

Thesis Title	A Feasibility Study of Cross Flow Corn Dryer Using Shelled Cobs as Fuel :Case Study at Pranomsarakarm District, Chachoengsao Province.
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#### Abstract

This study was undertaken to appraise the feasibility study of the cross flow corn dryer using shelled cobs as fuel. The researcher aimed to generate utilization of agro-wastes to improve agricultural commodity quality which should help farmer get higher income.

The results from the study displayed optimistic solution. The dryer was feasible in all four points of view. Technically, the dryer was feasible to be applied at local level for farmer-group or local trader who had the product to be dried about 450 tons/year. The Dryer functions could work well and technology was appropriate for local level. It could dry wet corn

capacity 5 tons moisture content 26% wb to 14% wb in 12 hours, even if, it had rather low overall drying efficiency (ranged from 7.2 - 10.2%) when compared with fuel used. However, it had no problem about source of energy because the amount of shelled cobs from ear corns was enough to dry grains. Financially, the dryer gave an attractive rate of return which ranged from 22.20% to 141.02% for corn price during 1.2 B/kg to 3.0 B/kg respectively and drying cost was about 119.89 B/ton at interest rate 15%. Whilst economically, the Benefit/Cost ratio was more than 1. The benefit based on money that the user gained from using the dryer and money that was saved from using shelled cobs as a fuel. Finally, the dryer using shelled cobs as a fuel did not find any toxic pollutant. The smoke occurred from combustion was Ringelmann No.2 or equivalent 40% black and NO<sub>2</sub> formation was not found. The moisture content of shelled cobs that were used should not more than 18% (wb) otherwise, emitted smoke might exceed the standard.

Eventhough, the dryer was feasible from the study, in practical view it may be impossible for the user to invest. Because most farmers are poor and indebted. In case of local traders, financial problem might be less than farmers however, their attitude to accept the dryer and another problem had to be concerned. Finally, The researcher suggests that the project could come true if the government plays an important role on commodity market and subsidizes loan and provides other assistance such as educational knowledge and information to the user.