BACKDROP™

ACTIVATOR AND DRIFT RETARDANT

WHAT MAKES BACKDROP™ UNIQUE?

Backdrop™ is a patented, liquid premix of ammonium sulfate (AMS) plus the unique HPG polymer technology. The combination of these two components along with other ingredients in the formulation have been proven to optimize the performance of both glyphosate and glufosinate across the Meherrin marketing area. With much cooler conditions at burn-down in the northern area, and hotter conditions during the growing season in the southern area, we developed Backdrop™ to provide additional performance and crop safety under the widest range of stressful conditions.

AMMONIUM SULFATE

AMS has proven to be a consistent water conditioner and activator for both glyphosate and glufosinate based herbicides. With a stable liquid formulation that is easy to handle, 2.5 gallons of Backdrop™ provides the equivalent of 8.5 lbs. of dry ammonium sulfate.

THE HPG POLYMER

The HPG polymer adds two critical performance parameters. The first is superior drift control. Backdrop™ delivers the highest quality drift control on the market today. The second performance parameter is exceptional retention of the spray droplet on the leaf surface. Spray droplet bounce-off is rarely discussed among retailers and growers but researchers know it is a problem that reduces pesticide performance. University research has shown that the HPG polymer technology has a significant impact on the amount of spray solution retained on leaf surfaces. In some cases, up to 30% or more can be lost when not using Backdrop™ technology. See the chart to the right for more information.

The superior droplet retention and drift control characteristics of Backdrop™ sets it far apart from ordinary ammonium sulfate based adjuvants. Backdrop™ has been proven in our marketing area to provide our growers with the added punch they need to get the most out of their weed control programs, even under the most stressful growing conditions.

GROWER PERFORMANCE EXPECTATIONS

Our growers have experience better performance of glyphosate and glufosinate under even the most challenging of hard water sources. They have also come to expect exceptional drift control when Backdrop™ is used at the full labeled rate. The unique polymer technology eliminates spray particle bounce, providing the super adhesion of the spray solution to the leaf surface. Backdrop™ allows growers to achieve the highest levels of weed control and return on their pesticide investment.

RECOMMENDED USE RATES

Ground Application: Up to 2.5% v/v (2.5 gallons per 100 gal.)

ACHEIVING OPTIMUM PERFORMANCE

Always read and follow label directions. The addition of adjuvants to some pesticides and/or fertilizers and their tank mixes may cause phytotoxicity to the foliage and/or fruit of desirable crops. The applicator or crops advisor must have experience with the pesticide combination, including Backdrop™, or must have conducted a phytotoxicity test prior to use. Do not use this product in a manner inconsistent with labeling. Backdrop™ increases the activity of many pesticides. Therefore, care must be taken when treating sensitive crops during periods of drought stress, high temperatures, or high humidity.

PRODUCT PROFILE

Backdrop is a liquid activator adjuvant specifically formulated to maximize pesticide performance on a wide range of weed species by eliminating spray particle bounce, thus providing superior adhesion of the spray particle solution to the leaf surface while providing the required amount of ammonium and sulfate ions.

Backdrop has been designed to achieve three key objectives: It is an ideal all-around general glyphosate adjuvant that is compatible with all glyphosate formulations, it offers superior drift and retention control, and it increases herbicide control in drought and cool conditions.

KEY PRODUCT BENEFITS

• Multifunctional formulation
• Provides AMS for improved weed control
• Delivers superior drift control
• Exceptional spray droplet retention on the leaf surface

FATE OF SPRAY DROPLETS DISTRIBUTION %

BACKDROP™ is a trademark of Meherrin.
FACTOR 80 LR™
STANDARD NONIONIC SURFACTANT

WHAT MAKES FACTOR 80 LR™ UNIQUE?

Factor 80 LR™ is our general workhorse 80-20 surfactant. Unlike many other surfactants on the market, Factor 80 LR™ meets the ASTM testing standards and definition of a true 80% surfactant. Factor 80 LR™ combines higher active ingredient loading with an optimum hydrophilic/lipophilic balance level and added humectancy to extend spray droplet performance on the leaf. All this results in Factor 80 LR™ being more effective with a wider range of crop protection products used in the Meherrin marketing area.

OPTIMUM HLB BALANCE
Factor 80 LR™ is formulated based on an optimum hydrophilic/lipophilic balance (HLB) for the crop protection products used in the Meherrin market area. The HLB value is a key indicator of a surfactant’s ability to enhance herbicide performance. HLB values that are too low can antagonize and reduce the performance of water-soluble herbicides like glyphosate. HLB values that are too high result in lower levels of performance with oil-soluble herbicides. Factor 80 LR™’s optimum HLB level ensures it performs with the widest possible range of crop protection products that require the use of a nonionic surfactant.

EXCEPTIONAL SPREADING, WETTING, AND HUMECTANTS
Factor 80 LR™ delivers exceptional spreading and wetting of the spray droplet on the leaf surface. This, combined with the humectants in the formulation, ensures that the spray deposit maximizes contact, coverage, and uptake time for more consistent performance.

GROWER PERFORMANCE EXPECTATIONS
Growers can expect Factor 80 LR™ to improve the performance of a wide range of crop protection products. Factor 80 LR™ has a unique formulation that maximizes contact, coverage, and dwell time of the spray droplets in the most challenging weather conditions, allowing greater uptake and more consistent performance.

When trying to control glyphosate resistant/tolerant weeds like palmer amaranth (pigweed) or marestail, consider upgrading to Quadfire™ or Backdrop™ for superior performance. Another option is to add Factor 80 LR™ in combination with Quadfire or Backdrop. Contact your Meherrin representative for rate recommendations.

RECOMMENDED USE RATES
0.125–0.5% v/v (1–4 pints per 100 gal. of spray solution)

ACHIEVING OPTIMUM PERFORMANCE
Always read and follow label directions. The addition of adjuvants to some pesticides and/or fertilizers and their tank mixes may cause phytotoxicity to the foliage and/or fruit of desirable crops. The applicator or crops advisor must have experience with the pesticide combination, including Factor 80 LR™, or must have conducted a phytotoxicity test prior to use. Do not use this product in a manner inconsistent with labeling. Factor 80 LR™ increases the activity of many pesticides. Therefore, care must be taken when treating sensitive crops during periods of drought stress, high temperatures or high humidity.

PRODUCT PROFILE
Factor 80 LR™ is a low-foaming, nonionic, activator adjuvant designed to improve the effectiveness of pesticides requiring the use of a nonionic surfactant. Factor 80 LR™ enhances pesticide performance by improving spray solution coverage and penetration of target leaf surfaces.

KEY PRODUCT BENEFITS
• Premium quality
• Easy-to-use formulation
• Improves spray coverage and penetration
henbit was dead and the field was brown. It was already wilting. Just three days later the same field was covered with
henbit. The grower sprayed the field in the morning with labeled rates of Touchdown®, 2,4-D Amine and
Faststrike Advanced™ because they see quicker results and less leaf burn. From burndown through
defoliation, many growers have already switched from ordinary crop oils to Faststrike Advanced™ because they see quicker
der results and less leaf burn.

**BURNDOWN PERFORMANCE**

This field (right) was covered with henbit and sprayed with labeled rates of Touchdown®, 2,4-D Amine and
Faststrike Advanced™ at 2 oz. per acre. The grower sprayed the field in the morning and by afternoon the henbit was already wilting. Just three days later the henbit was dead and the field was brown.

**COTTON DEFOLIATION UNDER STRESS**

Hurricane Irene caused a lot of problems for cotton growers in Meherrin’s northern market area in 2011. Rain from the hurricane had high concentrations of salts that burned and damaged cotton leaves making defoliation difficult. With our recommendation of Faststrike Advanced™, we were able to help cotton growers achieve greater coverage and penetration of cotton defoliants in to the stressed plants and experience improved performance in a difficult situation.

**RECOMMENDED USE RATES**

Ground: 0.125% v/v (1 pint per 100 gal. of spray solution) or 2–3 oz. per acre. Aerial: 2–3 oz. per acre or up to 0.75% v/v (3 quarts per 100 gal.) in 1–5 gal. of water per acre.

**ACHIEVING OPTIMUM PERFORMANCE**

Always read and follow label directions. The addition of adjuvants to some pesticides and/or fertilizers and their tank mixes may cause phytotoxicity to the foliage and/or fruit of desirable crops. The applicator or crop advisor must have experience with the pesticide combination, including Faststrike Advanced™, or must have conducted a phytotoxicity test prior to use. Do not use this product in a manner inconsistent with labeling. Faststrike Advanced™ increases the activity of many pesticides. Therefore, care must be taken when treating sensitive crops during periods of drought stress, high temperatures, or high humidity.
MAX FACTOR 90 LR™

PREMIUM NONIONIC SURFACTANT

WHAT MAKES MAX FACTOR 90 LR™ UNIQUE?

Max Factor 90 LR™ is our premium 90-10 nonionic surfactant. Unlike many other surfactants on the market, Max Factor 90 LR meets the ASTM testing standards and definition of a true 90% surfactant. Max Factor 90 LR™ combines higher active ingredient loading with an optimum hydrophilic/lipophilic balance (HLB) level and added humectancy to extend spray droplet performance on the leaf longer. All this results in Max Factor 90 LR™ being more effective with a wider range of crop protection products used in the Meherrin marketing area.

OPTIMUM HLB BALANCE

Max Factor 90 LR™ is formulated based on an optimum hydrophilic/lipophilic balance for the crop protection products used in the Meherrin market area. The HLB value is a key indicator of a surfactant’s ability to enhance herbicide performance. HLB values that are too low can antagonize and reduce the performance of water-soluble herbicides like glyphosate. HLB values that are too high result in lower levels of performance with oil-soluble herbicides. Max Factor 90 LR™’s optimum HLB level ensures it performs with the widest possible range of crop protection products that require the use of a nonionic surfactant.

EXCEPTIONAL SPREAD, WETTING, AND HUMECTANTS

Max Factor 90 LR™ delivers exceptional spreading and wetting of the spray droplet on the leaf surface. This, combined with the humectants in the formulation, ensures that the spray deposit maximizes contact, coverage, and uptake time for more consistent performance.

GROWER PERFORMANCE EXPECTATIONS

Growers can expect Max Factor 90 LR™ to improve the performance of a wide range of crop protection products. Max Factor 90 LR™’s unique formulation maximizes contact, coverage and dwell time of the spray droplets in the most challenging weather conditions, allowing greater uptake and more consistent performance. When trying to control glyphosate resistant/ tolerant weeds like palmer amaranth (pigweed) or marestail, consider upgrading to Quadfire™ or Backdrop™ for superior performance. Another option is to add Max Factor 90 LR™ in combination with Quadfire or Backdrop. Contact your Meherrin representative for rate recommendations.

RECOMMENDED USE RATES

0.125–0.5% v/v (1–4 pints per 100 gal. of spray solution)

ACHIEVING OPTIMUM PERFORMANCE

Always read and follow label directions. The addition of adjuvants to some pesticides and/or fertilizers and their tank mixes may cause phytotoxicity to the foliage and/or fruit of desirable crops. The applicator or crops advisor must have experience with the pesticide combination, including Max Factor 90 LR™, or must have conducted a phytotoxicity test prior to use. Do not use this product in a manner inconsistent with labeling. Max Factor 90 LR™ increases the activity of many pesticides. Therefore, care must be taken when treating sensitive crops during periods of drought stress, high temperatures or high humidity.

PRODUCT PROFILE

Max Factor 90 LR™ is a low-foaming, nonionic activator adjuvant designed to improve the effectiveness of pesticides requiring the use of a nonionic surfactant. Max Factor 90 LR™ enhances pesticide performance by improving spray solution coverage and penetration of target leaf surfaces.

KEY PRODUCT BENEFITS

• Premium quality
• Easy-to-use formulation
• Improves spray coverage and penetration

Max Factor 90 LR™ is a trademark of Meherrin. Quadfire™ and Backdrop™ are trademarks of Meherrin.
MSO XTREME™
PREMIUM METHYLATED SEED OIL

WHAT MAKES MSO XTREME™ UNIQUE?

Ordinary crop oil concentrates or methylated seed oils cannot match performance potential of some of the tank mixes we use to control resistant weeds in the Meherrin marketing area. That is why we introduced MSO Xtreme™, a unique, premium performing methylated seed oil based on canola oil. MSO Xtreme delivers a higher level of weed control and crop safety to many of our preferred tank mix options.

1. The Highest Quality MSO
   Methylated canola oil has the ability to better penetrate weed species with waxy surfaces. Our research trials at universities and with basic crop protection product producers have proven that our canola oil based MSO delivers the highest levels of crop safety and weed control.

2. The Right Surfactant System
   MSO Xtreme™ contains a surfactant system designed to enhance both performance and compatibility. The proprietary surfactant system emulsifies and stabilizes methylated canola oil under a wider range of tank mix partners and water conditions. This contributes to better weed control and fewer incompatibility problems.

GROWER PERFORMANCE EXPECTATIONS
When it comes to fighting glyphosate resistant weeds, some tank mixes need more help penetrating the cuticle of tough to control weeds so they can deliver an extra performance punch. That is where MSO Xtreme™ can help. Whether it’s Sharpen® by itself, a glyphosate and Flexstar® tank mix, or using Valor® as a burndown treatment, MSO Xtreme™ optimizes the performance of your tank mix.

RECOMMENDED USE RATES
Research has proven that oil-based adjuvants should be used on a per acre basis rather than a percent of the spray volume. We recommend 16 – 24 ounces per acre of MSO Xtreme™.

ACHIEVING OPTIMUM PERFORMANCE
Always read and follow label directions. The addition of adjuvants to some pesticides and/or fertilizers and their tank mixes may cause phytotoxicity to the foliage and/or fruit of desirable crops. The applicator or crops advisor must have experience with the pesticide combination, including MSO Xtreme™, or must have conducted a phytotoxicity test prior to use. Do not use this product in a manner inconsistent with labeling. MSO Xtreme™ increases the activity of many pesticides. Therefore, care must be taken when treating sensitive crops during periods of drought stress, high temperatures, or high humidity.

PRODUCT PROFILE
MSO Xtreme™ is a fully formulated methylated canola concentrate that enhances pesticide performance when compared to ordinary methylated seed oils or crop oil concentrates. MSO Xtreme™ combines the cuticle penetration properties of a premium quality methylated seed oil with a proprietary surfactant system to deliver higher levels of biological performance than traditional oil-based adjuvants.

KEY PRODUCT BENEFITS
- Better performance on tougher weeds than ordinary MSOs
- Less crop stress than cheap crop oils and MSOs
- Superior tank mixing compatibility for fewer mixing problems
PROMOTE™
ACTIVATOR ADJUVANT FOR FUNGICIDES

WHAT MAKES PROMOTE™ UNIQUE?

Promote™ has three key components that enable us to achieve the results we have seen in our market area. 

First is a buffering component. This offers several key advantages. We have tested water pH across our market area, and found it has ranged from 4.0 to 8.6. Therefore, we have a wide range of water sources being used for fungicide application. The buffering component will improve solubility of the active fungicide for optimum bio-availability and ensure consistent performance from the varying water sources across our market area. 

Next is the carbohydrate-based surfactant component. This component improves droplet retention and coverage on the leaf surface, retards run-off and wash-off, and exploits hydrophillic channels around cuticle and into intracellular tissue. 

Finally, the amine polymer complex. This component actually modifies the cuticle for more rapid penetration, improves uptake of oil-soluble fungicides, while avoiding cellular damage beneath spray deposits that would reduce translocation. 

In summary, the three key components—the buffering system, the carbohydrate-based surfactant and the amine polymer complex—together make Promote™ a unique adjuvant to enhance the performance of fungicides and their tank mixes. 

GROWER PERFORMANCE EXPECTATIONS

Based on the performance across our marketing area growers can expect to optimize performance of their fungicides and fungicide-insecticide tank mix applications. If an untreated check strip is left, significant performance differences should be identified if disease-insect pressure levels are present. 

RECOMMENDED USE RATES

Ground Application: 0.125% v/v (1 pint per 100 gal. of spray solution). 

Aerial Application: 0.25% v/v (1 quart per 100 gal. of spray solution). 

ACHIEVING OPTIMUM PERFORMANCE

Always read and follow label directions. The addition of adjuvants to some pesticides and/or fertilizers and their tank mixes may cause phytotoxicity to the foliage and/or fruit of desirable crops. The applicator or crops advisor must have experience with the pesticide combination, including Promote™, or must have conducted a phytotoxicity test prior to use. Do not use this product in a manner inconsistent with labelling. Promote™ increases the activity of many pesticides. Therefore, care must be taken when treating sensitive crops during periods of drought stress, high temperatures, or high humidity. 

KEY PRODUCT BENEFITS

- Maximizes fungicide and insecticide performance
- Excellent crop safety
- Superior tank mixing compatibility
- Rainfast in 30 minutes

PRODUCT PROFILE

Promote™ is an activator adjuvant specifically formulated to enhance the performance of a wide range of both systemic and contact fungicides and their tank mixes. Promote™ is designed to achieve three key objectives: First, optimize fungicide and tank mix partner performance in disease control as well as positively impacting yield. Next, achieve excellent crop safety across a wide variety of crops. Finally, achieve a rain fastness that works for our market area. 

Promote™ is a trademark of Meherrin.
QUADFIRE™
ACTIVATOR ADJUVANT FOR GLYPHOSATE TANK MIXES

WHAT MAKES QUADFIRE™ UNIQUE?

In developing Quadfire™, we wanted to achieve two key objectives. First, increase the performance of glyphosate especially on lambsquarter, velvetleaf and other hard-to-control weeds. Second, maximize the performance of the tank mix partners on volunteer glyphosate-resistant corn and other tough grasses.

To increase the glyphosate performance, we added a unique water conditioning component to the formulation that is capable of dropping spray solution pH to near 3. By driving the spray solution pH that low we can improve the speed of loading into the plant, resulting in faster up-take and quicker knockdown of tough weeds.

To energize the performance of the tank mix partner we added two additional components for even greater adjuvancy. This proprietary blend of an oil-based component and unique surfactants ensures improved uptake of the oil-soluble tank mix partner across the plant cuticle. This is something other adjuvants and surfactants are unable to do.

GROWER PERFORMANCE EXPECTATIONS
Across the Meherrin marketing area, growers have reported faster performance with glyphosate and Quadfire™ tank mixes—in most cases, two days quicker burndown. When tank mixing glyphosate with other herbicides, Quadfire™’s unique formulation has been proven to significantly enhance the performance of the tank mix partner(s) as well as the glyphosate.

RECOMMENDED USE RATES
0.25–0.75% v/v (1–3 quarts per 100 gal. of spray solution)

ACHIEVING OPTIMUM PERFORMANCE
Always read and follow label directions. Do not use 2,4-D amine with this product, as incompatibility may occur. To avoid this, use ester formulations whenever possible. Do not mix Gramoxone Inteon® with this product, as incompatibility will occur. The addition of adjuvants to some pesticides and/or fertilizers and their tank mixes may cause phytotoxicity to the foliage and/or fruit of desirable crops. The applicator or crops advisor must have experience with the pesticide combination, including Quadfire™, or must have conducted a phytotoxicity test prior to use. Do not use this product in a manner inconsistent with labeling.

PRODUCT PROFILE
Quadfire™ is a low-use rate, activator adjuvant designed to maximize the performance of glyphosate, and its tank mix partners, on hard-to-control weed species such as susceptible glyphosate tolerant palmer amaranth, lambsquarters, sicklepod, dayflower, morning glory and other weed species. Quadfire™ effectively replaces the need for ammonium sulfate with glyphosate tank mixes by sequestering antagonistic hard water ions, maximizing cuticle penetration of both water-soluble and oil-soluble herbicides, and protonating weak acid herbicides for rapid absorption and transportation through the plant.

KEY PRODUCT BENEFITS
• Protects glyphosate performance potential
• Maximizes tank mix partner performance
• Superior tank mixing compatibility
• Faster results
**SILTRATE ADVANCED™**

**NONIONIC SOLOXANE SURFACTANT**

**WHAT MAKES SILTRATE ADVANCED™ UNIQUE?**

Siltrate Advanced™ has the ability to quickly maximize spray solution coverage across the most difficult-to-wet leaf surfaces. This accelerates spray deposit drydown and rainfastness giving Siltrate Advanced™ a significant performance advantage over ordinary nonionic surfactants.

**PRODUCT PROFILE**

Siltrate Advanced™ is a lowfoaming, low-use rate, nonionic surfactant. Siltrate Advanced™’s super spreader technology causes a “wicking action” to move spray solution up and down the plant surface for superior coverage of targeted surfaces and pests. Siltrate Advanced™ is drift retardant compatible, and should be used with herbicides, insecticides and fungicides that rely on coverage as a primary method of delivering control or protection.

**KEY PRODUCT BENEFITS**

- Maximizes spray coverage for better performance
- Low foaming formulation
- Low use rates for easier handling

Siltrate Advanced™ delivers over 20x better coverage than premium nonionic surfactants.

Siltrate Advanced™ dries droplets down over 7x faster than water alone.
TWISTER HL™
HIGH LOAD ADJUVANT CONCENTRATE

WHAT MAKES TWISTER HL™ UNIQUE?

Twister HL™ is the next generation in crop oil concentrate formulations. Ounce for ounce, Twister HL™ is more active than ordinary crop oil concentrates or other high surfactant oil concentrates. Its unique formulation forms a true micro emulsion in the spray tank, leading to better tank mixing compatibility and fewer incompatibility problems than competitive products.

USE RATE

Twister HL™ is based on a 60-40 blend of paraffinic oil and two unique surfactants. This high surfactant loading allows us to recommend a use rate of 10–12 ounces per acre, or 50% the normal use rate of crop oil concentrates on a per 100 gallons of spray solution basis. When used at 50% the rate of crop oil concentrate, Twister HL™ performs as well as, or better than, traditional crop oil formulations. The concentrated formulation of Twister HL™ provides handling and storage advantages with fewer containers to rinse and dispose of when compared to ordinary crop oils.

FORMS A TRUE MICRO-EMULSION

Twister HL™ forms a true micro-emulsion in a spray solution, making it more stable than ordinary crop oil concentrates. Better stability and improved compatibility results in fewer mixing problems, less oily residue left in the sprayer, and faster sprayer clean-outs.

GROWER PERFORMANCE EXPECTATIONS

Based on performance across the Meherrin marketing area, growers can expect Twister HL™ to perform better than traditional crop oil concentrates. Twister HL™ is the ideal adjuvant selection for enhancing the performance of glyphosate and its tank mix partners when fighting tough-to-control weeds such as Palmer amaranth (pigweed) and marestail.

RECOMMENDED USE RATES

0.375-0.5% v/v (3-4 pints of Twister HL™ per 100 gal. of spray solution) or, 10–12 ounces per acre.

ACHIEVING OPTIMUM PERFORMANCE

Always read and follow label directions. The addition of adjuvants to some pesticides and/or fertilizers and their tank mixes may cause phytotoxicity to the foliage and/or fruit of desirable crops. The applicator or crops advisor must have experience with the pesticide combination, including Twister HL™, or must have conducted a phytotoxicity test prior to use. Do not use this product in a manner inconsistent with labeling. Twister HL™ increases the activity of many pesticides. Therefore, care must be taken when treating sensitive crops during periods of drought stress, high temperatures, or high humidity.

PRODUCT PROFILE

Twister HL™ is a low-use rate crop oil concentrate replacement adjuvant that enhances pesticide performance and crop safety when compared with ordinary crop oil concentrates. This superior formulation combines the properties of a premium quality crop oil concentrate and an advanced nonionic surfactant.

KEY PRODUCT BENEFITS

• Enhanced surfactant system improves performance
• 50% lower use rates than ordinary COC
• Superior tank mixing compatibility

This is a field with a fair amount of morning glories and other weeds in Phytogen® cotton. The grower applied Ignite® and Twister HL™, achieving very good weed control with little burn of the cotton.

Footnotes:

- Twister HL™ is a trademark of Meherrin.
- PhytoGen® is a registered trademark of PhytoGen Seed Company, LLC.
- Ignite® is a registered trademark of Bayer.