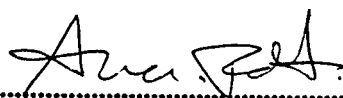




THESIS TITLE : EFFECTS OF ORGANIC AND INORGANIC FERTILIZERS ON GROWTH, YIELD AND GRAIN QUALITY OF KDML 105 RICE VARIETY UNDER RAINFED AND IRRIGATED CONDITIONS.

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ABSTRACT

KDML 105 rice variety in the Northeastern region is mostly grown under rainfed and some grown under irrigated condition. The improvement of production efficiency of KDML 105 may be assisted if soil management with suitable fertilizer applications are known. A total of 3 experiments were conducted in wet season 1995, to study effects of farm yard manure (FYM) and chemical fertilizers on growth, yield and grain quality of KDML 105 under both rainfed and irrigated conditions. The experimental design was randomized complete block with four replicates, and eight types of fertilizer applications; (1) control, (2) FYM, (3) FYM + NPK, (4) N, (5) PK, (6) NPK, (7) NPK slowrelease, and (8) all nutrients were compared in each experiment. The results found that farm yard manure combine with NPK fertilizer gave the highest in grain yield resulting from higher leaf area index (LAI) and total dry matter production than that of others fertilizer types application under both rainfed and irrigated condition. During drought period, KDML 105 with farm yard manure combine with NPK fertilizer application were able to retain green leaves for longer and resulting to higher in dry matter

production than others fertilizer types application. The results of the experiments also show that the higher in grain yield was obtained when KDML 105 grown under sufficient water throughout the growing season under irrigated condition as compared to it subjected to temporary water stress during the growing season under rainfed condition. In addition, optimum date of planting was also play an important role for increasing in grain yield, due to providing longer vegetative growth. In term of grain quality, grain size, milling quality and amylose content were slightly different among fertilizer types application. However, KDML 105 gave higher milling quality with farm yard manure combine with NPK fertilizer application than that of the others fertilizer types application.