CHEMICAL WEED CONTROL IN PEANUT

(Arachis hypogaca L.)

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(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.

He received his formal education at the primary, secondary and tertiary levels in Holy Trinity Primary School, Lokoja, Kwara State (1970), Bishop Crowther Memorial College, Lokoja, Kwara State (1975) and Department of Crop Science, Faculty of Agriculture, Rivers State University of Science and Technology, Port Harcourt, Nigeria (1981), respectively.

Upon graduating in 1981, he was posted to serve for one year (1981/1982) in the National Youth Service Scheme (A program designed by the Federal Government of Nigeria to promote and foster national unity and community development in the country). His primary assignment was that of college instructor in Saint John Teacher Training College, Port Harcourt, Rivers State, Nigeria.

In January 1983, the Kwara State Schools Management Board in Ilorin offered him a teaching job in Ira Grammar School, Ira-offa, where he taught Integrated Science in the first year High School class (Form I) and Agricultural Science in the third and fourth year classes (Forms III and IV). Barely nine months after taking up the teaching job, he was granted an admission to pursue his graduate studies leading to Master of Science degree, major in Crop Science (Agronomy) and minor in Crop Protection in the Central Luzon State

University, Muñoz, Nueva Ecija, Philippines. During his stay in CLSU, he served as the Auditor of the Foreign Students' Association in the school year 1983-1984.

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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)-2-1/1-//(3-chloro-2-propenyl)oxy/imino/butyl-5-/2-(ethylthio)propyl/-3-hydroxy-2-cydohexen-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 (Selectone^{TM}) at different rates (0.25, 0.50, 0.75, and 1.00 kg a.i./ha) alone or in combination with either bentazon (basagran^{TM}) at 0.75 kg a.i./ha (applied post emergence to the weeds) or chloramben (Amiben^{TM}) 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., *Dactoloctenium 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 graasy weeds from 2 to11 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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