

RhizoSorb® Life Cycle Assessment

Phospholutions RhizoSorb® Technology Life Cycle Assessment Executive Summary

Assessment Conducted by Sustainable Solutions Corporation

Objective

Phospholutions firmly believes that relying on the environment requires caring for the environment. To take the next step in their sustainability journey, Phospholutions commissioned Sustainable Solutions Corporation (SSC) of Royersford, Pennsylvania to conduct a comparative cradle-to-gate LCA of RhizoSorb® 8-39-0 and monoammonium phosphate (MAP) fertilizers to determine their environmental impacts. A cradle-to-gate analysis includes all inputs and outputs of the system from raw materials, transportation and production.

Scope of Study

This LCA study is characterized as a cradle-to-gate study, examining the RhizoSorb® 8-39-0 and MAP from raw material extraction through use in the growing of maize. For this life cycle assessment, specific data was collected on energy and material inputs, wastes, water use, emissions, and transportation impacts for the product system. The scope of this study was RhizoSorb® 8-39-0 sourced by Phospholutions and Ecoinvent supplied data for MAP production and maize growth.

Key Findings

The main differences between these two products are their material compositions and the amount of product required to fertilize one bushel of corn. The decrease in phosphoric acid and ammonia, combined with roughly 33% less product per acre leads to significant reductions in environmental impacts and raw material footprints.

Environmental Impact

- **Eutrophication** -40.5%
- **Ozone Layer Depletion** -46.1%
- **Acidification** -34.7%

RHIZOSORB®
8-39-0

45.2%
Carbon Emission Reduction

Analyzing corn's life cycle from cradle to harvest on the farm, the study has found producing corn with RhizoSorb® 8-39-0 instead of MAP reduces carbon emissions by 45.2%. If adopted across all United States corn acres, RhizoSorb® 8-39-0 could prevent a staggering 3.4 billion kg CO₂ eq emissions when compared to MAP.

Note: The findings and conclusions presented in this press release are based on the data available at the time of the assessment and are subject to further validation and refinement in future studies.