FACT SHEET

tank mixing chemicals

Following the correct mixing order reduces the risk of products interacting in a way that may reduce their efficacy or affect the stability of the tank mix

Broaden the target spectrum: tank-mixtures can help you to control multiple problems with less applications

Improve resistance: mixing products with different modes of action can help lessen the chance your application will lead to disease, insecticide or herbicide resistance

Enhance action: when the mixed products deliver an improvement, compared to applying the product on its own

Synergistic impact: when the mixed products combine and interact to produce more effective results than if they were applied separately

Chemical incompatibility: products combine and interact to produce less effective results than if they were applied separately

Physical incompatibility: can be caused by improper mixing sequence, inadequate agitation, inadequate water carrier volume, poor water quality, or lack of stable emulsifiers in some emulsifiable concentrates

Increased resistance: rotate your modes of action with tank-mixes as well as with single products

correct mixing order

1. **Clean water** into a clean tank - fill with 70% of the required water and **start agitation**
2. **Water conditioners or compatibility agents** (pH adjustments)
3. **Wettable powders** (WP) and **solid fertilisers**

Allow dry products to mix thoroughly

4. **Water Dispersible Granules** (WG)
5. **Oil Dispersibles** (OD)

Ensure fully dispersed before proceeding

6. **Suspension Concentrates** (SC)
7. Add (a) **Dispersible Concentrates** (DC) followed by (b) **Emulsifiable Concentrates** (EC), followed by (c) **Microemulsions** (MC)
8. **Suspo-emulsions** (SE)
9. **Soluble Concentrates** (SL)
10. Add **adjuvants** and top up the tank with **clean water**
11. **Liquid Fertilisers***

*When adding fertiliser, consider the compatibilities and the impact on the tank pH levels

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If you are unsure about the ability to mix certain products it is always a good idea to conduct a jar test to confirm physical compatibility

conducting a jar test (1L batch)

1 ADD WATER

In a clean glass jar with a tight, sealable lid add at least 500 mL of clean water

use the same source of water that will be used for the final tank mix

conduct the test at the temperature the tank mix will be applied

2 ADD PRODUCTS

add the appropriate amount of each product in their correct order and relative proportions based on recommended label rates

after each addition, shake or stir gently to thoroughly mix

3 ADD ADJUVANTS

after the products are mixed, add any adjuvants that are to be used in the final spray solution at recommended label rates

4 FILL WITH WATER

fill the jar to the required final volume with clean water

5 MIX WELL

put lid on the jar and tighten well

invert the jar 10-12 times to ensure fully mixed

6 ALLOW TO STAND

let the mixture stand for 20-30 minutes

look for separation, large flakes, any sign of precipitates, heat, gels, heavy oily film on the jar, or any other signs of product mix incompatibility

7 REMIX & OBSERVE

if the mixture separates but can be remixed easily, then this mixture can be applied as a spray providing continuous good agitation is used

8 DISPOSE WITH CARE

if the mixtures are incompatible, it is best to apply in separate sprays

dispose of any product waste in accordance with the Storage and Disposal section on the label

this process will only test for ***physical incompatibility*** of various chemical products

it is still possible for some mixtures to be ***chemically incompatible*** i.e. overall efficacy may be impacted despite no physical evidence of mixing problems

- consult the product label
- contact the manufacturer or a professional agronomist for specific mix advice
- disposable syringes are very useful for measuring out small quantities of liquids
- incompatible mixes can be difficult to clean from tanks, filters, nozzles and control valves