

## **ABSTRACT**

*PTPN VIII Rancabali is a company engaged in agriculture, especially in West Java tea. The production process at PTPN VIII still using manual systems in both the production process and data recording system that can lead to uniformity of product quality. According to the SOP PTPN VIII Rancabali, to achieve the objective of withering is flatness wilt 90% then the difference between the temperature of dry and wet should be  $\leq 2$  ° C, but 20 of the 34 observations or about 59% difference in temperature produced there which is above 2 ° C, WT linear design also causes the average temperature is uneven deployment, the existing condition WT average temperature is 25.78 ° C, while the optimum is 27-28 ° C. This can then lead to not achieving the production target according to the quality and therefore required the redesign of the Withering Trough to deploy the air more evenly using a method of designing rational product Niggel Cross for systematic design process and SCADA systems that can facilitate foreman / operator wilted in the process monitoring and controlling constantly and continuously to keep the temperature difference between dry and wet produced is  $\leq 2$  ° C. The results obtained after designing WT using rational product design is the concept 2 that uses PLC, monorail, geared motors and solenoid valve with size of WT is 32,9x1,8 m and hole size divided by 3 section with the size 3,62x0,5 m with 6.6 m spacing between holes, average flatness temperature becomes 27.87 ° C which means has increase 7.48% better than the existing. In addition, the system for recording the withering station is automatically recorded in the database automatically.*

**Keywords : Withering, Nigel Cross, Orthodox, Automation, Product Design, Database, SCADA, HMI.**