

Measuring crop yield

Winter crops

Sow

Measuring crop yield is critical to achieve animal performance targets. Without knowing the yield, you cannot allocate the correct break size and animal allowance. Crop dry matter percentages are often assumed, which can lead to inaccurate feeding.

Fresh weight

For leaf crops such as kale and rape join both ends of a 3.54 m length of alkathene to create a circle with an area of 1 m^2. Place this over representative areas of the crop. To quantify the fresh weight, cut, bag and weigh everything within the circle. Remember to subtract the bag weight. For bulb crops sown in rows, like swedes, harvest part of a row. Row width will determine length sampled, e.g. for 50 cm wide rows, a 2 m row sample length will give an area of 1 m^2.

In all cases

Repeat sampling at least 5 times across the paddock to gain an average fresh weight. The more variable a crop the more samples you need. The fresh weight is then multiplied by 10,000 to convert from kg/m^2 to kg/ha (10,000 m^2 = 1 ha).

For example:

Sample	1	2	3	4	5	Average
Fresh weight (kg/m^2)	8.6	9.3	9.2	9.4	9.0	9.1
Fresh weight (kg/ha)	86,000	93,000	92,000	94,000	90,000	91,000

Dry matter %

Take three samples per crop to determine the dry matter percentage. For each sample, take 2 or more whole plants which are representative of the crop, and chop into small segments. These samples can be put in a sealed bag, and sent as rapidly as possible to a feed test laboratory to analyse the dry matter percentage.

Alternatively, you can calculate this yourself. Weigh the sample to determine fresh weight, then dry at 60- 90°C for 48 hours, until the weight stops dropping. Then weigh the dried sample. The dry matter percentage can be calculated by dividing the dry weight by the fresh weight.

E.g.	Fresh weight of sample	=	112 g
	Dry weight of sample	=	16.8 g
	Dry matter %	=	16.8 g ÷ 112 g
		=	15%

Crop yield (kg DM/ha)

Once you know the fresh weight yield (91,000 kg/ha) and the DM % (15%) you can calculate crop yield in kg DM per hectare.

Crop yield (kg DM/ha)	=	Fresh weight (kg/ha)	x	Dry matter % (DM %)
	=	91,000 kg/ha	x	0.15 (15%)
	=	13,650 kg DM/ha		

Crop feed quality (ME)

You can’t calculate accurate feed allowances for your animals if you don’t know the quality of the crop they will be grazing. Send a representative sample to a laboratory to test quality, particularly metabolisable energy (ME). You can do this when you send samples for dry matter testing.