

Monsanto Company

CASE
SUMMARY

15



MONSANTO COMPANY

Muscatine, Iowa
Muscatine County

Intern: Somchan Vuthipadadon
Major: Ph.D in Industrial &
Manufacturing Engineering
School: Iowa State University



The Company

The Monsanto Muscatine plant is one of the facilities of Monsanto Company, a leading global provider of technology-based solutions and agricultural products that improve farm productivity and food quality. Started as an ammonia terminal plant in 1961, the Muscatine plant has expanded its operation to serve the two main Monsanto products, acetanilide and glyphosate based herbicides, and employs more than 450 people. Some Monsanto product brands that the Muscatine plant supplies are Roundup®, Lasso®, Machete®, Degree®, Harness® and MicroTech herbicides.

Project Background

The purpose of the Monsanto Muscatine's P2 summer intern project was to develop a release report database which will enable the plant to have an accurate and timely release reporting system. A lighting project was also undertaken to reduce energy demand.

Incentives to Change

The new release reporting system will allow the Muscatine plant to maintain the freedom to operate and perform effective data analysis. Analyzing the release historical record, Monsanto can easily identify the areas and equipment that have release potential, and quickly determine the appropriate corrective actions. As a result, possible future releases can be prevented or eliminated.

The Monsanto Muscatine plant started operation in 1961; therefore, the lighting systems in several buildings are quite old. Upgrading the lighting fixtures to a more efficient system can offer Monsanto Muscatine significant energy saving opportunities.

Results

1. Release Report Database Project

The development of the new release report database is not only enabling the plant to easily track all releases but is also speeding up the process of release reporting. The time savings results in an annual labor cost saving of \$3,550. The database is currently completely developed for an operating area. Full development of the database for all operating areas is expected to be completed in the near future.





2. Energy Savings from Lighting Upgrade Projects

Lighting upgrades were proposed in three areas: parking lot, maintenance shop and control room, and 20G granular west warehouse. For the parking lot area, the new system provides higher CRI and better quality of light. For the maintenance shops, control room and warehouse, installing the proposed lighting fixtures will not only result in improvement of the quality of light, but will also reduce energy consumption. The proposed T5 fluorescent fixtures are an energy saving alternative to the existing lighting system. The proposed system will offer \$11,292 in annual potential energy cost savings, with a payback period of approximately two years.

Project Summary Table

Project Description	Environmental Impact	Economic Cost Savings	Status
Release report database <ul style="list-style-type: none"> •GT Area •Flowables area •CAC area 	Proactive real time approach to releases	\$3,550	Complete In Progress In Progress
Energy saving from lighting upgrade <ul style="list-style-type: none"> •Parking Lot •Maintenance Shop and Control Room •20G Granular West Warehouse 	Improve light levels, reduction of energy consumption: 256,632 kWh/year	Potential Saving of \$11,292	Implementation in progress Recommended Recommended