

# LI-700<sup>®</sup>

A unique non-ionic surfactant with  
**excellent drift reduction properties**

## New Research Shows Drift Retardant Benefits

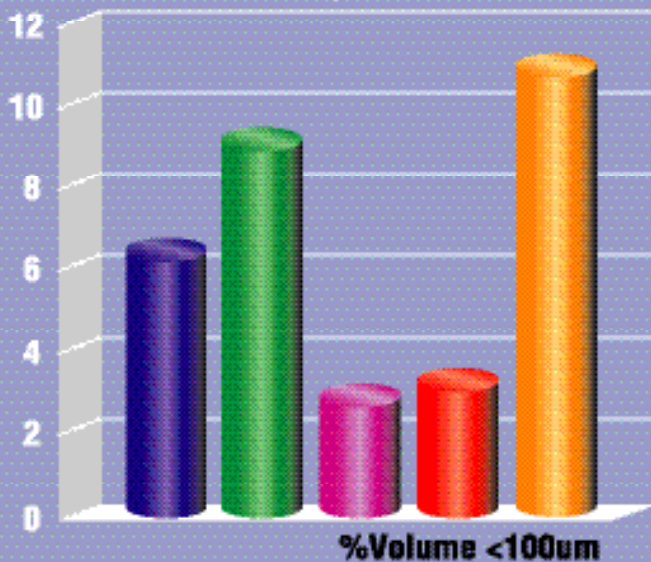
LI-700 is the surfactant of choice to use with all glyphosate formulations. LI-700 allows your herbicide to reach its target with reduced spray drift potential.

### Advantages to LI-700

- LI-700 dramatically reduces spray drift potential by reducing the volume of droplets below 100 microns in size.
- LI-700 Increases penetrating ability and pesticide uptake.
- LI-700 Reduces spray solution pH to limit pesticide breakdown.
- LI-700 Reduces surface tension for better spreading.

### Drift Retardant Comparison Study

Research conducted by Dr. Tom Wolf, AAFC



Water Alone

LI-700 Alone - 0.25%

Agral 90/  
Roundup  
Transorb

Roundup Transorb

LI-700/Roundup  
Transorb - 0.25%

Reduced spray drift

More uniform droplet size

Reduced surface tension

Faster penetration

Lower pH

**Remove the obstacles to better weed control  
and let glyphosate get on with the job.  
Use LI-700 from Loveland.**

1.204.837.8050

1.800.356.8920

**LOVELAND**  
INDUSTRIES INC.

LI-700 is a registered trademark of Loveland Industries.

If you have hard water, also ask your crop protection retailer about Choice<sup>®</sup> water conditioner from Loveland.

Roundup<sup>®</sup> Transorb is a registered trademark of Monsanto Company. Agral<sup>®</sup> is a registered trademark of Zeneca Agro, a Syngenta Group Company.

# Surfactant Showing Excellent Results as Spray Drift Retardant

*Research findings are pointing to another alternative in the quest to reduce spray drift from glyphosate applications.*

The recent trend to no-till and toward the seeding of herbicide tolerant crops including canola and soybeans has led to increased research in the area of spray drift management.

The use of non-selective herbicides, like Roundup and other generic glyphosate formulations, has increased grower and custom applicator concerns about the impact of spray drift as these products are increasingly being applied post-emergent to tolerant crops that are located beside or near non-tolerant crops. Research has also increased in the area of drift management due to broader buffer zone requirements on product labels and stewardship efforts aimed at protecting environmentally sensitive areas.

Research has primarily focused on two areas of spray drift management – (1) the use of low drift nozzles, and (2) the use of drift retardant products. Recent research conducted in Saskatchewan has brought a new option front and centre in the quest to find a better drift retardant. The product is LI-700, marketed to this point across Canada as a non-ionic surfactant to use with glyphosate products and as a pH buffer.

Dr. Tom Wolf, a researcher with Agriculture and Agri-Food Canada and the Pest Management Regulatory Agency at the Saskatoon Research Centre conducted research that involve commercially marketed drift retardants and LI-700. Drift was measured using a highly accurate laser based instrument. The trial compared water alone to water mixed with Roundup Transorb, water mixed alone with a drift retardant, and water mixed with both a drift retardant and Roundup Transorb. This herbicide was selected as it has a tendency to produce finer spray particles in

solution than seen with water alone, and is now a primary product used for in-crop and pre-harvest applications.

“LI-700 is unique as it is providing us with the best of both worlds,” notes Dr. Wolf. He says the goal with any drift retardant is to reduce the volume of spray droplets that are a 100 microns in diameter or smaller...the principal cause of spray drift concerns.

“What often happens with a drift retardant is that it shifts the range of droplet sizes too far,” he says. A typical spray drift retardant increases the viscosity of the spray solution, which results in a fairly dramatic increase in the volume median diameter (VMD) of the spray. Then one has too many larger droplets, which can result in compromised coverage and the potential for reduced herbicide efficacy with contact herbicides.

“There is usually a trade-off with drift retardants. Spray drift decreases but so does coverage,” notes Wolf. “LI-700 is interesting as it did not do this,” he says. “It reduced the percentage of smaller droplets by over 50%, but did not increase overall droplet size (VMD) significantly. It’s exciting as it reduced drift and provided good droplet size distribution, exactly what we would want.”

Wolf’s research could also provide insight into other concerns present with current drift retardant products. He says most drift retardant products are made with polyacrylamide, polyvinyl, or starch based polymers. Once atomized through a nozzle, there has been a history of relatively poor spray patterns produced. Sprayer operators have been forced to reduce their output rate and increase spray pressure, effectively trying to balance output and pressure to create a good spray pattern. LI-700 is made with soy-based lecithin chemistry and is not showing this effect in trials. Also, to this point applicators have had to choose between using a low drift nozzle or using a drift retardant to reduce drift due to atomization problems where both were used together. LI-700 may provide a solution in this area.

“This is more than we expected,” says Brodie Blair, Western Canada Business Manager for Loveland Industries, manufacturer’s LI-700. “We initiated the research with LI-700 as we thought the product may have some merit as a drift retardant. The research results show just how good LI-700 is as a drift retardant, in addition to it being a very good surfactant. It shows definite promise for both growers and custom applicators.”

Spray Solution	Concentration (% v/v)	% Volume <100um
Water Alone		6.5
Roundup Transorb alone	1.25	9.3
Agral 90	0.2	9.0
LI-700	0.25	2.8
LI-700	0.5	3.0
LI-700 and Roundup Transorb	0.25	3.2
LI-700 and Roundup Transorb	0.5	3.5
Roundup Transorb and Agral 90	0.2	11.2

*Note: Trial conducted at 40psi using a XR-8003 standard flat fan 80° nozzle with a flow rate of 0.3 US gallon/minute.*