ABSTRACT

Abstract of thesis submitted to the Graduate School of Maejo University in partial fulfillment of the requirements for the degree of Master of Science in Agricultural Economics

AN ANALYSIS OF POTATO PRODUCTION BETWEEN CONTRACT FARMING AND NON-CONTRACT FARMING IN SANSAI DISTRICT, CHIANG MAI PROVINCE CROP YEAR 1997/1998

By

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The objectives of the research were to study 1) costs and benefits of contract and non- contract potato farming; 2) the production function on technical and economic efficiency in the production factors; and 3) problem, and obstacles concerning contract and non-contract potato farming in Sansai, Chiang Mai crop year 1997/1998. Data were collected by of interview chedule from a sample of 88 contract farmers and 74 non- contract farmers (Taro Yamane's procedure) and analyzed by using the SPSS for window.

The findings indicated the contract farming had an average total costs of 1,199.71 baht per rai, average income of 15,464.82 baht per rai and average net profit of 4,265.11 baht per rai. Non- contract farmers had an average total costs of 11,573.43 baht per rai, average income of 24,404.37 baht per rai and average net profit of 12,830.90 baht per rai.

The Linear form function could explain the relationship between yield quantity and production inputs of the potato production contract farming better than the Cobb-Douglas form equation. The production inputs i.e. certified seed (S), chemical fertilizer and pesticide (D) could significantly explain the changes in the yield quantity at the 99% and 95% confident level. The

most important factor for contract farming was certified seed followed by pesticide and chemical fertilizer, respectively.

The technical efficiency study of contract potato farming showed that an increase in certified seed by one kilogram increased the potato output by 9.986 kilogram; an increase in chemical fertilizer by 1 kilogram increased the potato output by 1.151 kilograms; and an increase in pesticide by 1 gram increased the potato output by 0.282 kilogram

The economic efficiency analysis revealed the ratio of marginal value product (MVP) of contract potato farming to the unit prices of certified seed and pesticide were 1.920 and 3.318,respectively. It indicated inefficient use of these two inputs in contract farming production. At the existed price structure, the farmers would receive more profits by the increase use of certified seed and pesticide.

In non-contract potato farming, the Cobb-Douglas equation could explain the relationship between yield quantity and production inputs better than the linear form equation. The production inputs i.e. certified seed (S) and labor (L) could significantly explain the changes in the yield quantity at the 99% confident level. The most important input factor for non-contract potato farming was certified seed followed by pesticide, respectively.

The technical efficiency study of non-contract potato farming showed that an increase in certified seed by one kilogram increased the potato output by 37.177 kilograms; and an increase in labor by 1 man-day increased the potato output by 8.344 kilograms.

The economic efficiency analysis revealed the ratio of marginal value product (MVP) of non-contract farming to the unit prices of certified seed were 6.120. It indicated inefficient use of these two inputs in non-contract farming production. At the existing price structure, farmers would receive more profits by the increase use of certified seed but importer should focus more quality on certified seed. Should decreases the amount of labor used, leading to economically suitable level of production. Raising variable factors for maximize product in economic and physical according to Law of Diminishing Return.

Both contract farming and non-contract farming had the problems on expensive certified seed, insufficient output, decrease in potato quality, changeable yield and low yield. Marketing problems was low price guarantee for contract farming unstable price for non-contract farming.