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ADVANCES IN RISK ASSESSMENT AND MANAGEMENT

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Assessment of environmental fate of novel clay-based herbicide formulations

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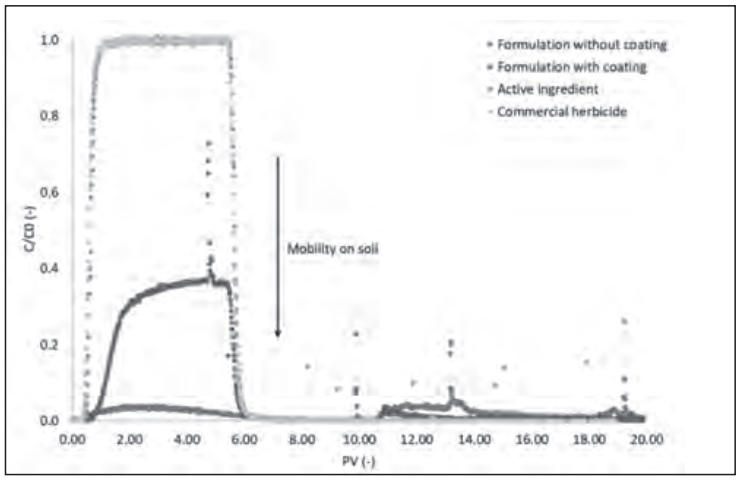
Objectives

- Developping a novel environmental-friendly herbicide formulation using clay and biopolymers as a particle coating
- Reducing herbicide spreading on subsoil, surface water and groundwater
- Reducing herbicide spreading in air
- Testing efficacy in greenhouse test

Highlights

- Mobility on soil was investigated through unsaturated column transport tests.
- Mobility in groundwater was investigated through saturated column transport tests.
- The novel clay formulation showed reduced mobility both on soil and in groundwater compared to the free compound and a commercial formulation. At least 50% of the clay formulation was retained in the first cms of the columns.



Breakthrough curves for unsaturated column transport tests.

- Volatility was studied through both batch open vessel tests (with and without soil). Formulation with coating showed negligible volatilization compared to active ingredient alone.
- Greenhouse tests showed comparable efficacy to the commercial herbicide