Prawn Feed Manufacturer

Background

The organization is a pioneer in prawn industry in India. The industry faced a severe recession in 2007 and 2008 due to depressed global prices. Finally demand started picking up in 2009. However, the unit was unable to cater to the growing demand with the plant operating at an OPE less than 50%. Morale of the employees was also down due to sluggish work environment in the recession period. KIAP was called in to help the organization get back to peak output levels.

Objectives

- To increase OPE of the feed mills from approx. 45% to atleast 70%
- To motivate the team and bring in a dynamic work culture

Improvement Themes

- Increase mill performance ratio – run at close to rated RPM
- Reduce downtime due to die changeovers

Approach

Cross functional teams formed for each area and improvement projects taken up during monthly 3-4 day kaizen workshops followed up with interim reviews

PERFORMANCE RATIO

Problem: Following several market complaints on quality, the mills were being run at lower than rated speeds to get product as per specification

Root cause: Mills were unable to reach the required cooking temperature as the die was getting jammed.

Analysis: Statistical analysis including regression was carried out to find the relation between various process parameters and the product quality

Countermeasures:

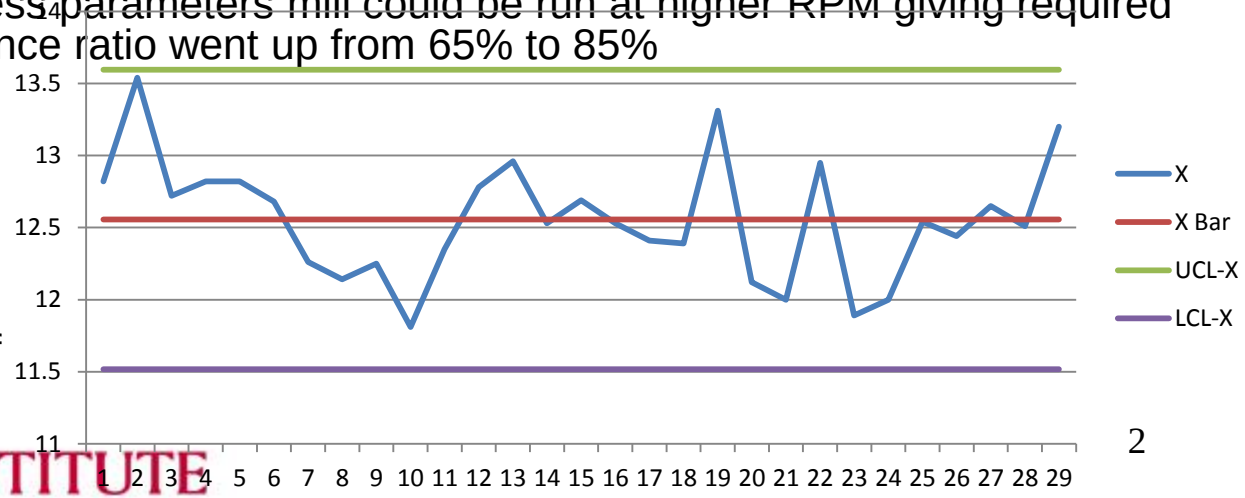
- Control on moisture through improved water addition practice in the mixing area.
- Improved practice for raw material traceability so that process parameters can be set accordingly

Result

With the correct mix and process parameters mill could be run at higher RPM giving required product quality – performance ratio went up from 65% to 85%

Standardization

Process control charts introduced at mill for operator and quality inspector – any deviation or trend observed to be corrected in next batch itself



CHANGEOVER TIME

Earlier State

- Average changeover time was 95 – 100 minutes for die and feed change
- Due to the feed mix required by prawn at different stages of growth, there was at least one changeover per mill per day = loss of 5 MT output per mill

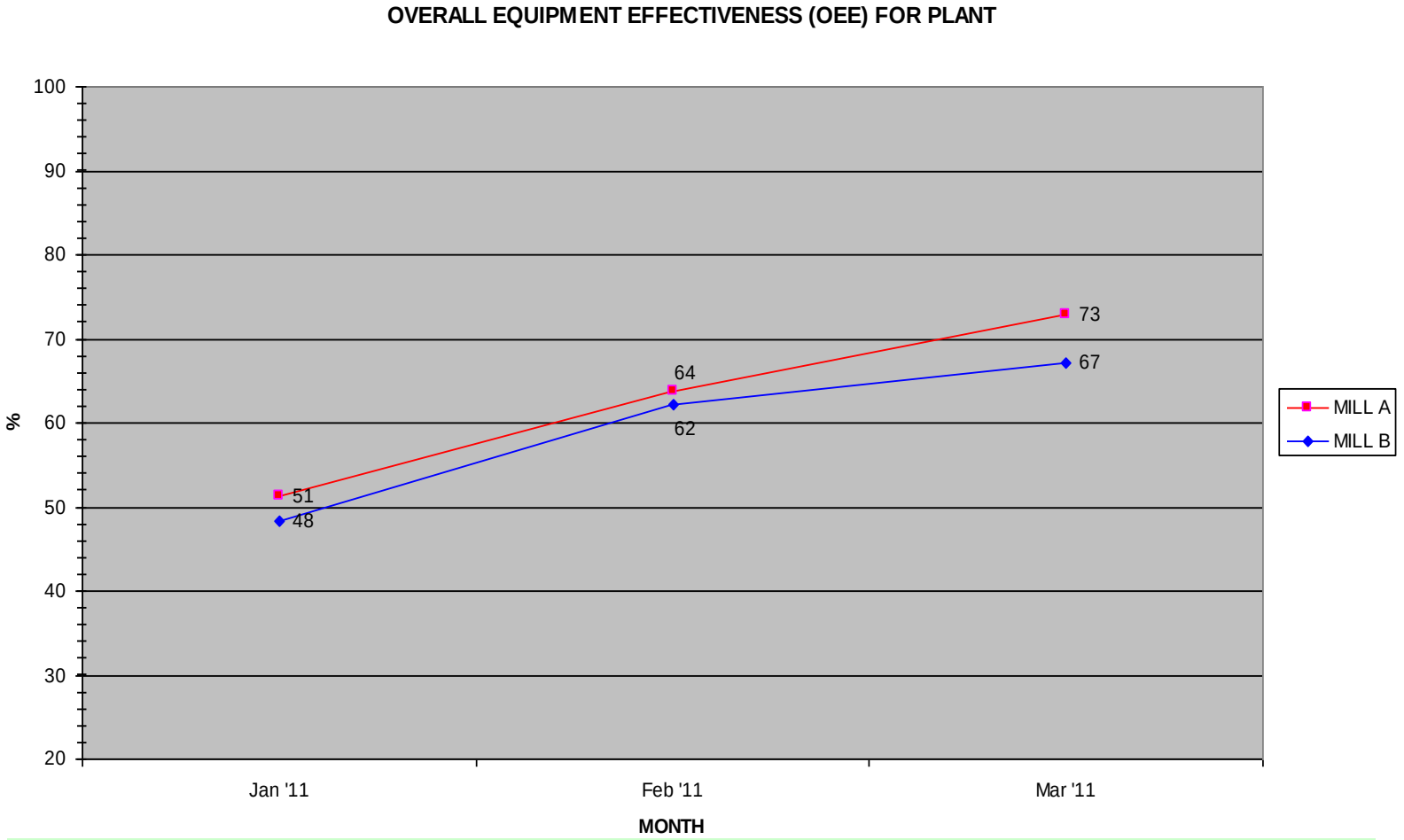
Improvement

- Using SMED concept, the die changeover was observed, recorded, analyzed and improvements made which included
  - tool rack
  - cleaning stand
  - die shifting and placement trolley,
  - Defining parallel activities for operator and helper
- SOP was made and die changeover procedure was standardized

Result

Changeover time reduced to 60 – 65 minutes giving additional 2.5MT .day per mill

RESULTS



Increase in performance (mill speed), reduction in changeover time and stabilization of process parameters have together contributed to increase the plant OEE and gain 40% in output utilizing the same resources