# RATES PER HECTARE

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Application of weedicides, trace elements, soil fumigants etc. in solution where these are applied from boom sprays or other similar apparatus necessitates calculating a speed of travel to apply the right volume of solution per hectare.

The following is submitted as a quick and accurate method of calculating such speeds and examples are typical applications.

Tractors are usually used to carry or tow spraying equipment and tractor speed required for proper rates of application are dependent upon -

1. Rate of discharge of solution from tank.

2. Width of swathe covered by boom spray.

3. Required rate of application per hectare.

The actual rate of discharge is usually measured by recording the time taken to discharge a known volume from a tank at the constant required pressure.

The following calculation will provide the exact speed in metres/hour for a known -

A Rate of discharge

B Width of swathe

C Required rate of application (litres/ha)

$$\frac{\text{Litres discharged from test tank} \times 10{,}000 \times 60}{\text{Required rate of application (litres/ha)} \times \text{swathe width (metres)} \times \text{Time to discharge test tank (minutes)}}$$

Example $\quad \frac{455 \times 10{,}000 \times 60}{790 \times 5.69 \times 17}$

$= 3572.5$ metres/hour

Where tachometers are still graduated in Miles per hour the following converts metres/hour to miles/hour :

$$\frac{\text{Speed in metres/hr} \times 0.62}{1{,}000}$$

Example $\frac{3572.5 \text{ m/hr} \times .62}{1{,}000}$

= 2.21 miles/hr.

To go one step further, for mixing weedicides and trace elements and applying at required rates/ha (either liquids or solids in solution) the following will calculate the quantities of weedicide or trace elements etc., to be mixed with each tank of water.

$$\frac{\text{Required rate of application/ha (Weedicide, trace element etc.)} \times \text{Volume of tank (litres)}}{\text{Required rate of application of solution per ha (litres)}}$$

Example $\frac{15 \text{ kg} \times 455 \text{ litres}}{1125 \text{ litres}}$

= 6.06 kg per 455 litre tank.