Rothamsted Experimental Station Report for 1978 Part 2
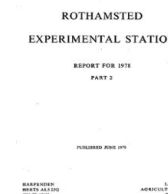
Conversion Factors / Tables

Rothamsted Research

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

To convert	*Multiply by*
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:

$$1 \text{ lb ac}^{-1} = 1 \cdot 1 \text{ kg ha}^{-1}$$
$$1 \text{ gal ac}^{-1} = 11 \text{ litres ha}^{-1}$$
$$1 \text{ ton ac}^{-1} = 2 \cdot 5 \text{ t ha}^{-1}$$

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

$$1 \text{ lb} = 0 \cdot 5 \text{ kg}$$
$$1 \text{ lb ac}^{-1} = 1 \text{ kg ha}^{-1}$$

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

177

ROTHAMSTED REPORT FOR 1978, PART 2

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)

To convert	Multiply by
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 (P_2O_5, K_2O, Na_2O, CaO, MgO, SO_3) is still used in work involving fertilisers and liming since Regulations require statements of P_2O_5, K_2O, etc.

For quick conversions

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

$$2\tfrac{1}{3} \times P = P_2O_5 \qquad \tfrac{3}{7} \times P_2O_5 = P$$
$$1\tfrac{1}{5} \times K = K_2O \qquad \tfrac{5}{6} \times K_2O = K$$
$$1\tfrac{2}{5} \times Ca = CaO \qquad \tfrac{7}{10} \times CaO = Ca$$
$$1\tfrac{2}{3} \times Mg = MgO \qquad \tfrac{3}{5} \times MgO = Mg$$

For accurate conversions:

To convert	Multiply by	To convert	Multiply by
P_2O_5 to P	0·4364	P to P_2O_5	2·2915
K_2O to K	0·8301	K to K_2O	1·2047
CaO to Ca	0·7146	Ca to CaO	1·3994
MgO to Mg	0·6031	Mg to MgO	1·6581

178