

Broadacre Compatibility Explained



When combining two or more chemicals in a tank, although it may save time and fuel, it can come at the expense of the crop, if the mix isn't fully compatible.

An explanation on the 3 forms of compatibility are outlined below:

1. Physical:

Some combinations of pesticides and pesticides/fertilisers cannot be physically mixed together. For example, 2,4-D Amine when mixed with Copper Sulphate results in a curdle of thick gelatinous sludge causing instant blockages of nozzles.

Physical incompatibility can also cause solids to settle out of the mixture - or cause mixtures to separate into layers after agitation – but the chemical reaction isn't always this obvious. For instance, when Ammonium Sulphate (AMS) is added to hard water it reacts with the calcium and magnesium ions

WARNING: Physical compatibility does not always guarantee chemical or biological compatibility.

in water, causing a precipitate to form in the spray solution.

However, water quality also plays an important part; water hardness, pH and even low water temperature can reduce the ability of some products to mix when added to water, and may cause some filter and nozzle blockages.

2. Chemical:

Sometimes, products that mix well still shouldn't be used together because the activity of the mixture may be different than if the products were applied separately. The result can be either decreased activity (antagonism), or increased activity (synergism).

Chemical incompatibility that doesn't cause a plug or gel can reduce the activity of one or more of the active ingredients, and may not become obvious until there is evidence

of CropShock[®], phytotoxicity or reduction in weed control. A change to the water pH may affect pH sensitive ag chemicals or mixes by inhibiting the way the product is mixed, causing performance reduction while no physical concern is noticeable.

*CropShock is any form of stress on the crop that impacts the crop in a negative manner. It is most commonly expressed as phytotoxicity that is visually seen in the crop in some form.

3. Biological:

This is when the biological activity within the plant is antagonistic to the biological activity of the herbicide, causing a reduction in performance. One of the most common is zinc fertiliser; zinc assists in promoting

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TYPE	COMMON TRADE NAME	ACTIVE	MOA	Zn	Mn	Cu	Duo	ZMC	MC	3-2-1	Fe	Mg	ZBM	Ca	Combi7	Mi6	Starter	K	Balance	Filler		
INSECTICIDES	Alpha-Scud® Elite	Alpha-Cypermethrin	3A																			
	Pirimor®	Pirimicarb	1A																			
	Axe®	Permethrin	3A																			
	Decis® Options	Deltamethrin	3A																			
	Bulldock® Duo	Beta-Cyfluthrin	3A																			
	Chess®	Pymetrozine	9B																			
	Chlorpyrifos	Chlorpyrifos	1B																			
	Cobalt®	Chlorpyrifos / Lambda-Cyhalothrin	1B 3A																			
	Cypermethrin	Cypermethrin	3A																			
	Dimethoate	Dimethoate	1B																			
	Malathion	Maldison	1B																			
	Karate Zeon®	Lambda-Cyhalothrin	3A																			
	Lannate-L®	Methomyl	1A																			
	Le-Mat®	Omethoate	1B																			
	Pegasus®	Diafenthiuron	12A																			
	Pyrinex® Super	Chlorpyrifos / Bifenthrin	1B 3A																			
	Success Neo®	Spinetoram	5																			
	Sumi-Alpha® Flex	Esfenvalerate	3A																			
	Suprathion®	Methidathion	1B																			
	Talstar®	Bifenthrin	3A																			
	Transform®	Sulfoxaflor	4C																			
	Trojan®	Gamma-cyhalothrin	3A																			
	CAUTION DUE TO LABEL WARNINGS																					
		Delfin®	Bacillus thuringiensis (kurstaki)	11C																		
		ViVus® Gold	Helicoverpa NPV																			
	Larvin®	Thiodicarb	1A																			
FUNGICIDES	Amistar 250 SC®	Azoxystrobin	11																			
	Amistar® WG	Azoxystrobin	11																			
	Amistar Xtra®	Azoxystrobin / Cyproconazole	3 11																			
	Aviator® Xpro®	Prothioconazole / Bixafen	3 7																			
	Bravo® Weather Stik®	Chlorothalonil	M5																			
	Cogito®	Propiconazole / Tebuconazole	3																			
	Dithane®	Mancozeb	M3																			
	Elatus® Ace	Benzovindiflupyr / Propiconazole	7 3																			
	Impact®	Flutriafol	3																			
	Miravis®	Pydiflumetofen	7																			
	Opera®	Epoxiconazole / Pyraclostrobin	3 11																			
	Opus®	Epoxiconazole	3																			
	Orius®	Tebuconazole	3																			
	Prosaro®	Prothioconazole / Tebuconazole	3																			
	Radial®	Azoxystrobin / Epoxiconazole	3 11																			
	Spin Flo®	Carbendazim	1																			
	Sumisclex®	Procymidone	B																			
	Tazer® Xpert®	Epoxiconazole / Azoxystrobin	11 3																			
	Thiragranz®	Thiram	M3																			
	Throttle®	Propiconazole	3																			
	Veritas®	Tebuconazole / Azoxystrobin	3 11																			
	CAUTION DUE TO LABEL WARNINGS																					
	Rovral®	Iprodione	2																			
ADJUVANTS	Hasten®	Fatty acid esters of canola oil + surfactant																				
	Hygro-Stic®	Di-1-p-menthene																				
	Uptake®	Paraffinic oil + 208 g/L non-ionic surfactants																				
	Wetter 1000	Nonyl phenol and alcohol ethoxylates																				
	CAUTION DUE TO LABEL WARNINGS																					
	Li 700®	Soyal phospholipids + 350 g/L propionic acid																				
	Sprawl®	Polyether modified polysiloxane																				

■ Compatible
 □ No Data
 ■ Caution: physically compatible but reduced efficacy may occur
 ■ Not Compatible

The Agspec Compatibility Guide is based on jar testing and experience with use in the field over many years. It is a guide only and if using products for the first time, a jar test is recommended to confirm compatibility. ALWAYS read the label before use.

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young plant and root growth while some chemical activity restricts growth and root development. This biological antagonism, if products combined together, may cause a reduction in pesticide performance.

Where biological effects have been observed in trials or in the field, often a caution will be included on the label, e.g., “mixing with zinc based foliar fertilisers may result in loss of efficiency.”

Some ag chemicals may inhibit the plant’s ability to utilise nutrients like zinc, inducing a nutrient deficiency even though leaf tissue tests indicate adequate zinc levels. Where this occurs, the addition of RapiSol® Zn is recommended.

RapiSol Technology- Designed for use with Ag Chemicals

RapiSol EDTA technology micro-nutrients are built for Ag Chemicals, but it’s important to understand why they can’t be mixed with all agricultural chemicals.

Note: The Agspec BlueSpear® range of high quality NPK and trace element formulations are also highly compatible.

The 3 forms of compatibility have been discussed. Two other key factors, the label and the formulation need to be considered, thereby making up the five pillars of compatibility.

There are five pillars of product compatibility:

1. Physical
2. Chemical
3. Biological
4. Label
5. Formulation



4. Label:

If the label states “Do Not”...then don’t - *especially* if multiple chemicals are being mixed in the paddock recommendation. Why? You might be putting your crop at risk of CropShock potential, where leaf burn or crop retardation may occur. For example, if the label states “Do Not tank mix with foliar fertilisers”, then RapiSol and Blue Spear should NOT be included where this chemical is used, or where the chemical is part of a multi-product tank mix.

5. Formulation:

The structure and formulation of chemicals and fertilisers is important in compatibility; if there is a change in the formulation, it has the potential to impact the compatibility of mixes. With fertiliser, liquid complex chelates formulations are more compatible than straight sulphate foliar fertiliser, and RapiSol with EDTA Technology is far more compatible than the liquid complex chelates.

The compatibility formulation ranking is as follows: **RapiSol EDTA >>>>>**
Liquid Complex (chelate) >>
Sulphates

If you want to eliminate concerns about adding foliar fertiliser to your tank mix, use RapiSol EDTA Technology; it is built for Ag Chemicals.

Tank mixing order

Industry guidelines recommend that chemicals should be mixed in the following order:

1. Partly fill the spray tank with water as per label directions to at least 50% of the required amount. Commence agitation and maintain agitation during the mixing and spraying process.
 2. Add any Water Conditioners (AMS)
 3. Add any Wettable Powders (WP) or Dry Flowable (DF) products (**BLUE SPEAR®**)
 4. Add any Water Dispersible Granules (WDG) products (**RAPISOL®**)
 5. Add any Flowable Liquids (FL) or Suspension Concentrates (SC)
 6. Add any Emulsifiable Concentrates (EC)
 7. Add any Aqueous Concentrate (AC) or Soluble Liquids (SL) (**SPEEDY®**)
 8. Add Adjuvant if required (**HYGRO-STIC®, RYWETT TX®**)
 9. Fill the remainder of the spray tank with water.
- Use the spray mix immediately with agitation running at all times. (unless otherwise stated on label).

Always read the product label for the manufacturer’s tank mix recommendations and to determine individual product compatibility options and correct mixing order for individual products. If unsure, perform a jar test before proceeding to determine physical compatibility. Physical compatibility does not always guarantee chemical compatibility.

Disclaimer

AGSPEC warrants that the product within the unopened pack conforms to the chemical description on this label. As the occurrence of unusual environmental conditions, and the use of this product, are all beyond the control of AGSPEC, no guarantee, expressed or implied, is made as to the effects of such use or the results obtained, and in no event shall the liability of AGSPEC exceed the price of the product used. The purchaser must assume all risks of storage, use or application of this product.

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