Operational Excellence
In Biotech Industry

Case Study
India

About Client:

The client is one of the few leading biotechnology product manufacturing companies in India, with focus on production and supply of probiotic products. The various business verticals of client’s group are probiotics, bio-agriculture, food, nutraceuticals & specialty, textiles enzymes and auxiliaries, global enzyme analytical technology, oenology and brewing.

The major customer base for client’s probiotic products includes pharmaceuticals, food, animal feed, agriculture, industrial cleaning and waste water treatment.

**Objectives**

- Improving Yield Ratio
- Reducing Rejections
- Reducing Throughput Time
- Improving Productivity
- Improving Value Adding Ratio
- Rolling out Standard Operating Procedures for various functions
- Improving Equipment Efficiency
- Managing Inventory Levels

**Analysis**

After detailed analysis exercise, following key improvement areas were identified:

- Yield ratio was low
- Prevalent batch failures
- Underutilization of capacity
- High throughput time
- Lack of robust inventory management

**Approach**

- Quality Control tools for structured problem solving for reducing batch rejections
- Six Sigma implementation to reduce errors
- Wastes / inefficiencies (Muda, Mura and Muri) analysis in the process and find ways to eliminate or reduce it
- Improving equipment efficiency
- Reducing throughput time through VSM (Value Stream Mapping)
- Define standard operating procedures for different functions
- Inventory management to reduce non-moving inventories and optimize inventory
Project Implementation

**Implementing Six Sigma & Five S (+Safety):** Conducted training sessions on Six Sigma, Five S (+ Safety) & Lean fundamentals & implemented the same for improved efficiency and better quality

**7 Quality Control Tools:** Conducted Fishbone & why why analysis to understand the root cause of low yield & eliminated such causes by improving vial quality through kobetsu kaizen (focused improvement)

**Rejection Analysis:** Conducted rejection analysis to trace the reasons for rejections & reduced rejection rate through the Six Sigma & DMAIC (Define, Measure, Analyze, Improve and Control) methodology

**Plant Layout:** Analyzed packing lines layout which was based on batch production & worked out a new layout which was based on pull mechanism for improved value-added ratio

**Overall Line Effectiveness:** Rolled out overall line effectiveness framework for tracking the quality, performance & availability to track the target achieved against the target set

**Overall Operations Improvement:** Eliminated NVAs (non-value adding activities) & improved inventory through inventory management model & autonomous maintenance of project trackers set up to track the progress. Set up steering committee & trained team on OPLs (One Point Lessons), SOPs, etc.

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Results Delivered

**Reduced rejection by ~94% & 91% in two major products respectively**

Yield consistency improved by 71% & 25% in two major products respectively

**Autonomous Maintenance reduced breakdowns by 83%**

Non-moving inventory & search time reduced by 6% & 90% respectively

**Improved Five S + Safety audit score by 184%**

50 new SOPs established & rolled out

**Sustenance**

Implemented results shall be sustained over a period using Systematic Audit & Improvement Loop (SAIL) & Daily Work Management (DWM)