Agricultural Technology and Mechanical Systems Formulas

NORTH DAKOTA

1 acre = 43,560 square feet

$P = I \times E$

$Cr = \frac{Pd + CV}{CV}$

$I = \frac{P}{E}$

$E = I \times R$

$E = \frac{P}{I}$

$I = \frac{E}{R}$

Power Used = Sum of Individual Loads

$R = \frac{E}{I}$

$hp = \frac{S \times D}{375}$

Electrical Energy = Power x Time

Cost = Electrical Energy x Rate

1 kW = 1,000 W

$\% \text{ Efficiency} = \frac{\text{Power Output}}{\text{Power Input}} \times 100$

$D1 \times N1 = D2 \times N2$

88 ft/min = 1 mph

$T1 \times N1 = T2 \times T2$

1.47 ft/sec = 1 mph

$hp = \frac{2\pi T N}{33{,}000}$

746 Watts = 1 hp

$1 \text{ yd}^3 = 27 \text{ ft}^3$

Area of a Circle = πr^2 or $(\pi D^2)/4$

$Hp = \frac{T \times rpm}{5252}$

Circumference of a Circle = $2\pi r$ or πD

Volume of a Cylinder = $\pi r^2 \times h$

$\text{Field Capacity} = \frac{S \times W \times Eff}{8.25}$

Square of Shingles = 100 sq. ft.

$MCdry = \frac{WW-DW}{DW} \times 100$

1 kg = 2.2 lb

1 ha = 2.47 ac

$MCwet = \frac{WW-DW}{WW} \times 100$

$1 \text{ ft}^3 = 7.48 \text{ gal.}$