

ABSTRACT

Tea is one of the commodities that have a significant role in economic activities that become the highest export commodity after oil and gas that generate income for the country. PT Perkebunan Nusantara VIII, Rancabali is a big company engaged in orthodox black tea plantation in Indonesia. In the orthodox black tea processing, enzymatic oxidation process is the most important process of all other processes as a result of this process will determine the outcome of the tea powder. Enzymatic oxidation time every kind of powder on average 120 minutes starting from shoots wilt put into the machine OTR to start into the drying machine. Incompatibility of oxidation time (over-fermentation) will cause the characteristics of black tea (taste, solid color, and black appearance) would not be appropriate. One cause is the accumulation over the fermentation when the tea powder will be incorporated into a drying machine for 4-6 minutes. Stacking occurs because the entry process tea powder into the machine is not continuous. By using rational product design process Nigel Cross through six stages, namely clarifying objectives, establishing functions, setting requirements, determining characteristics, generating alternatives, and evaluating alternatives, resulting in material handling equipment that can prevent the buildup of tea powder in the drying machine and over-fermentation does not occur, namely with a belt conveyor with a five-point displacement (transfer point) to help steer toward five tea powder drying machine.

Keywords: *Conveyor, Material Handling Equipment, Nigel Cross, Rational Product Design Method, Orthodox Black Tea*