

Case Study

SECTOR FERTILIZERS

SIX SIGMA

C. S. Fertilizers

Six Sigma

YEAR 2010-11	C. S. Fertilizers (name changed) is in the business segments of fertilizers, specialty nutrients, crop protection and retail. It manufactures a wide range of fertilizers and markets around 2.9 million tons making it a leader in its addressable markets and the second largest phosphatic fertilizer player in India.
SECTOR Fertilizers	
REGION India, Asia	C. S. Fertilizers wanted to enhance its people's capabilities in root cause analysis, improve operational effectiveness & service level and refine process parameters using high end quality tools; hence it chose to deploy Six Sigma Methodology in one of its plants.
SERVICES Fertilizers, Specialty Nutrients	



INDUSTRY OVERVIEW

India is predominantly an agrarian economy; hence there is tremendous scope for the growth of the chemical fertilizer industry. The Indian chemical fertilizer industry is developing fast in terms of using the latest world-class technology. Indian manufacturers of chemical fertilizers are now adopting some of the most advanced manufacturing processes to prepare innovative new products to supplement the Indian agriculture. India is also ranked as the third-largest exporter and producer of nitrogenous fertilizer. Some of the prominent products manufactured by the Indian fertilizer industry are nitrogenous fertilizers, phosphate-based fertilizers, calcium ammonium nitrate, urea, ammonium sulfate, and other complex fertilizers.



BUSINESS CHALLENGES

Organization's throughput was getting impacted due to various losses such as ammonia emission through stack, P205 contents through Gypsums & variation in fertilizers' bag filling. This not just had a huge financial impact but also environmental regulation issues and customer dissatisfaction. C.S. Fertilizers decided to take up these key business issues and equip their operational team to tackle these issues with a scientific approach instead of some ad hoc way of solving these issues.

PROJECT SELECTION

The strategic focus area chosen for this initiative was operational efficiency improvement. The following improvement projects were chosen in the pilot wave:

- Improvement in the yield of 28:28 fertilizers through consistency in product specification.
- Improvement in the yield of Phosphoric acid
- Reduction in variation in the packing process

SSA'S APPROACH

SSA adopted RDMAIC Methodology of Six Sigma and recommended the following approach to C.S. Fertilizers for achieving its objectives:

- Aim to bring about a culture of quality through data based analysis /decision making at all levels in the organization.
- Undertake phased implementation programme to internalize the skills of problem solving using Six Sigma methodology.
- Implement Six sigma through training in phase-1 and apply the learning from the above pilot projects and achieve breakthrough results.

BUSINESS BENEFITS

Over a period of 7 months, the teams underwent the exciting journey of DMAIC, addressing all the challenges of the 3 projects and successfully completing them, with significant improvement in Six Sigma Levels.

The table below gives us a clear picture of before-after change.

PROJECT	IMPROVEMET IN SIGMA LEVEL
Reduction in Water Soluble P205 losses	0.1 to 3.3
Reduction of Stack emissions	0.1 to 2.9
Reduction of Bag weight variation	0.6 to 1.5

INTANGIBLE BUSINESS BENEFITS

- 12 Certified Green Belts
- Improvement in 3 core business projects
- Savings of Rs.2.61cr
- Improved competency for problem solving
- Learning

“We have gained good experience on deployment of Six Sigma, and our teams are now in a better position to independently take up projects and do the studies.”

- VP Manufacturing, C. S. Fertilizers



ABOUT SSA

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