Abstraction

PT Bumi Sari Prima is a company engaged in processing cassava into tapioca flour. PT Bumi Sari Prima still uses traditional system in determining the amount of production. PT Bumi Sari Prima uses quota method to determine their production amount. Quota means the company uses constant amount for its production for the next four months by judging its capability. After four months has passed, the company will renew the amount of production for the next four months. But, the fluctuation of demand has caused PT Bumi Sari Prima can't meet their consumer need.

Kanban system is a system that can settle demand fluctuations problem in PT Bumi Sari Prima. Kanban system uses cards called kanban cards as tools to authorize production process. To implement kanban system, first find how many the number of kanban cards that will circulate in the production process at each work station. The number of kanban cards are influenced by five factors like the number of daily demand, order frequency, lead time, safety time and capacity of the palette.

The number of daily demand is found by using forecasting method . Based on available historical data, the pattern can be determined as horizontal data. Thus the forecasting methods will be used are linear trend forecasting method, moving average forecasting methods, and single exponential smoothing forecasting method. Standard error value is used to determine the selected method of three available ones and see which one has the smallest standard error value. Daily demand amount can be obtained by dividing the amount of monthly demand with the number of working days per month (30 days).

Data of lead time, safety time and capacity palettes are obtained from the interview process with production division employee. Before the frequency orders is determined, the value of the safety stock and order point must be obtained first. After the value of the five factors are obtained, the next process is to calculate the number of kanban cards at each workstation.

Beside counting the number of kanban cards, the flow of the production process also needs attention. Kanban system will eliminate unnecessary process of tapioca production process. In PT Bumi Sari Prima production process is started with skin peeling process, cassava washing process, chopping process, rasping process, extracting process, separating process, dehydrating and drying process, cooling process and is ended with sifting and packaging process.

Based on the data calculating results, 99 kanban cards are needed for skin peeling process, cassava washing process, chopping process, rasping process, and extracting process and 19 kanban cards are needed for separating process, dehydrating and drying process, cooling process, sifting and packaging process.

Keyword: forecasting, safety stock, order point, kanban card