Melon is a high-value horticulture commodity which is expected to increase farmer household's income in Kulon Progo Regency. The purpose of farming is not only to gain the highest resulting output but also the efficiency of input usage. Knowing the magnitude and distribution of technical efficiency has important implications for input allocations and farming managerial capability improvement. FRONTIER 4.1 software helps to estimate the stochastic production frontier and technical efficiency, as well as the inefficiency model as a one step process (simultaneously). The sample of this research were 100 melon farmers in Kulon Progo. Stochastic Frontier Approach using Cobb Douglas production function was applied in this research. The result reveals that 1) land use, quantity of seed, NPK fertilizer, organic fertilizer, pesticide, ricefield agroecosystem and wet season contributed significantly to melon production; 2) technical efficiency indeces ranged from 0.33 to 0.99, with a mean of 0.64; 3) farmer’s age, level of education and large portion of loan for farming capital give significant influence to technical efficiency
References

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**Index Terms**

Computer Science  Information Sciences

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