

How to conduct a simple physical compatibility test

SpraySURE

syngenta®



A compatibility test is often recommended before tank mixing to ensure physical compatibility of various products.

Incompatibility of tank mixtures can occur with mixtures of fertiliser and control products or when mixing “cocktails”.

Test Procedure

1. In a clean glass jar with a tight, sealable lid add approximately 50% of the final volume of carrier (water or liquid fertiliser if this is to be used as the carrier) e.g. if 1 L of total solution is to be made up then add 500 mL to the jar at this stage. Note: Use the same source of water that will be used for the tank mix and conduct the test at the temperature the tank mix will be applied.
2. Next add the appropriate amount of each product in their relative proportions based on recommended label rates (refer Table 1). If more than one product is used, add them separately according to the sequence in Figure 1. After each addition, shake or stir gently to thoroughly mix.
3. After the products are mixed, add any adjuvants that are to be used in the final spray solution at recommended label rates (refer to Table 2).
4. Fill the jar to the required final volume e.g. for the example above, make up to 1 L total volume.
5. Put lid on and tighten. Invert the jar 10 times to mix. Let the mixture stand 15-30 minutes and then look for separation, large flakes, precipitates, heat, gels, heavy oily film on the jar, or other signs of incompatibility.
6. If the mixture separates but can be remixed readily, the mixture should be able to be sprayed as long as good agitation is used.
7. If the mixtures are incompatible, it is best to apply in separate sprays.
8. After compatibility testing is complete, dispose of any product waste in accordance with the **Storage and Disposal** section on the label.

Note: This procedure will only test for physical incompatibility of various products. It is still possible for some mixtures to be chemically incompatible i.e. efficacy may be impacted despite no physical evidence of mixing problems.



Figure 1. Mixing Sequence

Water goes into the clean tank first. Fill the tank at least half full and start agitation.

Add **Water Soluble Bags (WSB)** to the clean water in the tank before adding any other tank mix partners. Allow the water soluble bags to completely dissolve before adding any other products.

Add **Wettable Powders (WP)**

Add **Water Dispersible Granules (WDG)**

Maintain **Agitation** and allow the dry products to mix thoroughly to ensure uniform dispersion before adding other products. This might take a few minutes.

Add **Liquid Flowables** – Suspension Concentrates (SC), Oil Dispersibles (OD) or Flowable Liquids (FL).

Add **Emulsifiable Concentrates (EC)** or Microemulsion Concentrates (MEC).

Table 1		Volume of product required (mL or g) to be added to a 1 L mix									
Rate L/kg per ha	Planned spray volume/ha										
	200	250	300	350	400	450	500	600	800	1000	
0.3	1.5	1.2	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	
0.5	2.5	2.0	1.7	1.4	1.3	1.1	1.0	0.8	0.6	0.5	
1	5.0	4.0	3.3	2.9	2.5	2.2	2.0	1.7	1.3	1.0	
1.5	7.5	6.0	5.0	4.3	3.8	3.3	3.0	2.5	1.9	1.5	
3	15.0	12.0	10.0	8.6	7.5	6.7	6.0	5.0	3.8	3.0	
6	30.0	24.0	20.0	17.1	15.0	13.3	12.0	10.0	7.5	6.0	
9	45.0	36.0	30.0	25.7	22.5	20.0	18.0	15.0	11.3	9.0	
13	65.0	52.0	43.3	37.1	32.5	28.9	26.0	21.7	16.3	13.0	
18	90.0	72.0	60.0	51.4	45.0	40.0	36.0	30.0	22.5	18.0	
20	100.0	80.0	66.7	57.1	50.0	44.4	40.0	33.3	25.0	20.0	

For products where application rate is expressed in rate per hectare use this table.

Table 2		Volume of product required (mL or g) to be added to a 1 L mix									
Rate % v/v	Planned spray volume/ha										
	200	250	300	350	400	450	500	600	800	1000	
0.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
0.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
0.25	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
0.42	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	
0.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
1	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
2	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	

For products where application rate is expressed in rate per water volume (e.g. many wetters and adjuvants) use this table.



For further information on the Syngenta SpraySure program, please contact your local Syngenta Sales Manager or Agent Representative.
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