STUDIES ON CULTURAL PRACTICES FOR SUNFLOWER (*Helianthus annus* L.) GROWN AFTER WETLAND RICE

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This thesis entitled, STUDIES ON CULTURAL PRACTICES FOR SUNFLOWER (Helianthus annus L.) GROWN AFTER WETLAND RICE, prepared and submitted by AYE THAW, 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

The author was born on July 20, 1945 at Kokkozu Village, Myittha, Burma. He is the fourth child of U Maung Gale (deceased), former Headmaster of Elementary School, Kokkozu, and Daw Aye Hte.

He completed his elementtry education at Kokkozu Elementary School in 1955 and his secondary education at Kume State High School in 1959. He finished high school at Myittha State High School in 1961. He obtained his Bachelor of Agriculture (B.Ag) degree from the Institute of Agriculture, Mandalay in 1968.

On January 1, 1969, he was employed in the Agriculture Corporation as agriculturist at Kyetmauktaung Dam Cotton Project, Kyaukpadaung. He was employed as Project Leader at Pyaungpya Dam Cotton Project, Natogyi, Myingyan from 1971 to 1975.

In May 1976, he was promoted to Deputy Township Manager (Extension) at Myittha. In April 1983, he was again promoted to Township Manager at Lewe. In 1985, he was awarded an IRRI/BUR Cooperative Project (IBCP) scholarship to pursue Master of Science in Crop Science, major in Agronomy and minor in Soil Science at the Central Luzon State University, Muñoz, Nueva Ecija, Philippines.

He is happily married to Daw Aye Thein (Aye) with whom he is blessed with six children, Aung Kyaw Oo, Sint Sint Thaw, Aung Myoe Thant, San San Thaw, Moe Myint Thaw and Hlaing Myitzu.

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AYE THAW

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ABSTRACT

THAW, AYE, Institute of Graduate Studies, Central Luzon State University, Muñoz, Nueva Ecija, Philippines, March 1988. STUDIES ON CULTURAL PRACTICES FOR SUNFLOWER (Helianthus annus L.) GROWN AFTER WETLAND RICE.

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Three field experiments were conducted on a Maligaya clay to determine the yield performance of sunflower grown after wetland rice as affected by tillage and fertilizer level (Experiment 1), irrigation frequency and plant density (Experiment 2), and intercropping with field legumes (Experiment 3). The experiments were undertaken at the College of Agriculture Experimental Area, Central Luzon State University, during the dry season, crop year 1987.

Both tillage and fertilizer treatments significantly affected the yield performance of sunflower. Maximum tillage produced significantly higher seed yield (2.34 t/ha) than medium (2.12 t/ha) and minimum (1.90 t/ha) tillage operations. Application of 120 kg N/ha was needed to obtain optimum yield of 2.40 t/ha. At each level of N, application of P and K at the rate of 60 kg/ha did not further result in higher seed yield.

The yield performance of sunflower was also markedly affected by irrigation frequency and plant density. Regardless of plant density, plants irrigated six times had significantly higher seed yield than those irrigated four times. Plants grown at 53, 333 plt/ha and irrigated six times increased the seed yield by 43.79% compared to plant density of 44,444 plt/ha and irrigated four times.

Intercropping field legumes such as mungbean, cowpea, and soybean did not affect the yield performance of sunflower. The seed yield of these field legumes was significantly reduced in an intercropping system as compared to monocropping system. The seed yield reduction was 93.79% for mungbean, 107.48% for cowpea, and 139.41% for soybean.

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