

**Calibration of ground-driven granular insecticide applicators for canegrub management:**

**When *either* the driving or the driven cog is changed to achieve the required application rate**

This method works for any row spacing or row configuration.

To change the rate of application you can change either the **driving cog** or the **driven cog**.

**Equipment needed**

- Metric measuring tape.
- Metric scales capable of measuring from about 50 to 500 grams, with 10 gram intervals (battery operated electronic scales are best).
- Plastic bags or buckets.

**Procedure**

1. Decide on the appropriate application rate, e.g. 225 g/100 m row.
2. Measure out 100 metres.
3. Attach a plastic bag or bucket to the outlet or outlets of the distributor box.
4. Drive over the measured distance with the applicator in its normal working position. Collect the granules delivered over the 100 metres. Repeat the run again and use the average output from the two runs.
5. Is the output correct? If not, fit a new driving or driven cog according to the following formulae.
6. Fit the new cog and re-check output over 100 m.

1. Change the **driving cog** size

Driving cog size (number of teeth) required =

$$\frac{\text{Required rate (g/100 m row)} \times \text{Present number of teeth on driving cog}}{\text{Present rate (g/100 m row)}}$$

Present rate (g/100 m row)

**Example:** The distributor is currently applying 150 g/100 m of row. The desired rate is 225 g/100 m of row. The **driving cog** currently has 8 teeth.



$$\frac{225 \text{ g/100 m of row} \times 8}{150 \text{ g/100 m of row}} = 12 \text{ teeth required on driving cog}$$

2. Change the **driven cog** size

Driven cog size (number of teeth) required =

$$\frac{\text{Present rate (g/100 m row)} \times \text{Present number of teeth on driven cog}}{\text{Required rate (g/100 m row)}}$$

Required rate (g/100 m row)

**Example:** The distributor is currently applying 150 g/100 m of row. The desired rate is 225 g/100 m of row. The **driven cog** currently has 22 teeth.



$$\frac{150 \text{ g/100 m of row} \times 22}{225 \text{ g/100 m of row}} = 14.7 \text{ teeth required on driven cog (round up to 15 teeth)}$$



Keep this sheet as a record of calibration

Your calibration worksheet

Date of calibration: \_\_\_\_\_ Actual rate run 1: \_\_\_\_\_ g/100 m of row
Product applied: \_\_\_\_\_ Actual rate run 2: \_\_\_\_\_ g/100 m of row
Required rate: \_\_\_\_\_ g/100 m of row Actual rate average: \_\_\_\_\_ g/100 m of row

To re-calibrate:

- 1. By changing the driving cog size (fill in the blanks with your own numbers)

Driving cog size (number of teeth) required =

Required rate (g/100 m row) [ ] x Present number of teeth on driving cog [ ]
Present rate (g/100 m row)
= [ ] teeth required on driving cog

Or

- 2. By changing the driven cog size (fill in the blanks with your own numbers)

Driven cog size (number of teeth) required =

Present rate (g/100 m of row) [ ] x Present number of teeth on driven cog [ ]
Required rate (g/100 m of row)
= [ ] teeth for the driven cog

Further information

See also Information Sheet IS13097 'Calibration of ground-driven insecticide applicators for canegrub management: When both driving and driven cogs are changed to achieve the desired application rate'.