ABSTRACT

Industrial the world must getting efficient day by day in carry on its business. PT Ajinomoto Indonesia, as one of PMA Company also always develops its business to increases profit, one of it is by processing waste. This product is called Co Product. One of Co Product development is Single Cell production (Dried Bacterial Cell) as protein source for animal feed substitution. This Single cell production is by, Separation, Drying up, and Packaging.

But since the process technology is new, therefore needs to be done by optimal process selection based on company’s investment policy. Technological options for Heating processes are: Steam Heater and Gas Heater, while for Separation processes are: Super Decanter Centrifuge (SDC), Filter Press, and J-Press, and finally Dryer processes are: Steam Pan Dryer and High Speed Dryer. Totally there are 12 available alternative's combines technology elect processes that can be chosen.

Since there are many objective functions to meet (minimize investment, operation and maintenance cost, maximizing laboring utilization, minimize pollution, and easy expansion at the future) therefore we choose Goal Programming method to aid in searching optimal solution.

From searching result, the combination equipments : Steam Heater as heating, Filter Press as separation, and Steam Pan Dryer as dryer, comply at most of Goal predetermined, and achieve the most minimum investment, operating and maintenance cost, moderate pollution to the environment, maximum labor utilization, but poor in expansion opportunity in the future. But on cash flow point of view, we got equipment combination: Steam Heater-Filter Press-High Speed Dryer is the best to obtain 5-year cash flow. And this last combination also superior to meet many scenarios in term of increasing utility price (steam, gas, electric) and also increasing wages.

Key word: Programming field goal, Elect Processes, Co Product, Dried Bacterial Cell,