

Integrating Nature Farming into the Mainstream R & D Programs of PhilRice Towards Sustainability of Agricultural Systems

Bernardo D. Tadeo, Rizal G. Corales, CA Asis, Truong H Xuan, Jovino L. de Dios, J.C. Cordero and P.S. Ramos

Philippine Rice Research Institute, Maligaya, Science City of Muñoz 3119 Nueva Ecija, Philippines

Abstract : *In our quest for advanced technologies to help farmers increase their production, productivity, and resource use efficiency, ecological development of the rice ecosystem is left behind in favor of high stream knowledge that disturb its capacity to produce in a sustainable manner. Hence, the Philippine Rice Research Institute (PhilRice) embarks on appropriate researches dealing with sustainable natural farm inputs including alternative energy-saving mechanization devices, management approaches to conserve natural resources, and the reduction in greenhouse gas emissions from rice paddies. The following project is aimed at enhancing biodiversity in the rice fields while reducing production cost in a socially desirable, ecologically viable and economically feasible rice and rice-based agro-ecosystems:*

In the project on biodegradable farm and household waste management and utilization, indigenous materials in a village are selected as substrates to sustain the production of microbial inoculant. As base inoculant, pure rice bran with 5% EM-1 microbial solution and 5% molasses fermented for 5-7 days is preferred.

On turning household waste to bio-organic fertilizer, higher nutrient content was obtained from fermented food waste with the base inoculant at 1:5 ratio than chicken manure. Formulation of bio-organic fertilizer from the mixture of fermented food waste, chicken manure, carbonized rice hull and rice bran (4:3:2:1) inoculated with 5% EM-1 and 5% molasses in waster at 30-40% MC is being evaluated.

On approaches in managing rice biomass models of rice hull carbonizer were designed. Initial test showed that capacities were 23 and 8 kg hr⁻¹ of open-type and close-type models, respectively. Rice straw in combination with other biomass is being evaluated for rapid composting within two weeks.
