

**MODELLING OF COWPEA YIELD USING RESPONSE SURFACE
METHODOLOGY**

BY

ADETONA, TOLUWANIMI Y.

MATRIC NUMBER 20081645

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ABSTRACT

This experimentation plays an important role in Science, Engineering, Industry and Agriculture where the yield of cowpea yield need to be maximize due to its versatile importance and its adaptability features coupled with the ability to improve soil fertility.

The experimentation is to test for the effect of different levels of factors on the response of a cowpea yield using a response surface methodology for optimizing the cowpea yield responses. This is a part of scientific method requires identifying an appropriate model to examine responses where there is difference in the type of error generated by the factors. In this methodology a multiple regression model is applied using the first and second order model to test for the adequacy of the model. The results shows the significance of both the main and interaction effects and also shows the lack of fit of the first order model which indicate more highly structured model such as second order model for locating the optimum responses which is targeted as a 100%.

Therefore, on this project work conclusions can be drawn by the result which shows that there can be 100% optimization yield on the cowpea yield, if there is more relationship among the level of factors and its responses experiment.