



CROP FORAGE MASS CALCULATOR

- Step 1** Record row spacing in centimetres [a].
- Step 2** Place a 1 metre ruler along a row and cut the crop off at windrowing height.
- Step 3** Weight the fresh sample to get the wet weight in grams [b].
- Step 4** Chop up the sample with scissors into small pieces to assist with drying.
- Step 5** Dry the sample in a microwave oven.

Ensure that the sample dries evenly by mixing the sample several times during the drying process. Avoid burning the sample. As the sample gets dry, weigh the sample frequently. When the sample weight no longer drops it is near as practical to 0% moisture. If the sample then burns you can go back to the previous weight.

- Step 6** Record the dry weight of the sample in grams [c]
- Step 7** Calculate the **Dry Matter** per hectare.

$$\text{Kg DM/ha [d]} = (100 \div \text{Row spacing [a]}) \times \text{Dry Weight [c]} \times 10$$

- Step 8** Calculate Harvested Dry Matter after field losses**

** Field losses for hay and silage are commonly around 20%. Last year many drought affected crops baled for hay or silage had field losses of between 15% and 45%. Field losses were greatest in crops that had less than 2 tonnes/ha of dry matter.

$$\text{Loss factor [e]} = (100 - \text{loss \%}^{**}) \div 100$$

$$\text{Harvested Dry Matter kg/ha [f]} = \text{Dry Matter kg/ha [d]} \times \text{Loss factor [e]}$$

- Step 9** Convert into hay or silage per hectare.

$$\text{Baled Hay kg/ha} = \text{Harvested DM kg/ha [f]} \div \text{product dry matter \%}^* \times 100$$

- * Hay = approx. 87% dry matter
- Silage = approx 30% to 40% dry matter
- “haylage” = approx 50% dry matter

Paddock Number/Name:	Hay Example: <ul style="list-style-type: none"> • 87% product dry matter • 20 % field losses 	CUT 1	CUT 2	CUT 3	CUT 4
[a] ROW SPACING (cm)	18 cm				
[b] SAMPLE WET WEIGHT (grams)	180 g				
[c] SAMPLE DRY WEIGHT (grams)	27 g				
MOISTURE % OF CROP $1 - (c \div b) \times 100$	$1 - (27 \div 180) \times 100$ = 85% Moisture (or = 15% Dry matter)				
[d] Kg DM/ha $(100 \div \text{Row spacing [a]}) \times \text{Dry Weight [c]} \times 10$	$(100 \div 18\text{cm}) \times 27\text{g} \times 10$ = 1500 kgDM/ha				
[e] LOSS FACTOR $(100 - \text{loss \%}^{**}) \div 100$	$(100 - 20) \div 100$ = 0.8				
[f] HARVESTED DRY MATTER kg/ha Dry Matter kg/ha [d] x Loss factor [e]	$1500 \text{ kg/ha} \times 0.8$ = 1200 kg/ha				
BALED HAY kg/ha Harvested DM kg/ha [f] \div product dry matter %* $\times 100$	$1200 \text{ kg/ha} \div 87 \times 100$ = 1379 kg/ha of hay				

