



Agricultural Technology and Mechanical Systems

Formulas

$$1 \text{ acre} = 43,560 \text{ ft}^2$$

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

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

$$P = I \times E$$

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

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

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

$$E = I \times R$$

$$\text{Cost} = \text{Electrical Energy} \times \text{Rate}$$

$$\text{Electrical Energy} = \text{Power} \times \text{Time}$$

$$\text{Power Used} = \text{Sum of Individual Loads}$$

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

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

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

$$\text{Circumference of a Circle} = 2\pi r \text{ or } \pi D$$

$$\text{Area of a Circle} = \frac{\pi r^2}{4}$$

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

$$1 \text{ ft}^3 = 7.48 \text{ gallons}$$

$$1 \text{ ha} = 2.47 \text{ ac}$$

$$1 \text{ kg} = 2.2 \text{ lbs}$$

$$746 \text{ Watts} = 1 \text{ hp}$$

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

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

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

$$Hp = \frac{V \times A \times PF \times \text{Eff.}}{746}$$

$$1.47 \frac{\text{ft}}{\text{sec}} = 1 \text{ mph}$$

$$\frac{88 \text{ ft}}{\text{min}} = 1 \text{ mph}$$

$$MC_{\text{dry}} = \frac{WW - DW}{DW} \times 100$$

$$MC_{\text{wet}} = \frac{WW - DW}{WW} \times 100$$

$$1 \text{ kW} = 1000 \text{ W}$$

$$\text{Square of Shingles} = 100 \text{ ft}^2$$