

ABSTRACT

The continuing search for time and labour saving as well as instant high yield in agricultural practice has resulted in the ever increasing degree of mechanization and fertilization. Green revolution, as it is known, has been hailed as one of man's greatest triumphs over nature, his timely means of rescue from the impending population explosion and food crisis. This optimism has raised so much hope and expectation because the long-term prospect of depletion of resources needed to supply energy subsidies in agricultural systems has been largely ignored. The present energy crisis has almost completely shattered this glowingly painted picture. A new way of thinking is urgently needed.

Rice, the staple diet of every Thai citizen, and rice cultivation, the occupation of more than three quarters of the population of Thailand, have also received considerable impact from the introduction of this so-called modern thinking in agriculture. Thai and foreign experts alike have been busy for some years persuading Thai farmers to go for mechanization and fertilization. Their success is evident in the rapid disappearance of buffaloes from the rice field and the increase by leap and bound of fertilizer import. Analytical methods used by agricultural economists in finding the optimum points of mechanization and fertilization to be adopted by farmers are usually based on the principle of profit maximization. The name implies that the

quantities of input (fertilizer, fuel, machinery, etc.) and output (rice) must be measured in terms of money which are then compared. It follows, therefore, that the optimum point will vary with the fluctuation in prices of both input and output. The soundness of this principle is thus subjected to question at this time of energy crisis when the most important criterion is sustainability.

An alternative analytical approach for investigation is based on the comparison of energy equivalent of input and output instead of monetary equivalent. The point at which energy output/energy input is maximum be the most desirable point of application. In other words the optimum point is where ER which is the ratio EO/EI is maximum.

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