



CROPPING QUICK REFERENCE GUIDE

Conversions

Seeding rates

1 Pound per Acre = 1.12 Kilograms per Hectare
 1 Kilogram per Hectare = 0.89 Pounds per Acre

Grain Volume

1 Kilolitre = 27.397 Bushels
 1 Bushel = 0.0365 Kilolitre

Grain Density

1 Hectolitre = 100 Litres
 1 Pound per Bushel = 1.25 Kilograms per Hectolitre
 1 Kilogram per Hectolitre = 0.8 Pounds per Bushel

Grain Yield

The number of 3 bushel bags per acre equivalent for a range of crops yielding one tonne per hectare.

Crop	Bags
Wheat	5
Barley	6
Oats	7
Canola	5.5
Pulses	5

Sowing Rate Calculation

Desired number of plants/sq m x grain weight of 1000 seeds
 Germination Percentage

Chemical Mixing Order and Compatibility

Correct order when tank mixing

- 1) Fill tank to 60 - 80 % water volume
- 2) Water conditioners / Acidifiers e.g. LI 700, Liase
- 3) Wettable / Dispersible Powders e.g. Pirimor, Siege (Chlorsulfuron)
- 4) WDGs (Dry Flowable Granules) e.g. Diuron, Simazine, Atrazine DFS
- 5) Flowables (Suspension concentrates) e.g. Diuron, Simazine, Atrazine Flowables
- 6) *1 Wetter – if using ECs e.g. Wetspray 1000
- 7) ECs (Emulsifiable Concentrates) e.g. Trifluralin, Hoegrass, Dimethoate
- 8) Soluble Concentrates e.g. Glyphosate, Amicide
- 9) Adjuvants e.g. Wetspray 1000, LI 700 *3, Oils *2

*1 Wetter to be added at stage 6 if using ECs. If no ECs used in the mix then add wetter at stage 9.

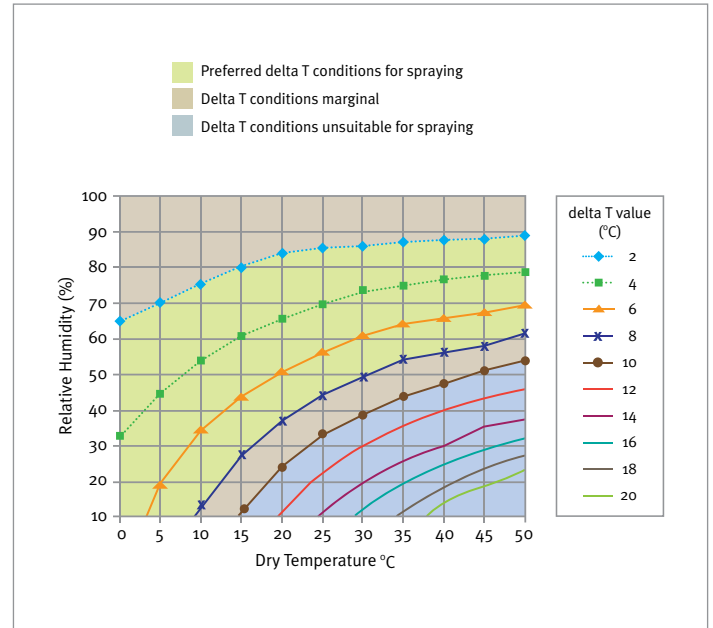
*2 Oils must be added last to all mixes.

*3 If added to stage 2, do not add at stage 6 or 9.

Physical compatibility

Physical compatibility means products, will mix without causing filter or jet blockages, will not fall out of suspension, will not coagulate or separate into layers. If product compatibilities are not known then a jar test is recommended.

Selecting the right delta T conditions for spraying



Nutrient Removal Chart

	N	P	K	S	Ca	Mg	Zn	Mn	Cu
Species	Kilograms per tonne or product						grams per tonne		
Cereal Grains									
APH	24.5	2.43	3.10	1.64	0.36	1.64	29	40	5
AH1	21.8	2.28	3.33	1.40	0.33	0.93			
ASW	17.7	2.41	3.40	1.35	0.31	1.02			
Barley	19.2	2.88	4.39	1.1	0.35	1.08	15	11	3
Oats	16.5	3.0	3.9	1.5	0.5	1.0	17	40	3
Maize	23.8	3.3	5.0	3.8	0.2	0.9	13	45	4
Sorghum	18.8	3.7	4.8	2.8	0.5	1.5	72	35	4
Rice	11.8	2.9	2.4	0.9	0.1	1.1	16	41	4
Pulse Crops									
Albus Lupin	57.3	3.6	8.8	2.5	2.0	1.3			
Field Pea	37.1	4.0	8.2	2.0	0.7	1.2			
Chick Pea-Desi	32.2	3.6	8.2	1.8	1.8	1.4	38		
Chick Pea-Kabuli	34.4	3.8	8.9	1.8	1.1	1.2			
Faba Bean	38.6	3.8	9.8	1.4	1.1	1.0	28	30	10
Common Vetch	44.4	3.8			0.8				
Lentil	38.4	3.2			0.6				
Oilseed									
Soybean	61	4.7	15.8	3.0	2.4	2.4	25	30	
Canola	40	6.5	9.2	9.8	4.1	4.0	40	40	4
Linseed	31.3	5.8	7.3	2.25	2.3	4.1			9



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Boomspray Calibration

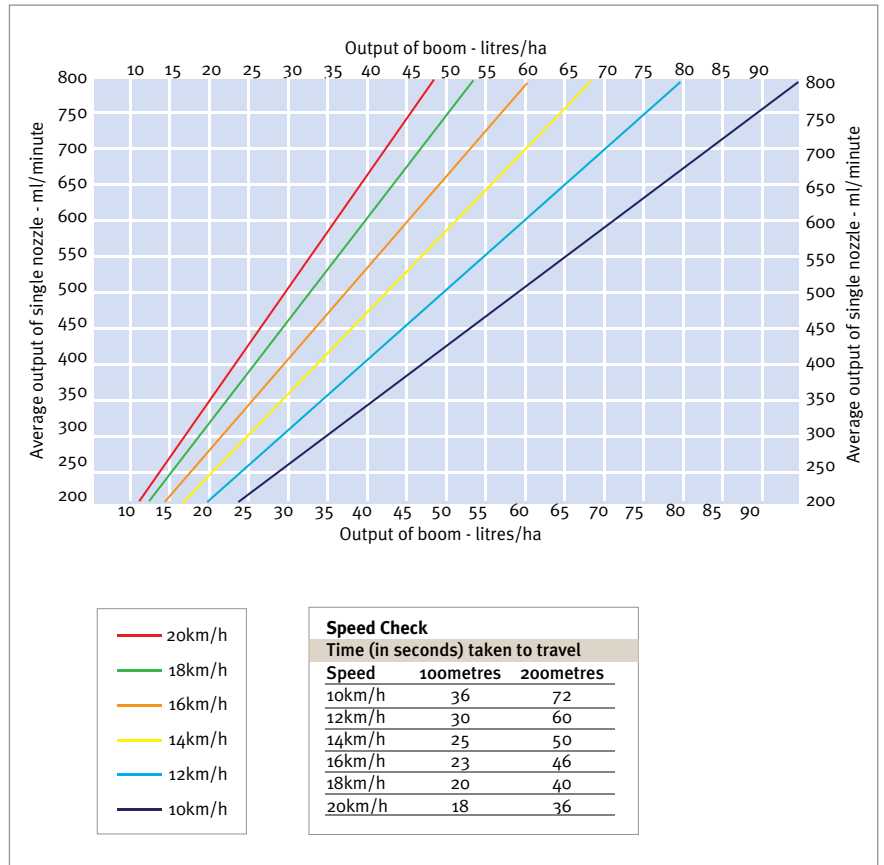
Once you have selected an even set of nozzles, calibrate the sprayer. There are many methods for calibrating, usually involving a series of mathematical steps. A simplified method designed for boomsprays with nozzles at 50 cm spacing is summarised below.

- Measure the output of each nozzle for one minute. This should have already been done when choosing an even set of nozzles.
- Add up the output of all nozzles and divide by the number of nozzles. This gives average output per nozzle in millilitres per minute (mL/min).
- Decide on a speed of travel for spraying.
- Measure out a distance of 100 m and record the time taken to cover the distance with the spray unit. It is important to calculate the speed on a surface similar to that being sprayed. Figure below shows the time taken to cover the 100 m at various speeds. You can calculate it by :

$$\text{Speed (km/hr)} = 360 / \text{time (seconds) to travel 100 m}$$

- Refer to figure below to obtain output in litres per hectare (L/ha). Take a line across the figure from the average output of the nozzles you have measured to the speed you have selected. Trace a vertical line from where these two meet to the edge of the figure to find the output (L/ha).
- Alternatively, calculate the output using the following formula:

$$\text{Output L/ha} = \frac{\text{Average output of a nozzle (mL/min)} * 60}{\text{Nozzle spacing (cm)} * \text{Speed (km/hr)}}$$



Jar Test

- ▶ Use a glass jar.
- ▶ Add correct chemical and water amounts in the correct order using a syringe or teaspoon.
- ▶ Mix thoroughly.
- ▶ Allow to stand for 10 minutes.
- ▶ Check for coagulation, separation into layers, products falling out of suspension or stringy texture forms.
- ▶ Pour through 120 mesh screen as a final check.

Jar test kits are available from Elders.

Biological Compatibility

Some herbicides reduce the activity of others when mixed together; this is referred to as antagonism. As a result they cannot be sprayed together as a tank mix and must be sprayed separately at least 10 days apart. Some herbicides cannot be mixed as their modes of action conflict e.g. translocated herbicides like glyphosate and contact herbicides like Sprayseed. If three or more chemicals are used in a tank mix then a jar test is recommended.

Zadok's Scale

