NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

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FORMULATION OF A PESTICIDE DUSTING POWDER (CARBARYL 5%)

A RESEARCH PROJECT UNDERTAKEN

BY

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ABSTRACT

This dissertation covers the product development of a carbamate insecticide, CARBARYL for both commercial agronomic used and for registration purposes.

The insecticide was formulated to minimise and hopefully substitute completely the organophosphates and organochlorines which are not environmentall friendly.

Carbaryl, a carbarnate insecticide, which is environmentally friendly, was formulated as a dusting powder suitable for application by a dusting machine and by hand, using a perforated can.

The conventional three phase technical approach was used in the formulation. In **phase one** , the dispersibility properties of carbaryl with a variety of filler materials was defined. Promising fillers were blended with the active material in **phase two** to produce the formulation with the desired properties. The filler that produced the best formulation was optimised in **phase three** to produce the final commercial product.

The essential key point therefore was to take into consideration the physical and chemical instabilities associated with dust formulations and to choose fillers that steer clear away from them. The physical and chemical properties of the product formulation were evaluated to ascertain conformance with the desired attributes sought. A shelf-life analysis was carried out under accelerated conditions of temperature and humidity to simulate a number of years on the shelf. Other parameters evaluated were particle size, flowability.