

THE ULTIMATE SPRAYWISE SUPERPOWERS



Essential Adjuvants Guide

 **Nufarm**
Grow a better tomorrow

MAKE THE MOST OF YOUR SPRAYING PROGRAM WITH NUFARM



This guide will help you take control over pests, weeds and diseases by helping you choose the right adjuvants for every application.

Spraywise Introduction

The Nufarm Spraywise range is your 'one stop shop' for quality adjuvants, application and cleaning partners.



If you are new to adjuvants this booklet is aimed to help you select the best fit for your spraying application and maximise your on farm results.

When using the appropriate Spraywise partner with your crop protection product, you can achieve higher efficacy, improved deposition, coverage and penetration whilst reducing; drift, water use, over-spraying or crop damage resulting in safer more sustainable spraying practices.

Continue reading and look to the back half of this booklet for recommendations on which Spraywise products can be used with each of our wider product offerings. For a glossary of terms refer to the back page of this booklet.

If you're using one of our Spraywise range in accordance with the label, you have the peace of mind that Nufarm has your back with our Nufarm Performance Guarantee on all our products.

Talk to your local Nufarm Territory Manager or call Customer Services on 0800 683 276

WHAT'S AN ADJUVANT?

An adjuvant is an ingredient added to a spray application that improves the spraying properties of the spray solution and activity of the active ingredient(s) in agricultural and horticultural crop protection sprays.

WHAT'S AN ACTIVE?

Active ingredients are the main component of a crop protection product (i.e herbicide, insecticide or fungicide), that control targeted pests, weeds or fungi in a range of agricultural or horticultural situations.



As sustainable spraying practices become more and more important, we've searched globally to provide you with a high quality range, that we've tested in New Zealand conditions.

As an example of this is our most recent Bonza Gold introduction, where we confirmed Bonza Gold's **safety and efficacy** in 17 trials across NZ when tank mixed with a wide range of products across an extensive range of crops.

Pulse® Penetrant

Premium Organo-silicone Penetrant

Thanks to its spreading and super penetrating abilities, Pulse Penetrant has significant advantages when used with glyphosate. By dramatically reducing droplet surface tension on foliage it allows both for rapid uptake and decreased drying times. The amount of herbicide entering the plant quickly is greatly increased.

KEY BENEFITS

- Superior wetting ability
- Improved penetration through stomatal uptake leading to faster herbicide uptake
- Improved adhesion to hard to wet plants such as gorse, bracken and "waxy" spring ryegrass

WATCH OUT FOR

- Add Pulse when the tank is 85% full to avoid excessive foaming
- Avoid application to wet plants as this may negatively effect rainfall period
- When spray mix has been stored over night, Pulse should be re-added before spraying the next day



IDEAL SITUATION

- Apply to actively growing plants
- Ensure there is sufficient leaf area
- Ensure the correct water rate is applied
- Apply to dry foliage
- Ensure the correct rate and type of herbicide is applied
- Can be used under challenging weather conditions
- Must be added to some herbicides when spraying brushweeds

SUCCESS STORIES

- Reduces the rainfall period from 2 hours to 15 minutes when applied with Crucial

Bonza Gold[®]

Adjuvant Oil

A premium oil adjuvant, Bonza Gold is a blend of esterified canola oil with emulsifiers and surfactants to enhance wetting and spreading of agricultural chemicals, uptake of systemic herbicides and as an aid for modifying spray droplet quality and to preserve droplet survival.



KEY BENEFITS

- Improves deposition, wetting, spreading and uptake
- Aids in management of spray droplet quality and survival
- Potential to increase droplet VMD and reduce fine droplets

WATCH OUT FOR

- Some herbicides do not mix well with Bonza Gold, as it can create burn on some crops (eg. peas, beet, etc), so check before adding

IDEAL SITUATION

- Mixed at 500ml – 1L per 100lt of water with:
 - Valdo – pasture, clover seed crops, lucerne, maize, chicory
 - Latro – maize
 - Prestige – brassicas
 - Crest – wide range of broadleaf crops
 - Sequence – a wide range of broadleaf crops including brassicas, beet, clover, forage herbs & vineyards

SUCCESS STORIES

- When using Bonza Gold I know I'm covered if something goes wrong with my herbicide application

Flume®

Superior Spreading

A super spreading adjuvant to improve coverage of horticultural and agricultural products in low volume applications.



KEY BENEFITS

- Reduces the surface tension of spray solutions and spreads rapidly over the plant surface when used at recommended rates in low water volumes
- Allows for lower water rates meaning a spray tank will cover a bigger area. This leads to less down time filling and mixing and reduced spraying costs
- No penetration activity means excellent plant safety

WATCH OUT FOR

- Water and use rates depend on the situation. Ensure correct rate is used
- Before treating large areas, a small area should be tested first and results observed
- Flume will break down rapidly when mixed with highly acidic or highly alkaline agrichemicals and poor wetting may result
- Do not add any other adjuvants to Flume other than those products named on the label

IDEAL SITUATION

- Use in horticultural and agricultural crops
- Use when coverage is important for:
 - Contact fungicides
 - Contact insecticides
 - Low volume herbicides
- When time and money matter

SUCCESS STORIES

- By reducing the water rate it allows me to spray more with each tank fill

For superior spray coverage use a super-spreader

With Flume®

Without Flume®



Contact™ Xcel

Non-ionic General Purpose Spreader

For use with fungicides, some herbicides, insecticides and plant growth regulators. Contact Xcel is especially formulated to reduce the surface tension of spray droplets, causing them to spread out evenly over sprayed surfaces upon impact.



KEY BENEFITS

- A non-ionic surfactant
- Improves wetting, spreading and sticking of agricultural and horticultural sprays
- Reduces surface tension of spray droplets
- Maximises droplet retention and uptake
- Increases deposition on hard to wet plants
- Cost effective
- Does not contain any NPE's

WATCH OUT FOR

- Do not use on ornamental crops including those grown for cut flowers, foliage and nursery plants as crop injury may occur
- Do not mix with selective herbicides unless a non-ionic surfactant is recommended

IDEAL SITUATION

- Added to agricultural and horticultural sprays to better penetrate water repellent cuticles of insects, disease infection sites and enhance coverage of, and adherence to, waxy and hairy leaf surfaces
- Under hardened growth conditions such as very dry weather or where vegetation is dust covered

SUCCESS STORIES

- Preferred surfactant with ProGibb
- Used over forage brassicas to improve coverage of insecticides

Foam Marker

Foaming Agent

Manufactured from a blend of surfactants, Nufarm marking foam is a concentrated foam liquid additive for foam generating devices to assist with identifying broadacre spray swath width and prevent overspraying of already treated areas.



KEY BENEFITS

- Long lasting foam (approx. 2 hours in good weather conditions)
- Improves precision of agrichemical application reducing risk of over or under application
- Easy to use
- Use rates: 1L Foam Marker in 50-100L water

WATCH OUT FOR

- Quality can be affected by hard water
- Use clean rainwater or soft water
- When the foam marker mix has been stored overnight, Foam Marker should be re-added before spraying the next day

IDEAL SITUATION

- Where identification of spray swath width is necessary
- For use in suitably equipped booms, wipers and other application equipment

SUCCESS STORIES

- Quality foam markers are a desirable tool despite increasing use of GPS. Nufarm Foam Marker produces a long lasting quality foam at a competitive price

Amigo®

Drift Reduction Specialist

A drift reduction agent with built-in anti-foam that produces a more uniform spray pattern with fewer fine droplets and better spray deposition.



KEY BENEFITS

- Reduces driftable fines
- More uniform droplet size
- May improve droplet retention
- Excellent antifoam system
- Low use rates

IDEAL SITUATION

- Anywhere drift is a concern:
- Aerial application
- Challenging conditions
- Around sensitive crops or areas
- Where drift reduction measures are mandated on product labels

WATCH OUT FOR

- Do NOT mix Amigo with Pulse or other organosilicones
- Amigo has no drift reduction effect on Relay Super S which already contains emulsifiers and adding more can cause destabilisation and increase spray drift

SUCCESS STORIES

- Amigo shows a significant reduction in spray drift
- Amigo performs well at low use rates
- Amigo is plant friendly and does not cause cuticle or cell injury. Some adjuvants (eg oils) can cause cell or cuticle damage (burning) which can disrupt uptake and translocation of agrichemicals

Amigo. Drift reduction specialist.

Water

Driftable Fines

Amigo

Less Drift

With increased droplet retention



With Amigo®

Foam Wrecker

Anti-foam Agent

An anti-foam agent additive for agricultural chemicals.



KEY BENEFITS

- Controls foam in agricultural and horticultural spray mixtures
- Easy to use
- Low use rates: 1 - 5ml/100L

IDEAL SITUATION

- An additive to agricultural and horticultural sprays that are known to have foaming issues
- Staple product in contractors sheds for use when foaming issues arise

WATCH OUT FOR

- For best results add Foam Wrecker when the tank is being filled and before the addition of agricultural chemicals

SUCCESS STORIES

- Gives peace of mind for helicopter sprayers knowing they are not going to lose time dealing with foaming issues

Red Marker Dye

Marker Dye

A bright liquid marker dye for use with a range of agrichemicals to visually identify sprayed areas.



KEY BENEFITS

- Improves weed control by supporting coverage visually
- Minimises missed areas or over spraying
- Flexible use range
- Non flammable
- Compatible with most commonly used herbicides and foam markers

IDEAL SITUATION

- Scattered brushweed spraying
- Hand gun spraying
- Back pack spraying

WATCH OUT FOR

- Thoroughly rinse sprayer after use

SUCCESS STORIES

- Significantly reduces the likelihood of missing bushes or double spraying. Helps ensure the job is done well the first time.

Tank and Equipment Cleaner

If using the same spraying equipment for different chemical groups it's important to clean and decontaminate the equipment between each use. Nufarm Tank & Equipment Cleaner is ideal for cleaning, protecting and decontaminating between sprays and for end of season cleaning before storage.



KEY BENEFITS

- Cleans, protects and decontaminates
- Easy to transport
- Compact
- Low use rates
- Powder
- Suits most agrichemical situations

IDEAL SITUATION

- Routine cleaning at the end of each day's spraying
- When changing from herbicides to insecticides/fungicides especially when spraying sensitive crops
- End of season cleaning before storage
- Stain removal on outside of tank, tractors or other machinery

WATCH OUT FOR

- Ideally clean gear at end of spraying, not just before the next job
- Need to fill spray tank to top when cleaning
- Ensure filters, screens and nozzle diaphragms are cleaned properly as well
- Beware of older equipment with poor hygiene history (i.e. cracks in hold hoses and scale build up)

SUCCESS STORIES

Contractor Feedback:

"When we load the spray trucks in the morning for a days spraying there is not a lot of room left, with this product we can put in the cab with no risk of smell or health issues."

Tank Mixing Order

Reference Chart

1	Fill the tank $\frac{3}{4}$ full with water and add in the following order:
2	Wettable powders
3	Water dispersable granules
4	Flowable – suspension concentrates, capsule suspensions, etc
5	Emulsifiable concentrates
6	Water soluble concentrates
7	Adjuvants, wetters, oils, penetrants

Tank Mixing Reference Chart

Note: The information in this table is a quick reference only.
Always consult the product label before use.

CHEMISTRY	MODE OF ACTION GROUP	ACTIVE INGREDIENT	HERBICIDE	CLEANING PRODUCT AND RATE PER 100L WATER
DIMS – Cyclohexanediones	1	Clethodim	SeQuence® Centurion® Plus	Nufarm Tank and Equipment Cleaner – all as per label instructions
FOPs – Aryloxyphenoxy-propionates	1	Clodinafop-propargyl	Topik® Mandate®	
		Fenoxaprop-p-ethyl	Puma® S	
		Fluazifop-p-butyl	Fusilade® Forte	
		Haloxifop [(r)-isomer]	Crest® 520 Gallant Ultra®	
Sulfonylureas	2	Chlorimuron-ethyl	Classic®	
		Chlorsulfuron	Glean®	
		Halosulfuron-methyl	Sempra®	
		Iodosulfuron-methyl	Hussar®	
		Metsulfuron-methyl	Associate® 600 WDG Answer® Escort®	
		Nicosulfuron	Latro® WG	
		Primisulfuron-methyl	Beacon®	
		Thifensulfuron-methyl	Charter® 750WDG Harmony®	
		Tribenuron-methyl	Sero® 750WG Granstar®	
Imidazolinones	2	Imazethapyr	Kyte™ 700WG Spinnaker®	Water or Nufarm Tank and Equipment Cleaner as per label instructions or tank mix partner/s requirements
Triazolopyrimidines	2	Flumetsulam	Valdo® 800WG Preside®	
Triazines	5	Atrazine	Flowable Atrazine Nu-Trazine™ 900DF Gesaprim®	
		Cyanazine	Bladex®	
		Prometryn	Prominent® Prometryne 500SC	
		Propazine	Gesamil® 50WP	
		Simazine	Simanex® 600SC	
		Terbutylazine	Terb 500™ Tyllanex® 500SC Magneto® Topogard®	
		Terbutryn	Topogard®	
Triazinones	5	Hexazinone	Velpar® 20G Velpar DF	
		Metamitron	Goltix® DF Betanal® Quattro	
		Metribuzin	Sencor®	
Uracils	5	Bromacil	Uragan® WG	Water or Nufarm Tank and Equipment Cleaner as per label instructions
		Terbacil	Sinbar®	

CHEMISTRY	MODE OF ACTION GROUP	ACTIVE INGREDIENT	HERBICIDE	CLEANING PRODUCT AND RATE PER 100L WATER
Pyridazinones	5	Chloridazon	Pyramin® DF	Water or Nufarm Tank and Equipment Cleaner as per label instructions
Phenyl-carbamates	5	Desmedipham	Betanal Forte Betanal Quattro Betasana Trio	Water or Nufarm Tank and Equipment Cleaner as per label instructions or tank mix partner/s requirements
		Phenmedipham	Betanal Forte Betanal Quattro Betasana Trio®	
Ureas	5	Diuron	Karmex® 900	Water or Nufarm Tank and Equipment Cleaner as per label instructions
		Isoproturon	IPU 500 Turonex® 500SC Twister™ Protugan®	
		Linuron	Afalon®	
		Methabenzthiazuron	Tribunil®	
Nitriles	6	Bromoxynil	Emblem® Flo Bromotril® 400EC Jaguar® Image®	Water or Nufarm Tank and Equipment Cleaner as per label instructions or tank mix partner/s requirements
		Ioxynil	Totril® Super Twin-Star® Image®	
Benzothiadiazinones	6	Bentazone	Dictate™ 480 Basagran® Pulsar®	
Bipyridils	22	Diquat	Preeglone® Reglone®	Water or Nufarm Tank and Equipment Cleaner as per label instructions
		Paraquat	Gramoxone® Preeglone®	
Diphenylethers	14	Oxyfluorfen	Goal Advanced®	Water or Nufarm Tank and Equipment Cleaner as per label instructions or tank mix partner/s requirements
Oxidiazoles	14	Oxadiazon	Oracle® Exadia®	Water or Nufarm Tank and Equipment Cleaner as per label instructions
Triazolinones	14	Carfentrazone-ethyl	Nail® EC Nail® 600EC Hammer®	Water or Nufarm Tank and Equipment Cleaner as per label instructions or tank mix partner/s requirements
Pyridinecarboxamides	12	Diflufenican	Quantum® Jaguar®	Water or Nufarm Tank and Equipment Cleaner as per label instructions

CHEMISTRY	MODE OF ACTION GROUP	ACTIVE INGREDIENT	HERBICIDE	CLEANING PRODUCT AND RATE PER 100L WATER
Triazoles	34	Amitrole	Lonza® Activated Amitrole 400	Water or Nufarm Tank and Equipment Cleaner as per label instructions or tank mix partner/s requirements
Isoxazolidinones	13	Clomazone	Director™ CS Magister®	Nufarm Tank and Equipment Cleaner - all as per label instructions
Glycines	9	Glyphosate	CRUCIAL® WeedMaster® 360 WeedMaster® 470 WeedMaster® 540 WeedMaster® Dry Roundup Ultra®MAX Touchdown® IQ Trounce® Gorsekiller	Thorough water clean, or as per tank mixing partner/s requirements
Phosphinic acids	10	Glufosinate-ammonium	Biffo® Buster®	
Carbamates	18	Asulam	Dockstar™ Asulox®	Nufarm Tank and Equipment Cleaner - all as per label instructions
Dinitroanilines	3	Oryzalin	Surflan® Flo	Water or Nufarm Tank and Equipment Cleaner as per label instructions
		Pendimethalin	Stomp® Xtra Pendimethex®	
		Trifluralin	Treflan® NF Trifluralin Herbicide	
Benzamides	3	Propyzamide	Kerb® 500F	
Benzenedicarboxylic acids	3	Chlorthal-dimethyl	Dacthal® 75W	
Carbamates	23	Chlorpropham	Chloro IPC	
Chloroacetamides	15	Acetochlor	Roustabout® 840 Sylon® 840 Acierto®	Small amount of Nufarm Tank and Equipment Cleaner or just water
		Alachlor	Alanex® Cyclone®	
		Dimethenamid	Frontier®	
		Propachlor	Ramrod®	
		S-metolachlor	Dual® Gold	
Nitriles	29	Dichlobenil	Prefix®-D	Water or Nufarm Tank and Equipment Cleaner as per label instructions or tank mix partner/s requirements
Thiocarbamates	15	Tri-allate	Avadex® Xtra	Small amount of Nufarm Tank and Equipment Cleaner or just water
Benzofuranes	15	Ethofumesate	Claw® Nortron®	Water or Nufarm Tank and Equipment Cleaner as per label instructions or tank mix partner/s requirements
Chlorocarbonic acids	15	2,2-Dichloropropionic acid (dalapon)	Teedal®	
		TCA	Teedal	

CHEMISTRY	MODE OF ACTION GROUP	ACTIVE INGREDIENT	HERBICIDE	CLEANING PRODUCT AND RATE PER 100L WATER
Phenoxy-carboxylic acids	0	2,4-D	Baton® 800WSG Relay® Super S Sprinter® 2,4-D Amine Pasture-Kleen®	2L household ammonia (to make a 1% solution in the tank) followed by Nufarm Tank and Equipment Cleaner as per label instructions
	0	2,4-DB	Debut® 2,4-DB Herbicide	2L household ammonia (to make a 1% solution in the tank) followed by Nufarm Tank and Equipment Cleaner as per label instructions
	4	Dichlorprop	Dyprop® Salvo®	
		Dichlorprop-P	Duplosan® Super	
		Mcpa	Agritone® 750 Duplosan® Super Thistrol® Plus Tribal™ Gold Trimec®	
		Mcpb	MCPB 400 Thistrol® Plus Tribal™ Gold Pulsar®	
		Mecoprop	Trimec®	
		Mecoprop-P	Duplosan® KV Duplosan® Super Image® Saxon®	
Benzoic acids	4	Dicamba	Kamba® 750 Trimec® Cutlass®	Nufarm Tank and Equipment Cleaner, all as per label instructions
Pyridine-carboxylic acids	4	Clopyralid	Archer® 750 Prestige® Radiate® Versatill®	Nufarm Tank and Equipment Cleaner, all as per label instructions
		Fluroxypyr	Tandus® XL Starane® Twin-Star®	
		Picloram	Conquest® Prestige® Radiate® Tordon® Brushkiller XT	
		Triclopyr	Conquest® Scrubcutter® Grazon® Tordon® Brushkiller XT	
Arylamino propionic acids	0	Flamprop-m-isopropyl	Crusader® Stratos®	Water or Nufarm Tank and Equipment Cleaner as per label instructions or tank mix partner/s requirements

HERBICIDES	FORMULATION	RECOMMENDED SPRAY QUALITY	PREFERRED WATER VOL. FOR BOOM SPRAYING (L/HA)
Agritone® 750	SL	COARSE-VERY COARSE	100-300
Archer® 750	SL	COARSE-VERY COARSE	up to 300
Associate® 600 WDG	WDG	COARSE-VERY COARSE	200-400 (aerial)
Baton® 800WSG	WSG	COARSE-VERY COARSE	100-300
Biffo®	SL	MED-COARSE	200-500
Charter® 750WDG	WDG	MED-COARSE	60-300
Chateau®	WDG	COARSE	200-400
Conquest®	EC	COARSE	100-300
Crest® 520	EC	MEDIUM	200-400
CRUCIAL®	SL	MED-COARSE	100-200
Dictate™ 480	SL	MEDIUM	300-500
Director™ CS	CS	COARSE	150-400
Debut®	SL	COARSE-VERY COARSE	up to 300
Dockstar®	SL	MEDIUM	150-200
Duplosan® KV	SL	COARSE	150-300
Duplosan® Super	SL	COARSE	150-300
Emblem® Flo	SC	COARSE	min 200
Flowable Atrazine	SC	MED-COARSE	200-400
Kamba® 750	SL	MED-COARSE	150-300
Kyte™ 700WG	WDG	MED-COARSE	200-300
Latro® WG	WDG	MEDIUM	100-300

CS	Capsule Suspension	SL	Soluble Concentrate
EC	Emulsifiable Concentrate	WDG	Water Dispersible Granule (or Dry Flowable)
EW	Oil in Water Emulsion	WSG	Water Soluble Granule
SC	Suspension Concentrate		

PULSE® PENETRANT	CONTACT™ XCEL	BONZA GOLD®	AMIGO®	GENERAL COMMENTS
N	N	N	Y	
N	N	N	Y	
Y	N	N	Y but not with Pulse or any other organosilicone adjuvant	
N	N	N	Y	
N	Y	N	Y	A contact herbicide - good coverage is essential
Y, but only when used with glyphosate	N			
N	N	N	Y	
Y	N	N	N	
N	N	Y	N	
Y but not with Amigo or other drift control adjuvants	N	N	Y but not with Pulse or any other organosilicone adjuvant	
N	Only when specifically recommended	Only when specifically recommended	N	A contact herbicide - good coverage is essential
N	N	N	N	
N	N	N	Y	
N	N	N	N	Specific recommendation - no adjuvants
n	n	N	y	
n	N	N	y	
n	n	N	n	Specific recommendation - no adjuvants
n	N	Y aids foliar control	y	Only use one adjuvant
n	N	N	y	
n	Must be used	N	n	
n	N	Must be used	n	

HERBICIDES	FORMULATION	RECOMMENDED SPRAY QUALITY	PREFERRED WATER VOL. FOR BOOM SPRAYING (L/HA)
Nail® EC	EC	MED-COARSE	100-200
Nail® 600EC	EC	MED-COARSE	100-200
Nufarm MCPB 400	SL	COARSE-VERY COARSE	100-300
Nu-Trazine™ 900DF	WDG	MED-COARSE	200-400
Prestige®	SL	COARSE	100-300
Primiera®	SC	MED-COARSE	100-300
Ramrod®	SC	MED-COARSE	220
Relay® Super S	EC	COARSE-VERY COARSE	100-500
Roustabout® 840	EC	COARSE	200-300
Scrubcutter®	EC	COARSE-VERY COARSE	200-400
Sempra®	WDG	MED	100-200
SeQuence®	EC	FINE-MED	100-300
Sero® 750WG	WDG	MED-COARSE	min 60
Sprinter® 700DS	SL	COARSE-VERY COARSE	100-300
Tandus® XL	EC	MEDIUM	100-200
Thistrol® Plus	SL	COARSE-VERY COARSE	100-300
Tribal™ Gold	SL	COARSE-VERY COARSE	100-300
Trimec®	SL	MED-COARSE	200
Valdo® 800WG	WDG	COARSE	100-300
WeedMaster® Dry	WSG	MED-COARSE	100-200
WeedMaster® G360	SL	MED-COARSE	100-200
WeedMaster® TS470	SL	MED-COARSE	100-200
WeedMaster® TS540	SL	MED-COARSE	100-200

KEY			
CS	Capsule Suspension	SL	Soluble Concentrate
EC	Emulsifiable Concentrate	WDG	Water Dispersible Granule (or Dry Flowable)
EW	Oil in Water Emulsion	WSG	Water Soluble Granule
SC	Suspension Concentrate		

PULSE® PENETRANT	CONTACT™ XCEL	BONZA GOLD®	AMIGO®	GENERAL COMMENTS
N	N	Y for seed potato haulm desiccation	N	
N	N	Y for seed potato haulm desiccation	N	
N	N	N	Y	
N	N	Y aids foliar control	Y	Only use one adjuvant
Y when spraying brushweeds	N	Y when spraying fodder brassicas	N	
N	N	Must be used (except with Kamba or Emblem Flo)	N	
N	N	N	N	
N	N	N	N	
N	N	N	N	
Y	Y	N	Y but not with Pulse or any other organosilicone surfactants	
N	Y	Y	N	Only use one adjuvant
N	N	Must be used	N	
Y, but only when used with glyphosate	N	N	N	
N	N	N	Y	
Y, but only when tank mixed with glyphosate	N	N	N	
N	N	N	Y	
N	N	Must be used	Y	
N	N	N	N	
N	N	Must be used	N	
Y but not with Amigo or other drift control adjuvants	N	N	Y but not with Pulse or any other organosilicone surfactants	
Y but not with Amigo or other drift control adjuvants	N	N	Y but not with Pulse or any other organosilicone surfactants	
Y but not with Amigo or other drift control adjuvants	N	N	Y but not with Pulse or any other organosilicone surfactants	
Y but not with Amigo or other drift control adjuvants	N	N	Y but not with Pulse or any other organosilicone surfactants	

INSECTICIDES	FORMULATION	RECOMMENDED SPRAY QUALITY	PREFERRED WATER VOL. FOR BOOM SPRAYING (L/HA)
Attack®	EC	MEDIUM	100-300 (forage brassicas) 500-700 (vegetable brassicas)
Chlorpyrifos 500EC	EC	MEDIUM	100-200
Dew™ 600	EW	MEDIUM	150-250
Dimilin® 2L	SC	FINE-MED	100-200
Endgame™	WDG	MEDIUM	300-500
Grandevo® WDG	WDG	MEDIUM	N/A
Kaiso® 50WG	WDG	MEDIUM	200-1000
Nuprid® 350SC	SC	MEDIUM	Up to 600L
Admiral®			
DiPel® DF			
Digger® EW			
Mainman			
Torpedo			

FUNGICIDES	FORMULATION	RECOMMENDED SPRAY QUALITY	PREFERRED WATER VOL. FOR BOOM SPRAYING (L/HA)
Barrack® Betterstick	SC	MEDIUM	300-600
Captan 600 Flo	SC	MEDIUM	300-600
Champion®++	WDG	MEDIUM	300-600
Champ® WG	WDG	MEDIUM	300-600
Intuity®	SC	MEDIUM	300-600 (1000 for white rot)
Hornet™ 430SC	SC	MEDIUM	300-600 (1000 for white rot)
Nando®	SC	MEDIUM	500-600
Sumisclex® 500SC	SC	MEDIUM	500-1000L/ha depending on crop
Tazer®	SC	MEDIUM	200-500
Thiram 40F	SC	MEDIUM	300-600
Amishield®			
Botector			
Digger® EW			
Grandevo®			
Prolectus®			

PLANT GROWTH REGULATORS	FORMULATION	RECOMMENDED SPRAY QUALITY	PREFERRED WATER VOL. FOR BOOM SPRAYING (L/HA)
ProGibb® SG	WSG	MEDIUM	100-200
ReTain®	WSP	MEDIUM	800-1500

KEY

CS	Capsule Suspension	SL	Soluble Concentrate
EC	Emulsifiable Concentrate	WDG	Water Dispersible Granule (or Dry Flowable)
EW	Oil in Water Emulsion	WSG	Water Soluble Granule
SC	Suspension Concentrate		

CONTACT™ XCEL	FLUME®	AMIGO®	GENERAL COMMENTS
Y	Y	unknown	When using Flume with Attack on fodder crops consider crop density when adjusting water rates. Do not add Flume to Attack when spraying fodder beet
Y	Y	unknown	Do not add Flume to Chlorpyrifos 500EC when spraying fodder beet
Y	Y	unknown	
N	N	N	
Y	N	N	
N	Y	N	
Y	N	N	
Y	N	N	

FLUME®	CONTACT™ XCEL
N	Turf and cotula
N	Y
Y	Y
Y	Y
N	Y
N	Y
Y	Y
N	Y
N	Y
Y	Y

ADJUVANT
CONTACT XCEL
FREEWAY

	PULSE® PENETRANT	CONTACT™ XCEL	BONZA GOLD®
COMMENTS	For improved penetration & faster uptake of CRUCIAL®, WeedMaster® and other herbicides	A non-ionic surfactant which will improve the wetting, spreading and sticking of sprays	A specially formulated blend of esterified oil with emulsifiers and surfactants to enhance wetting and spreading of agricultural chemicals, uptake of systemic herbicides and as an aid for modifying spray droplet quality and to preserve droplet survival.
Droplet Management/Drift	✗		✓✓
Deposition Aid/Adhesion	✓✓	✓	✓✓
Spreading	✓✓✓	✓✓	✓
Penetration	✓✓✓		✓✓
Rainfastness	✓✓✓		
Antifoam	✗		
Low Volume Spraying		✗	✗
Foam marking			
Cleaning			

KEY



Better effects indicated by higher number of ticks

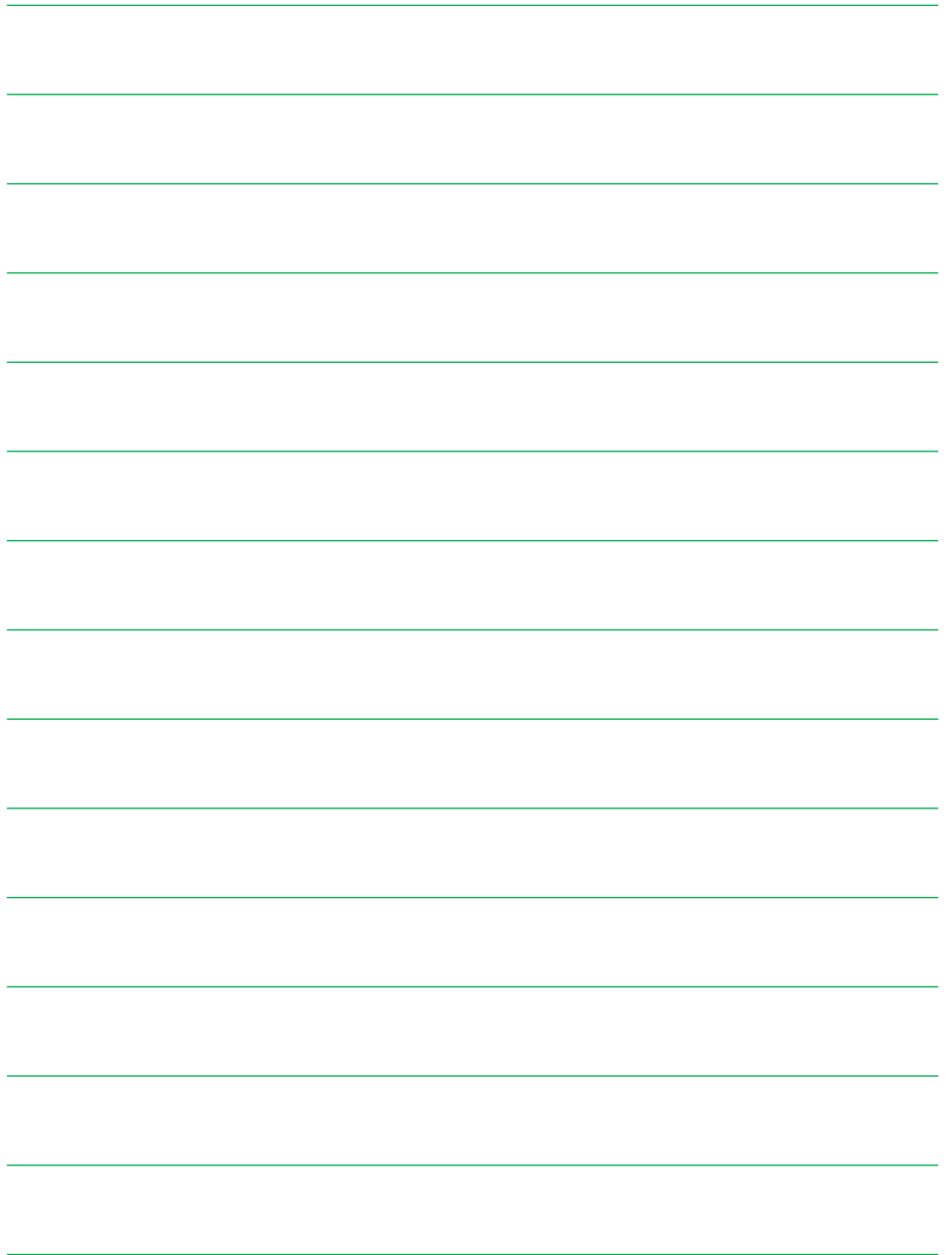


Indicates that the product has an adverse effect on the outcome

AMIGO®	FLUME®	TANK & EQUIPMENT CLEANER	FOAM MARKER	FOAM WRECKER
A drift reduction agent with built-in anti-foam that produces a more uniform spray pattern with fewer fine droplets and better spray deposition	A superior spreading adjuvant to improve coverage of horticultural and agricultural products in low volume applications	Cleans, protects, decontaminates	A foam marker for use with agricultural spraying	An anti-foam agent additive for agricultural chemicals
✓✓✓✓	✓			
✓✓	✓✓			
✓	✓✓✓✓			
✓✓				✓✓✓
✗	✓✓✓			
			✓✓✓	
		✓✓✓		

This image shows a single sheet of white paper with horizontal green ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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Glossary of Terms

The Nufarm Spraywise range is your 'one stop shop' for quality adjuvants, application and cleaning partners.

THE FOLLOWING TERMS ARE IMPORTANT TO UNDERSTANDING THE SPRAYWISE RANGE:

- **Adjuvant** – an ingredient added to a spray application that improves the spraying properties of the spray solution and activity of the active ingredient(s) in agricultural and horticultural crop protection sprays.
- **Active** – Active ingredient(s) are the main component of a crop protection product (i.e. herbicide, insecticide or fungicide), that control targeted pests, weeds or fungi in a range of agricultural or horticultural situations.
- **Penetrant** – Important when crop protection products require entry into the plant. These products help penetrate through the leaf surface.
- **Rainfastness** – The amount of time it takes for a crop protection product (and penetrant) to safely enter the plant where 'wash off' cannot occur.
- **Droplet Management** – Improves sprayed droplet properties, i.e. these can include the droplet size and/or the droplet's surface tension.
- **Drift** – The amount of small driftable fines. Reducing this supports higher contact with the leaf and reduces off-target drift.
- **Surface Tension** – High surface tension can result in droplets (ball bearings) that bounce or roll off leaf surfaces, lower surface tension improves deposition and spreading.
- **Deposition/Adhesion** – Essential when spraying plants, improving this increases the amount of sprayed droplets that stay on the leaf.
- **Spreading** – Important for contact herbicides, insecticides, fungicides, and some plant growth regulators. Increased coverage significantly improves the results with contact crop protection products.
- **Antifoam** – Reduces the amount of foaming when mixing and spraying, improving user safety and tank filling.
- **High Volume (Dilute) Spraying** – Spraying at medium to high water rates.
- **Low Volume (Concentrate) Spraying** – Spraying at low water rates (half to one-third of dilute) whilst achieving or improving coverage. This results in; less downtime filling and mixing, allowing a spray tank to go even further.
- **Foam Marking** – Supports fewer spray misses and overlapping with a visual foam line on the end of a spray boom.
- **Cleaning/Decontamination** – Reduces the amount of damaged crops or pastures due to previous spray tank residues.



Nufarm Priority Partnership® is an exclusive customer loyalty programme that values Nufarm customers for their support. As a Nufarm Priority Partnership member you will receive a number of exclusive benefits including:

- Purchase incentives on the full range of Nufarm products
- Information on new products, technology and services
- Special membership offers and promotions

Register today at:
www.prioritypartnership.co.nz

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