

Chemical active conversion guide

Converting application rates based on active ingredient loading is an important skill to have! Make sure you have a process for double checking rate conversions, aside from asking the agronomist. A 'cheat sheet' is included below with tables of common products showing application rates across various active ingredient strengths commonly found.

Active ingredient conversion formula

The following formula can be used to convert application rates based on product active concentration. The 'active constituent' (i.e. active concentration or product strength) is found on the first page of the product label.

$$\text{New application rate} = \frac{\text{original rate} \times \text{original active concentration}}{\text{new active concentration}}$$

An example: The recommendation that I received is for 1.5L/ha of glyphosate 600g/L (Crucial[®]), but I only have glyphosate 540g/L in the shed. See the equation below to determine the rate required of glyphosate 540g/L.

$$\begin{aligned}\text{New application rate (for glyphosate 540g/L)} &= \frac{1.5\text{L} \times 600\text{g/L}}{540\text{g/L}} \\ &= 900 \div 540\end{aligned}$$

$$\text{New application rate (for glyphosate 540g/L)} = 1.67\text{L/ha}$$

Note: Not all chemical formulations of the same active ingredient are the same. Please check that the alternative product used is still compatible with your tank mix and/or doesn't require changes to adjuvants.

COMMON CHEMICAL ACTIVE CONVERSIONS

To use the following herbicide matrix tables:

1. Find the active concentration of your original product on the left hand (**bold**) side.
2. Along the same row as the active concentration of your original product, find the original rate recommended.
3. Within the same column as the original application rate, find the new application rate that corresponds with the new product active concentration on the left hand (bold) size.

An example: I wish to use 1.6L/ha of paraquat 250, but I have paraquat 330 (Spraytop®) on hand. Looking at the table below, I would need to use 1.2L/ha of paraquat 330 (Spraytop®) to achieve the same volume of active concentration per ha.

Knockdown herbicides

Paraquat

Paraquat active concentration (g/L)	Rate (L/ha)						
250	0.8	1	1.2	1.5	1.6	1.8	2
330 (Spraytop®)	0.6	0.75	0.9	1.1	1.2	1.35	1.5
360 (Gramozone®)	0.55	0.7	0.83	1.05	1.1	1.25	1.4

Spray.Seed®

Active concentration (g/L)	Rate (L/ha)					
Spray.Seed®	1	1.2	1.5	2	2.5	3
Paraquat 250	0.54	0.65	0.81	1.08	1.35	1.62
Diquat 200	0.58	0.69	0.86	1.15	1.44	1.73
Note: Spray.Seed® is made up of 135g/L Paraquat250 + 115g/L Diquat200. This table states the rate required of paraquat and diquat as separate components when mixed together, which are at different concentrations to Spray.Seed®. An example: If you were recommended to use 1L/ha Spray.Seed®, you could use 0.54L/ha Paraquat 250 + 0.58L/ha Diquat 200.						

Glyphosate

Glyphosate active concentration (g/L)	Rate (L/ha) or (g/ha)						
360	1.25	1.5	1.88	2.25	2.5	3.13	3.75
450	1	1.2	1.5	1.8	2	2.5	3
470 (Weedmaster® DST®)	0.96	1.15	1.44	1.72	1.91	2.39	2.87
510	0.88	1.06	1.32	1.59	1.76	2.21	2.65
540	0.83	1	1.25	1.5	1.67	2.08	2.5
570 (Roundup Ultra Max®)	0.79	0.95	1.18	1.42	1.58	1.97	2.37
600 (Crucial®)	0.75	0.9	1.13	1.35	1.5	1.89	2.25
690g/kg	0.65	0.78	0.98	1.17	1.3	1.63	1.96

Glufosinate

Glufosinate-ammonium active concentration (g/L)	Rate (L/ha) or (g/ha)						
150	2	2.66	3.33	4	4.66	5	
200 (Basta®, Liberty®, Biffo®)	1.5	2	2.5	3	3.5	3.75	
280 (Fascinate®)	1.07	1.43	1.78	2.14	2.5	2.67	
500g/kg (Fascinate Dry®)	0.6	0.8	1	1.2	1.4	1.5	
880g/kg	0.34	0.45	0.57	0.68	0.8	0.85	

Other herbicides

Propyzamide

Propyzamide active concentration (g/kg)	Rate (L/ha) or (g/ha)				
500g/L	1	1.25	1.5	1.75	2
900 (Rustler®)	0.55	0.7	0.83	0.97	1.11

Sakura® products

Pyroxasulfone active concentration (g/kg)	Rate (L/ha) or (g/ha)			
480g/L (Sakura® Flow)	141	159	177	208
850 (Sakura® 850 WG)	80	90	100	118

Overwatch® products

Bixlozone active concentration (g/L)	Rate (L/ha)	
400 (Overwatch®)	1	1.25
750g/kg (Overwatch® eXL Granules)	0.53	0.67

Clethodim

Clethodim active concentration (g/L)	Rate (mL/ha)						
240	300	500	750	1000	1200	1500	2000
360	200	333	500	666	800	1000	1333

Factor® - Butroxydim

Butroxydim active concentration (g/kg)	Rate (g/ha)			
250 (Factor®)	160	180	200	220
500 (Encode®)	80	90	100	110

Lontrel® products - Clopyralid

Clopyralid active concentration (g/L)	Rate (mL/ha) Rate (L/ha) or (g/ha)						
300 (Lontrel®)	80	100	150	200	250	300	
600 (Lontrel® Advanced)	40	50	75	100	125	150	
750g/kg (Lontrel® 750 SG)	32	40	60	80	100	120	

Dicamba products

Dicamba active concentration (g/L)	Rate (mL/ha)					
500 (Kamba®)	50	80	100	120	150	200
750	33	53	66	80	100	133

2,4-D Amine

2,4-D Amine active concentration (g/L)	Rate (L/ha)						
300	1.66	2.08	2.5	2.9	3.12	3.54	3.75
475	1.05	1.3	1.57	1.84	1.97	2.23	2.36
500	1	1.25	1.5	1.75	1.87	2.12	2.25
625	0.8	1	1.2	1.4	1.5	1.7	1.8
700 (Amicide Advance®)	0.7	0.9	1.07	1.25	1.33	1.5	1.6

Hammer® - Carfentrazone-ethyl

Carfentrazone-ethyl active concentration (g/L)	Rate (mL/ha)					
240 (Hammer® Force)	33	41	50	58	66	
400 (Hammer®)	20	25	30	35	40	

Sharpen® products - Saflufenacil

Saflufenacil active concentration (g/kg)	Rate (L/ha) or (g/ha)						
160g/L (Sierra®)	79	87	96	105	114	122	131
700 (Sharpen®)	18	20	22	24	26	28	30

Fungicides

Epoxiconazole

Epoxiconazole active concentration (g/L)	Rate (mL/ha) Rate (L/ha) or (g/ha)					
125 (Opus®)	260	320	360	400	440	500
500 (Soprano®)	65	80	90	100	110	125
750g/kg	43	53	60	67	73	83
800g/kg (Octopus®)	41	50	56	63	69	78

Propiconazole

Propiconazole active concentration (g/L)	Rate (mL/ha)					
250	150	200	250	300	400	500
435 (Fitness®)	86	115	143	172	230	287
500 (Tilt®)	75	100	125	150	200	250
550	68	90	113	136	182	227
625 (Bumper®)	60	80	100	120	160	200

Note: If the formulation of your products is different (i.e. converting from a liquid product to a granular product, or vice versa), the conversion between units remains as a 1:1 ratio, as long as the magnitude stay the same.

1mL/ha = 1g/ha

1L/ha = 1kg/ha