



Adsee[™] AMP40

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All-in-one adjuvant –
a formulators dream ...

Nouryon

Adsee AMP40

Adsee AMP40 is an all-in-one biodegradable adjuvant for crop protection formulations. It is a salt-free amphoteric surfactant, designed to be used as an adjuvant for both in-can and tank-mix applications.

Key benefits

- Versatile - improves efficacy when used with fungicides and herbicides
- Compatibilizer, hydrotrope
- Adds humectancy to formulations and softens/hydrates wax layer
- Readily biodegradable and not persistent, addresses concerns over bio accumulative formulation aids
- Considered "clean label" - no eye or skin irritation, no classified ingredients
- Low foaming
- Soluble in strong caustic or acid solutions



Typical properties

Appearance	clear liquid
CMC	13 g/L
Color	max 500 Hazen (20% in water)
Density	1.08 g/L at 20°C
Foaming	0 ml after 5 mins
pH	8.5-9.5 (20% in water)
Pour point	-8°C
Solid content	40%
Surface tension	64 mN/m at 0.1 w%
Viscosity*	max 100 cps at 20°C
Water uptake	22% after 48 hrs
Surface tension at 0.1 wt%	64 mN/m

* Brookfield DV-III Plus Rheometer; SC-18 spindle @ 25 rpm

Regulatory

- TSCA complaint
- REACH registered
- Listed in NZIoC / IECSC / ISHL / ENCS / KECI Chemical Inventory

Tank-mix compatibility

2-Way compatibility challenge

WDG sample

- Farmozine 900 WDG (Atrazine)

Gly-IPA 480 samples

- TAE blend, 15%
- Adsee AMP40, 15%

Dilution test set

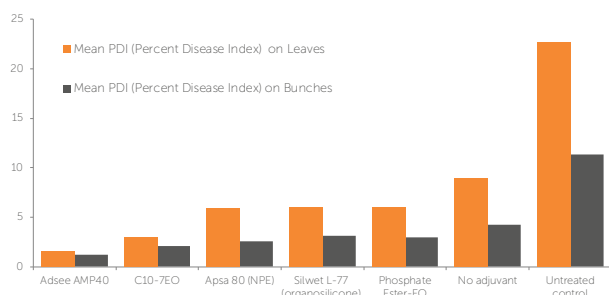
- Each cylinder is filled with Farmozine WDG and inverted 10x
- Addition of each Gly-IPA sample in to each cylinder
- Inverted 10x and left to stand at RT

Adsee AMP40 is suitable compatibilizer for Atrazine and Glyphosate combos.



Left: Gly-IPA 480 SL 15% of Adsee AMP40 + Farmozine 900 WG
Right: Gly-IPA 480 SL 15% of TAE + Farmozine 900 WG

Bio-efficacy against powdery mildew on grapes



Target pest: Powdery mildew (*Erysiphe necator*)
Fungicide: Azoxystrobin 250 g/L SC
Doses: 0.02 % (v/v) Azoxystrobin along with 0.03 % (v/v) adjuvant in 15 L water

In addition to Azoxystrobin 250 g/L SC, trials with Fluopyram + Tebuconazole (200+200) g/L SC, Metrafenone 50 g/L SC, Dimethomorph 50 g/kg WP, Thiophanate-methyl 700 WP have shown that Adsee AMP 40, when used as a tank-mix adjuvant, shows superior control over early and late blight as well as powdery mildew.

When Adsee AMP40 used, nearly 20% increase in harvestable yield can be achieved. No phytotoxicity (no chlorosis, burning, necrosis, epinasty or russetting) is caused by any of the adjuvants tested.

Adsee AMP40 can be readily formulated in-can.

Glyphosate trials

Adsee AMP40 is a sustainable alternative to current adjuvants for Glyphosate.

Overall efficiency

Formulation	3 days	5 days	7 days	10 days
RoundUp	3.7	6.6	7.3	7.7
Face 48	4.2	6.5	7.1	7.6
Adsee 1629 (8%)	4.7	7.5	7.6	8.3
Adsee 1629 (15%)	6.8	9.1	9.2	9.2
Witcamine 4130A (5%)	3.0	7.6	8.0	8.1
Witcamine 4130A (10%)	5.3	8.7	8.8	9.2
Adsee C-70A (10%)	7.1	9.1	9.2	9.3
Adsee AMP40 (10%)	6.5	8.6	8.6	8.8
Control	0	0	0	0

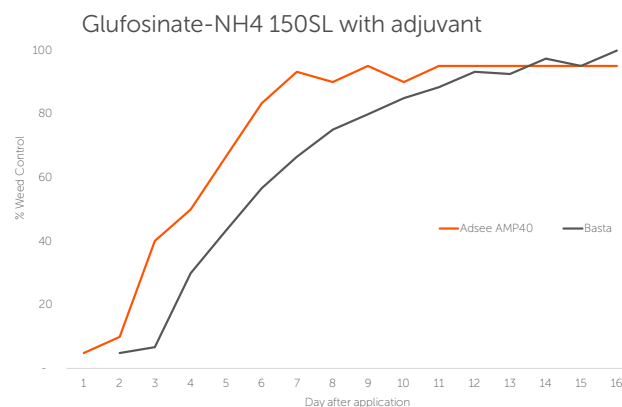
0 = unable to control the weeds, 10 = completely controls the weeds

Adsee 1629: C-16 trimethyl ammonium chloride
Witcamine 4130A: TAE
Adsee C-70A: coco amidopropylamine

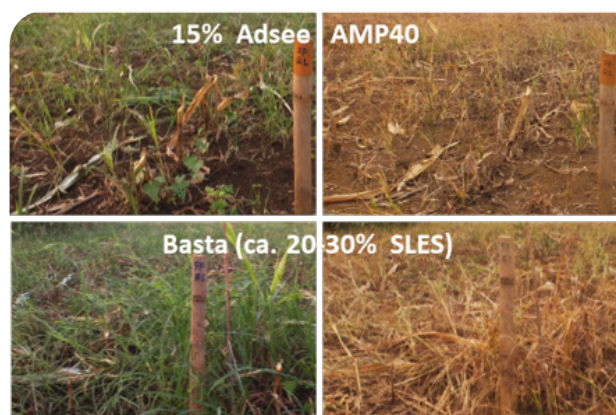
Place: KAWA – International Chemie, Thailand
Design: Randomized Block Design
Replications: 4
Water volume: 500 l/ha

Glufosinate NH₄ trials

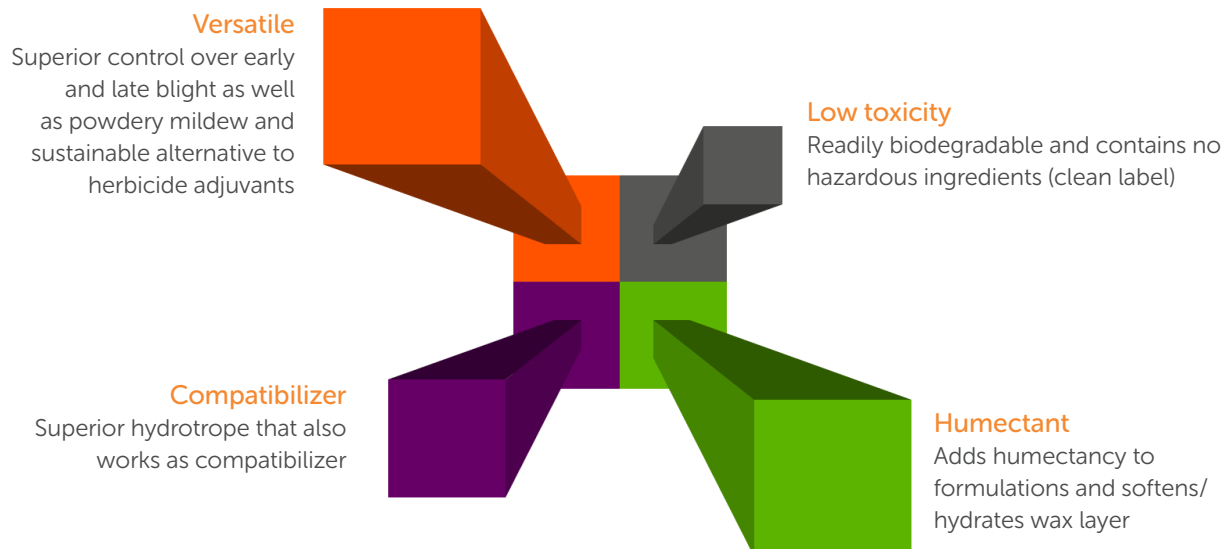
Efficacy comparison of Adsee AMP40 in-can adjuvant vs benchmark.



Field trials show that Glufosinate-NH₄ 150 SL formulated with 15% Adsee AMP40 has fast knockdown effect at lower dosage of adjuvant compared to benchmark.



Trial location: Medan, Indonesia
Plot size: 7.56 m x 10 m
Assessment period: up to 20 days
Replicates: 3
Crop land: corn
Applications rate: 2 L/ha
Water use: 400 L/ha
Weed type: Amaranthus spp, Althemanthera spp, Borreria sp, Calopogonium spp, Cleome rutidospemae, Commeling benghalensi, Cynodon dactilon, Digitaria ciliaris, Galinsaga parviflora, Rodbulia



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