

# Which adjuvant?



**UPL**  
The market  
leader in  
adjuvants

## Your UPL adjuvant guide

Enhance the performance of your crop protection inputs with UPL's comprehensive range of adjuvants



PRODUCT	ADJUVANT TYPE	FEATURES & BENEFITS
	<b>SPREADER/WETTER</b>	<ul style="list-style-type: none"> <li>General purpose non-ionic adjuvant to improve deposition, wetting and spreading of crop protection products</li> <li>Outperforms spreading ability of most other non-ionic wetters in high to moderate spray volumes</li> </ul>
	<b>PENETRATING ADJUVANT</b>	<ul style="list-style-type: none"> <li>Improve the uptake of nitrogen</li> </ul>
	<b>NON-IONIC SUPER SPREADER/STICKER</b>	<ul style="list-style-type: none"> <li>Low water volume spraying for improved coverage and rainfastness</li> </ul>
	<b>HERBICIDE ACTIVATOR</b>	<ul style="list-style-type: none"> <li>Enhances knockdown of various contact herbicides in orchards, vineyards and forestry</li> <li>For volunteer potato management in onions and improved herbicide performance in conservation tillage</li> </ul>
	<b>SUPER-SPREADER/WETTER</b>	<ul style="list-style-type: none"> <li>Provides superior spray deposition and target coverage in low water volume</li> <li>Delivers significant spraying work rate efficiencies, which reduce spray operator costs</li> <li>Ideal for aerial, low water volume spraying</li> </ul>
	<b>SUPER-SPREADER/WETTER</b>	<ul style="list-style-type: none"> <li>BioGro approved organosilicone blend</li> <li>Provides superior spray deposition and target coverage in low water volume</li> <li>Delivers significant spraying work rate efficiencies, which reduce spray operator costs</li> <li>Ideal for aerial, low water volume spraying</li> </ul>
	<b>SUPER-SPREADER/WETTER</b>	<ul style="list-style-type: none"> <li>Unique super-spreader for use with reduced water rates in combination with highly acid or alkaline based products</li> </ul>
	<b>SUPER-SPREADER/STICKER</b>	<ul style="list-style-type: none"> <li>Low volume aerial or ground spraying for enhanced spread, coverage and superior rainfastness</li> </ul>
	<b>SUPER PENETRANT</b>	<ul style="list-style-type: none"> <li>For post-harvest use to promote crop protection products into difficult to penetrate situations such as cicada and passion vine hopper egg masses on kiwifruit vines</li> </ul>
	<b>LECITHIN BASED ACIDIFYING PENETRANT</b>	<ul style="list-style-type: none"> <li>Surfactant, penetrant, acidifier, drift retardant</li> <li>Increases droplet retention</li> <li>Increases uptake of systemic and translaminar products</li> <li>Very good drift reduction</li> <li>Rainfast in 30 minutes</li> <li><b>Acidifies spray solution</b></li> </ul>

SUITABLE FOR USE WITH	REPLACEMENT FOR
<ul style="list-style-type: none"> <li>In any situation where a non-ionic surfactant/wetting agent is recommended (unless otherwise stated)</li> <li>Amistar®, Ampligo®, Attack®, Cypher® EW, Dew™ 600, Diazol® 800, Dominex®, Karate® Zeon, Kumulus®, Microthiol®, PastureGibb™, Progibb® SG, Prolific®, Reglone®, Semptra®</li> </ul>	Contact™ Xcel, Ezi Cover, Lat-B®, Omniwett, Spreadwet 1000, Synergy™ Wetter Sticker, Wetcit® · Widespread® 1000
<ul style="list-style-type: none"> <li>Nitrogen source at late dormancy in apples and kiwifruit to induce even budbreak</li> </ul>	Alternative to hydrogen cyanamide
<ul style="list-style-type: none"> <li>Crop protection products including PGRs in outdoor horticultural crops</li> </ul>	Bind-R Duo™, Hywet Spraytite™, Umbrella™
<ul style="list-style-type: none"> <li>Glyphosate, glufosinate ammonium, hexazinone, terbuthylazine</li> </ul>	Brownout™, Burnout™
<ul style="list-style-type: none"> <li>Low water volume ground or aerial spray applications of insecticides, fungicides, certain contact and selective herbicides, PGRs and foliar fertilisers</li> </ul>	Flume®, Gro-Wet™, Hywet™
<ul style="list-style-type: none"> <li>Low water volume ground or aerial spray applications of insecticides, fungicides, PGRs and foliar fertilisers</li> </ul>	Biospread®, Ecospread®
<ul style="list-style-type: none"> <li>Stain removal products in kiwifruit</li> <li>Lime sulphur use in grapes</li> </ul>	
<ul style="list-style-type: none"> <li>Insecticides, fungicides, and nutrient products in low water volume, concentrate spraying</li> </ul>	Bind-R Duo™, Hywet Spraytite™, Umbrella™
<ul style="list-style-type: none"> <li>Assail®</li> </ul>	
<ul style="list-style-type: none"> <li>Weak acid herbicides, PGRs, desiccants, defoliant, foliar nutrients and systemic fungicides and insecticides</li> <li>Where <b>acidification</b> of spray solution is required</li> </ul>	Companion™, Hybrid™ SB, Raizer® 700





PRODUCT	ADJUVANT TYPE	FEATURES & BENEFITS
	<b>LECITHIN PENETRANT</b>	<ul style="list-style-type: none"> <li>• Surfactant, penetrant, drift retardant</li> <li>• Increases droplet retention</li> <li>• Increases uptake of systemic and translaminar products</li> <li>• Very good drift reduction</li> <li>• Rainfast in 30 minutes</li> <li>• Great mate for glyphosate</li> </ul>
	<b>SILICONE BASED OIL ADJUVANT</b>	<ul style="list-style-type: none"> <li>• Silicone-based adjuvant that mixes with oil to improve spreading and penetration into plants for use with herbicides to control wilding conifers</li> </ul>
	<b>LOW FOAM ORGANOSILICONE</b>	<ul style="list-style-type: none"> <li>• Low foam trisiloxane organosilicone</li> <li>• Improves droplet spread for thorough coverage of plant parts</li> <li>• Provides increased penetration for maximum uptake through stomata of weeds such as gorse and broom</li> </ul>
	<b>OIL ADJUVANT</b>	<ul style="list-style-type: none"> <li>• Enhances spreading properties of horticultural spraying oils on plant surfaces</li> </ul>
	<b>CROP OIL CONCENTRATE</b>	<ul style="list-style-type: none"> <li>• Superior paraffinic oil</li> <li>• Enhances performance of certain herbicides and insecticides</li> <li>• Aids droplet spreading and penetration</li> <li>• Low foaming</li> </ul>
	<b>SURFACTANT/POLYMER BLEND</b>	<ul style="list-style-type: none"> <li>• For the reduction of pod-shatter in seed brassica crops including oil seed rape</li> </ul>
	<b>PENETRATING ADJUVANT/ MODIFIED SEED OIL</b>	<ul style="list-style-type: none"> <li>• For use whenever a methylated (MSO) or esterified (ESO) seed oil-based product is recommended</li> <li>• Improves droplet spread and penetration</li> <li>• Reduces drift</li> <li>• Reduces spray droplet evaporation</li> </ul>
	<b>NON-IONIC SPREADER/ WETTER</b>	<ul style="list-style-type: none"> <li>• Non-ionic adjuvant to improve wetting, spreading properties of agricultural chemicals</li> </ul>
	<b>ORGANOSILICONE PENETRANT</b>	<ul style="list-style-type: none"> <li>• For use with herbicides when spraying out brushweeds (e.g., gorse, blackberry, broom, kanuka, manuka, sweet briar)</li> <li>• Improves droplet spread for thorough coverage of plant parts</li> <li>• Provides increased penetration for maximum uptake through stomata of weeds such as gorse and broom</li> </ul>

SUITABLE FOR USE WITH	REPLACEMENT FOR
<ul style="list-style-type: none"> <li>• 2,4-D, fungicides and insecticides that are either systemic or translaminar (i.e., they move into plant), foliar fertilisers, glyphosate formulations, Granstar®, Harmony®, MCPA, PGRs</li> </ul>	Buffy, Driftex™, Eradicate 600
<ul style="list-style-type: none"> <li>• Added to Punch® to promote penetration and spread of herbicide mix</li> <li>• Wilding pine control herbicides such as X-Tree®</li> </ul>	
<ul style="list-style-type: none"> <li>• Associate® 600 WDG, Escort®, glyphosate and metsulfuron formulations, Grazon®, Mustang®, Synergy™ Met 600, Tordon Brushkiller™ XT, Zeal™</li> </ul>	Accelerate, Agpro Organosilicone, Country Mile Organosilicone, Dewdrop™, Force®, Pulse®, Silmaxx™, SuperSil™
<ul style="list-style-type: none"> <li>• DC Tron™, Excel® Oil, JMS™ Stylet Oil</li> </ul>	
<ul style="list-style-type: none"> <li>• In any situation where a crop oil is recommended</li> <li>• Callisto®, Gallant Ultra, Monarch™ (post-emergent use only), Preside™/Valdo® 800 WG, Radiate™, Success™ Naturalyte, Tordon™ Max</li> <li>• All selective grass herbicides such as clethodim (Centurion® Xtra)</li> </ul>	Agpro Crop Oil, Agpro Spray Maximiser, Bonza®, Collaborate Spraying Oil, Hasten™, Uptake™ Spraying Oil, Synergy™ Mineral Oil, Synoil™
<ul style="list-style-type: none"> <li>• In any situation where an oil-based adjuvant is specified on the label</li> <li>• Topik®, Twinax®</li> </ul>	Hasten™, Kwickin™
<ul style="list-style-type: none"> <li>• In any situation where a non-ionic surfactant/wetting agent is recommended</li> <li>• Amistar®, Ampligo®, Attack®, Cypher® EW, Dew™ 600, Diazol® 800, Dominex®, Karate® Zeon, Microthiol®, PastureGibb™, Progibb® SG, Prolific®, Reglone®, Sempra®</li> </ul>	Contact™ Xcel, Ezi Cover, Lat-B®, Omniwett, Spreadwet 1000, Synergy™ Wetter Sticker, Wetcit®, Widespread® 1000
<ul style="list-style-type: none"> <li>• Answer®, Associate® 600 WDG, Escort®, all glyphosate and metsulfuron formulations, Grazon®, Lion® 490 DST, Mustang®, Roundup Ultra® Max, Synergy™ Met 600, Tordon Brushkiller™ XT, WeedMaster® TS540, Zeal™</li> </ul>	Accelerate, Agpro organosilicone, Country Mile Organosilicone, Dewdrop™, Force® Input®, Pulse®, Silmaxx™, SuperSil™





PRODUCT	ADJUVANT TYPE	FEATURES & BENEFITS
	<b>CROP OIL CONCENTRATE</b>	<ul style="list-style-type: none"> <li>• Spreader, penetrant, activator, cuticle disrupter</li> <li>• General purpose crop oil concentrate with a special blend of surfactants and added anti-foam designed for use with crop protection sprays</li> </ul>
	<b>ORGANOSILICONE PENETRANT</b>	<ul style="list-style-type: none"> <li>• For use with herbicides when spraying out brushweeds (e.g., gorse, blackberry, broom, kanuka, manuka, sweet briar)</li> <li>• Improves droplet spread for thorough coverage of plant parts</li> <li>• Provides increased penetration for maximum uptake through stomata of weeds such as gorse and broom</li> </ul>
	<b>PENERANT/DEPOSITION/ DRIFT CONTROL AGENT</b>	<ul style="list-style-type: none"> <li>• Penetrant, deposition aid, drift control agent derived from sustainable pine tree stump resin</li> </ul>

SUITABLE FOR USE WITH	REPLACEMENT FOR
<ul style="list-style-type: none"> <li>• In any situation where a crop oil is recommended</li> <li>• Callisto®, Gallant Ultra Monarch™ (post-emergent use only), Preside™/Valdo® 800 WG, Radiate™, Success™ Naturalyte, Tordon™ Max</li> <li>• All selective grass herbicides such as clethodim (Centurion® Xtra)</li> </ul>	Agpro Crop Oil, Agpro Spray Maximiser Bonza®, Collaborate Spraying Oil, Hasten™, Uptake™ Spraying Oil, Synergy™ Mineral Oil, Synoil™
<ul style="list-style-type: none"> <li>• Associate® 600 WDG, Escort®, glyphosate and metsulfuron formulations, Grazon®, Mustang®, Synergy™ Met 600, Tordon Brushkiller™ XT, Zeal™</li> </ul>	Accelerate, Agpro organosilicone, Country Mile Organosilicone, Dewdrop™, Force®, Pulse®, Silmax™, SuperSil™
<ul style="list-style-type: none"> <li>• For use with herbicides when spraying out pasture, controlling weeds post-harvest and applying under vines and trees</li> <li>• Bammer®, glyphosate</li> </ul>	Driftex™, Kwickin®, Eradicate™

## GOOD AGRICULTURAL PRACTICE

PRODUCT	ADJUVANT TYPE	FEATURES AND BENEFITS
	<b>TANK CLEANER AND DECONTAMINANT</b>	<ul style="list-style-type: none"> <li>• Minimizes potential damage to sensitive crops by thoroughly cleaning and decontaminating spray tanks, hose lines and booms</li> <li>• Removes hard to shift residues from sulfonyl urea, phenoxy and carfentrazone herbicides</li> <li>• Superior chemistry formulation</li> </ul>
	<b>ANTI-FOAM</b>	<ul style="list-style-type: none"> <li>• New generation technology</li> <li>• Excellent foam prevention</li> <li>• Effective in wide pH ranges</li> <li>• Very low use rates</li> </ul>
	<b>MARKER DYES AND FOAM MARKER</b>	<ul style="list-style-type: none"> <li>• Trakka® Brite Highly visible marker dye</li> <li>• Trakka® Blue Biodegradable blue dyestuff</li> <li>• Trakka® Red Low staining biodegradable diazo dyestuff</li> <li>• Trakka® Foam Marker Long life spray marker foam</li> </ul>
	<b>WATER CONDITIONER</b>	<ul style="list-style-type: none"> <li>• Reduces the effects of 'hard' water on herbicide performance</li> <li>• Helps reduce water pH</li> </ul>

SUITABLE FOR USE WITH	REPLACEMENT FOR
<ul style="list-style-type: none"> <li>• Spray tanks that require cleaning or decontaminating of chemical residues</li> <li>• Perfect for use in helicopter or spray contractor operations where spray tank clean out is critical between spray jobs</li> </ul>	Synergy™ Tank Cleaner, Tanksafe™
<ul style="list-style-type: none"> <li>• In any situation where excessive foaming in spray tanks occurs</li> </ul>	AntiFoam™-A, Agpro Anti-Foam 1410, Foam Fighter®, Foamex 10™, Synergy No Foam
<ul style="list-style-type: none"> <li>• To assist with identifying sprayed areas</li> <li>• Trakka Blue as colourant for turf</li> <li>• Trakka Foam performs in a wide range of conditions including hot temperatures</li> </ul>	FIL Been There, FIL Done That
<ul style="list-style-type: none"> <li>• When spraying water is 'hard' and high in cations</li> <li>• When water acidification is required</li> <li>• Ideal for use with all glyphosate, phenoxy, FOP and DIM products, picloram and clopyralid etc.</li> </ul>	Lokit™



PRODUCT PROPERTIES	Increase spreading	Increase deposition	Increase rain-fastness	Cuticle penetrant grass and broadleaf weeds	Stomata penetrant	Reduce drift	Dilute water volumes (to point of run-off)	Moderate water volumes	Low water volumes
<b>ACTIWETT</b> ACT SMART	✓✓✓	✓✓✓	✓	✓			✓✓✓✓✓	✓✓✓	✓
<b>ARMO</b> Break M2	✓✓✓✓	✓✓✓✓	✓✓✓			✓✓	✓✓	✓✓✓✓	✓✓✓✓
<b>BOND</b> Adjuvant Extra	✓✓✓	✓✓✓✓	✓✓✓✓			✓✓✓✓		✓✓✓	✓
<b>BROWNDOWN</b> ZAP-D	✓	✓✓	✓✓	✓✓✓✓			✓✓✓✓	✓✓	
<b>DuWett</b> SUPER-SPREADER	✓✓✓✓✓	✓✓✓✓✓	✓			✓✓✓✓		✓✓✓✓	✓✓✓✓✓
<b>DuWett</b> ORGANIC	✓✓✓✓	✓✓✓✓	✓			✓✓✓		✓✓✓✓	✓✓✓✓✓
<b>DuWett</b> STAINLESS	✓✓✓✓	✓✓✓✓	✓			✓✓✓		✓✓✓✓	✓✓✓✓✓
<b>DuWett</b> WATERPROOF MAX	✓✓✓✓	✓✓✓✓✓	✓✓✓✓✓			✓✓✓✓		✓✓✓✓	✓✓✓✓✓
<b>Engulf</b> SUPER PENETRANT SURFACTANT	✓✓✓✓	✓✓✓✓	✓✓✓				✓✓	✓✓✓	✓✓✓✓✓
<b>Li-700</b>	✓✓	✓✓✓✓	✓✓✓	✓✓✓✓✓		✓✓✓✓✓	✓✓✓	✓✓✓	
<b>Li-7000</b>	✓✓	✓✓✓✓	✓✓✓	✓✓✓✓✓		✓✓✓✓✓	✓✓✓	✓✓✓	✓✓✓✓✓ + Du-Wett
<b>JAB</b>	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓			✓✓✓	✓✓✓✓✓
<b>MAX-Spread</b> LOW FOAM	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓	✓✓✓✓✓			✓✓✓	✓✓✓✓✓
<b>OilMate II</b> OIL MANAGEMENT SYSTEM	✓✓✓	✓✓	✓			✓	✓✓✓✓✓	✓✓✓✓✓	✓✓✓✓✓ + Du-Wett
<b>PEPTOIL</b>	✓✓	✓✓✓	✓✓✓	✓✓✓✓		✓✓	✓✓✓✓✓	✓✓✓✓	✓
<b>PUNCH</b> PENETRANT	✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓		✓✓✓✓✓		✓✓✓	✓✓✓✓✓ + JAB
<b>RANGER</b>	✓✓✓	✓✓✓	✓	✓			✓✓✓✓✓	✓✓✓	✓
<b>SATUR8</b> SUPER WETTING-PENETRANT	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓	✓✓✓✓✓			✓✓✓	✓✓✓✓✓
<b>SIDEKICK</b>	✓✓	✓✓✓	✓✓✓	✓✓✓✓		✓✓	✓✓✓✓✓	✓✓✓✓	✓
<b>SLIKKA</b>	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓	✓✓✓✓✓			✓✓✓	✓✓✓✓✓
<b>UNISON</b>	✓✓	✓✓✓✓	✓✓✓	✓✓✓✓✓		✓✓✓✓✓	✓✓✓	✓✓✓	✓

<b>RATING SYSTEM</b> MORE TICKS = BEST PRODUCT	<b>SOME EFFECT</b> ✓	<b>EFFECTIVE</b> ✓✓✓	<b>BEST USE</b> ✓✓✓✓✓
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This adjuvant guide is not intended to replace product labels. Always refer and adhere to respective product labels. Various factors, including skill of user, can affect the performance of these products. No warranties are given in respect of products or information relating to them. Implied warranties are excluded to the extent legally permitted.

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