

White Paper

Business Case for Adoption of Closed Chain of Custody Best Management Practices

Introduction

This white paper provides the financial justification for migrating to a closed chain of custody best practice methodology. Currently in the vegetation management industry, disposable one-way containers are used to ship herbicide concentrates and prepare mixes on job sites. The best practice proposal is to migrate to the use of custom blends supplied in returnable/recyclable containers that have interlocks (improved liquid transfer mechanisms) and tracking technology. Although there are sound systematic reasons for migrating to this new best practice methodology, the financial analysis demonstrates that there is also a financial incentive to migrate. This report provides an analytical financial analysis to justify a migration.

Solution Overview

Financial analysis of the economic implications of implementing the new CCC BPM can be broken down into four elements:

1. The use of returnable reusable (RR) supply containers.
2. The use of a closed system interlocks.
3. The use of an improved means of tracking supply containers.
4. The use of custom blends versus concentrates.

The financial analysis was conducted in a way such that the cost of implementation, and financial justification, for each element can be considered as a separate initiative.

Solution Details

The economics for each initiative are examined and calculated, when appropriate, for the aggregate of all stakeholders (Utilities, Distributors, Customer Blenders, and Applicators) into a supply chain-wide five year Net Present Value (NPV). The key reference metric is the cost differential of a mixed ready to apply gallon in a spray tank. This is a calculation made by comparing the traditional use of “package goods” in open one-way containers to the corresponding element in the CCC BMP.

Data used in the financial analysis are based on the results from an Internet survey of UAA membership and interviews from Asset Owners, Distributors, Customer Blenders and Applicators. The analysis was run for each of four application types based on herbicide formulations and rates that are representative of UVM industry practice. A detailed presentation of the financial analysis will be included in the UAA CCC BMP project report.

Solution Benefits

The 5-year NPV, given a yearly cost of capital of 9%¹, is presented individually, and in composite in the table below for each of the four aspects of the CCC BMP:

CCC BPM 5-year NPV Results per Applied Gallon

Application type	RR Supply Containers	Closed Systems	RR Closed Supply Container	Tracking	Custom Blend	All CCC BMP elements
RTA: LV Basal	\$1.13	\$(0.64)	\$0.49	\$0.07	\$0.25	\$0.81
DC: LV Foliar	\$0.08	\$0.00	\$0.08	\$0.00	(\$0.04)	\$0.04
DC: HV Foliar	\$0.04	\$(0.01)	\$0.03	\$0.00	\$0.01	\$0.04
DC: Aerial	\$0.12	\$(0.05)	\$0.07	\$0.02	\$0.42	\$0.51

The migration to RR supply containers is net positive across all four applications types. This is due to the two main contributing factors including the avoided cost of proper disposal of one-way containers, and incremental improvement in crew productivity related to efficiency of transfer and mixing of herbicides.

The adoption of closed connections comes at a premium. There is an immediate benefit from more accurate herbicide mixing, thereby reducing waste as well as spillage-induced liability, but it is countered by the initial capital cost to fit the rigs and RR containers. However when combined in current form of the RR Closed Supply Containers available to the Utility Vegetation Management (UVM) industry, the benefits are net positive.

Improvements in tracking are economically positive, primarily due to better inventory management. There are also savings in the purchase cost of formulations as custom blends except in the case of low-volume foliar applications. When all elements of the CCC BMP are considered together, the results are net positive, as reported in the right most column of the table above.

Summary

The financial impact of the CCC BMP for all application types is positive. Adoption of these practices by the UVM industry can therefore be financially justified. The burden of capital outlay is most intensive for custom blenders in establishing a fleet of RR Closed Supply Containers. The capital outlay for applicators is offset by rebates from Producers. Tracking system improvements are a result of increased information technology and could be adopted in a phased approach.

In addition, there are several soft benefits from migrating to the CCC BMP that are not included in these results, such as enhanced branding (Green PR) by demonstrating environmental stewardship. These benefits accrue to the utility through customer and regulator perception.

¹ The cost of capital is an average taken from various asset owners, distributors, and customer blenders.