

Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED
RESEARCH

Yields of the Field Experiments 1984

[Full Table of Content](#)



Conversion Factors

Rothamsted Research

Rothamsted Research (1985) *Conversion Factors* ; Yields Of The Field Experiments 1984, pp 346 - 347 - DOI: <https://doi.org/10.23637/ERADOC-1-32>

ROTHAMSTED REPORT FOR 1977, PART 1

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 ²) | = 0.8361 m ² |
| 1 acre (ac) (=4840 yd ²) | = 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:

$$\begin{aligned}1 \text{ lb ac}^{-1} &= 1.1 \text{ kg ha}^{-1} \\1 \text{ gal ac}^{-1} &= 11 \text{ litres ha}^{-1} \\1 \text{ ton ac}^{-1} &= 2.5 \text{ t ha}^{-1}\end{aligned}$$

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

$$\begin{aligned}1 \text{ lb} &= 0.5 \text{ kg} \\1 \text{ lb ac}^{-1} &= 1 \text{ kg ha}^{-1}\end{aligned}$$

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 ²) | = 1.196 square yards (yd ²) |
| 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 (ft ³) |

| <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:

| | |
|----------------------------------|---------------------------------|
| $2\frac{1}{2} \times P = P_2O_5$ | $\frac{3}{7} \times P_2O_5 = P$ |
| $1\frac{1}{2} \times K = K_2O$ | $\frac{5}{6} \times K_2O = K$ |
| $1\frac{3}{8} \times Ca = CaO$ | $\frac{7}{10} \times CaO = Ca$ |
| $1\frac{3}{4} \times Mg = MgO$ | $\frac{3}{5} \times MgO = Mg$ |

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 |