

TAGUCHI METHOD IN BIOPROCESS ENGINEERING: *Case Studies*

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Chapter 8

Taguchi on Quality Improvement

Maizirwan Mel, Najiah Nadir

1. Introduction

Quality of product and process is a main target for every manufacturing industry. One of the most significant achievements associated with designing quality into a product is Taguchi's system of quality engineering. There are four system spans the physical and process domains such as parameter design in the physical domain, tolerance design in the physical domain, process parameter design in the process domain and on-line quality control in the process domain. Use of these methods can make improvement in higher quality and also improve both cost and productivity.

Taguchi's design intends to produce the highest quality product at the lowest possible cost. The major idea behind parameter design is the concept of affecting the initial product (and/or process) design with "noise" and discovering a factors combination that can be altered in the design systematically to make its functional performance incentive to noise. Noise is identified as variation; the bioprocess engineer either cannot control or chooses not to control, although it may affect product (and/or process) performance.