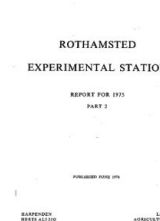


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Conversion Factors

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 (sq yd) | = | 0.8361 sq m |
| 1 acre (ac) (=4840 sq yd) | = | 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 ⁻¹ to g ha ⁻¹ | 70.06 |
| lb ac ⁻¹ to kg ha ⁻¹ | 1.121 |
| cwt ac ⁻¹ to kg ha ⁻¹ | 125.5 |
| cwt ac ⁻¹ to t ha ⁻¹ | 0.1255 |
| ton ac ⁻¹ to kg ha ⁻¹ | 2511 |
| ton ac ⁻¹ to t ha ⁻¹ | 2.511 |
| gal ac ⁻¹ to l ha ⁻¹ | 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 (sq m) | = | 1.196 square yards (sq yd) |
| 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 | = | 1.760 pints = 0.2200 gallon (gal) |
| 1 litre = 1000 millilitres (ml) | = | 35.20 fluid ounces = 0.03531 cubic foot |

| <i>To convert</i> | <i>Multiply by</i> |
|--|--------------------|
| g ha ⁻¹ to oz ac ⁻¹ | 0.01427 |
| kg ha ⁻¹ to lb ac ⁻¹ | 0.8921 |
| kg ha ⁻¹ to cwt ac ⁻¹ | 0.007966 |
| t ha ⁻¹ to cwt ac ⁻¹ | 7.966 |
| kg ha ⁻¹ to tons ac ⁻¹ | 0.0003983 |
| t ha ⁻¹ to tons ac ⁻¹ | 0.3983 |
| l ha ⁻¹ to gal ac ⁻¹ | 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 P₂O₅, K₂O, Na₂O, CaO, MgO, SO₃ is still used in work involving fertilisers and liming since Regulations require statements of P₂O₅, K₂O, etc.

For quick conversions

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

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

For accurate conversions:

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