

How to measure plant populations

Poor establishment or low plant counts can reduce yield. Knowing your plant populations means the crop can be effectively managed through the growing season to maximise yield.

For more information, visit: cereals.ahdb.org.uk/wheatgg

Plant populations can be measured in two ways:

OPTION 1

1. Place a 0.5m x 0.5m (0.25m²) quadrat diagonally so that one row goes vertically from one corner to the opposite corner.
2. Count the number of plants in the quadrat.
3. Repeat in 10 representative areas of the field
4. Take the average of all counts and then multiply by four to get the number of plants/m².

OPTION 2

1. Place a 30cm stick/ruler or clipboard along a row.
2. Count the number of plants along the length.
3. Repeat in 10 representative areas of the field/1 count per hectare and calculate the average.
4. Work out the area counted, eg: 30cm x drill coulter width.
5. Divide this figure into 100cm x 100cm (10,000cm²) to give you a multiplication factor.
6. Take the average of all counts and multiply by the multiplication factor to give you the plants/m².

Example:

30 cm count length x 20cm (Drill coulter width) = 600cm²

10,000cm² ÷ 600 cm² = 16.67 (Multiplication factor)

18 plants (average number from field) x 16.67 = 300 plants/m²

NOTES:

- Counting plants in November gives a picture of emergence. For establishment, plants should be counted in the spring to allow for over-winter losses.
- If using variable rate seed, do a minimum of two counts per zone.

TARGET PLANT POPULATIONS

End of February

- 70% of seeds established
- 260 plants/m²

Benchmarks from AHDB Wheat Growth Guide

SEED RATE

Compare your results to your original predicted establishment used to calculate the original seed rate. Consider any adjustments required for future seasons.

Seed rate (kg/ha) = $\frac{\text{Target plant population/m}^2 \times \text{Thousand Grain Weight (g)}}{\text{Expected establishment (\%)}}$

