PRE-RICE GREEN MANURE PRODUCTION IN THE RAINFED ENVIRONMENTS: A SIMULATION APPROACH

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ABSTRACT

The rainfed lowland ricelands prone to waterlogging in the pre-rice season are a major potential niche for the use of farm-grown green manure crops tolerant to saturated soils. But year-to-year variability in green manure growth and N accumulation would be large due to quite variable field hydrology in the dry-to-wet transition months. We developed a simulation model of the green manure-rainfed rice system that was used to estimate the yield levels and relative stability of pre-rice green manures and the subsequent rainfed rice crops in three representative sites in southeast Asia. The average estimated green manure N yield over 25 years was higher in Los Baños, Philippines (65 kg N/ha) than in Ubon, northeast Thailand (40 kg N/ha) or Tuguegarao, northern Luzon, Philippines (18 kg N/ha), with yield stability following the same trend. Simulation of sesbania planting was compared when established early (at

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