



OPTIMIZING CROP
PROTECTION

A GUIDE TO ADJUVANTS AND MICRONUTRIENT SOLUTIONS

2026



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www.winfieldunited.ca or at your local
independent retailer!



@winfieldunitedcanada



WinFieldUnitedCanada



WinFieldUnitedCanada

WINFIELDUNITED.CA

WHO WE ARE

WELCOME TO WINFIELD® UNITED CANADA

WE'RE NOT HERE TO BLEND IN. WE'RE HERE TO BACK YOU UP.

We're not your typical ag company. We don't lead with flash or fluff—we lead with data, grit, and boots-on-the-ground experience. We were built by Independent Ag Retailers who understand that farming isn't just a business—it's a legacy.

We work shoulder-to-shoulder with the people who actually make agriculture happen. Our tools are science-backed. Our network spans this great country. And our mission? Simple: to give Independent Ag Retailers the power to compete and win in a world full of giants – without giving up what makes them independent in the first place. We back the people who live and breathe their communities, know every fence line, and pick up the phone when it rings.

We don't deal in hype. We deal in real-world answers. From seed performance and crop protection to data-backed adjuvant recommendations and spray optimization, everything we offer is tested, proven, and grounded in agronomy that works where you are. We're not here to sell you snake oil or hand you cookie-cutter solutions. We're here to give you the tech, insights, and support to do what you do best—only better. Because when you win, we all do.

With access to a powerful community of Independent Ag Retailers across Western Canada, we help you make sharper decisions, faster. At our core, WinField United is about standing strong in your independence, ensuring you're never standing alone. We're about fighting for the farmer, supporting the retailer, and always putting agronomy before empty promises.

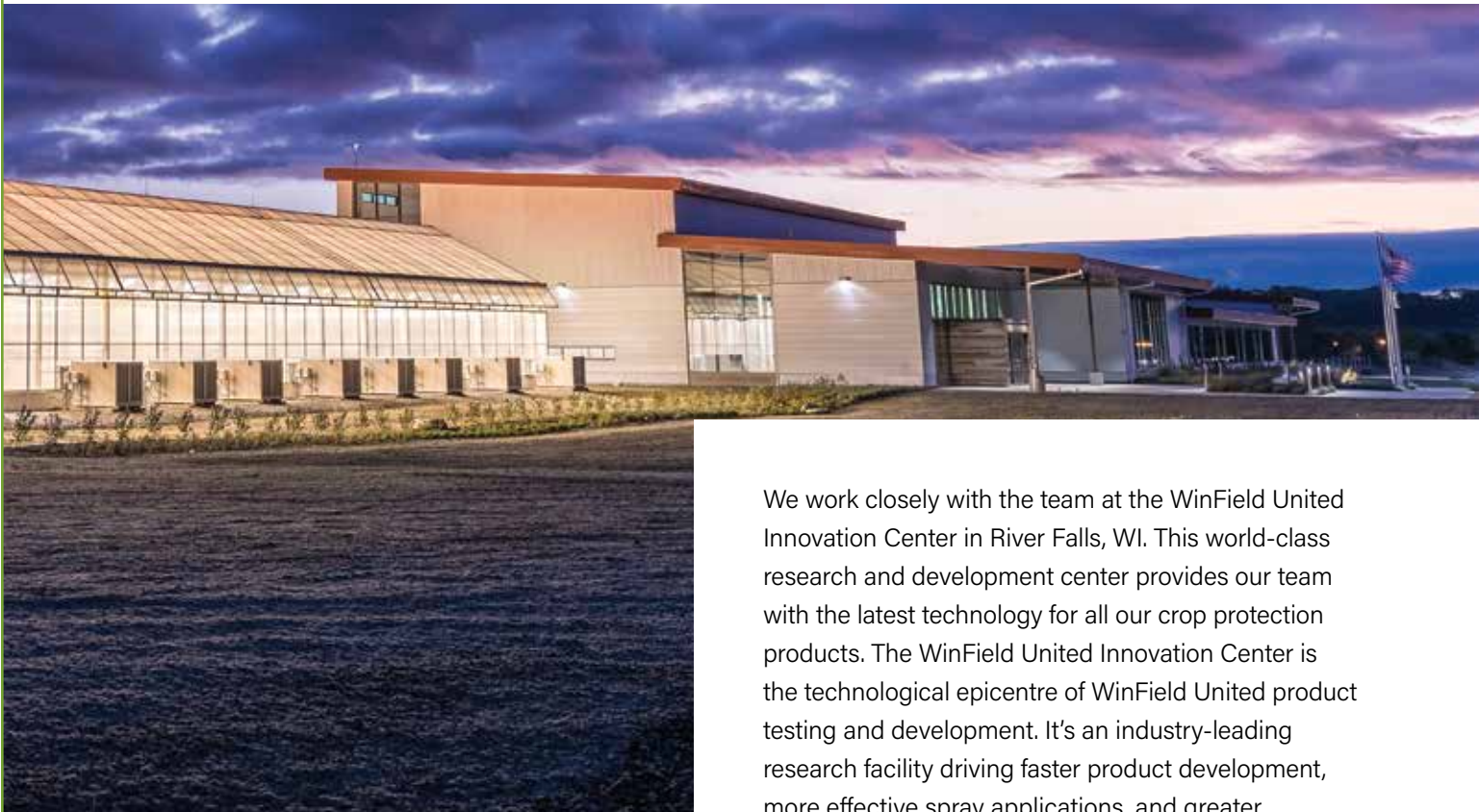
**WELCOME TO WINFIELD UNITED CANADA.
INDEPENDENT. UNAPOLOGETIC. UNITED.**

**WinField United has the technical know-how,
proprietary tools, and research-based solutions
you can trust for success today, tomorrow,
and beyond.**

- Answer Plot® field research delivers insights to help farmers make better decisions each season.
- Testing at the state-of-the-art Innovation Center tackles real problems farmers face in the field and finds solutions to advance spray application technology.
- In-house manufacturing allows for outstanding quality control over ingredients and formulations, providing a consistent product experience for growers and operators.
- Relationships with industry leaders allow our retail network access to the right crop protection products for every acre.



WINFIELD UNITED CANADA AND THE INNOVATION CENTER



We work closely with the team at the WinField United Innovation Center in River Falls, WI. This world-class research and development center provides our team with the latest technology for all our crop protection products. The WinField United Innovation Center is the technological epicentre of WinField United product testing and development. It's an industry-leading research facility driving faster product development, more effective spray applications, and greater profitability potential and efficiency for farmers. The Innovation Center has 30 full time scientists and staff who have conducted and developed:

- **120 active research projects each year**
- **500,000+ tissue samples collected since 2010**
- **100,000+ spray analysis samples tested**
- **100+ active patents globally**

The Innovation Center has six research units that provide WinField United with the latest product information:

- Spray Technology & Wind Tunnels
- Chemistry Lab
- Seed Care and Plant Nutrition & Performance Lab
- Controlled Environment Lab
- Field Research Facility
- Plant Phenotyping Lab



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GIVE YOUR CROPS THE EDGE THEY NEED



Find the perfect mix for your crops and conditions. WinField United not only offers crop protection and nutrient products, but the additives and adjuvants to help you maximize their effectiveness, too.

SPRAY CLINICS

Getting the most out of your crop protection and nutrient investment takes more than the right products. Our Spray Clinics help you gain advanced knowledge of the newest innovations in chemical selection and application with first-hand training and expertise. Learn practical tips, techniques, and insights you can apply right away to improve your spray application. Talk to your WinField United Market Development Manager to book and learn more about our Discover, Expand, and Train-the-Trainer Spray Clinics today!



REQUEST A SPRAY CLINIC

Use smartphone
camera to scan code



WHAT IS LOCKTECH®?

LOCKTECH: REDUCING DRIFT AND IMPROVING CANOPY PENETRATION

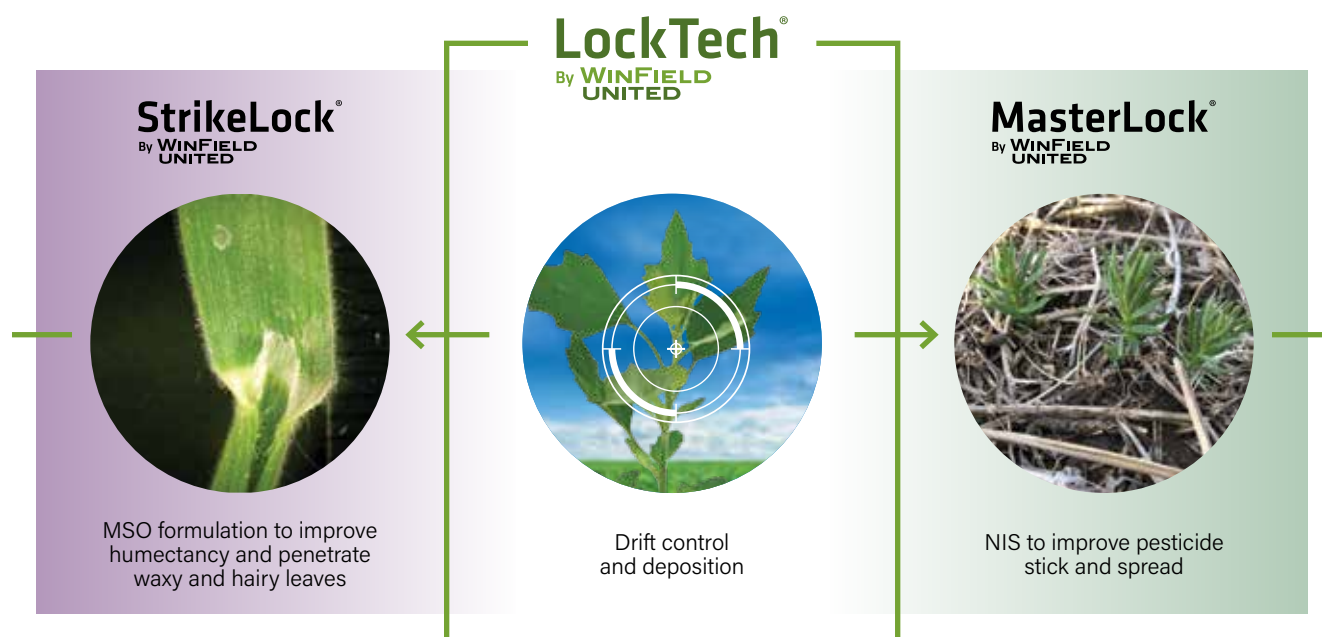
LockTech solves the issue of driftable fines—tiny droplets that can easily drift away and be wasted. With LockTech, those fine droplets are transformed into a usable size that can hit the target for improved pest control. Not only does this mean more pesticide reaches the plant, but it also ensures better penetration into the crop canopy. This is particularly important for fungicide applications because many diseases originate

DID YOU KNOW?

LockTech has been used for more than 20 years, across 13 countries around the world, and on more than 900 million acres globally.

in the lower parts of the plant, where humidity is high and pathogens thrive.

By getting the fungicide deep into the canopy MasterLock® provides better protection. Penetration into the canopy is also crucial for effective diquat applications. MasterLock helps get it where it needs to go for an effective drydown.



TESTIMONIALS

MasterLock is a great option paired with a fungicide as it improves coverage allowing you to **get the most out of your fungicide investment**. Help **enhance your ROI** and fungicide applications by using MasterLock as your NIS of choice!



Matt Thrower
Regional Business Lead |
Eastern Canada



Martin Carr
Agronomy Manager |
Western Canada

What makes LockTech truly stand out is the **deep research** and **development** behind it. We've mastered when, how, and at what rates to use it, giving us the **confidence** that it delivers **reliable results** every time.



Derek Flad
Market Development
Manager | Eastern
Saskatchewan

LockTech doesn't just reduce drift – it enhances pesticide performance in many conditions. LockTech improves the **droplet pattern** of your spray so you not only **hit more targets**, but stick, spread, and penetrate once they hit. We get limited opportunities each year for pesticides and **LockTech makes applications count.**



Amy Katzman
Market Development
Manager | Central and
Northwest Saskatchewan

The technology that LockTech brings to our adjuvants offers a **huge benefit** for our growers. Inputs are a valuable addition to any operation: ensuring the products being sprayed are getting where they need to be is critical both economically and agronomically. LockTech **enhances chemical deposition** throughout the canopy and on the leaf surface, all while **reducing drift.**



Josh Moffatt
Account Manager |
South Central Ontario

In my territory, on any given day you could be spraying beside a carrot field, applying herbicide on corn next to food grade dry beans, or spraying in tight fields where drift is next to inevitable. **LockTech has become a vital component** for most farmers, custom applicators, and retail partners alike in order to **protect their investment** and in general, be a **conscientious neighbour.**



Darren McColm
Technical
Product Manager |
Eastern Canada

I think LockTech is pivotal because it ensures we get the **droplets exactly where they need to be.** For effective coverage and application, especially with fungicides, you need **even distribution throughout the canopy**—LockTech delivers that. To **improve your spray application and boost your ROI**, try LockTech to fine-tune your spray.

LOCKED ON TARGET

Strike weeds and disease with improved accuracy and effectiveness with **LockTech®** adjuvants.



Advanced leaf
penetration



Best-in-class
drift control



Improved adhesion
and coverage

StrikeLock®

By WINFIELD
UNITED

METHYLATED SEED OIL

MasterLock®

By WINFIELD
UNITED

NON-IONIC SURFACTANT

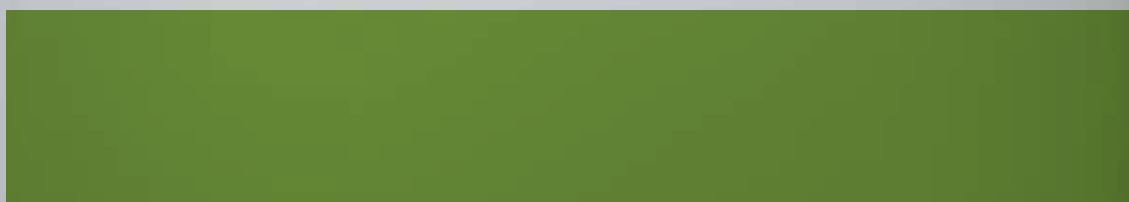
Available exclusively from your local independent retailer

**WINFIELD
UNITED**





ADJUVANTS





WinField United Canada adjuvants are crafted with precision and tested under real-world conditions to give you full command over your spray solutions. Designed to meet the challenges of the toughest environments, they boost performance where it counts—enhancing coverage, improving droplet stick and spread, conditioning hard water, and minimizing drift. Whatever the situation, our adjuvants help you get the most out of every application.

WHAT IS AN ADJUVANT?

An adjuvant is a material added to a tank-mix to aid or modify the action of an agrichemical or the physical characteristics of the mixture. Adjuvants are one of the key contributors to improved efficacy and provide other significant benefits such as reducing drift, conditioning water, modifying the physical properties of the spray solution, and protecting a farmer's crop protection investment.

Most adjuvants are added to the tank with formulated products to improve pesticide performance, or as spray

modifiers or utility modifiers. Some are included with formulated pesticides.

Many registered pesticides have specific adjuvant recommendations. Those recommendations range from general requirements to more specific information that defines active ingredients and rates. If an adjuvant recommendation is on the label, it is because the pesticide will not perform optimally without the inclusion of the adjuvant.

ADJUVANT CATEGORIES

WinField United Canada adjuvants are not your average tank-mix. Our adjuvants are sharp, no-nonsense tools—crafted with purpose and tested in the real world, not just the lab. They cut through chaos: boosting coverage, locking in deposition, taming water, and shutting down drift. Built for those who don't follow the playbook—they write their own.



LOCKTECH

These products combine industry-leading drift control and deposition technology with a surfactant. They work to reduce off-target drift potential and increase canopy penetration by increasing the consistency of droplet sizes. Without thickening the spray solution, droplet modifiers employ systems like oils and surfactants to create more spray droplets in their optimal droplet size, which reduces drift risk and optimizes in-field coverage. See pages 26 to 28 for more information on the WinField United LockTech offerings, MasterLock and StrikeLock®.



WATER CONDITIONERS

Many water sources naturally contain cations like calcium, iron, and magnesium. Because of their positive charge, these cations can bind to many commonly used negatively charged herbicides, hindering their performance and reducing weed control. Water conditioning agents prevent this herbicide tie-up from occurring, leaving herbicide molecules available to attack weeds. There are multiple classes of water conditioners, each with its own set of strengths. Commonly used classes of water conditioners include ammonium sulfate (AMS), acidifying agents, and chelating agents. See page 29 for more information on the WinField United water conditioning agent, Crimson® NG.



OILS

Oils improve uptake into the leaf by cutting through the weed's waxy leaf cuticle. The cuticle width can change based on weather conditions, increasing in thickness during hot, dry, stressful conditions. There are two main categories of oils: crop oil concentrates (COC) and methylated seed oils (MSO). Certain herbicides and/or weather conditions dictate the use of surfactants and oils, and can greatly impact herbicide performance and weed control. See pages 30 and 32 for more information on the WinField United MSOs Destination® MSO and Journey® HSOC, or pages 33 and 34 for more information on the WinField United COCs Superb™ HSOC and Voyage™ COC.



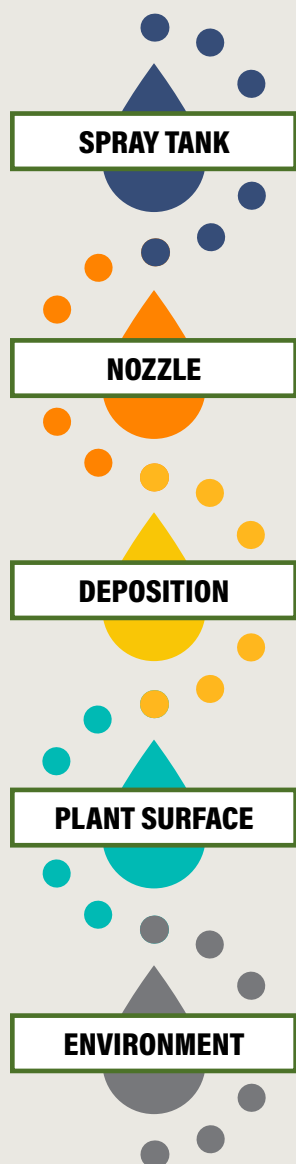
SURFACTANTS

Surfactants improve coverage and uptake of spray droplets by reducing droplet surface tension and bounce, leading to droplets sticking and spreading across the leaf surface. The most commonly used class of surfactants are non-ionic surfactants (NIS). See page 31 for more information on the WinField United NIS, HiActivate®.

THE ROLE OF ADJUVANTS

It's not just about what you put in the spray tank. It's what gets delivered to the site of action that matters.

Crop protection products face many factors that can reduce their performance, starting from the moment they enter the tank. Including a premium adjuvant system can help mitigate the impacts of these threats and help more active ingredient get to the target for improved weed and pest control.



Crimson NG

Threat: Antagonism from hard water cations and other elements in the tank.

Solution: Water Conditioner

LockTech

Threat: Depending on nozzle size, orifice size, and pressure, there is typically a percentage of fine, driftable spray droplets created.

Solution: Drift and Deposition Aid

LockTech

Threat: From the time a droplet leaves the nozzle to when it enters the plant, it could evaporate, drift, bounce, runoff, or simply miss the target.

Solution: Drift and Deposition Aid

MasterLock | StrikeLock Journey HSOC | Superb HSOC

Threat: Some weed species like kochia have small hairs on their leaves that keep droplets suspended above the leaf surface.

Solution: Non-Ionic Surfactant, Crop Oil Concentrate, or Methylated Seed Oil

StrikeLock | Journey HSOC Destination MSO

Threat: Dry conditions can cause soil particles to adhere to the leaf surface and can trigger the plant to build up a waxy cuticle on the leaf surface, making it harder for herbicide to enter.

Solution: Methylated Seed Oil

*These are illustrative examples only.

WHAT AFFECTS ADJUVANT AND PESTICIDE PERFORMANCE?

While many factors affect the efficacy and performance of foliar pesticides, the primary components that interact are the adjuvant, environment, equipment, plant, and pesticide.

The general process for most pesticides to work includes:

- Contact with the pest
- Uptake (absorption)
- Translocation (move to site of action)
- Toxic accumulation

For weed control, that means the herbicide must contact and be retained by target weeds, penetrate the cuticle (uptake), and translocate to the site of action. In addition, the active form of the herbicide must accumulate in sufficient quantities to provide effective control (toxic accumulation).

There are three ways that adjuvants exist — in the formulated product, as a co-pack, or sold separately. Within the formulated product, the physical and chemical characteristics of the pesticide (systemic or contact activity, mode of action, formulation, built-in adjuvants, etc.) influence which adjuvant to use and

the efficacy. Contact herbicides, insecticides, and fungicides require more thorough coverage. Therefore, an adjuvant that improves spreading, sticking, or canopy penetration is required.

Other factors influencing pesticide efficacy include the environment and equipment. See Table 1 and Figure 2 for where these influences occur.

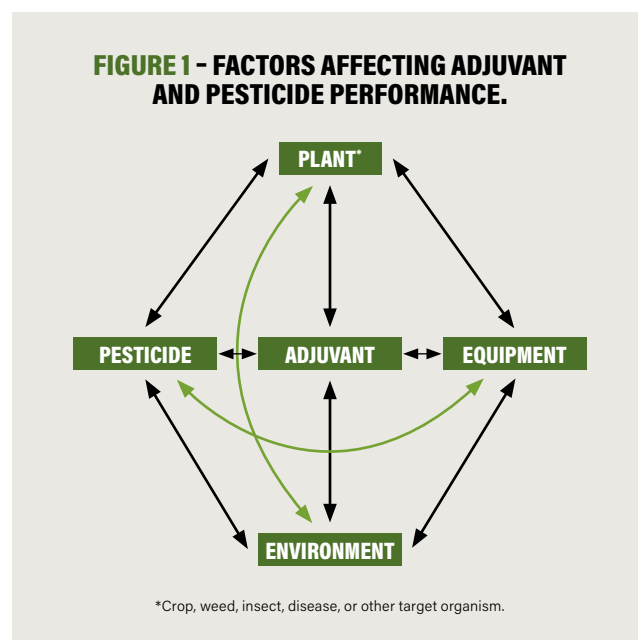


TABLE 1 - WHERE ADJUVANTS INFLUENCE HERBICIDE PERFORMANCE.

PRODUCT	COMMON SPECIFIC CLASS(ES)	1. SPRAY TANK	2. NOZZLE	3. DEPOSITION	4. PLANT SURFACE	5. UPTAKE AND LEAF PENETRATION
MasterLock	NIS + LockTech		✓	✓	✓	
HiActivate	NIS				✓	
StrikeLock	MSO + LockTech		✓	✓	✓	✓
Journey HSOC	MSO + HSOC				✓	✓
Destination MSO	MSO				✓	✓
Superb HSOC	COC + HSOC				✓	✓
Voyage COC	COC				✓	✓
Crimson NG	WCA + AMS + AF ¹	✓				

* AF = antifoam agent, COC = crop oil concentrate, HSOC = high surfactant oil concentrate, MSO = methylated seed oil, AMS = ammonium sulphate, NIS = non-ionic surfactant, WCA = water conditioning agent/AMS replacement.

¹ Antifoam included in the formulated product; this does not always substitute for other antifoams in high-foaming tank-mixes.

WHERE DO ADJUVANTS AFFECT PESTICIDE PERFORMANCE?

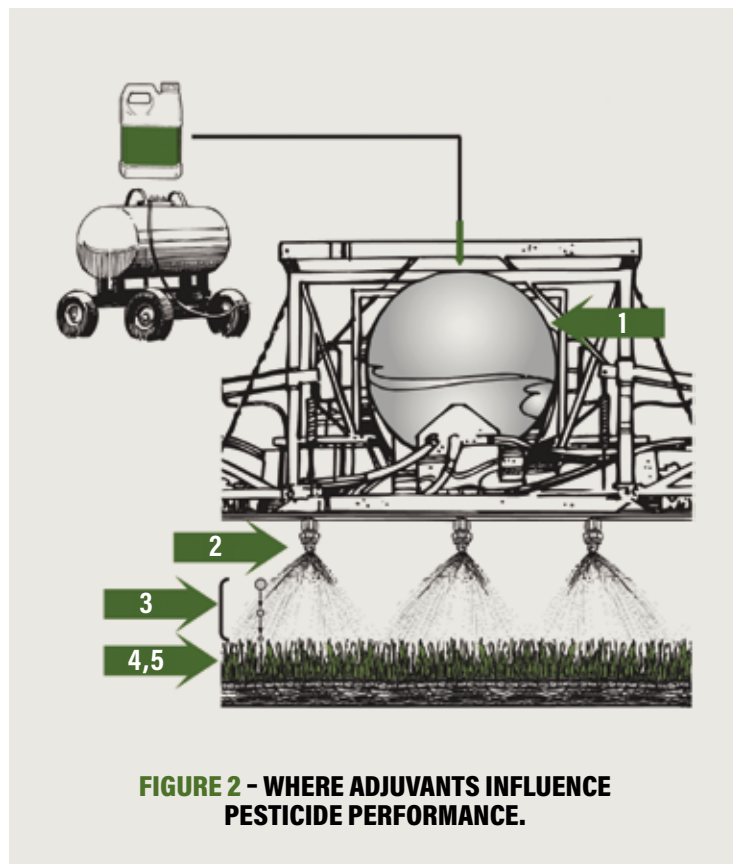
Adjuvants can influence herbicide or pesticide performance at a number of places, from the container to the weed or pest, including:

1) Spray tank – Many of the adjuvant classes influence pesticide performance either by altering the characteristics of the spray solution or by providing a utility function.

2) Nozzle – Many adjuvants and pesticides interact with the nozzle to influence droplet size and distribution. Adding any product to the spray water may change the physical characteristics of the water (such as weight/litre or viscosity), the spray distribution, and droplet size and spectrum, which can dramatically affect pesticide performance.

3) Deposition – This is the process of the spray leaving the nozzle and landing on the plant or pest. Potential spray losses during this transfer include evaporation, drift, bounce, run off, or simply missing the target. Adjuvants can have a significant influence on these processes.

4) Plant surface – Many adjuvants interact with the plant surface to enhance pesticide performance by increasing adhesion or retention, improving distribution or droplet formation (decreased contact angle, enhanced spreading on the leaf, prevent crystallization), and slowing evaporation and ultraviolet (UV) degradation.



5) Uptake and leaf penetration – The first and biggest barrier in leaves is the cuticle, which is composed of water-repelling waxes, cutin, and pectin. Adjuvants influence uptake and leaf penetration by altering or solubilizing cuticle permeability or affecting the active or passive uptake.

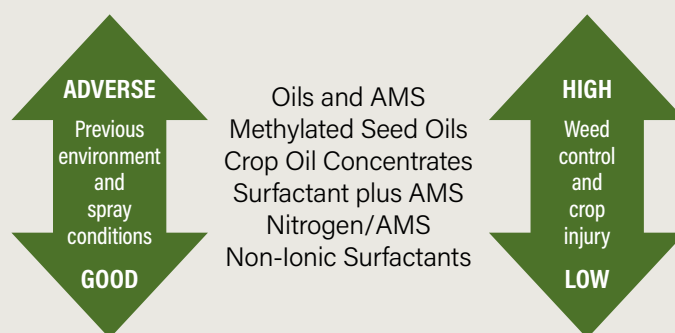
HOW DO I SELECT THE RIGHT ADJUVANT?

When choosing an adjuvant, start by reading the pesticide label to determine product requirements, and then talk to your local agronomist to fine-tune recommendations.

Some of the factors to be considered include:

- **Pesticide type.** Herbicide, insecticide, fungicide, other; systemic or contact activity; formulation (water, oil-based, or dry); label requirements; potential for improved performance.
- **Environmental conditions.** Temperature, wind, humidity, drought or moisture stress, potential for rain.
- **Weeds and crop.** Weed spectrum, growth stages, signs of stress, crop safety, application timing.
- **Adjuvant criteria.** Agricultural use, percent active ingredient, technical facts, formulation, handling, use rate, convenience, performance, intended use, availability, package size.
- **Other factors.** Economic considerations, opportunities to minimize potential failures, and provide consistent performance.

FIGURE 3 - RELATIVE COMPARISON OF ADJUVANTS FOR PERFORMANCE, WEED CONTROL, AND CROP INJURY.



WATER CONDITIONING AGENT/AMS REPLACEMENT

Many spray waters contain calcium, iron, potassium, sodium, and magnesium ions, which tie up (antagonize) herbicide active ingredients. Micronutrients also can antagonize glyphosate. AMS conditions the water to prevent hard-water and micronutrient antagonism.

Water conditioning agents or AMS replacement adjuvants are often used with glyphosate and glufosinate, although other herbicide Groups,

such as many Group 1 and some Group 27 products, can also be affected by hard water. Always read and follow label directions.

Before selecting an AMS source to condition water, is it important to know the amount of AMS per unit in the adjuvant and the other benefits of premixed products.

WinField United water conditioning agent/AMS replacement agent: Crimson NG

DRIFT AND DEPOSITION TECHNOLOGY

Deposition aids improve canopy penetration and deposition of crop protection products. Drift agents affect the characteristics of the spray droplets or spectrum to reduce or minimize drift. These are generally divided into three groups: new technology products, viscosity agents (spray thickeners), and oil-based or invert oil emulsions.

Deposition and drift agents such as LockTech do not encapsulate or thicken, but they do influence spray droplet size, spectrum, volume mean diameter (VMD), coverage, canopy penetration, and spray pattern. LockTech reduces the amount of fine droplets in the spray solution (Figure 4), reduces drift (Figure 5), and improves deposition into the crop canopy (Figure 6).

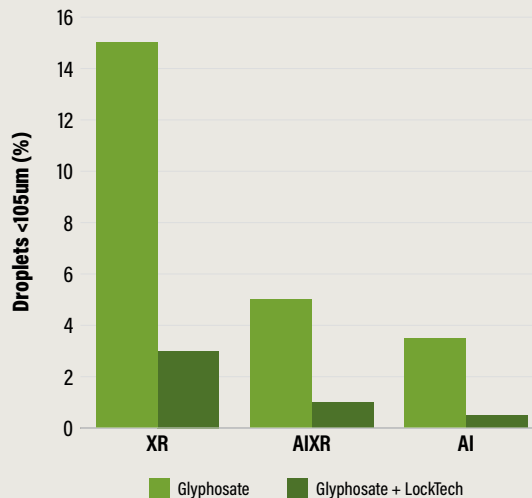
WinField United deposition & drift agents:
LockTech products like StrikeLock and MasterLock

Viscosity agents or spray thickeners work by increasing viscosity and surface tension, which, in turn, increases droplet size and reduces the amount of small droplets susceptible to drift. A disadvantage is that too much product can cause pattern collapse or streaking and some products may not work well with “low-drift” nozzles. Viscosity agents or spray thickeners include polymers, polyethylene oxides, polyacrylamides, and polysaccharides (guar).

Oil-based or invert oil emulsions (encapsulators) have an oil film that encapsulates the herbicide and does not change or modify the spray water. As a result, the herbicide is not found in fine droplets.

To reduce drift, select nozzles that increase droplet size for products that are systemic, or whenever possible, use drift reduction nozzles, increase GPA, reduce PSI, lower the spray boom, avoid adverse weather (monitor wind speed, direction, and inversions), use buffer zones, use other drift-reduction technologies (shields, electrostatics, air-assist and pulse), use drift reduction adjuvants, evaluate field conditions, and choose products less subject to drift.

FIGURE 4 - EFFECT OF LOCKTECH ON FINE DROPLETS WITH DIFFERENT NOZZLES. LOCKTECH REDUCES FINE DROPLETS WITH ALL THREE NOZZLES.

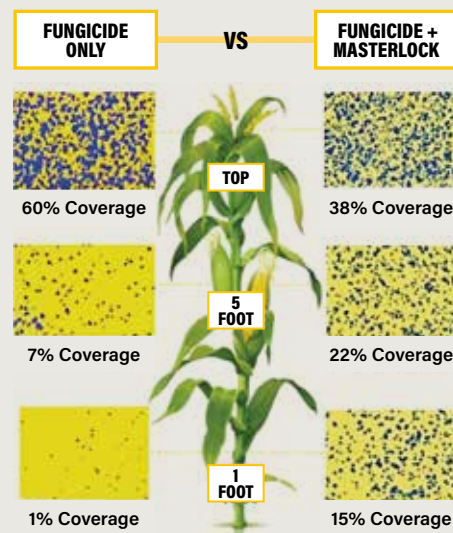


Nozzles: XR11004 @ 40 psi, AIXR11004 @ 45 psi, AI1104 @ 45 psi, 10 gpa. Glyphosate: Roundup Transorb® HC 0.67 L/ac. LockTech® 120 mL/ac. Analyzed by Klein and Golus, UN © 2013 WinField Solutions, LLC

FIGURE 5 - EFFECT OF LOCKTECH ON DROPLETS. INCREASED “FOG” INDICATES MORE FINE DROPLETS. LOCKTECH TREATMENT SHOWS FEWER FINE DROPLETS.



FIGURE 6 - DROPLET DISTRIBUTION WITHIN A CORN CANOPY, LOCKTECH PLUS NIS ADJUVANTS IMPROVE SPRAY COVERAGE AND DEPTH OF SPRAY DROPLET PENETRATION IN THE CANOPY.



SELECTING THE RIGHT ADJUVANT (CONTINUED)

NON-IONIC SURFACTANT (NIS)

A surfactant's primary role is to reduce surface tension or improve the wetting, spreading, and dispersing characteristics of the spray solution. A reduction in droplet surface tension allows it to "collapse" the contact angle and spread out to increase the coverage of the leaf, which increases pesticide absorption and efficacy (Figure 7).

WinField United NIS: MasterLock or HiActivate

METHYLATED OR ETHYLATED VEGETABLE SEED OIL (MSO OR ESO)

While vegetable oil concentrates such as MSOs or ESOs provide benefits similar to crop oil concentrates, they are derived from the vegetable-based oils of sunflowers, soybeans, cotton, canola, linseed, or other crops. Some MSOs may also fit the HSOC classification. MSOs are considered the most active adjuvants relative to COCs or NISs. They often are the preferred adjuvants in hot, dry, droughty conditions.

WinField United MSO: StrikeLock, Journey HSOC, or Destination MSO

HIGH SURFACTANT OIL CONCENTRATE (HSOC)

HSOCs are an evolution of crop oils. They are an emulsifiable oil-based adjuvant with 25 to 50 percent surfactant and a minimum of 50 percent paraffin/mineral oil by weight. Use rates are generally half that of standard COCs or MSOs.

WinField United HSOC: StrikeLock, Superb HSOC, or Journey HSOC

CROP OIL CONCENTRATE (COC)

COCs are added to the spray solution to improve adhesion and coverage of plant surfaces and to keep the leaf surface moist (humectant) longer than water alone. This allows more time for the herbicide to penetrate the waxy leaf cuticle and results in increased amounts of herbicide entering the plant. Crop oil concentrates are more effective with herbicides than NISs during low humidity and drought-stress conditions or when larger weeds are present. Some COCs also fit into the HSOC classification.

WinField United COC: Superb HSOC or Voyage COC

FIGURE 7 - DROPLET SPREAD OF WATER COMPARED TO SURFACTANT.

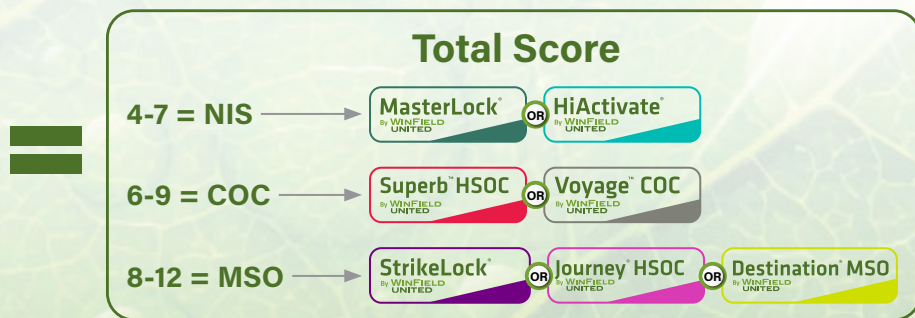
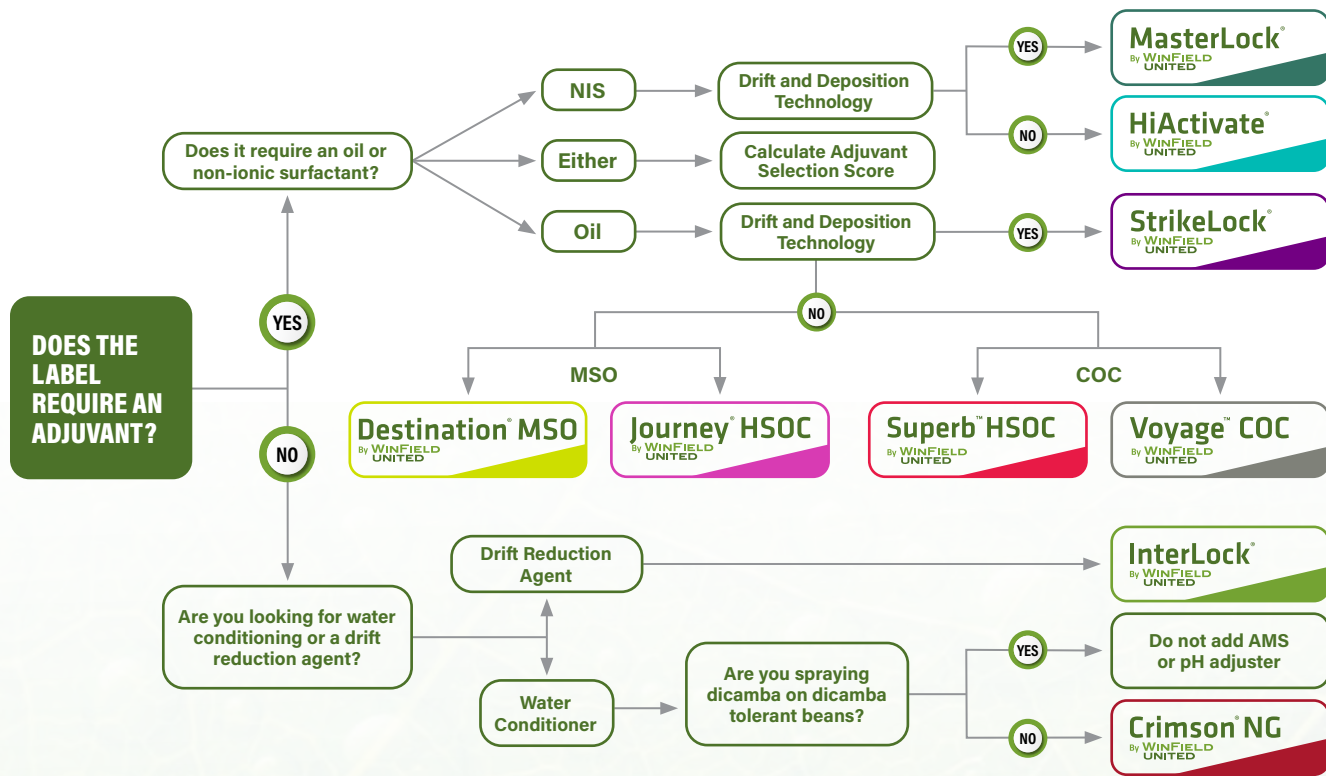


HIGH SURFACE TENSION OF DROPLET MAINTAINS THE SHAPE OF THE DROPLET



NIS REDUCES SURFACE TENSION ALLOWING THE DROPLET TO SPREAD = MORE SURFACE COVERED

ADJUVANT SELECTION 101



This is a general guide to adjuvant selection. Adjuvant recommendations may vary depending on environment, pesticide, label requirements, and tank-mix partners. Always read and follow label directions.

Crimson NG = Water conditioning agent
 Destination MSO = Methylated seed oil
 HiActivate = Non-ionic surfactant
 InterLock = Drift reducing agent
 Journey[®] HSOC = High surfactant methylated seed oil

MasterLock = LockTech drift control and deposition agent combined with a non-ionic surfactant
 StrikeLock = LockTech drift control and deposition agent combined with a high surfactant MSO
 Superb[™] HSOC = High surfactant crop oil concentrate
 Voyage COC = Crop oil concentrate
 *Includes proprietary MAX-IN Technology

Pro Tips

- For more consistent weed control add 2 points to your total score.
- Choose MasterLock over HiActivate for added drift reduction and deposition benefits.
- Choose StrikeLock over Journey HSOC for added drift reduction and deposition benefits.
- Choose Journey over Destination, and Superb over Voyage, for the added benefits of MAX-IN[®] Technology.
- Use the lower labeled rate range of fertilizer with an MSO and the higher rate with an NIS.
- If the label recommends the use of a surfactant and you are tank-mixing with a herbicide with a high potential of crop injury when used with oils, select a NIS.

ADJUVANT CHEAT SHEET

ADJUVANT
CHEAT SHEET

		RECOMMENDED ADJUVANT OPTIONS (V/V %)							
		Non-Ionic Surfactant		Methylated Seed Oil			Crop Oil Concentrate		
		MasterLock WINFIELD UNITED NIS	HiActivate WINFIELD UNITED NIS	StrikeLock WINFIELD UNITED NIS	Journey HSOC WINFIELD UNITED NIS	Destination MSO WINFIELD UNITED NIS	Superb HSOC WINFIELD UNITED NIS	Voyage LOC WINFIELD UNITED NIS	
BRAND NAME	ACTIVE INGREDIENT								NOTES
ACCENT™	Nicosulfuron	0.5	0.2						UAN may be added in some situations.
AIM® EC	Carfentrazone	0.5	0.25	0.5	0.5	1	0.5		Requires a surfactant when used without glyphosate.
ALLY® TOSS-N-GO®	Metsulfuron								WinField United NIS not yet registered. Use Agral® 90 at 0.2% v/v. Requires a surfactant when used without glyphosate.
AMITY™ WDG	Imazamox								WinField United MSO not yet registered. Use SurJet™ at 0.5% v/v.
ANTLER®	Clethodim	0.5		0.5	0.5				This product has a co-packed adjuvant. These are registered replacements, or for use when additional adjuvant is required.
ANTLER® 360 UNPACKED	Clethodim			0.5	0.5				
ARES™ SN	Imazamox Imazapyr								WinField United MSO not yet registered. Use SurJet at 0.5% v/v.
ARMEZON®	Topramezone			1	0.5				
ARMORY® 240	Diquat	0.3	0.1						
ARROW® 240 EC	Clethodim	0.5		0.5	0.5				This product has a co-packed adjuvant. These are registered replacements, or for use when additional adjuvant is required.
ARROW ALL IN®	Clethodim	0.5		0.5	0.5	0.5			Additional adjuvant advised when used alone, under challenging environmental conditions, or extreme weed pressure.
ASSURE® II	Quizalofop	0.5	0.25	0.5	0.5	1	0.5		This product has a co-packed adjuvant. These are registered replacements, or for use when additional adjuvant is required.
AUDIBLE®	Thifensulfuron Tribenuron Fluroxypyr		0.2						
AUTHORITY STRIKE™	Carfentrazone Sulfentrazone	0.5	0.25						Requires a surfactant when used without glyphosate.
BARRICADE® II	Thifensulfuron Tribenuron Fluroxypyr		0.2						Use at 0.25% v/v when tank-mixing with Simplicity™.
BATALIUM®	Flucarbazone Fluroxypyr MCPA Bromoxynil	0.5	0.25						
BERSERK™	Bentazon							1	When using in dry beans, an AMS product such as Crimson® NG at 1.5% v/v, will result in more consistent weed control.
BIFECTA® EZ	Metribuzin Flumioxazin	0.5	0.25					0.5-1 L/ac	All tank-mixes with Bifecta® EZ applied to assist in the control of emerged weeds require use of a surfactant.
BISON® UNPACKED	Tralkoxydim					0.5			Add AMS, such as Crimson NG, in hard water.
BISON® 400 L	Tralkoxydim					0.5			Add AMS, such as Crimson NG, in hard water. This product has a co-packed adjuvant. These are registered replacements, or for use when additional adjuvant is required.
BOOST®	Thifensulfuron Tribenuron								WinField United NIS not yet registered. Use with Agral 90 or Ag-Surf® at 0.2% v/v.
BOOST® M	Thifensulfuron Tribenuron MCPA								WinField United NIS not yet registered. Use with Agral 90 or Ag-Surf at 0.2% v/v.
BOUNDARY®	S-Metolachlor Metribuzin	0.3	0.1				1	1	For pre-plant and pre-emergent applications only.
BROADLOOM®	Bentazon							1	

OUR ADJUVANT LINEUP

Use smartphone camera to scan code



RECOMMENDED ADJUVANT OPTIONS (v/v %)

Non-Ionic Surfactant

Methylated Seed Oil

Crop Oil Concentrate

MasterLock[®]
WinField UnitedHiActivate[®]
WinField UnitedStrikeLock[®]
WinField UnitedJourney H50C[®]
WinField UnitedDestination M50[®]
WinField UnitedSuperb H50C[®]
WinField UnitedVoyage C0C[®]
WinField United

BRAND NAME	ACTIVE INGREDIENT	MasterLock [®] WinField United	HiActivate [®] WinField United	StrikeLock [®] WinField United	Journey H50C [®] WinField United	Destination M50 [®] WinField United	Superb H50C [®] WinField United	Voyage C0C [®] WinField United	NOTES
CADILLAC™ ONE	Clodinafop			0.5	0.5				This product contains adjuvant. Should additional adjuvant be required, these are registered WinField United options.
CADILLAC™ UNPACKED	Clodinafop	0.5		0.5	0.5		0.5	1	
CALLISTO®	Mesotrione	0.4	0.2						
CANOPY™ PRO	Chlorimuron Metribuzin	0.5	0.2						Surfactant use depends on application timing and tank-mix partner. See label for details.
CANVISTA®	Imazamox	0.5	0.25	0.5	0.5	0.5			
CAZADO™	Pinoxaden Thiencarbazone	0.5	0.25	0.5	0.5	0.5	0.5		Add AMS if faced with hard water. Under heavy weed pressure or stressed conditions, add an adjuvant at rates listed.
CENTURION®	Clethodim				0.5				This product has a co-packed adjuvant. This is a registered replacement, or for use when additional adjuvant is required.
CHAPERONE®	Chlorimuron	0.5	0.2						
CIRPREME™ XC	Florasulam Clopyralid Haloxifen	0.5	0.25						Not required if adding phenoxy.
CLASSIC®	Chlorimuron	0.5	0.2						
CLEARVIEW™	Metsulfuron Aminopyralid	0.5	0.25						NIS is required with certain tank-mixes. See label for details.
CLEAT™	Tribenuron	0.5	0.2						Use an adjuvant when applied alone.
CLETHODIM 240	Clethodim	0.5		0.5	0.5	0.5			This product has a co-packed adjuvant. These are registered replacements, or for use when additional adjuvant is required.
CLORVANTE™ 50 G/L OR 25 WDG	Florasulam								WinField United NIS not yet registered. When used on its own, add Agral 90 at 0.2% v/v.
COMMAND® CHARGE	Clomazone Carfentrazone	0.5	0.25						Requires a surfactant when used without glyphosate.
COMMENZA™	Flumetsulam Metribuzin Metolachlor		0.1						Do not use NIS for post-emergent applications. NIS is optional for pre-burn.
CORAGEN®	Chlorantraniliprole				0.5	0.25			
COYOTE® 1	Mesotrione								Post-emergent applications require the use of an NIS at 0.2% v/v. WinField United NIS not yet registered, use Agral 90.
DAKOTA®	Imazamox								WinField United MSO not yet registered. Use Merge® at 0.5% v/v.
DAVAI® 80 SL	Imazamox	0.5	0.25	0.5	0.5	0.5			
DAVAI® A PLUS	Clethodim Imazamox	0.5	0.25	0.5	0.5	0.5			
DAVAI® Q PLUS	Quizalofop Imazamox	0.5	0.25	0.5	0.5	1			
DELARO®	Prothioconazole Trifloxystrobin	0.3	0.125						Use of NIS is optional, do not use an NIS in corn.
DELARO® COMPLETE	Prothioconazole Fluopyram Trifloxystrobin	0.3	0.125						Use of NIS is optional, do not use in corn prior to tassle emergence.
DESICA®	Diquat	0.3	0.1						
DESTRA™ IS	Rimsulfuron Mesotrione								WinField United NIS not yet registered. Use Agral 90 at 0.2% v/v. Not required when tank-mixed with glyphosate.
DRAFT®	Thifensulfuron Tribenuron		0.2						

		RECOMMENDED ADJUVANT OPTIONS (V/V %)							
		Non-Ionic Surfactant			Methylated Seed Oil			Crop Oil Concentrate	
		MasterLock [®] WinField United NIS	HiActivate [®] WinField United NIS	StrikeLock [®] WinField United NIS	Journey HSOC [®] WinField United NIS	Destination MSO [®] WinField United NIS	Superb HSOC [®] WinField United NIS	Voyage COC [®] WinField United NIS	
BRAND NAME	ACTIVE INGREDIENT								NOTES
DRIFAST™	Diquat	0.3	0.1						
ELEVORE™	Halauxifen			0.5	0.5	1	0.5	1	
EMPHASIS®	Carfentrazone								WinField United NIS not yet registered. Use Agral 90 at 0.25% v/v.
ENGARDE™	Rimsulfuron Mesotrione	0.5	0.2						
EPIC® II	Pinoxaden	0.5			0.5				
EVEREST® 3.0	Flucarbazone	0.5	0.25						
EXHILARATE™	Florasulam Halauxifen	0.5	0.25						NIS only if Exhilarate is applied on its own, otherwise depends on tank-mix partner.
EXPRESS® SG	Tribenuron	0.5	0.2						Requires an adjuvant when applied alone in ExpressSun® sunflowers.
EXTINGUISH™ XL	Florasulam 2,4-D Halauxifen	0.5	0.25						Add an NIS for control of weed under stress, advanced growth stages, or heavy infestations.
FIRSTRATE™	Cloransulam	0.5	0.25						For post emergent applications when applied alone add NIS, and liquid fertilizer (28-0-0 or 32-0-0) at 2.5% v/v. If using with glyphosate, decrease NIS to 0.125% v/v.
FLEXSTAR™ GT	Glyphosate Fomesafen					0.25	0.5	0.5	Under stressful conditions, or for larger weeds, add an adjuvant. Do not add AMS.
FOCUS®	Carfentrazone Pyroxasulfone	0.5	0.25						Requires a surfactant when used without glyphosate.
FOREMOST®	Carfentrazone	0.5	0.25	0.5	0.5	1			Requires a surfactant when used without glyphosate.
FREESTYLE™	Chlorimuron Imazethapyr	0.5	0.25						
GARLON™ XRT	Triclopyr	0.5	0.32						WinField United COC not yet registered. When used alone, use Gateway™ at 0.375% v/v. NIS only required when tank-mixed with Clearview™.
GRAZON™ XC	2,4-D Picloram	0.5	0.25						Use of NIS only required for faster burndown of coniferous species, and for control of leafy spurge or toad flax under less than optimum growing conditions.
HALEX® GT	Mesotrione S-Metolachlor Glyphosate	0.4	0.2						
HEAT® LQ	Saflufenacil			0.2 L/ac	0.2 L/ac	0.4 L/ac			This product has a co-packed adjuvant. These are registered replacements, or for use when additional adjuvant is required.
HINGE™	Rimsulfuron								WinField United NIS not yet registered. Use Agral 90 or Ag-Surf at 0.2% v/v.
HORNET™	Tebuconazole	0.3	0.125						
HURRICANE™	Bentazon Acifluorfen								Additive recommendations vary by crop type and tank-mix. See label for full details.
IDOL™	Quizalofop	0.5			0.5				
IMPACT®	Topramezone				0.5	0.25			
INFERNO® TRIO	Florasulam Flucarbazone Carfentrazone	0.5	0.25						Adjuvant not required when tank-mixed with glyphosate.
INFINITY®	Bromoxynil Pyrasulfatole								For control of certain weeds the addition of an AMS product, such as Crimson NG, is required. See label for details.
INFINITY® FX	Fluroxypyr Bromoxynil Pyrasulfatole								For control of certain weeds the addition of an AMS product, such as Crimson NG, is required. See label for details.
INSIGHT®	Tiafenacil			1		1			

		RECOMMENDED ADJUVANT OPTIONS (V/V %)							
		Non-Ionic Surfactant			Methylated Seed Oil		Crop Oil Concentrate		
		MasterLock [®] WinField UNPCKD	HiActivate [®] WinField UNPCKD	StrileLock [®] WinField UNPCKD	Journey [®] H50C WinField UNPCKD	Destination M50 WinField UNPCKD	Superb [®] H50C WinField UNPCKD	Voyage COC WinField UNPCKD	
BRAND NAME	ACTIVE INGREDIENT								NOTES
INSTEP™	Carfentrazone								WinField United adjuvants not yet registered. Use Agral 90 or Ag-Surf at 0.25% v/v, or Merge at 1% v/v.
INVOLVE® 50 WDG	Tribenuron								Requires an adjuvant if used alone. WinField United NIS not yet registered. Use Agral 90 at 0.25% v/v.
JOUST®	Prothioconazole								WinField United NIS not yet registered. Use with Agral 90 or Ag-Surf at 0.125% v/v. Do not use an adjuvant in corn prior to tassle emergence.
KOMODO®	S-Metolachlor	0.3	0.1						Many pre-emergent application tank-mixes require the use of an NIS, recommendations vary by crop type and tank-mix. See label for full details. Do not use adjuvant in post-emergent applications.
LADDER® 240 EC	Clodinafop	0.5			0.5		0.8	1	This product has a co-packed adjuvant. These are registered replacements, or for use when additional adjuvant is required.
LAUDIS®	Tembotrione			0.5	0.5	1	0.5	1	
LEOPARD®	Quizalofop	0.5	0.25	0.5	0.5	1	0.5		
LIQUID ACHIEVE™ SC	Tralkoxydim					0.5			
MARSHALL® UNPACKED	Quizalofop	0.5	0.25	0.5	0.5	1	0.5	1	
MILESTONE™	Aminopyralid	0.5	0.25						NIS only required for certain tank-mixes. See label for details.
MILESTONE™ NXT	Aminopyralid Florpyrauxafin	0.5	0.25	0.5	0.5	1			
MIRAVIS® ACE	Pydiflumetofen Propiconazole	0.325	0.125						
MIRAVIS® BOLD	Pydiflumetofen	0.325	0.125						
MIRAVIS® ERA	Pydiflumetofen Propiconazole	0.325	0.125						
MIRAVIS® STAR	Pydiflumetofen Fludioxonil	0.325	0.125						
NELATIC®	Imazamox Bentazon								Add Crimson NG at 0.81 L/acre for improved grassy weed control.
NUFARM TRALKOXYDIM	Tralkoxydim					0.5			Add AMS, such as Crimson NG, in hard water.
ONDECK™	Bromoxynil Tolpyralate			0.5	0.5	1	0.5	1	
ORIUS® 430 SC	Tebuconazole	0.3	0.125						
OXBOW®	Dichlorprop Bromoxynil								For improved control, add Crimson NG at 1-2.5% v/v.
OZONE® 3.0	Flucarbazone	0.5	0.25						
PARADIGM™ PRE	Florasulam Halauxifen	0.5	0.25						Not required when tank-mixed with glyphosate.
PAVISE™ 480 SC	Prothioconazole	0.3	0.125						
PEAK®	Prosulfuron		0.2				1	1	Do not use crop oil concentrates when tank-mixing with Ultim™, Accent™, or Pardner®, or when used on winter wheat.
PERMIT®	Halosulfuron		0.25				1	1	Use COC when tank-mixes are used. Do not use a COC in dry bean or post-emergence corn applications.
PHANTOM® 240 SL	Imazethapyr	0.5	0.25						
PINNACLE® SG TOSS-N-GO®	Thifensulfuron	0.3	0.1				0.5	0.5	
PIXXARO™ FLEXX	Fluroxypyr Halauxifen			0.5	0.5		0.5		
PLOTTER™	Metsulfuron Methyl								WinField United NIS not yet registered. Use Agral 90 or Ag-Surf at 0.2% v/v.

		RECOMMENDED ADJUVANT OPTIONS (V/V %)							
		Non-Ionic Surfactant			Methylated Seed Oil		Crop Oil Concentrate		
		MasterLock [®] WinField United	HiActivate [™] WinField United	StrikeLock [™] WinField United	Journey HSOC [™] WinField United	Destination MSO WinField United	Superb HSOC [™] WinField United	Voyage COC [™] WinField United	
BRAND NAME	ACTIVE INGREDIENT								NOTES
PRECISIONPAC [®]	PP-2525 PP-23235 PP-3317	0.5	0.2						
	CS-100-2525 CS-75-2525 CS-100-23235 CS-75-23235 CS-75-12 CS-100-12	0.5	0.25						
	DB-8454								WinField United NIS not yet registered. Use Agral 90, Ag-Surf, or Citowett [®] Plus at 0.2% v/v.
PRIMERO [™]	Nicosulfuron								WinField United adjuvants not yet registered. Use Agral 90 or Ag-Surf at 0.2% v/v, or Merge at 0.5% v/v.
PRIMEXTRA [®] II MAGNUM [®]	S-Metolachlor Atrazine	0.5	0.3						With glyphosate tank-mix. Only use NIS in pre-emergent applications.
PRISM [™] SG	Rimsulfuron	0.5	0.2						
PROLINE [®]	Prothioconazole	0.3							
PROSARO [®] PRO	Prothioconazole Tebuconazole Fluopyram	0.3	0.125						
PROSPECT [™]	Halauxifen Carfentrazone			0.5	0.5	0.5			Add MSO when using Prospect on its own.
PURSUIT [®]	Imazethapyr	0.5	0.25						
PYTHON [™]	Imazamox Bentazon	0.5	0.25	0.5	0.5	0.5			Add Crimson NG at 0.81 L/acre for improved grassy weed control.
RANSACK [®]	Imazamox Bentazon								Add Crimson NG at 0.81 L/acre for improved grassy weed control.
REATA [®]	Flucarbazone	0.5	0.25						
RECLAIM [™] II	Metsulfuron 2,4-D Aminopyralid	0.5	0.2						
REFINE [®] SG	Thifensulfuron Tribenuron		0.2			0.2			If tank-mixing with Simplicity, increase NIS to 0.25%. Does not require an NIS if tank-mixed with MCPA Ester.
REFLEX [®]	Fomesafen	0.5	0.25		0.5		0.5	0.5	Rates vary by adjuvant and crop type. See label for details.
REGLONE [®]	Diquat	0.3	0.1						
RESTORE [™] NXT	Aminopyralid Florpyrauxifen	0.5	0.25	0.5	0.5	1			
REXADE [™]	Pyroxsulam 2,4-D Halauxifen	0.5	0.25						Not required if adding 2,4-D.
ROUNDUP XTEND [®]	Dicamba Glyphosate	0.5	0.25						Use of NIS is optional.
ROUNDUP XTEND [®] 2	Dicamba Glyphosate	0.5	0.25						Use of NIS is optional.
ROXAR [™]	Tetraconazole	0.3	0.25						Use 0.2% v/v in corn applications, do not use NIS in corn when application is between V8 and VT.
SANDEA [®]	Halosulfuron		0.25				1	1	Use COC when tank-mixes are used.
SELECT [®]	Clethodim				0.5				This product has a co-packed adjuvant. This is a registered replacement, or for use when additional adjuvant is required.
SENCOR [®] 480F OR 75DF	Metribuzin		0.1				0.5	0.5	Under adverse conditions, and for improved burndown of small, emerged, annual weeds, use NIS. Do not add surfactants in post emergent applications. Use a COC when tank-mixing with Dual Magnum [®] or Dual II Magnum [®] +/- glyphosate only.

		RECOMMENDED ADJUVANT OPTIONS (V/V %)							
		Non-Ionic Surfactant			Methylated Seed Oil			Crop Oil Concentrate	
		MasterLock [®] WinField United	HiActivate [®] WinField United	StrikeLock [®] WinField United	Journey H50C [®] WinField United	Destination M50 [®] WinField United	Superb H50C [®] WinField United	Voyage [®] COC WinField United	
BRAND NAME	ACTIVE INGREDIENT								NOTES
SHIELDEX [®] 400SC	Tolpyralate			1	1	1			
SIERRA [®] 3.0 AG	Flucarbazone	0.5	0.25						
SIGHTLINE [™]	Metsulfuron Aminopyralid Fluroxypyr	0.5	0.2						
SIGNAL [®]	Clodinafop	0.5		0.5	0.5				This product has a co-packed adjuvant. These are registered replacements, or for use when additional adjuvant is required.
SIMPLICITY [™] GODRI [™]	Pyroxsulam	0.5	0.25						Always add Bindem when using MasterLock or HiActivate.
SLAM [®] R [®]	Clodinafop	0.5			0.5			1	This product has a co-packed adjuvant. These are registered replacements, or for use when additional adjuvant is required.
SORADUO [™]	Prothioconazole Tebuconazole	0.3	0.125						
SORTAN [™] IS	Rimsulfuron	0.5	0.2						Not required when tank-mixed with glyphosate.
SQUADRON [®]	Metribuzin	0.3	0.1				1	1	Under adverse conditions, and for improved burndown of small, emerged, annual weeds, use NIS. Do not add surfactants in post emergent applications.
STATUE [™]	Clethodim								WinField United COC not yet registered. Use Carrier at 0.5% v/v.
STEADFAST [™] IS	Rimsulfuron Nicosulfuron								WinField United NIS not yet registered. Use Agral 90 at 0.2% v/v. Not required when tank-mixed with glyphosate.
STONEWALL [®] 540	Glyphosate	0.5		0.5	0.5				Adjuvant only required when using more than 61 L water per acre to kill quackgrass or Canada Thistle.
STRIM [™] MTZ	Metribuzin S-Metolachlor	0.3	0.1				1	1	For improved burndown of small, emerged annual weeds, add adjuvant.
TRIACTOR [®] EZ	Imazethapyr Metribuzin Flumioxazin	0.5	0.25						All tank-mixes with TriActor EZ applied to assist in the control of emerged weeds require use of a surfactant.
TRICOR [®] 75 DF OR LQ	Metribuzin	0.3	0.1						Under adverse conditions, or for improved burndown of small, emerged annual weeds, add adjuvant.
TROPHY [®]	Fluroxypyr MCPA								WinField United COC not yet registered. Use Carrier at 0.5% v/v.
ULTIM [™]	Rimsulfuron Nicosulfuron	0.5	0.25						
ULTRA BLAZER [™]	Acifluorfen							0.5	Adjuvant only required with 0.5 L/ac rate of Ultra Blazer [™] applied alone.
UPBEET [®]	Triflusaluron	0.5	0.25						Adjuvant required when applied alone.
VARRO [®]	Thiencarbazone								When applied alone an AMS product, such as Crimson NG, may be added. See label for details.
VENIM [™]	Imazamox			0.5	0.5	0.5			
VOLTA [®]	Thifensulfuron	0.5	0.2						
WINFIELD [®] DIQUAT 240	Diquat		0.1						
XTENDIMAX [®]	Dicamba	0.5	0.25						When XtendiMax is used on its own, NIS use is optional. Certain tank-mixes require the use of an NIS. See label for details.
XTENDIMAX [®] 2	Dicamba	0.5	0.25						When XtendiMax 2 is used on its own, NIS use is optional. Certain tank-mixes require the use of an NIS. See label for details.
YUMA [®]	Quizalofop	0.5	0.25	0.5	0.5	1	0.5	1	
ZOLERA [®] FX	Tetraconazole Fluoxastrobin	0.3	0.25						Use 0.2% v/v in corn applications, do not use NIS in corn when application is between V8 and VT.

MASTERLOCK MAXIMIZE YOUR FUNGICIDE APPLICATION AND BOOST YOUR YIELD



ENHANCED STICKING AND SPREADING

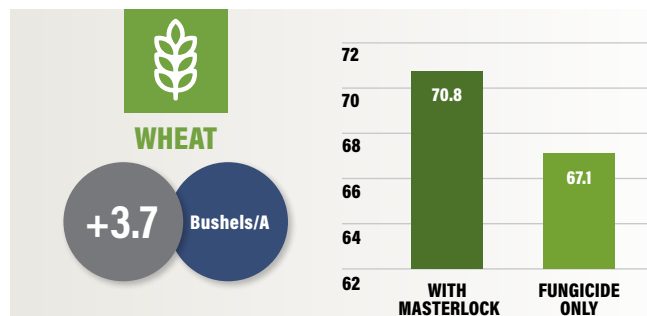
A key function of MasterLock is its ability to improve the sticking and spreading of fungicide droplets. The improved efficacy comes from ensuring that droplets land where they are supposed to—on the plant—without bouncing off. Once they land, MasterLock helps them stay in place, spreading evenly across the leaf surface for better coverage. The better the coverage, the more consistent the protection. This effective sticking and spreading gives you greater control over your fungicide application.



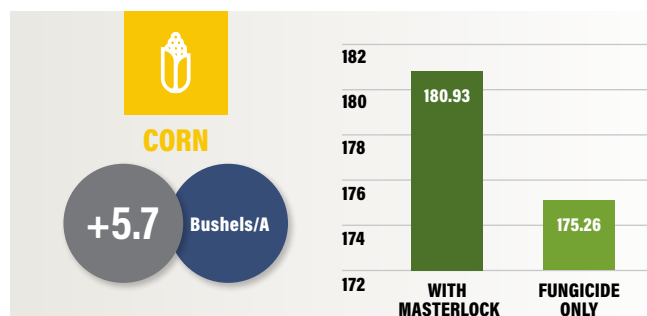
PROLONGED WETTING FOR MAXIMUM ABSORPTION

Once droplets dry on the leaf, they can no longer be absorbed by the plant. This is where MasterLock's wetting properties come in—it helps the droplets stay wet longer, allowing the plant more time to absorb the pesticide. This prolonged wetting increases the pesticide's effectiveness and overall performance. Prolonged wetting is a crucial factor for fungicide and diquat success.

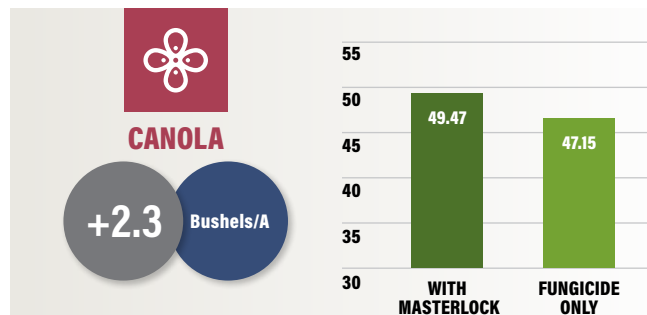
When it comes to improving pesticide performance and increasing yields, MasterLock adjuvant is the partner you need. MasterLock combines a non-ionic surfactant (NIS) with LockTech drift control and canopy penetration. This potent combination ensures MasterLock enhances the effectiveness of your pesticide, ensuring better results and healthier crops.



SOURCE: WINFIELD UNITED 12 STUDIES, LOCATIONS ACROSS THE US AND CANADA, 2019-2021.



SOURCE: WINFIELD UNITED 14 STUDIES, 8 STATES, ALL FUNGICIDES, 2012-2017.



SOURCE: WINFIELD UNITED CANADA 13 FARMER FIELD TRIALS, 3 PROVINCES, 2023.



YOUR PARTNER IN PROTECTION

Most fungicides are preventative, meaning that you need to protect the plant before a disease sets in. Whether you're managing ear moulds in corn, sclerotinia in canola, white mould in soybeans, or leaf diseases in wheat, MasterLock delivers improved coverage and protection, ensuring your fungicide performs at its best. Maximize your yield and hit plant disease where it hurts with improved accuracy and effectiveness using MasterLock.

MasterLock®

By WINFIELD
UNITED

MasterLock® is a non-ionic surfactant (NIS) combining DropTight® surfactant technology with the proven drift control of LockTech®. This all-in-one NIS, drift and deposition aid is designed to maximize pesticide performance. MasterLock meets your NIS requirements and helps to reduce spray drift.



FEATURES & BENEFITS

- MasterLock adjuvant with DropTight technology helps optimize droplet adhesions. This reduces bounce and increases droplet spreading for improved contact and coverage, delivering more active ingredient to the leaf surface.
- MasterLock improves deposition of the spray droplets onto the intended target and improves canopy penetration.
- Helps achieve uniform coverage from the top of the plant to the bottom.
- Reduces spray drift and evaporation of pesticides.
- NPE-free formulations should not contribute to arrested ear in corn.
- PMRA registered activator adjuvant.

Application Rates

0.3-0.5% v/v. This equates to 114-190 mL/acre in 10 US gal. Always consult product labels for recommended surfactant rates. MasterLock rates include both non-ionic surfactant and drift reduction technology.



COMMON USE RATE

0.3-0.5% v/v ground and aerial applications



PACKAGING

2 x 10 L jugs/case
450 L tote



ACTIVE INGREDIENT

100% Surfactant blend



PRODUCT GROUP



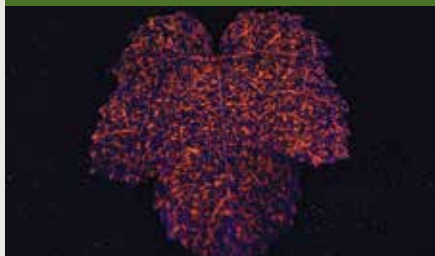
Drift control and deposition agent



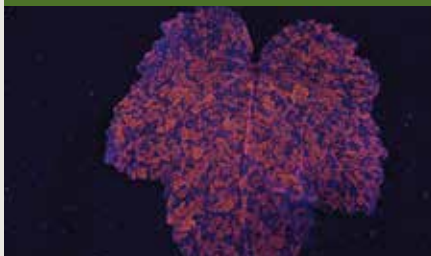
Non-ionic surfactant

IMPROVED DEPOSITION AND SPREAD

Without MasterLock = 38% Coverage



With MasterLock = 70% Coverage



1.8x increase in coverage

Without MasterLock = 38% Coverage



With MasterLock = 91% Coverage



2.4x increase in coverage

StrikeLock®

By WINFIELD UNITED

StrikeLock® is a methylated seed oil (MSO) based high surfactant oil concentrate adjuvant (HSOC) with the proven drift control of LockTech®. This proprietary all-in-one formulation of oil adjuvant and drift control is designed to maximize pesticide performance of oil-loving herbicides. HSOCs are an evolution of oil adjuvant technology. StrikeLock meets your oil adjuvant requirements and helps reduce spray drift.



FEATURES & BENEFITS

- Designed for oil-loving herbicides – providing improved coverage and activity from the proprietary formulation of oil adjuvant and drift reduction technology.
- Allows greater pesticide uptake by effectively breaking down waxy leaf surfaces, improving cuticle penetration.
- Showcases improved depth of canopy deposition and coverage to support uptake of herbicides.
- Exceptional drift reduction that you've come to expect from LockTech.

Application Rates

0.5-1.0% v/v. This equates to 190-380 mL/acre in 10 US gal. Always consult product labels for recommended surfactant rates. Results may vary by product.



COMMON USE RATE

0.5% v/v



PACKAGING

2 x 10 L jugs/case
450 L tote



ACTIVE INGREDIENT

100% Surfactant blend



PRODUCT GROUP



Drift control and deposition agent



High surfactant methylated seed oil

STRIKELock HELPS ENABLE LEAF PENETRATION

FLUORESCENT DYE ALONE



Leaf surface (cuticle)

FLUORESCENT DYE WITH 0.5% V/V STRIKELock



Leaf surface (cuticle)

Epidermis

Mesophyll

WinField United, 2017

Research at University of Guelph shows exceptional control of volunteer corn with the addition of StrikeLock adjuvant to clethodim*.

*Soltani, N., Shropshire, C., and Sikkema, P.H. (2023). Control of Volunteer Glyphosate-Resistant Corn in Soybean with Clethodim Plus Adjuvants. Journal of Agricultural Science.

Crimson® NG

By WINFIELD
UNITED

Crimson® NG is a convenient liquid premix of ammonium sulfate (AMS) and a proprietary blend of water conditioning, coupling, and antifoam agents. An AMS water conditioner that provides exceptional water conditioning, Crimson NG is designed for use with pesticides that may be affected by hard water or challenging application conditions. Crimson NG may also be used in other spray applications when the herbicide necessitates AMS additives.



FEATURES & BENEFITS

- Prevents herbicide antagonism due to hard water for optimum performance.
- Enhanced formulation contains antifoam for added convenience.
- Available in two bulk tote sizes for added spray-fill convenience.

Application Rates

Crimson NG rates are best determined from water test results.

Use 1-1.5% v/v for standard use and 2-2.5% v/v under extreme environmental conditions or when tank-mixing with foliar micronutrients.



COMMON USE RATE

1-2.5% v/v



APPLICATION GUIDE

Add and agitate spray solution prior to adding glyphosate or other herbicides¹



PACKAGING

2 x 10 L jugs/case
450 L tote
1000 L tote



ACTIVE INGREDIENT

AMS (34%) and a proprietary blend of water conditioning, coupling, and antifoam agents



PRODUCT GROUP

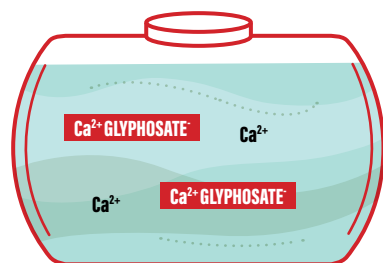
Utility modifier
– water conditioner

HELP PREVENT HARD WATER ANTAGONISM

Many spray waters contain positively charged cations such as calcium, iron, magnesium, potassium, and sodium that tie up (antagonize) pesticides such as glyphosate and glufosinate. Crimson NG conditions the water to prevent antagonism from hard water or when tank-mixing with foliar micronutrients, both of which can impact the performance of the spray application.

WITHOUT CRIMSON NG

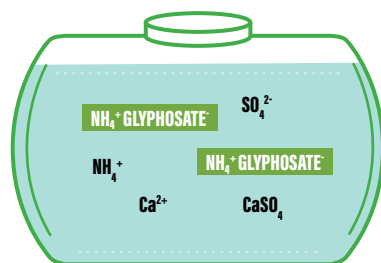
GLYPHOSATE ↓



Glyphosate is bound by hard water cations, which are less likely to be absorbed into plant tissue.

WITH CRIMSON NG

1ST CRIMSON NG ↓ ↓ 2ND GLYPHOSATE



Ammonium glyphosate is readily absorbed into plant tissue.

¹ Always refer to product label for specific tank-mix instructions.

Water quality can affect Groups 1, 9, 10, and some Group 27 products. Test your water and always read and follow label directions.

Destination® MSO

By WINFIELD
UNITED

Destination® MSO contains methylated seed oil (MSO) and emulsifiers to help break down waxy leaf surfaces for improved herbicide performance.

FEATURES & BENEFITS

- Increased penetration of pesticides through the waxy leaf layer into the plant.
- Improves adhesion and absorption of pesticides onto and into plant tissue.
- Use Destination MSO where oil adjuvants are required.
- PMRA approved activator adjuvant.

Application Rates

0.5-1.0% v/v. Always consult product labels for recommended oil adjuvant rates. Adjuvant rates typically vary by product. Higher registered rates are typically recommended under adverse conditions such as dense weed population, late weed growth stage, or poor environmental conditions.

HOW LONG DOES IT TAKE FOR VARIOUS OILS TO BREAK DOWN A WAXY SURFACE?

MSOs are newer technology that work faster than COCs.

OIL	EXPOSURE INTERVAL (MINUTES)					
	0	5	10	20	40	24 HR
Distilled water	0	0	0	0	0	0
Petroleum oil	0	0	0	2.5	2.5	9
Sunflower oil	0	0	0	0	2.5	6
MSO	2.5	5	6.5	9	10	10

Evaluation scale: 0 = No solubility, 10 = Wax totally dissolved

Manthey, F.A. and J.D. Nalewaja, NDSU, 1992.



COMMON USE RATE

1% v/v



PACKAGING

2 x 10 L jugs/case



ACTIVE INGREDIENT

Blend of methylated soybean oil and emulsifiers

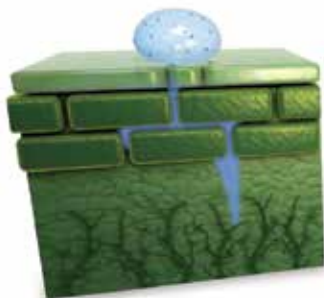


PRODUCT GROUP



Methylated seed oil

OIL ADJUVANTS HELP PESTICIDES TO PENETRATE INTO THE LEAF SURFACE



—
ADJUVANT



++
ADJUVANT
(DESTINATION MSO, JOURNEY™ HSOC,
SUPERB™ HSOC, VOYAGE™ COC OR STRIKELOCK®)

Looking to keep your spray on target and improve deposition? Check out StrikeLock®, an MSO with the added benefit of LockTech®, on page 28.

HiActivate®

By WINFIELD
UNITED

HiActivate® is a non-ionic surfactant registered for use with many crop protection products to optimize efficacy. Use HiActivate wherever a non-ionic surfactant is required on label.

FEATURES & BENEFITS

- HiActivate improves pesticide performance by reducing surface tension, and improving wetting, spreading, and dispersing characteristics of the spray solution.
- Reduced surface tension allows droplets to spread out over a larger area of leaf surface for improved coverage and uptake.
- HiActivate improves adhesion of the spray droplet to the plant's leaf surface, slows evaporation, and enhances pesticide uptake for maximum absorption and efficacy.
- A non-ionic surfactant such as HiActivate is a critical addition to certain crop protection products. If an adjuvant is required, and not included in the tank-mix, it may lead to product failure. Add HiActivate for maximum pesticide effectiveness.
- Our proprietary surfactant components improve mixability, even in cold water.

Application Rates

0.1-0.25% v/v. Always consult product labels for recommended surfactant rates. Surfactant rates typically vary by product.



COMMON USE RATE

0.1-0.25% v/v



PACKAGING

2 x 10 L jugs/case



ACTIVE INGREDIENT

90/10 Alkylaryl/polyoxyethylene glycols, free fatty acids, and IPA

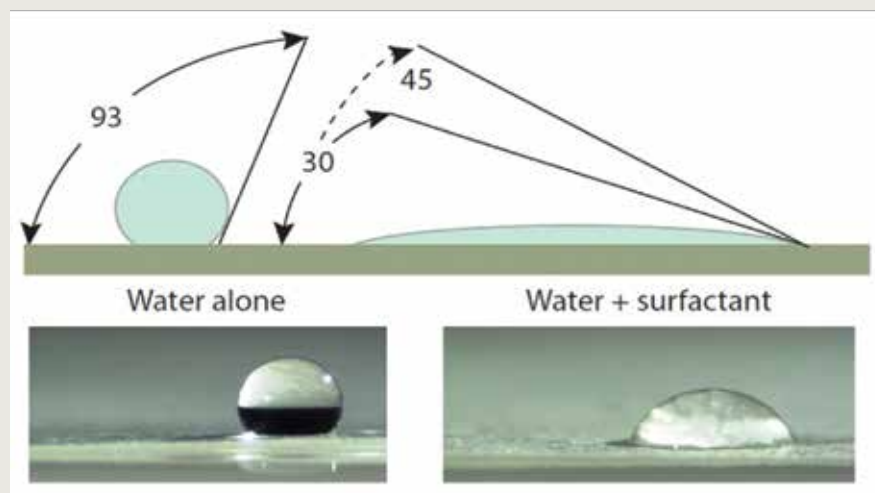


PRODUCT GROUP



Non-ionic surfactant

HIACTIVATE REDUCES SURFACE TENSION FOR MAXIMUM EFFICACY



Looking to keep your spray on target and improve deposition? Check out MasterLock®, an NIS with the added benefit of LockTech®, on pages 26-27.

Journey® HSOC

By WINFIELD UNITED

Journey® HSOC adjuvant is a methylated seed oil (MSO) based surfactant blend that includes proprietary MAX-IN® Technology. This unique combination allows for increased pesticide uptake and effectiveness.

HSOCs (High Surfactant Oil Concentrates) are an evolution of oil adjuvant technology. Journey HSOC is an MSO based oil adjuvant, with differentiated performance when compared to a standard MSO.

Journey has three key features:

1. **MSO** to breakdown waxy surfaces to let herbicides penetrate the leaf.
2. **MAX-IN Technology** to keep droplets wetter longer, improving humectancy.
3. **MAX-IN Technology** for increased droplet coverage and spread.

FEATURES & BENEFITS

- Journey HSOC actively dissolves the waxy cuticle on weeds allowing for quicker and more complete active ingredient uptake and absorption into weeds.
- Contains MAX-IN Technology, proven to increase humectancy for better droplet retention—improving herbicide uptake, boosting performance, and reducing herbicide losses from evaporation and other environmental factors.
- Aggressively aids herbicide performance, especially on large weeds and under stressful, hot, dry conditions.
- Helps improve the performance of active ingredients that target grassy weeds and weeds with waxy leaf surfaces.
- Designed to be compatible with glyphosate tank-mix partners requiring an oil adjuvant.
- Use Journey HSOC where MSOs are required.
- PMRA approved activator adjuvant.

Application Rates

0.5-1.0% v/v. Always consult product labels for recommended oil adjuvant rates. Adjuvant rates typically vary by product. When using spray volumes less than 10 US gal/acre, do not apply Journey HSOC at less than 0.19 L/acre.



COMMON USE RATE

0.5% v/v



PACKAGING

2 x 10 L jugs/case
450 L tote



ACTIVE INGREDIENT

50% MSO
50% Surfactant blend



PRODUCT GROUP

High surfactant
methylated seed oil

Looking to keep your spray on target and improve deposition? Check out StrikeLock®, an MSO with the added benefit of LockTech®, on page 28.

Superb™ HSOC

By **WINFIELD
UNITED**

Superb™ HSOC adjuvant is a crop oil concentrate (COC) based surfactant blend for use with herbicides that require a COC. Unlike some COCs, Superb HSOC adjuvant is compatible with glyphosate and includes proprietary MAX-IN® Technology, which increases humectancy for improved droplet retention.



FEATURES & BENEFITS

- High surfactant oil concentrate (paraffinic oil-based), designed for use with herbicides that require a COC.
- Superior wetting and penetration.
- Aids herbicide translocation through the waxy cuticle layer.
- HSOC formulation allows for lower use rate than traditional COC adjuvants.
- Contains MAX-IN Technology for improved uptake.
- PMRA approved activator adjuvant.

Application Rates

0.5-1.0% v/v. Always consult product labels for recommended oil adjuvant rates. Adjuvant rates may vary by product.



COMMON USE RATE

0.5% v/v



PACKAGING

2 x 10 L jugs/case



ACTIVE INGREDIENT

74% COC
26% Surfactant blend



PRODUCT GROUP

High surfactant
crop oil concentrate

BETTER SPREAD FOR IMPROVED PERFORMANCE



WITHOUT SUPERB HSOC ADJUVANT

- Minimal penetration
- Minimal coverage and spreading



WITH SUPERB HSOC ADJUVANT

- Increased penetration
- Increased coverage and spreading
- Improved weed control

MAX-IN Technology is a key component of Superb HSOC providing improved humectancy, droplet coverage, and spread.

Voyage™ COC

By WINFIELD
UNITED

Voyage™ COC contains crop oil concentrates (COC) and emulsifiers to assist in pesticide uptake and effectiveness. Voyage COC is used to help break down waxy leaf surfaces to allow for better pesticide uptake.



FEATURES & BENEFITS

- Helps adhesion and absorption of pesticides onto and into plant tissue.
- Use Voyage COC where oil adjuvants or crop oil concentrates are required by label.
- PMRA approved activator adjuvant.

Application Rates

0.8-1% v/v. Always consult product labels for recommended oil adjuvant rates. Adjuvant rates typically vary by product. Higher registered rates are typically recommended under adverse conditions such as dense weed population, late weed growth stage, or poor environmental conditions.



COMMON USE RATE

1% v/v



PACKAGING

2 x 10 L jugs/case



ACTIVE INGREDIENT

83% Paraffin base petroleum oil
17% Surfactant blend



PRODUCT GROUP



Crop oil concentrate



Looking for the humectancy benefits of MAX-IN® Technology? Check out Superb™ HSOC on page 33.

ADJUVANT VOLUME-TO-VOLUME CONVERSION CHART



US GALLONS PER ACRE

	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	20
0.1	4	6	8	9	11	13	15	17	19	21	23	25	26	28	30	32	34	36	38	40	42	44	45	47	49	51	53	55	57	76
0.125	5	7	9	12	14	17	19	21	24	26	28	31	33	35	38	40	43	45	47	50	52	54	57	59	62	64	66	69	71	95
0.15	6	9	11	14	17	20	23	26	28	31	34	37	40	43	45	48	51	54	57	60	62	65	68	71	74	77	79	82	85	114
0.2	8	11	15	19	23	26	30	34	38	42	45	49	53	57	61	64	68	72	76	79	83	87	91	95	98	102	106	110	114	151
0.25	9	14	19	24	28	33	38	43	47	52	57	62	66	71	76	80	85	90	95	99	104	109	114	118	123	128	132	137	142	189
0.3	11	17	23	28	34	40	45	51	57	62	68	74	79	85	91	97	102	108	114	119	125	131	136	142	148	153	159	165	170	227
0.325	12	18	25	31	37	43	49	55	62	68	74	80	86	92	98	105	111	117	123	129	135	141	148	154	160	166	172	178	185	246
0.4	15	23	30	38	45	53	61	68	76	83	91	98	106	114	121	129	136	144	151	159	167	174	182	189	197	204	212	220	227	303
0.5	19	28	38	47	57	66	76	85	95	104	114	123	132	142	151	161	170	180	189	199	208	218	227	237	246	255	265	274	284	379
0.6	23	34	45	57	68	79	91	102	114	125	136	148	159	170	182	193	204	216	227	238	250	261	273	284	295	307	318	329	341	454
0.7	26	40	53	66	79	93	106	119	132	146	159	172	185	199	212	225	238	252	265	278	291	305	318	331	344	358	371	384	397	530
0.8	30	45	61	76	91	106	121	136	151	167	182	197	212	227	242	257	273	288	303	318	333	348	363	379	394	409	424	439	454	606
0.9	34	51	68	85	102	119	136	153	170	187	204	221	238	255	273	290	307	324	341	358	375	392	409	426	443	460	477	494	511	681
1	38	57	76	95	114	132	151	170	189	208	227	246	265	284	303	322	341	360	379	397	416	435	454	473	492	511	530	549	568	757
1.25	47	71	95	118	142	166	189	213	237	260	284	308	331	355	379	402	426	449	473	497	520	544	568	591	615	639	662	686	710	946
1.5	57	85	114	142	170	199	227	255	284	312	341	369	397	426	454	483	511	539	568	596	625	653	681	710	738	766	795	823	852	1136
2	76	114	151	189	227	265	303	341	379	416	454	492	530	568	606	643	681	719	757	795	833	871	908	946	984	1022	1060	1098	1136	1514
2.5	95	142	189	237	284	331	379	426	473	520	568	615	662	710	757	804	852	899	946	994	1041	1088	1136	1183	1230	1277	1325	1372	1419	1893

ADJUVANT V/V (%)

ONLINE
VOLUME-TO-VOLUME
CALCULATOR

Use smartphone
camera to scan code

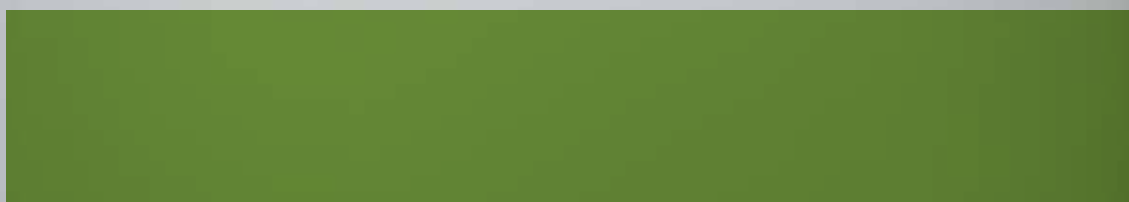
ACRES PER 10 L JUG

	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20
0.1	2642	1761	1321	1057	881	755	661	587	528	480	440	406	377	352	330	311	294	278	264	252	240	230	220	211	203	196	189	182	176	170	165	160	155	151	147	143	139	135	132
0.125	2114	1409	1057	845	705	604	528	470	423	384	352	325	302	282	264	249	235	222	211	201	192	184	176	169	163	157	151	146	141	136	132	128	124	121	117	114	111	108	105
0.15	1761	1174	881	705	587	503	440	391	352	320	294	271	252	235	220	207	196	185	176	168	160	153	147	141	135	130	126	121	117	114	110	107	104	101	98	95	93	90	88
0.2	1321	881	661	528	440	377	330	294	264	240	220	203	189	176	165	155	147	139	132	126	120	115	110	106	102	98	94	91	88	85	83	80	78	75	73	71	70	68	66
0.25	1057	705	528	423	352	302	264	235	211	192	176	163	151	141	132	124	117	111	106	101	96	92	88	85	81	78	75	73	70	68	66	64	62	60	59	57	56	54	53
0.3	881	587	440	352	294	252	220	196	176	160	147	135	126	117	110	104	98	93	88	84	80	77	73	70	68	65	63	61	59	57	55	53	52	50	49	48	46	45	44
0.325	813	542	406	325	271	232	203	181	163	148	135	125	116	108	102	96	90	86	81	77	74	71	68	65	63	60	58	56	54	52	51	49	48	46	45	44	43	42	41
0.4	661	440	330	264	220	189	165	147	132	120	110	102	94	88	83	78	73	70	66	63	60	57	55	53	51	49	47	46	44	43	41	40	39	38	37	36	35	34	33
0.5	528	352	264	211	176	151	132	117	106	96	88	81	75	70	66	62	59	56	53	50	48	46	44	42	41	39	38	36	35	34	33	32	31	30	29	29	28	27	26
0.6	440	294	220	176	147	126	110	98	88	80	73	68	63	59	55	52	49	46	44	42	40	38	37	35	34	33	31	30	29	28	28	27	26	25	24	24	23	23	22
0.7	377	252	189	151	126	108	94	84	75	69	63	58	54	50	47	44	42	40	38	36	34	33	31	30	29	28	27	26	25	24	24	23	22	22	21	20	20	19	19
0.8	330	220	165	132	110	94	83	73	66	60	55	51	47	44	41	39	37	35	33	31	30	29	28	26	25	24	24	23	22	21	21	20	19	18	18	17	17	17	
0.9	294	196	147	117	98	84	73	65	59	53	49	46	42	39	37	35	33	31	29	28	27	26	24	23	22	21	20	20	19	18	18	17	16	16	15	15	15	15	
1	264	176	132	106	88	75	66	59	53	48	44	41	38	35	33	31	29	28	26	25	24	23	22	21	20	20	19	18	18	17	17	16	16	15	15	14	14	13	
1.25	211	141	106	85	70	60	53	47	42	38	35	33	30	28	26	25	23	22	21	20	19	18	17	16	16	15	15	14	14	13	13	12	12	12	11	11	11	11	
1.5	176	117	88	70	59	50	44	39	35	32	29	27	25	23	22	21	20	19	18	17	16	15	14	14	13	13	12	12	12	11	11	11	10	10	10	9	9	9	
2	132	88	66	53	44	38	33	29	26	24	22	20	19	18	17	16	15	14	13	12	11	11	11	10	10	9	9	9	9	8	8	8	8	7	7	7	7	7	
2.5	106	70	53	42	35	30	26	23	21	19	18	16	15	14	13	12	11	10	10	9	9	8	8	8	8	8	8	7	7	7	7	6	6	6	6	5	5		

ADJUVANT V/V (%)



MICRONUTRIENTS





Forget cookie-cutter crop plans. With the right mix of sharp strategy, relevant in-field data, custom-built products, and boots-on-the-ground expertise, WinField United micronutrient offerings help your crops punch above their weight class—season after season.

From pre-seed to harvest and everything in between, we find the cracks where yield opportunity hides and then help you turn them into real gains.

Foliar or soil-applied, for soil conditions across the nation, we've got a deep bench of solutions built to meet the unique demands of your acres. Solutions like this can be your differentiator, because you're not here to follow the pack – you're here to outgrow it.

WHY MICRONUTRIENTS

Micronutrients are called micro due to their dosage, not their importance. Four key trace elements that can cause chaos when they're deficient are boron, zinc, copper, and manganese. WinField United capitalizes on our knowledge as an adjuvant company, bringing our understanding of how to get droplets into the plant and applying that expertise to micronutrient

development. Through our Innovation Center, we are able to test and create technical solutions that change the game on micronutrient uptake. The result is a soil-applied and a foliar nutrition line that takes science to the next level, with innovative solutions to help your crop grow strong and thrive.



THE ROLE OF BORON:

- Regulates carbohydrate metabolism which helps to move sugars to actively growing regions of the plant including seed development.
- Maintains cell wall integrity, which is important for nutrient movement.
- Involved in cell division and cell development, which keeps cell walls stable.
- Assists with nitrogen fixation and nodulation in legumes.
- Essential for pollen-tube formation, which is needed for pollination and ultimately seed production.



Main crops where boron is essential:
Canola and pulses



THE ROLE OF ZINC:

- Crucial for seed germination and early growth, helping the plant get off to its best start.
- Helping with seed-formation and pollination, which is critical for yield production.
- Important for maintaining healthy roots, leading to higher yield.
- Supports plant enzyme and hormone systems. These enzymes regulate pathways in the plant that are essential for proper plant growth and seed development.



Main crops where zinc is essential:
Pulses, soybean, canola, corn, and cereals

DID YOU KNOW?

Boron is soil mobile but plant immobile, and is important in both the early vegetation and reproductive stage of the plant's life.

DID YOU KNOW?

Soil zinc is less available to plants when soils are cool and wet.



THE ROLE OF COPPER:

- Controls photosynthesis, plant metabolism, and respiration; all of which are essential for plant growth and production.
- Involved in cell wall lignification, which helps with the plant's standability.
- Stimulates protein formation.
- Deficiencies can affect the flowering period of crops, thereby elongating the infection window for diseases like ergot.



Main crops where copper is essential:
Cereals



THE ROLE OF MANGANESE:

- Essential for the water-splitting and chlorophyll synthesis components of photosynthesis. Photosynthesis gives the plant its energy for growth and seed (yield) production.
- Activates anti-oxidant enzymes, which help the plant cope with environmental stress.
- Essential for energy production and storage as well as carbohydrate metabolism, which is necessary for the plant to be able to utilize nutrients.
- Deficiencies are often observed in grey-wooded soils.



Main crops where manganese is essential:
Soybeans, oats, and other cereals

DID YOU KNOW?

Copper is immobile in the soil and shows variable mobility within the plant.

DID YOU KNOW?

Manganese is minimally soil available, and has variable mobility within the plant.

SOIL-APPLIED LIQUID PLANT NUTRITION

Liquid fertilizers are suspensions of solids in a liquid-carrying medium, such as water. They can be mixed in the tank with compatible nutrients or chemicals and applied directly to the soil to increase nutrient efficiency and availability to plants.



FORMULATION MATTERS



ZINC OXIDE

Insoluble and immobile. **Must be converted to a soluble form AND the root must seek out the nutrient** so more is required to correct a deficiency.



ZINC SULFATE

Soluble but immobile. **Ties up rapidly** and still relies heavily on root interception.



CHELATED ZINC

Soluble and immobile. Protected from tie-up. **Increases plant availability and uptake.**

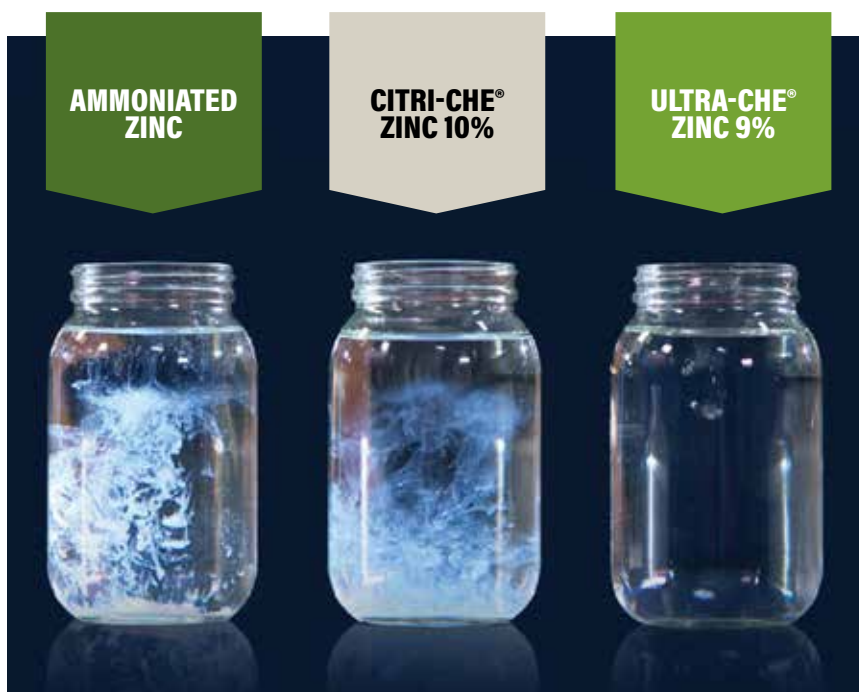
DID YOU KNOW?

The Ultra-Che® line of micronutrients are the only 100% EDTA chelated products for reduced nutrient tie-up in the soil and therefore increased nutrient efficiency and availability to plants.



LIQUID ZINC FORMULATIONS INTO ORTHOPHOSPHATE (9-18-9)

This image shows the comparison of chelation strength in each formulation. Where there are white solids, there is weakly chelated zinc getting tied up with the fertilizer. This zinc will not be available, and plugging in the drill can occur.



INDIVIDUAL NUTRIENTS	CHELATION STRENGTH	MIXABILITY	PERCENT (%) OF EACH NUTRIENT IN THE FORMULA				
			N	B	Cu	Mn	Zn
Ultra-Che Copper 7.5% EDTA	Best	Best	7		7.5		
Ultra-Che Manganese 6% EDTA	Best	Best	3			6	
Ultra-Che Zinc 9% EDTA	Best	Best	7				9
Liquid Boron 10%	None	Great		10			

N = Nitrogen | **B** = Boron | **Cu** = Copper | **Mn** = Manganese | **Zn** = Zinc



DID YOU KNOW?

All CROPLAN corn hybrids come standard with an on-seed zinc treatment to help your crop get off to its best possible start.



Ultra-Che®

By WINFIELD UNITED

Soil-Applied Micronutrients Protected by EDTA Chelation

Looking for reduced nutrient tie-up in the soil or with other fertilizers? Choose Ultra-Che®. The chelators in Ultra-Che micronutrients provide the strongest and most reliable protection against micronutrient deactivation.

FEATURES & BENEFITS

Chelating agents in Ultra-Che micronutrients:

- Provide strong protection against immobilization of metal ion micronutrients to help keep products stable and plant-available.
- Help supply nutrients more efficiently.
- Help increase compatibility of Ultra-Che micronutrients with other products.

USES & COMPATIBILITY

Ultra-Che micronutrients can be used on a variety of crops with flexible timing, including pre-plant, starter, side-dress, or fertigation. Ultra-Che micronutrients are generally compatible with pesticides and easily mix with starter or pop-up fertilizers for optimum early-season nutrition for your crops.

Ultra-Che micronutrients are specifically designed for in-furrow applications.



Ultra-Che® Copper
By WINFIELD UNITED



Ultra-Che® Manganese
By WINFIELD UNITED



Ultra-Che® Zinc
By WINFIELD UNITED

PRODUCT LINE

Products	Formulation	Application Guide	Rate	Packaging
Ultra-Che Copper 7.5% EDTA	7.5% Chelated Copper 7.0% Nitrogen	Pre-plant Starter Side-dress	0.5-4 L/acre	2 x 10 L jugs/case 1000 L tote
Ultra-Che Manganese 6% EDTA	6.0% Chelated Manganese 3.0% Nitrogen	Pre-plant Starter Side-dress	0.5-4 L/acre	2 x 10 L jugs/case 1000 L tote
Ultra-Che Zinc 9% EDTA	9.0% Chelated Zinc 7.0% Nitrogen	Pre-plant Starter Side-dress	1-6 L/acre	2 x 10 L jugs/case 1000 L tote

By **WINFIELD UNITED**

1-2 L/acre



2 x 10 L jugs/case
450 L tote



Soil-application
at seeding



10% Boron

Liquid Boron 10% provides a cost-effective option for soil-applied liquid boron.



NOTES:

MAX-IN[®]

By WINFIELD UNITED

Foliar Nutrients Powered by MAX-IN[®] Technology

MAX-IN products are foliar-applied micronutrients that deliver the essential nutrients boron, copper, zinc, and manganese—key for plant health and growth. These nutrients are quickly absorbed for fast, effective results.

What is MAX-IN Technology?

MAX-IN Technology is designed to increase humectancy, helping plants absorb more of the applied nutrients for improved uptake.

Why does humectancy matter?

In general, humectants absorb and retain moisture, therefore keeping leaves wetter, longer. With an elongated duration of leaf wetness, there is increased absorption of elements as there is increased cation movement through the leaf cuticle.



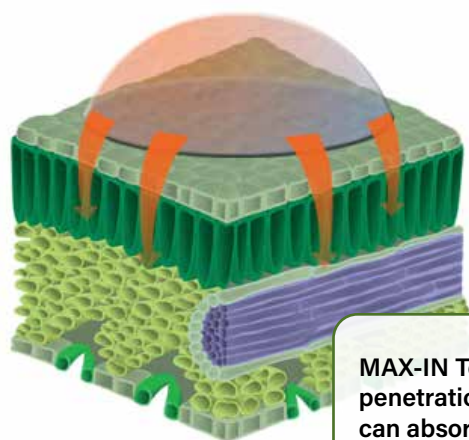
FEATURES & BENEFITS

- Contains MAX-IN Technology, to greatly increase the movement of micronutrients through the leaf cuticle and into internal structures.
- Can be used in a broad spectrum of crops.
- Use to meet a majority of in-season crop demands to help maximize crop performance potential.

COMPATIBILITY

- MAX-IN micronutrients easily mix with other plant nutrients and most crop protection products, including glyphosate-based herbicides.
- When MAX-IN micronutrients are tank-mixed with glyphosate, an AMS source such as Crimson[®] NG should always be used.

MAX-IN = MORE MICROS IN THE CROP



MAX-IN Technology increases penetration, which means plants can absorb up to 50% more nutrients.

Increased Uptake with MAX-IN Technology

Copper	52%
Boron	40%
Zinc	26%
Manganese	16%

2004, Patent Data, WinField Solutions, LLC.

MAX-IN® Boron

By WINFIELD UNITED

MAX-IN® Boron is a foliar-applied micronutrient that can support increased plant health and growth where a boron source is required. Boron influences cell development and is essential during reproductive stages.



COMMON USE RATE

Most crops:
0.35-0.71 L/acre



PACKAGING

2 x 10 L jugs/case
450 L tote



APPLICATION GUIDE

Foliar

Corn: V3-V9
Canola: 5 leaf-30% bloom
Cereals: GS 21-GS 33
Soybean: V3-R1



ACTIVE INGREDIENT

8.0% Boron



MAX-IN® Copper

By WINFIELD UNITED

MAX-IN® Copper is an effective foliar-applied source of copper. Copper is essential for activating multiple enzyme systems, supporting cell wall formation, and enabling protein synthesis. A deficiency can lead to the buildup of soluble nitrogen compounds. Additionally copper is involved in the function of the plant's immune system and overall plant health.



COMMON USE RATE

Most crops:
0.24-0.3* L/acre



PACKAGING

2 x 10 L jugs/case
450 L tote



APPLICATION GUIDE

Foliar

Cereals: GS 21-GS 33
Corn: V3-V8



ACTIVE INGREDIENT

5.0% Copper



*A second application may be needed. See label for other listed crops and rates of application.

MAX-IN® Ultra Manganese

By WINFIELD UNITED

MAX-IN® Ultra Manganese offers a foliar-applied source of manganese. Manganese is essential for photosynthesis in all plants and is especially important in legumes. It enhances nitrogen metabolism and improves carbohydrate utilization, supporting plant growth and development. Manganese also plays a role in plant immune function, helping plants build resistance or tolerance to disease.



COMMON USE RATE

Most crops:
1-2* L/acre



PACKAGING

2 x 10 L jugs/case
450 L tote



APPLICATION GUIDE

Foliar

Soybeans: V3-V5



ACTIVE INGREDIENT

5.0% Manganese



RECOMMENDED ADJUVANT

Add Crimson® NG when tank-mixed with glyphosate

*A second application may be needed. See label for other listed crops and rates of application.

NEW!

MAX-IN® Ultra ZMB® Plus

By WINFIELD UNITED

MAX-IN® Ultra ZMB® Plus is a premium liquid foliar blend that delivers a high load of zinc, manganese, and boron. A deficiency in even just one key micronutrient can impact yield potential. With one efficient application of MAX-IN Ultra ZMB Plus, you can meet a majority of in-season crop demands to help maximize crop performance potential.



COMMON USE RATE

Most crops:
0.5-2.0 L/acre



PACKAGING

2 x 10 L jugs/case
450 L tote



APPLICATION GUIDE

Foliar

Cereals: GS 21-GS 31
Corn: V3-V12, can go to R2
if tissue tests indicate a need
Soybeans: V3-R2



ACTIVE INGREDIENT

2.10% Boron
3.85% Manganese
4.24% Zinc



RECOMMENDED ADJUVANT

Add Crimson® NG when tank-mixed with glyphosate

MAX-IN ULTRA ZMB PLUS COMPARED TO MAX-IN ULTRA ZMB

Mean Yield Impact	3.5 bu/acre
Win Rate	70%
Mean Win Impact	6.5 bu/acre
P-Value	0.176

2023, Answer Plot Bio Trial 3 (n = 10), Corn Foliar, V4-V6 Application. Management system p-value <0.05

Always read and follow label directions.

Ascend® SL

By WINFIELD UNITED

CFIA Registered Plant Growth Regulator

Ascend® SL (soluble liquid) plant growth regulator (PGR) contains an optimal combination of three plant growth regulators, which can result in vigorous early plant germination and emergence, a robust root system, larger leaves, and wider stems. The product can be applied as a seed treatment, in-furrow, or as a foliar application.



FEATURES & BENEFITS

- Cytokinin promotes cell division and leaf expansion.
- Gibberellic acid stimulates cell division and elongation in leaves and stems.
- Indolebutyric acid stimulates root formation and development, and increases cell elongation.

3 YEAR YIELD RESULTS OF ASCEND SL ON CORN

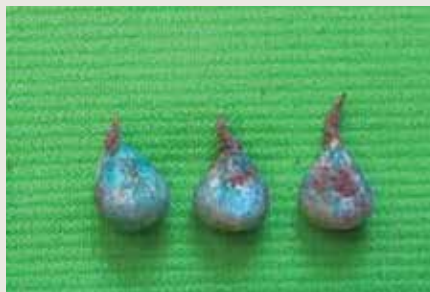
	Sites (% positive response)	Number of Locations	Yield Response (bu/acre)
3 Yr Average	60.5	199	5.85

Answer Plot® Data 2012-2015

GERMINATION RESULTS WITH ASCEND SL



10-34-0 + Citri-Che® Zinc 10% + Ascend® SL



10-34-0 + Citri-Che® Zinc 10%

ROOT MASS RESULTS WITH ASCEND SL



10-34-0 + Citri-Che® Zinc 10% + Ascend®



10-34-0 + Citri-Che® Zinc 10%



COMMON USE RATE

Foliar (All crops):
100 mL/acre

Seed treatment
(All crops):
68-273 mL/100 kg seed

In-furrow corn:
139-186 mL/acre



PACKAGING

2 x 9.46 L jugs/case



ACTIVE INGREDIENT

0.090% Cytokinin (as kinetin)
0.030% Gibberellic acid
0.045% Indolebutyric acid

Ascend SL provides advantages at many different growth stages. Apply Ascend as a seed treatment, in-furrow, or in a foliar application.

CPP OFFERINGS



CROP PROTECTION AND NUTRIENT PRODUCTS

Use smartphone camera to scan code

HERBICIDES

PRODUCT	GROUP	ACTIVE INGREDIENT	COMMON USE RATE	RECOMMENDED ADJUVANT	PACKAGING	RECOMMENDED DROPLET SIZE	PREHARVEST INTERVAL (PHI)	MIN WATER VOLUME	RAINFEST
Antler[®] 360 UNPACKED BY WINFIELD UNITED	1	Clethodim 360 g/L	80 acres/jug 320 acres/case	Journey [®] HSOC at 0.5% v/v	4 x 4 L jugs/case	Medium to Coarse	Peas, soybeans - 75 days Sunflowers - 72 days Canola, chickpeas, dry beans, faba beans, flax, lentils, mustard, potatoes - 60 days Alfalfa - 30 days	Ground = 6 US gal/ac Aerial = 3 US gal/ac	1 hour, is generally limited by tank-mix partners
Antler[®] BY WINFIELD UNITED	1	Clethodim 240 g/L	40 acres/case	Journey HSOC is included in the case	3 L + 7.57 L jugs/case	Medium to Coarse	Peas, soybeans - 75 days Sunflowers - 72 days Canola, chickpeas, dry beans, faba beans, flax, lentils, mustard, potatoes - 60 days Alfalfa - 30 days	Ground = 6 US gal/ac	1 hour, is generally limited by tank-mix partners
Cadillac[™] One BY WINFIELD UNITED	1	Clodinafop 80 g/L	40 acres/jug 80 acres/case 320 acres/drum	Included in the case	2 x 11.3 L jugs/case 90.6 L drum	Medium to Coarse	60 days	Ground = 5 US gal/ac Aerial = 3 US gal/ac	30 minutes, rainfast is typically limited by tank-mix partners
Cadillac[™] UNPACKED BY WINFIELD UNITED	1	Clodinafop 240 g/L	80 acres/jug 160 acres/case	Journey HSOC at 0.5% v/v	2 x 7.36 L jugs/case	Medium to Coarse	60 days	Ground = 5 US gal/ac Aerial = 3 US gal/ac	30 minutes, rainfast is typically limited by tank-mix partners
Cavalier[™] 333 BY WINFIELD UNITED	4	Fluroxypyr 333 g/L	60-80 acres/jug 120-160 acres/case	Not applicable	2 x 10 L jugs/case	Coarse	60 days	Ground = 6 US gal/ac Aerial = 3 US gal/ac	1 hour
Foremost[™] BY WINFIELD UNITED	14	Carfentrazone 240 g/L	80-160 acres/jug 320-640 acres/case	MasterLock [®] at 0.5% v/v or HiActivate [™] at 0.25% v/v when used without glyphosate	4 x 2.4 L jugs/case	Medium to Coarse	Potatoes - 7 days All crops registered for harvest aide use - 3 days	Ground = 10 US gal/ac	6 - 8 hours
Marshall[™] UNPACKED BY WINFIELD UNITED	1	Quizalofop 96 g/L	50 acres/jug 100 acres/case	Journey HSOC at 0.5% v/v	2 x 10 L jugs/case	Medium to Coarse	Chickpeas - 85 days Flax - 82 days Soybean - 80 days Peas, lentils - 65 days Canola, mustard - 64 days Sunflower - 60 days Dry bean - 30 days	Ground = 10 US gal/ac Aerial = 3 US gal/ac	1 hour
Stonewall[™] 540 BY WINFIELD UNITED	9	Glyphosate 540 g/L	Varies	Crimson [®] NG up to 2.5% v/v	2 x 10 L jugs/case 115 L drum 500 L, 800 L, and 1000 L totes	Coarse	7 days for most registered field crops	Ground = 5 US gal/ac Aerial = 2 US gal/ac Do not apply by air except for pre-harvest	1 hour
WinField[®] Diquat	22	Diquat 240 g/L	0.5-0.7 L/ac	HiActivate at 0.1% v/v	120 L drum 500 L and 1000 L totes	Medium to Coarse	Varies by crop	Ground = 24 US gal/ac Aerial = 5 US gal/ac	Once dry
WinField[®] Glufosinate	10	Glufosinate 150 g/L	1.08-1.6 L/ac	Crimson NG up to 2.5% v/v	2 x 10 L jugs/case 120 L drum 500 L and 1000 L totes	Medium	Soybeans - 70 days Other crops - depends on tank mix, refer to label for details	Ground = 12 US gal/ac Aerial = 4 US gal/ac	4 hours
WinField[®] Glyphosate	9	Glyphosate 540 g/L	Varies	Crimson NG up to 2.5% v/v	500 L and 1000 L totes	Coarse	7 days for most registered field crops; refer to label for details	Ground = 5 US gal/ac Aerial = 2 US gal/ac Do not apply by air except for pre-harvest aerial application	1 hour

FUNGICIDES

PRODUCT	GROUP	ACTIVE INGREDIENT	COMMON USE RATE	PACKAGING	PREHARVEST INTERVAL (PHI)	MIN WATER VOLUME
Confine[™] Extra BY WINFIELD UNITED	33	53% Mono- and Di-potassium salts of phosphorus acid and 47% other ingredients	2-4 L/ac	2 x 10 L jugs/case 1000 L tote	Do not apply within 1 day of harvest	Ground = 10.5 US gal/ac

TANK-MIX OPTIMIZATION

PRODUCT	USED FOR	ACTIVE INGREDIENT	COMMON USE RATE	PACKAGING
Fast Break[™] BY WINFIELD UNITED	Antifoam	Dimethylpolysiloxane Methylated silicon Inert ingredients	30 mL (1oz) per 100 US gal of spray solution	12 x 473 mL jugs/case
ProTank[™] Cleaner BY WINFIELD UNITED	Tank Cleaner	Proprietary blend of phosphate and carbonate salts, sequestering agents, surfactants, and solvents	1 L per 100 US gal of water	12 x 1 L jugs/case

PART OF YOUR COMMUNITY

AG THRIVES ON THE SUPPORT OF GOOD NEIGHBOURS

We're proud to support local partners and farmers through our pillars of community investment: Mental Health, Hunger, Education, and Community.

OUR INITIATIVES

Uplifting people and communities through volunteering and philanthropy is a fundamental part of how we operate every day. WinField United also undertakes two major community initiatives each year.



The Journey 5km by WinField United run, walk, and wheel was created to support mental health and combat burnout heading into the busy growing season. Participants simply sign up, run/walk/wheel 5 km, have open discussions about mental health, and check in with family, friends, and co-workers. Join us next spring!



JOURNEY 5KM

Use smartphone camera to scan code



Raise the Barn brings together independent retailers and community organizations to make a lasting difference in the communities in which we live and work. Partners put their creativity and ingenuity to the test to come up with an impactful idea to address a local need in the areas of Mental Health, Hunger, Education, or Community.



RAISE THE BARN

Use smartphone camera to scan code



10% Total Recycled Fiber

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Important: Before use always read and follow label instructions. Crop performance is dependent on several factors beyond the control of WinField United, including without limitation, soil type, pest pressures, agronomic practices, and weather conditions. Growers are encouraged to consider data from multiple locations, over multiple years, and be mindful of how such agronomic conditions could impact results.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. Delaro®, Infinity®, Laudis®, Proline®, Prosaro® Pro, Roundup Xtend®, Sencor®, Varro®, and XtendiMax® are trademarks of Bayer Group. Used under license.

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