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CHEMICAL WEED CONTROL IN PEANUT

(Arachis hypogaea L.)

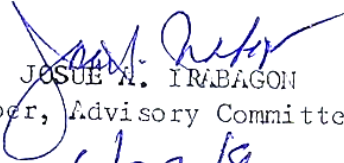
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Submitted to the Faculty of the Institute of Graduate Studies
Central Luzon State University, Muñoz, Nueva Ecija,
Philippines in partial fulfillment of the
requirements for the degree of

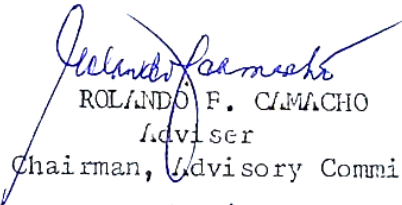
MASTER OF SCIENCE IN CROP SCIENCE
(Agronomy)

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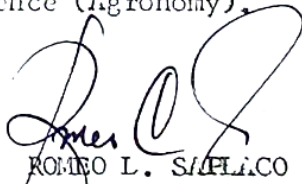
This thesis entitled, CHEMICAL WEED CONTROL IN PEANUT (Arachis hypogaea L.), prepared and submitted by JOSEPH MUBO AWOTUNDE in partial fulfillment of the requirements for the degree of Master of Science in Crop Science (Agronomy), is hereby accepted.


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BIOGRAPHICAL SKETCH

Born to the AWOTUNDE family, the author hails from Ijagbo in Kwara State of Nigeria.

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

JOSEPH MUBO AWOTUNDE

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ABSTRACT

AWOTUNDE, JOSEPH MUBO, Institute of Graduate Studies, Central Luzon State University, Muñoz, Nueva Ecija, Philippines, June, 1986.

CHEMICAL WEED CONTROL IN PEANUT (Arachis hypogaea L.)

Major Adviser: Prof. Rolando F. Camacho

A field study was conducted to determine the effect of cloproxydim [(E,E)-2-(1-[(3-chloro-2-propenyl)oxyimino]butyl-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one)] on the yield and yield components of peanut when applied alone or in combination with other compounds or when integrated with cultivation at different frequencies and intervals.

BPI-Pn9 variety of peanut was applied with cloproxydim (SelectoneTM) at different rates (0.25, 0.50, 0.75, and 1.00 kg a.i./ha) alone or in combination with either bentazon (basagranTM) at 0.75 kg a.i./ha (applied post emergence to the weeds) or chloramben (AmibenTM) at 3.00 kg a.i./ha (applied pre-emergence to the weeds) or in sequence with one time or two times cultivation.

The weed species predominantly present were Echinochloa colona (L.) Link., Dactyloctenium aegyptium (L.) Beauv., Cyperus rotundus L., Trianthema portulacastrum L., Portulaca oleracea L., Crotalaria mucronata Desv., and Rottboellia exaltata L.f.

Pre-emergence chloramben (3.00 kg a.i./ha) followed by cloproxydim (0.25 kg a.i./ha) plus sticker (Alkyl Olefin aromatic polymers) and cultivation (1x) followed by cloproxydim (0.50 kg a.i./ha) plus sticker reduced the population of grassy weeds from 2 to 11 times and 1.90 to 10.29 times, respectively lower than the unweeded check.

The addition of the spray adjuvant to the herbicides provide better control of both grasses and broadleaf weeds without significant injury to the peanut plants.

A one gram decrease in dry weight of grasses produced 44.5 g increase in yield while a gram reduction in dry weight of broadleaf weeds provided 18.34 g yield increase. The highest computed yield of 2462.02 kilograms per hectare was obtained from plots that received one cultivation followed by cloproxydim at 0.50 kg a.i./ha plus sticker.

The overall result showed that a treatment of chloramben (3.00 kg a.i./ha) followed by cloproxydim (0.25 kg a.i./ha) plus sticker and a supplementary cultivation (hilling up) at least once during the early stages of the peanut plants was suitable and efficient for the control of weeds associated with the crop. No phytotoxic effect of the chemicals was observed on peanut.

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