of the study is to determine how the different groundnut varieties respond to Benomyl application by way of leaf spot disease reaction and pod yield, in order to recommend to farmers varieties where benomyl application would be most beneficial.

The work is based on the null hypothesis (i.e on the assumption that there will be no significant varietal responses with respect to leaf spot disease reactions and pod yield to benomyl application.

## Materials and Methods

This study was conducted on a field measuring 60 x 60m$^2$ during wet season, in Minna, Niger State (Between July to October 2006). The following materials, four (4) groundnut varieties; RMP 91 M554.76, Ex-Dakar and RRB obtained from IAR Zaria. Benomyl, Napsack, weighing balance and address – T were used for the experiment.

Benomyl fungicide and control were first applied to the groundnuts when disease

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it resulted in higher pod yield only in M554.76, Ex-Dakar and RRB. Zadoks and Schein (1979), reported that not all disease infection in plants lead to damage. This suggests that although leafspot infection in RMP 91 was effectively controlled by benomyl application, the fungicide did not affect the pod yield in the groundnut variety, though benomyl phytotoxicity may have helped to suppress high plod yield in RMP 91 relative to other groundnut varieties.

This study has revealed that benomyl application to RMP 91 groundnut variety may not be beneficial to the farmer that produces groundnuts for its pods. The study also shows that RMP 91 groundnut without benomyl application would fetch greater yield compared to the other varieties with or without benomyl application.

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