



TECHNOLOGY

Naturally Derived Herbicide Adjuvants for Glyphosate-Resistant Weeds

OVERVIEW

Background

Glyphosate (i.e. Roundup®) is a broad-spectrum herbicide that is widely used due to its effectiveness and low toxicity. However, after decades of use, some plants have developed a resistance to glyphosate. These glyphosate-resistant weeds can create economic problems for farmers. For example, the presence of one giant ragweed per square meter can reduce soybean yields by up to 70%. The difficulty for farmers is finding an herbicide strong enough to combat the resistant weeds, without also harming their crops.

Innovative Technology

Researchers at the University of Maryland have identified a group of naturally derived adjuvants that, when added to glyphosate, are highly effective at killing glyphosate-resistant pigweed in greenhouse tests. When researchers added the adjuvant at a concentration of 1 μ M, 90% of the glyphosate-resistant pigweed died. Importantly, when the researchers sprayed the mixture directly onto Roundup Ready® soybeans, there was no herbicidal effect. These results suggest that this glyphosate/adjuvant mixture would be an effective combination for farmers using Roundup Ready® crops.

Future studies include securing other types of glyphosate-resistant weeds (giant ragweed, marehail) for greenhouse tests, as well as funding for field tests of the glyphosate/adjuvant combination in soybean fields. The researchers will continue to test other adjuvants to try to identify cheaper and/or more effective adjuvants for glyphosate.

APPLICATIONS

Treatment and control of weeds.

ADVANTAGES

- Naturally derived adjuvants have low toxicity, but are synthetically produced to lower costs
- Small concentrations of adjuvant are needed to be effective
- Does not harm Roundup Ready® soybeans

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Additional Information

INSTITUTION

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PATENT STATUS

Pending

LICENSE STATUS

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CATEGORIES

- Natural Compounds
- Agricultural

EXTERNAL RESOURCES

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