

KOMBO 950 LF

THE ALL-IN-ONE ADJUVANT



COMBINES MORE FUNCTIONS THAN ANY OTHER ADJUVANT

CARBOXYLIC ACID (CITRIC ACID)

Acidifies alkaline water

Assists herbicide penetration

Aids compatibility

Chelates Iron, Zinc & Aluminium Ions from solution

COMPLEX CARBOHYDRATE POLYMER (CCP)

Increases spray droplet size

Improves spray droplet deposition & retention

Reduces evaporative loss of the spray droplet

Mitigates spray drift

WETTING AGENT

Improves spray droplet spread

REFINED AMMONIUM SULPHATE

More soluble than normal AMS

Softens hard water

Stimulates herbicide uptake

Aids compatibility

DEFOAMING AGENT

Prevents build up of excess foam in the filling process

ALL IN ONE BAG



CONVENIENT "SINGLE PRODUCT COMBINATION ADJUVANT SYSTEM". NO NEED TO ADD ADDITIONAL AMMONIUM SULPHATE.

MORE SOLUBLE THAN TRADITIONAL BAGGED AMMONIUM SULPHATE.

MITIGATES OFF TARGET SPRAY DRIFT.

**COMPATIBLE WITH ALL OTHER HERBICIDES COMMONLY TANK MIXED WITH GLYPHOSATE.
EXTREMELY COST EFFECTIVE.**

1. WHAT IS KOMBO 950® LF?

- New generation, combination adjuvant with multi-functional properties for use with Glyphosate in all standard mixtures with other herbicides in broadacre fallow situations, under row weed control in horticulture and industrial weed control situations.
- Registered with the APVMA in March 2014 with 5 years of data protection from competitors.
- Researched, developed and made in Australia by Alphakem specifically for Australian conditions in an effort to make life a little easier for the Australian farmer.
- As a single spray adjuvant, KOMBO 950® LF performs functions that assist Glyphosate herbicide performance which in the past have required at least two (2) or more adjuvants (hence the name “KOMBO”) which in turn saves both the reseller and the farmer valuable time and money.
- Engineered as an “all-in-one” Glyphosate adjuvant to replace the need (in the majority of cases) to add bagged Ammonium Sulphate (AMS) to “LI 700 type” or “Oil based” adjuvants.

2. CHEMISTRY:

- Formulated as an easy to use, free flowing Water Soluble Powder (WSP).
- KOMBO 950® LF contains 800g/kg *Refined Ammonium Sulphate (RAMS)* and 150g/kg *Carboxylic Acid (Citric Acid)* as its active constituents.
- KOMBO 950® LF also contains a novel *Complex Carbohydrate Polymer (CCP)* and a powerful Wetting Agent as part of its formulation which are essential ingredients that enable this product to achieve high levels of performance.

INGREDIENT	USE IN FORMULATION
RAMS	Water softener, Stimulate herbicide uptake, Compatibility agent.
Citric acid	Acidifier, Chelating agent, Compatibility agent, Assist herbicide penetration.
CCP	Droplet size modifier, deposition & retention agent, anti-evaporant, drift mitigant.
Wetting Agent	Droplet surface tension reduction.
Defoaming Agent	Prevents build up of excess foam in the filling process
Other Components	Formulation aids.

3. KEY BENEFITS:

KOMBO 950® LF IS A CONVENIENT “ALL-IN-ONE” GLYPHOSATE ADJUVANT

Trials for registration showed that KOMBO 950® LF as a **single adjuvant** at a dilution rate of 0.5% will deliver equivalent or better results than 0.25% LI 700 type adjuvants + 0.8% AMS or 0.5% Oil based adjuvants + 0.8% AMS up to 500ppm of Total Water Hardness (TWH), measured as CaCO₃.

KOMBO 950® LF IS MORE SOLUBLE THAN TRADITIONAL BAGGED AMS

The AMS in KOMBO 950® LF is refined to 3.0mm diameter through a mechanical process prior to mixing with the other dry ingredients in the product and is packed off into air tight plastic bags to ensure that no air (and hence moisture) can enter the product during storage which ensures that the end use product is **the same flow able product every time**. This process allows KOMBO 950® LF to dissolve through the induction hopper up to 2-3 times faster than traditional bagged AMS depending upon the quality of the bagged AMS and how long it has been stored for. This speeds up the mixing process, especially in cold water, and reduces the risk of physical incompatibility where multiple tank mix partners are added to the spray solution, hence saving time and money.

KOMBO 950® LF PROVIDES BETTER SPRAY DROPLET MANAGEMENT

KOMBO 950® LF contains a *novel Complex Carbohydrate Polymer (CCP)* which significantly improves both droplet deposition and retention on the leaf surface. Polymer use in adjuvant technology is relatively new to Australia but has been very successfully used by USA farmers for a number of years.

a. KOMBO 950® LF improves DROPLET DEPOSITION by increasing spray droplet size:

Once this polymer comes in contact with the spray solution it hydrolyses and expands, thereby raising the overall viscosity of the spray solution i.e. (makes the solution “thicker”) hence creating a **significantly larger droplet than LI 700 based adjuvants and Oil based adjuvants**. As a result, a slightly higher boom pressure is required to ensure “double overlap”. **We recommend running 4 Bar (60 Psi) of pressure**. This larger droplet offers the following benefits to Glyphosate efficacy:

- (i) **By reducing evaporative loss of the spray droplet during summer fallow sprays.** This is a common cause of poor performance of glyphosate when temperatures exceed 25 degrees Celsius. KOMBO 950® LF produces less small droplet fines than traditional adjuvants which tend to evaporate prior to landing on the leaf surface. In addition, the KOMBO 950® LF droplets that actually deposit themselves on the leaf surface are larger, and less prone to evaporative loss, thus allowing more time for absorption of the herbicide through the leaf surface.
- (ii) **By reducing off target spray drift.** KOMBO 950® LF will mitigate drift at 0.5% dilution rate up to 10km per hour of wind speed. In addition to low drift nozzles, KOMBO 950® LF gives farmers and consultants another management tool to help with the control of both physical and inversion drift. This makes KOMBO 950® LF the adjuvant of choice for use with Glyphosate when spraying fire breaks, fence lines, road sides, and close to sensitive crops such as Cotton, and Grapevines.
- (iii) **By improving herbicide efficacy where stubble loads are present.** Larger droplets have proven to be more effective in penetrating through stubble loads.

b. KOMBO 950® LF improves DROPLET RETENTION

The CCP exhibits “anti-bounce” technology which reduces spray droplet rebound and ricochet from the leaf surface thereby increasing droplet retention.

KOMBO 950® LF ENHANCES HERBICIDE PENETRATION

The Citric acid component in KOMBO 950® LF drops the overall pH of the spray solution to 3.8, which helps to dissolve the waxy cuticle on the leaf surface, thereby improving herbicide penetration.

KOMBO 950® LF ASSISTS WITH HERBICIDE UPTAKE

KOMBO 950® LF will assist in the uptake of herbicides through the leaf tissue as the product has been built to ensure that there is at least 150g/100L of active AMS available for plant stimulation that has not already been taken up by the free Calcium ions present in TWH levels up to 500ppm, measured as CaCO₃. These free ammonium ions provide a “nitrogen hit”, thereby speeding up herbicide uptake.

KOMBO 950® LF INCLUDES A POWERFUL DEFOAMING AGENT

KOMBO 950® LF includes a silicone based, food grade defoaming agent. The key benefits of a defoaming agent include:

Loss of chemical solution in the filling process and improved accuracy- If you lose excess foam in the filling process, then you are losing chemical also.

Improved Safety For The Operator and The Environment- Excess foam overflowing in the filling process can cause hazardous outcomes for both operator and the environment.

Assists in the speed of filling process- The defoaming agent will assist in the speed of the filling time, however correct mixing instructions must still be followed according to herbicide label.

KOMBO 950® LF IS A COMPLETE WATER CONDITIONING AGENT

- a. KOMBO 950® LF will **protect Glyphosate from the harmful effects of free Calcium ions** that are present in hard water that is often an issue when using bore water as the spray water source. At a use rate of 500g/100L water (0.5%), KOMBO 950® LF will release 400g/100L of active AMS into the spray solution which is enough AMS to soften TWH levels of up to 500ppm measured as CaCO₃.
- b. KOMBO 950® LF will **acidify the spray solution** where alkaline water can reduce the performance of acid based herbicides like Glyphosate and 2,4-D. The Citric acid in KOMBO 950® LF will buffer the spray solution to a pH of 3.8 which is similar to the effect of Propionic acid in LI 700 type products which buffer to pH 4.0.
- c. KOMBO 950® LF will **chelate out (remove) from solution** Iron, Zinc, Aluminium, Magnesium, Sodium, Potassium and Sodium Bicarbonate which can also be present in bore water which can have a devastating effect on Glyphosate performance if present in high concentrations. This is a side benefit of Citric acid. Propionic acid in LI 700 type products will not remove these particular ions from the spray solution.
- d. KOMBO 950® LF will **enhance Glyphosate performance in turbid** water where clay particles exist. This is a problem often seen where either dam, river or irrigation channel water is used as the spray water source. This is another reason why AMS is used in KOMBO 950® LF.

KOMBO 950® LF AIDS TANKMIX COMPATIBILITY

The AMS in KOMBO 950® LF aids in the compatibility between Trifluralin and Glyphosate. The Citric acid in KOMBO 950® LF is a natural compatibility aid which will assist with physical compatibility especially where multiple tank mix partners are added to the spray tank.

KOMBO 950® LF IMPROVES DROPLET SPREAD

KOMBO 950® LF contains a powerful high performance wetting agent which effectively lowers the surface tension of the spray solution, thereby improving droplet spread.

KOMBO 950® LF HAS NO UNPLEASANT ODOUR

Unlike LI 700 type products that contain an unpleasant “vinegar like” odour, KOMBO 950® LF is virtually odourless. This is because the Citric acid in KOMBO 950® LF (unlike Propionic acid in LI 700 type products) has no odour.

DISPOSABLE PACKAGING

KOMBO 950® LF comes conveniently packaged in 10kg and 20kg plastic bags. These bags are robust, water proof, air tight, UV stable, non-slip and easily disposable.

























FREIGHT SAVING PALLET CONFIGURATION

KOMBO 950® LF is palletised as 96 x 10kg or 48 x 20kg (960kg) per pallet.

MINIMAL MEASURING REQUIRED

At 0.5% dilution rate, a 10kg bag of KOMBO 950® LF will treat 2000L of water and a 20kg bag will treat 4000L of water, so for broad acre farmers there will rarely be a requirement to measure the product out as the majority of broad acre spray tanks are either 2000L, 4000L, 6000L, 8000L or 10,000L in capacity.

KOMBO 950® LF PROVIDES ROBUST GLYPHOSATE EFFICACY

 500g/100L	IS AS GOOD OR BETTER THAN	 250ml/100L LI 700 type	+	 800g/100L Bagged AMS	up to 500ppm of TWH	WITH LESS SPRAY DRIFT AND IMPROVED SOLUBILITY
 500g/100L	IS AS GOOD OR BETTER THAN	 500ml/100L Uptake type	+	 800g/100L Bagged AMS	up to 500ppm of TWH	WITH LESS SPRAY DRIFT AND IMPROVED SOLUBILITY
 500g/100L	IS AS GOOD OR BETTER THAN	 500ml/100L Hasten type	+	 800g/100L Bagged AMS	up to 500ppm of TWH	WITH LESS SPRAY DRIFT AND IMPROVED SOLUBILITY
 500g/100L	IS AS GOOD OR BETTER THAN	 100-200ml/100L	+	 800g/100L Bagged AMS	up to 500ppm of TWH	WITH LESS SPRAY DRIFT AND IMPROVED SOLUBILITY
 500g/100L	IS BETTER THAN			 800g/100L Bagged AMS	up to 500ppm of TWH	WITH LESS SPRAY DRIFT AND IMPROVED SOLUBILITY
 250g/100L	IS BETTER THAN			 800g/100L Bagged AMS	up to 100ppm of TWH	WITH LESS SPRAY DRIFT AND IMPROVED SOLUBILITY
 250g/100L	IS BETTER THAN			 250ml/100L LI 700 type	regardless of TWH	WITH LESS SPRAY DRIFT
 500g/100L	IS BETTER THAN			 500ml/100L Uptake type	regardless of TWH	WITH LESS SPRAY DRIFT
 500g/100L	IS BETTER THAN			 500ml/100L Hasten type	regardless of TWH	WITH LESS SPRAY DRIFT
 250g/100L	IS BETTER THAN			 100-200ml/100L	regardless of TWH	WITH LESS SPRAY DRIFT

4. DIRECTIONS FOR USE:

MARKET	SITUATION	USE PATTERN	RATE	CRITICAL COMMENTS
Broadacre	Summer fallow sprays (Northern & Southern Australia)	With Glyphosate 450 in mixtures with Triclopyr, 2,4-D Ester or 2,4-D Amine, Fluoroxypyr, Metsulfuron, Oxyflurofen or Carfentrazone.	500g/100L	<ul style="list-style-type: none"> > Will provide a robust result up to 500ppm of Total Water Hardness (measured as CaCO₃) > Operate boom spray pressure of 4 Bar (60 Psi) to ensure double overlap. > Use water rate of 50-70L/ha > This rate will mitigate spray drift onto sensitive crops.
	Autumn pre-sow knockdown sprays (Southern Australia)	With Glyphosate 450 in mixtures with Trifluralin, Triasulfuron, Sakura or Boxer Gold, and Oxyfluorfen or Carfentrazone.	250g - 500g/100L	<ul style="list-style-type: none"> > The 250g/100L rate may only be used if:- 1. Total Water Hardness does not exceed 100ppm (otherwise use the 500g/100L rate) 2. Ambient temperatures at application do not exceed 25 degrees Celcius (otherwise use the 500g/100L rate). 3. There is zero risk of off target drift onto sensitive crops (otherwise use the 500g/100L rate). > Operate boom spray pressure of 4 Bar (60 Psi) to ensure double overlap. > Use higher water rate of 80-100L/ha to provide improved coverage on fine grasses.
		With Glyphosate 540 or 570 in mixtures with Trifluralin, Triasulfuron, Sakura or Boxer Gold, and Oxyfluorfen or Carfentrazone..	250g - 500g/100L	
	Winter fallow sprays (Northern Australia)	With Glyphosate 450 in mixtures with with 2,4-D Amine and Atrazine.	250g – 500g/100L	
		With Glyphosate 540 or 570 in mixtures with 2,4-D Amine and Atrazine.	250g - 500g/100L	
Fire break & Fenceline sprays (Northern & Southern Australia)	With Glyphosate 450 in mixtures with with Triclopyr, 2,4-D Ester or 2,4-D Amine, Fluoroxypyr, Metsulfuron, Oxyflurofen or Carfentrazone.	500g/100L	<ul style="list-style-type: none"> > Always use the 500g/100L rate to avoid off target spray drift onto sensitive crops. > Operate boom spray pressure of 4 Bar (60 Psi) to ensure double overlap. > Use water rate of 50–70L/ha. 	
Horticulture	Under row weed control	With all knockdown sprays	500g/100L	<ul style="list-style-type: none"> > Always use the 500g/100L rate to avoid off target spray drift onto sensitive crops. > Operate boom spray pressure of 4 Bar (60 Psi) to ensure double overlap. > Use water rate of 50–70L/ha.
Industrial	Roadside sprays	With all knockdown sprays	500g/100L	<ul style="list-style-type: none"> > Always use the 500g/100L rate to avoid off target spray drift onto sensitive crops and operator hazard.

5. MIXING:

- Half fill spray tank with water and commence agitation.
- Add KOMBO 950® LF and mix for 5 minutes in order to activate the polymer and to thoroughly condition the spray water.
- Add all NON-Glyphosate based herbicides next.
- Always add the Glyphosate herbicide last.
- Add the other half of the water.

6. BOOM SPRAY SETUP:

- Always operate boom spray pressure at a minimum of 4 Bar (60 Psi) to ensure that “double overlap” is achieved.
- Do not use pump filters than are finer than 100 mesh.

7. DOES KOMBO 950® LF PROVIDE ENOUGH AMS?

The simple answer is YES...for the majority of situations. Many agronomists ask, how can KOMBO 950® LF deliver equivalent efficacy compared to an LI 700 type adjuvant at 0.25% + Bagged AMS at 0.8% when KOMBO 950® LF at 0.5% is only delivering 0.4% AMS into the spray solution (i.e. half the amount)? The simple answer is that the 0.8% rate of AMS is way more than is required in most situations to soften hard water. This 0.8% rate relates to the amount of AMS required to ensure compatibility between Glyphosate and Triazines and does not relate at all to the amount of AMS required to soften the vast majority of hardness levels that farmers use as the water source for spraying.

This fact was highlighted by the GRDC in their Adjuvants Handbook 2012 edition on page 41. In this article they made reference to Syngenta trials that were carried out some years earlier. The article states “add enough AMS to treat the hardness in the water and then add extra for plant stimulation”.

How much AMS is required to treat hard water?

This was proven in Syngenta laboratory trials as follows:

Water hardness Level (CaCO ₃ ppm)	Syngenta Boost (AMS) Recommendation (mL/100L)	Equivalent amount of AMS Crystal (grams per 100L)
200	250	104
300	375	156
400	500	208
500	625	260
600	750	312
700	875	364
800	1000	417
900	1125	469
1000	1250	521
1250	1565	652
1875	2345	977
2500	3125	1303

Source: Syngenta Technotes TN08-379 Non-Selective Herbicides and Adjuvants

From this work, the conclusion was as follows:

AMOUNT OF AMS CRYSTAL REQUIRED TO SOFTEN 1PPM OF TOTAL WATER HARDNESS = 0.5g/100L

Therefore, the correct use rate formula to supply sufficient AMS crystal to soften hard water is as follows:

AMOUNT OF AMS CRYSTAL REQUIRED (g/100L) = (TWH MEASURED AS CaCO₃ in ppm) x 0.5

How much AMS is required for Plant Stimulation?

It is well accepted that AMS is not just used to soften hard water. It is important to have some Ammonium ions available in the spray solution that are not involved in protecting the Glyphosate molecule from the free Calcium ions in the hard water. These free ammonium ions act as a “nitrogen hit” on the leaf surface, thereby assisting with herbicide uptake.

In all replicated trials for APVMA registration of KOMBO 950[®] LF the TWH in the spray water was fixed at 500ppm measured as CaCO₃. In all trials the rates of KOMBO 950[®] LF tested were 0.25%, 0.5%, 0.75% and 1.0%. No improved efficacy was achieved at any of the rates above 0.5%, but improved efficacy was observed using 0.5% as opposed to 0.25%. From this work we were able to calculate the amount of AMS that was required for plant stimulation as follows:

From the Syngenta trials the theoretical amount of AMS required to soften this water was 250g/100L (i.e. 500ppm x 0.5).

At 0.5% dilution rate KOMBO 950[®] LF delivers 400g/100L of active AMS into the spray solution. Therefore, our conclusion was that the amount of AMS required for plant stimulation was 150g/100L (i.e. 400g-250g = 150g).

From this work we conclude that the formula for the total amount of AMS required to both soften hard water and also provide plant stimulation is as follows:

**TOTAL AMS CRYSTAL REQUIRED (g/100L) = AMOUNT TO SOFTEN WATER HARDNESS
+ AMOUNT FOR PLANT STIMULATION
= TWH X 0.5 + 150**

So for example, if TWH was 500ppm then amount of AMS crystal required = 500 x 0.5 + 150 = 400g/100L

This is the precise amount of AMS that KOMBO 950[®] LF delivers to the spray solution at a dilution rate of 0.5%, hence we fully back KOMBO 950[®] LF up to 500ppm of TWH to deliver sufficient AMS to soften this water while still making available sufficient free ammonium ions for plant stimulation.

How do I calculate the correct use rate of KOMBO 950[®] LF based my TWH?

RATE OF KOMBO 950[®] LF (g/100L) = (TWH measured as CaCO₃ in ppm x 0.5 + 150) / 0.8

For example,

1. If TWH was 500ppm, then rate of KOMBO 950[®] LF = (500 x 0.5 + 150) / 0.8 = **500g**
2. If TWH was 100ppm, then rate of KOMBO 950[®] LF = (100 x 0.5 + 150) / 0.8 = **250g**

8. COMPATIBILITY WITH NON-GLYPHOSATE BASED HERBICIDES:

➤ KOMBO 950[®] LF is physically compatible with the following NON-Glyphosate based herbicide active ingredients:

2,4-D Ester, 2,4-D Amine, Oxyfluorfen, Carfentrazone, Metsulfuron, Chlorsulfuron, Triasulfuron, Triclopyr, Trifluralin and Fluroxypyr.

9. TRIAL SUMMARY:

(A) Glyphosate Efficacy Trials:

Please note:

1. The spray water used in all 6 trials was set at pH 8.0 and a TWH of 500ppm (measured as CaCO₃).
2. Higher rates of KOMBO 950® LF (750g/100L and 1000g/100L) were tested in all trials but did not provide improved efficacy compared to the 500g/100L rate.

TRIAL 1: Young NSW, February 2008, Hairy Panic (*Panicum capillare*)

No.	Treatment	Rate	% Brownout (15 DAT)	ANOVA (P=0.05, LSD)
1	Untreated		0.0	a
2	Roundup CT	500ml/ha	70.0	bcd
3	Roundup CT KOMBO 950® LF	500ml/ha 250g/100L	76.7	def
4	Roundup CT KOMBO 950® LF	500ml/ha 500g/100L	78.3	efg
5	Roundup CT LI 700 AMS	500ml/ha 250ml/100L 800g/100L	81.7	efghi
6	Roundup CT Hotup	500ml/ha 500ml/100L	68.3	bc

TRIAL 2: Narrabri NSW, July 2008, Burr Medic (*Medicago polymorpha*)

No.	Treatment	Rate	% Brownout (21 DAT)	ANOVA (P=0.05, LSD)
1	Untreated		0.0	a
2	Roundup CT	500ml/ha	33.3	bc
3	Roundup CT KOMBO 950® LF	500ml/ha 250g/100L	43.3	bcdefg
4	Roundup CT KOMBO 950® LF	500ml/ha 500g/100L	45.0	cdefgh
5	Roundup CT LI 700 AMS	500ml/ha 250ml/100L 800g/100L	38.3	bcde
6	Roundup CT Hotup	500ml/ha 500ml/100L	41.7	bcdefg

TRIAL 3: Narrabri NSW, July 2008, Annual Ryegrass (*Lolium rigidum*)

No.	Treatment	Rate	% Brownout (28 DAT)	ANOVA (P=0.05, LSD)
1	Untreated		0.0	a
2	Roundup CT	500ml/ha	68.3	b
3	Roundup CT KOMBO 950® LF	500ml/ha 250g/100L	80.0	bcdefg
4	Roundup CT KOMBO 950® LF	500ml/ha 500g/100L	85.0	defg
5	Roundup CT LI 700 AMS	500ml/ha 250ml/100L 800g/100L	85.0	defg
6	Roundup CT Hotup	500ml/ha 500ml/100L	83.3	cdefg

TRIAL 4: Young NSW, December 2007, Goosefoot (*Chenopodium pumilio*)

No.	Treatment	Rate	% Brownout (7 DAT)	ANOVA (P=0.05, LSD)
1	Untreated		0.0	a
2	Roundup CT	1.0L/ha	40.0	b
3	Roundup CT KOMBO 950® LF	1.0L/ha 250g/100L	45.0	bcd
4	Roundup CT KOMBO 950® LF	1.0L/ha 500g/100L	51.7	cd
5	Roundup CT LI 700 AMS	1.0L/ha 250ml/100L 800g/100L	45.0	bcd
6	Roundup CT Hotup	1.0L/ha 500ml/100L	46.7	bcd

**TRIAL 5: Young NSW, December 2007,
Summer Grass (*Digitaria spp*)**

No.	Treatment	Rate	% Brownout (7 DAT)	ANOVA (P=0.05, LSD)
1	Untreated		0.0	a
2	Roundup CT	1.0L/ha	66.7	bc
3	Roundup CT KOMBO 950® LF	1.0L/ha 250g/100L	85.0	cd
4	Roundup CT KOMBO 950® LF	1.0L/ha 500g/100L	93.3	d
5	Roundup CT LI 700 AMS	1.0L/ha 250ml/100L 800g/100L	63.3	b
6	Roundup CT Hotup	1.0L/ha 500ml/100L	66.7	bc

**TRIAL 6: Narrabri NSW, December 2008,
Awnless Barnyard Grass (*Echinochloa colona*)**

No.	Treatment	Rate	% Brownout (20 DAT)	ANOVA (P=0.05, LSD)
1	Untreated		0.0	a
2	Roundup CT	1.0L/ha	45.0	cd
3	Roundup CT KOMBO 950® LF	1.0L/ha 250g/100L	53.3	def
4	Roundup CT KOMBO 950® LF	1.0L/ha 500g/100L	58.3	ef
5	Roundup CT LI 700 AMS	1.0L/ha 250ml/100L 800g/100L	61.7	f
6	Roundup CT Hotup	1.0L/ha 500ml/100L	38.3	bc

(B) Garlon Efficacy Trials:

Please note:

1. The spray water used in all 3 trials was York town water which had a pH 7.8 and a TWH of 105ppm (measured as CaCO₃).
2. All trials were conducted by Melissa Welsh & Andrew Wherrett from Living Farm York WA.

**TRIAL 1: York WA, February 2017,
4-6 leaf Paddy Melon (*Cucumis myriocarpus*)**

No.	Treatment	Rate	% Brownout (7 DAT)	% Brownout (16 DAT)	% Brownout (29 DAT)
1	Untreated		0 f	0 f	0 g
2	Garlon 755	80ml/ha	49 cd	54 d	66 cd
3	Garlon 755 Liberate	80ml/ha 250ml/100L	37 e	44 e	48 f
4	Garlon 755 Uptake	80ml/ha 500ml/100L	59 b	74 b	77 b
5	Garlon 755 LI 700	80ml/ha 250ml/100L	44 de	53 de	53 ef
6	Garlon 755 Hasten	80ml/ha 500ml/100L	61 b	68 bc	74 bc
7	Garlon 755 KOMBO 950® LF	80ml/ha 500g/100L	61 b	67 bc	70 bcd
		l.s.d.			
		c.v.	6.5	6.3	6.4
		f - prob.	<0.001	<0.001	<0.001

**TRIAL 2: York WA, February 2017,
<4 leaf Paddy Melon (*Cucumis myriocarpus*)**

No.	Treatment	Rate	% Brownout (7 DAT)	% Brownout (16 DAT)	% Brownout (29 DAT)
1	Untreated		0 f	0 d	0 e
2	Garlon 755	80ml/ha	53 de	64 c	76 c
3	Garlon 755 Liberate	80ml/ha 250ml/100L	47 e	58 c	59 d
4	Garlon 755 Uptake	80ml/ha 500ml/100L	69 c	81 b	86 b
5	Garlon 755 LI 700	80ml/ha 250ml/100L	45 e	58 c	58 d
6	Garlon 755 Hasten	80ml/ha 500ml/100L	59 cd	78 b	80 bc
7	Garlon 755 KOMBO 950 [®] LF	80ml/ha 500g/100L	64 c	78 bc	78 bc
		l.s.d. c.v. f - prob.	7.2 <0.001	5.8 <0.001	7.2 <0.001

**TRIAL 3: York WA, February 2017,
Mintweed (*Salvia reflexa*)**

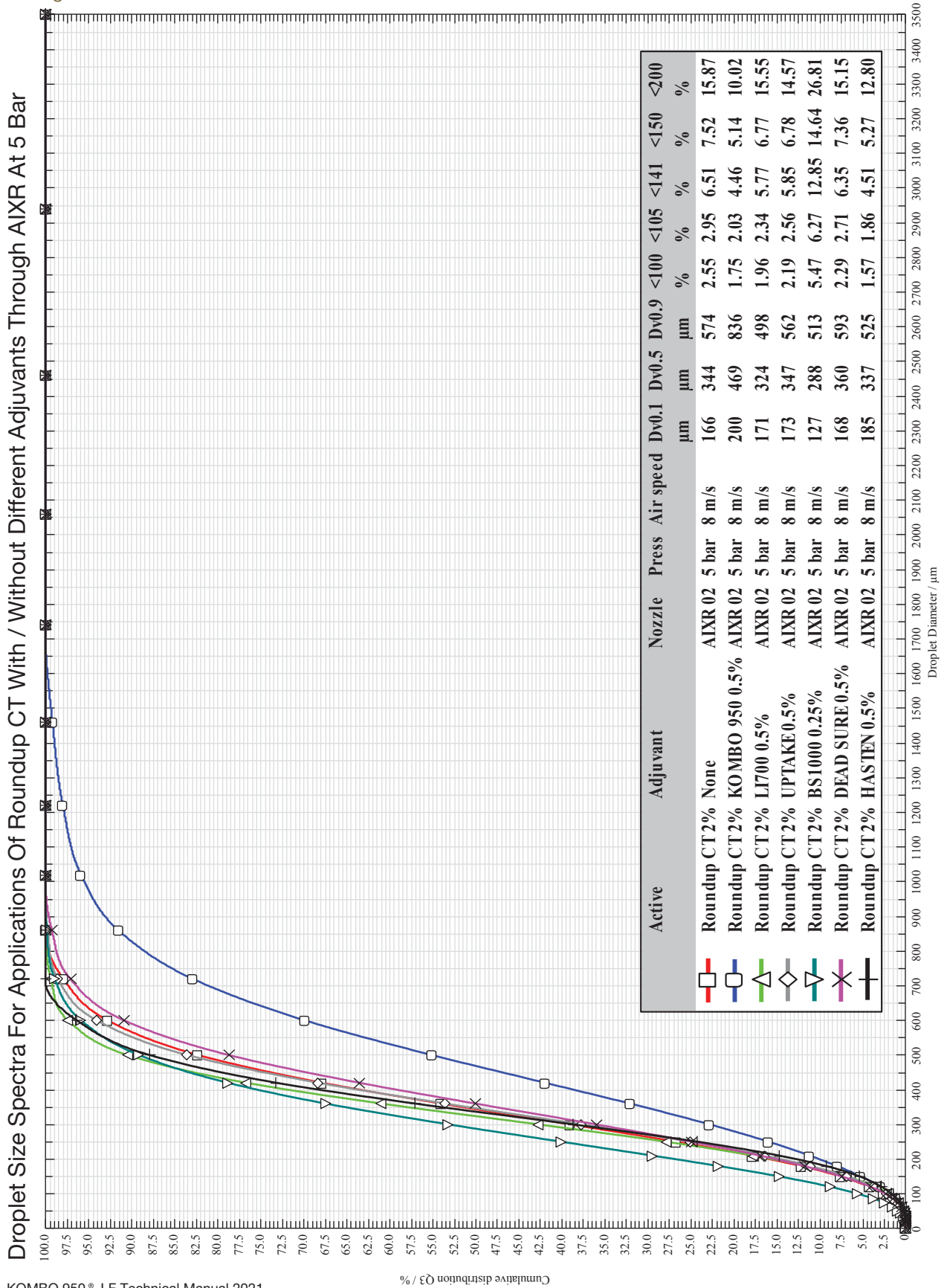
No.	Treatment	Rate	% Brownout (7 DAT)	% Brownout (16 DAT)	% Brownout (29 DAT)
1	Untreated		0 f	0 d	0 e
2	Garlon 755	80ml/ha	6 e	19 c	25 cd
3	Garlon 755 Liberate	80ml/ha 250ml/100L	8 de	16 c	20 d
4	Garlon 755 Uptake	80ml/ha 500ml/100L	13 d	23 c	29 c
5	Garlon 755 LI 700	80ml/ha 250ml/100L	10 de	20 c	27 c
6	Garlon 755 Hasten	80ml/ha 500ml/100L	7 de	23 c	36 b
7	Garlon 755 KOMBO 950 [®] LF	80ml/ha 500g/100L	11 de	31 b	40 b
		l.s.d. c.v. f - prob.	8.6 <0.001	6.6 7.9 <0.001	5.24 <0.001

(E) Spray Drift Wind Tunnel Trials:

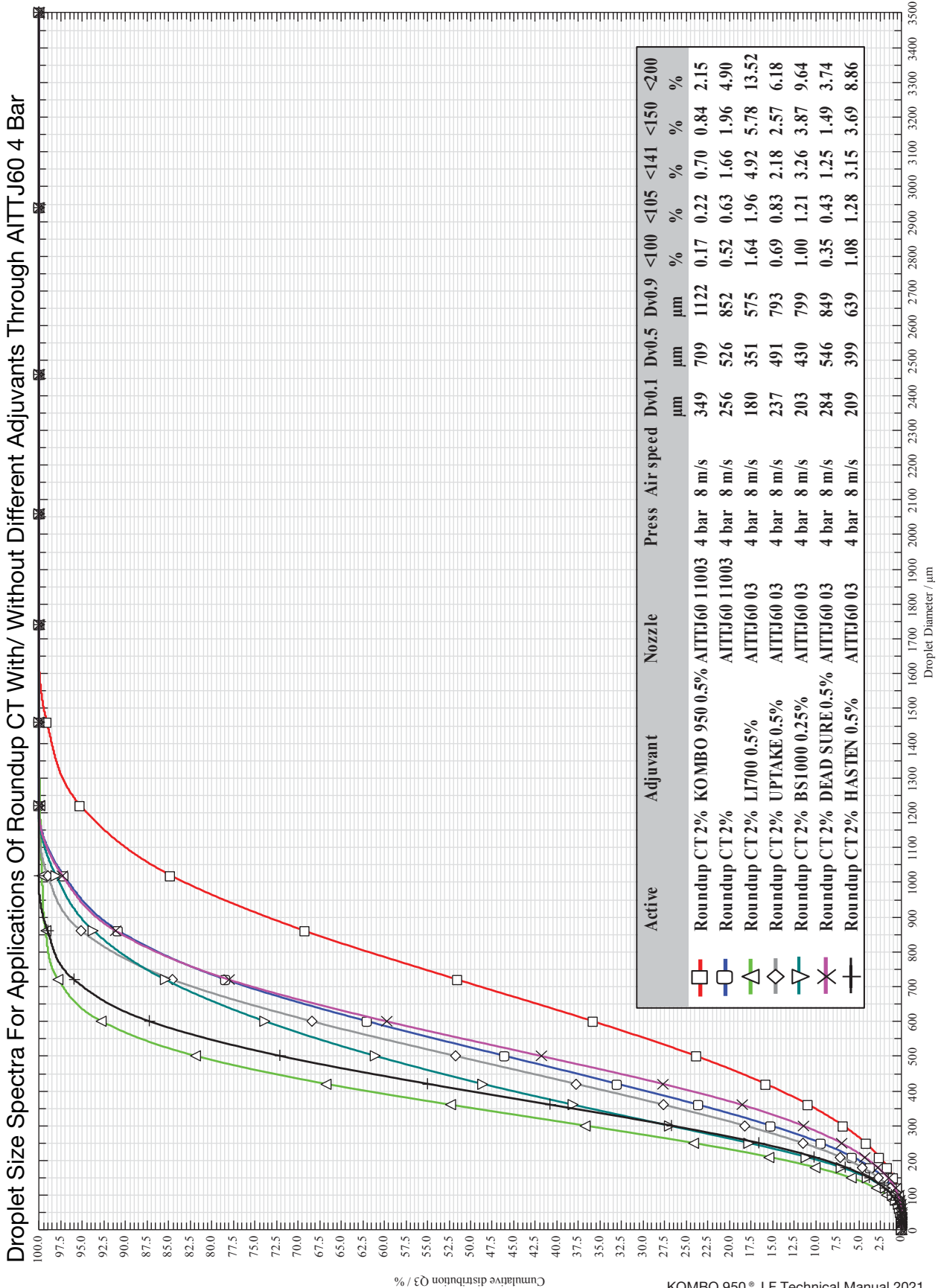
Please note:

1. These trials were conducted in a Wind Tunnel in October 2016, at The University of Queensland (Gatton Campus) by Dr Andrew J. Hewitt, PhD.
2. This was an atomization study conducted to measure the droplet size spectra produced by spraying tank mixtures containing Roundup CT with and without KOMBO 950 LF versus other popular adjuvants through various nozzles to simulate ground boom applications.
3. When compared to LI 700, Uptake, BS1000, Dead Sure and Hasten; KOMBO 950 was clearly the leader for coarsening the sprays as shown by an increase in the median droplet diameters, which would clearly reduce drift potential under field conditions.

TRIAL 1 : Droplet Size Spectra for Applications of Roundup CT with/without Different Adjuvants Through AIXR at 5 bar



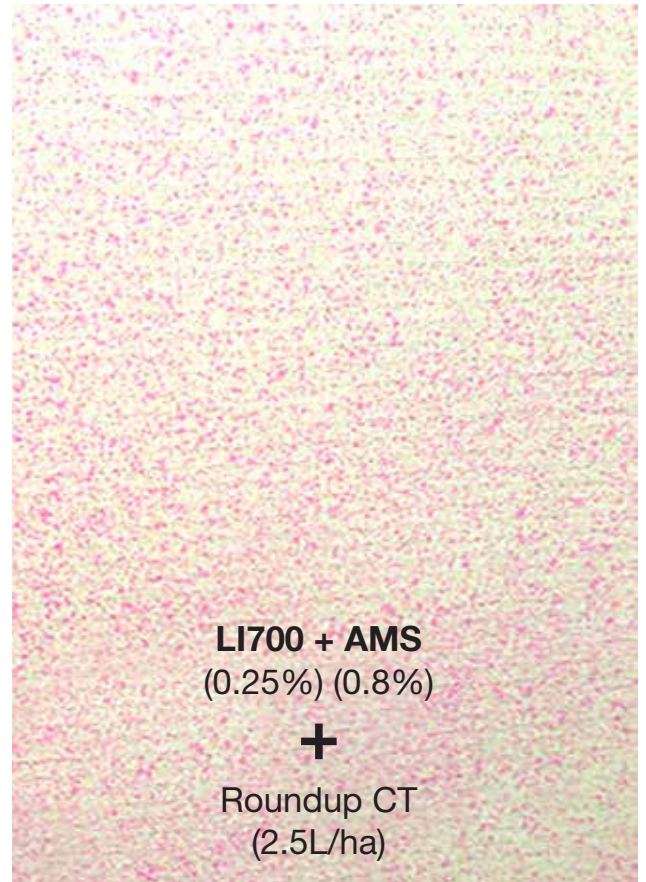
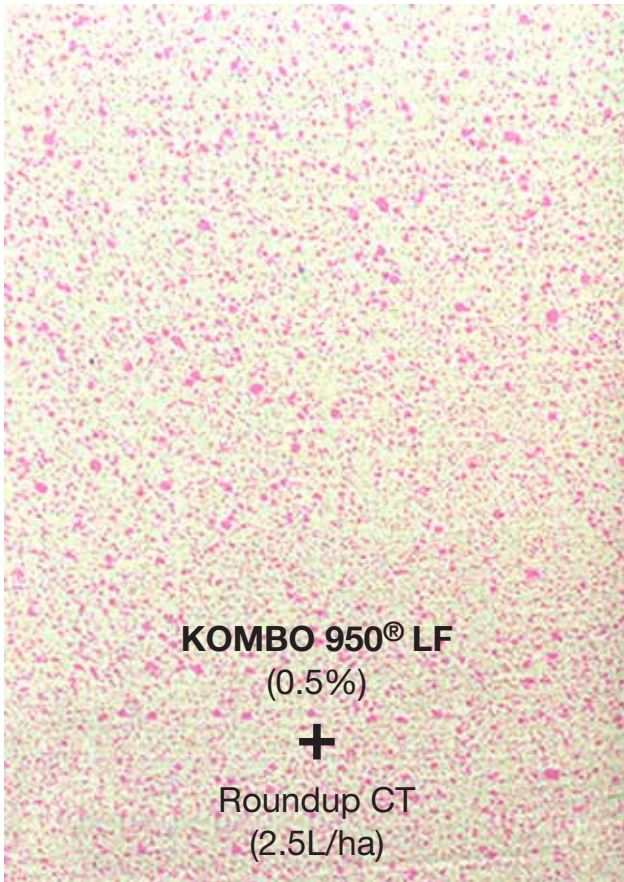
TRIAL 2 : Droplet Size Spectra for Applications of Roundup CT with/without Different Adjuvants Through AITTJ60 4 Bar



(C) Spray Droplet Pattern Trial:

Please note:

1. Trial conducted August 2014, Red dye sprayed over cardboard sheets using ATV.
2. Boom height was 70cm, Nozzles were AirMix Flat Fan 110-01, Pressure 4 bar (60psi), Water Rate 110L/ha







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