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## Report for 1982 - Part 1

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## Conversion Factors

### Rothamsted Research

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## CONVERSION FACTORS

### Factors for the Conversion of Imperial to Metric Units

1 inch (in.)	= 2.540 centimetres (cm)
1 foot (ft) (=12 in.)	= 30.48 cm
1 yard (yd) (=3 ft)	= 0.9144 metre (m)
1 square yard (yd <sup>2</sup> )	= 0.8361 m <sup>2</sup>
1 acre (ac) (=4840 yd <sup>2</sup> )	= 0.4047 hectare (ha)
1 ounce (oz)	= 28.35 grams (g)
1 pound (lb)	= 0.4536 kilogram (kg)
1 hundredweight (cwt) (=112 lb)	= 50.80 kg
1 ton (=2240 lb)	= 1016 kg = 1.016 metric tons (tonnes) (t)
1 pint	= 0.5682 litre (l)
1 gallon (gal) (=8 pints)	= 4.546 litres
1 fluid ounce = 1/20 pint	= 0.02841 litre = 28.41 ml
1 cubic foot	= 28.32 litres

<i>To convert</i>	<i>Multiply by</i>
oz ac <sup>-1</sup> to g ha <sup>-1</sup>	70.06
lb ac <sup>-1</sup> to kg ha <sup>-1</sup>	1.121
cwt ac <sup>-1</sup> to kg ha <sup>-1</sup>	125.5
cwt ac <sup>-1</sup> to t ha <sup>-1</sup>	0.1255
ton ac <sup>-1</sup> to kg ha <sup>-1</sup>	2511
ton ac <sup>-1</sup> to t ha <sup>-1</sup>	2.511
gal ac <sup>-1</sup> to l ha <sup>-1</sup>	11.233

*The following factors are accurate to about 2 parts in 100:*

$$1 \text{ lb ac}^{-1} = 1.1 \text{ kg ha}^{-1}$$

$$1 \text{ gal ac}^{-1} = 11 \text{ litres ha}^{-1}$$

$$1 \text{ ton ac}^{-1} = 2.5 \text{ t ha}^{-1}$$

*In general reading of the text there will be no great inaccuracy in regarding:*

$$1 \text{ lb} = 0.5 \text{ kg}$$

$$1 \text{ lb ac}^{-1} = 1 \text{ kg ha}^{-1}$$

### Temperatures

To convert °F into °C subtract 32 and multiply by  $\frac{5}{9}$  (0.556)

To convert °C into °F multiply by  $\frac{9}{5}$  (1.8) and add 32

## CONVERSION FACTORS

### Factors for the Conversion of Metric to Imperial Units

1 centimetre (cm)	= 0.3937 inch (in.) = 0.03281 ft
1 metre (m)	= 1.094 yards (yd)
1 square metre (m <sup>2</sup> )	= 1.196 square yards (yd <sup>2</sup> )
1 hectare (ha)	= 2.471 acres (ac)
1 gram (g)	= 0.03527 ounce (oz)
1 kilogram (kg)	= 2.205 pounds (lb)
1 kg	= 0.01968 hundredweight (cwt) = 0.0009842 ton
1 metric ton (tonne) (t)	= 0.9842 ton
1 litre (l)	= 1.760 pints = 0.2200 gallon (gal)
1 litre = 1000 millilitres (ml)	= 35.20 fluid ounces = 0.03531 cubic foot (ft <sup>3</sup> )

<i>To convert</i>	<i>Multiply by</i>
g ha <sup>-1</sup> to oz ac <sup>-1</sup>	0.01427
kg ha <sup>-1</sup> to lb ac <sup>-1</sup>	0.8921
kg ha <sup>-1</sup> to cwt ac <sup>-1</sup>	0.007966
t ha <sup>-1</sup> to cwt ac <sup>-1</sup>	7.966
kg ha <sup>-1</sup> to tons ac <sup>-1</sup>	0.0003983
t ha <sup>-1</sup> to tons ac <sup>-1</sup>	0.3983
l ha <sup>-1</sup> to gal ac <sup>-1</sup>	0.08902

### Plant nutrients

Plant nutrients are best stated in terms of amounts of the elements (P, K, Na, Ca, Mg, S); the old 'oxide' terminology (P<sub>2</sub>O<sub>5</sub>, K<sub>2</sub>O, Na<sub>2</sub>O, CaO, MgO, SO<sub>3</sub>) is still used in work involving fertilisers and liming since Regulations require statements of P<sub>2</sub>O<sub>5</sub>, K<sub>2</sub>O, etc.

### For quick conversions

(accurate to within 2%) the following factors may be used:

$2\frac{1}{3} \times P = P_2O_5$	$\frac{3}{7} \times P_2O_5 = P$
$1\frac{1}{3} \times K = K_2O$	$\frac{5}{8} \times K_2O = K$
$1\frac{2}{3} \times Ca = CaO$	$\frac{7}{10} \times CaO = Ca$
$1\frac{2}{3} \times Mg = MgO$	$\frac{3}{5} \times MgO = Mg$

### For accurate conversions:

<i>To convert</i>	<i>Multiply by</i>	<i>To convert</i>	<i>Multiply by</i>
P <sub>2</sub> O <sub>5</sub> to P	0.4364	P to P <sub>2</sub> O <sub>5</sub>	2.2915
K <sub>2</sub> O to K	0.8301	K to K <sub>2</sub> O	1.2047
CaO to Ca	0.7146	Ca to CaO	1.3994
MgO to Mg	0.6031	Mg to MgO	1.6581