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DUMFRIESSHIRE

Forage budgeting workshop
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Your forage

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How to estimate dry matter %

- Liquid easily squeezed out by hand **<20%**
- Liquid squeezed out but takes more effort **20-25%**
- Very hard to get liquid out but hands feel wet **>25%**

Can you form a ball, does it hold its shape?

Is it spikey in your hand? Higher fibre lower energy

Forage digestibility (an easy way to think about it)

1MJ=240kcal=1 Cadburys dairy milk bar

High ME silage= 11.5-12

Average hay= 9

Straw= 6

Energy

Maintenance= 10% bodyweight + 10MJ

For example:

- 650kg suckler cow= 75MJ to maintain body weight

-700kg suckler cow= 80MJ to maintain bodyweight

Pregnancy + 15MJ in last 8 weeks

Lactation 5MJ per litre of milk

Growth around 45MJ per 1kg/day

Feed provides

High quality silage = around 110MJ

Poor quality silage = around 80MJ

Average hay= 80MJ

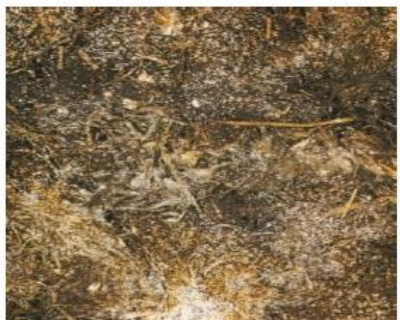
Straw = 50-60MJ

Colour

Very good- Yellowish khaki, vinegar/acidic smell

Overheated- Dark brown

Mouldy



Feed Budgeting

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What you need:

- Forage analysis
- Pit dimensions or bales no
- Record of stock needing fed and no days
- Ration
- Calculator

Why?

- Make sure that supply meets demand.
- Early detection of potential pinch points (can make plans early).
- Reduces risk of sudden diet change, shortage or expensive feed purchased later in season.
- Make best use of on farm resources.

Pit silage

Step 1: Calculate Clamp Volume
Pit: (pit length × pit breadth × pit height) = Total Volume (m^3)
- don't forget to add a ramp if there ((l×b×h)/2))

Step 2: Calculate Fresh Weight Available
Volume × Density / 1000 = FW (kg)

Step 3: Calculate Dry Matter Available
FW (kg) × Dry Matter (%) / 100

Step 4: Calculate Demand
No of stock × DM Consumption × Days Feeding

Step 5: Calculate Shortfall or Surplus
DM Available – DM Demand

Big bale silage

Step 1: Calculate Fresh Weight Available
Number of Bales × Bale Weight (kg) = Total FW (kg)

Step 2: Calculate Dry Matter Available
FW (kg) × Dry Matter (%) / 100

Step 3: Calculate Demand
No of stock × DM Consumption × Days Feeding

Step 4: Calculate Shortfall or Surplus
DM Available – DM Demand

*Density Table (tonnes fresh weight per cubic metre)

DM (%)	Clamp height (m)			
	2	**2.5**	**3**	**4**
20	790	840	890	950
25	690	730	780	830
30	620	660	690	740
35	570	600	630	670
40+	520	550	570	610

Note – Crop bulk density is similar for grass, wholecrop and maize silage. Bulk densities are a guide, which also depends on level of silage compaction, chop length and fibre content.

Feed budgeting -The easy way

The easy way to feed budget is using the FAS companion app which gives easy access to a range of tools, advice and a handy diary.

The app includes a:

- **Forage budget calculator**
- **Forage crop budget**
- **Slurry calculator**
- **Lime calculator**
- **Unit convertor**
- **Fertiliser calculator**

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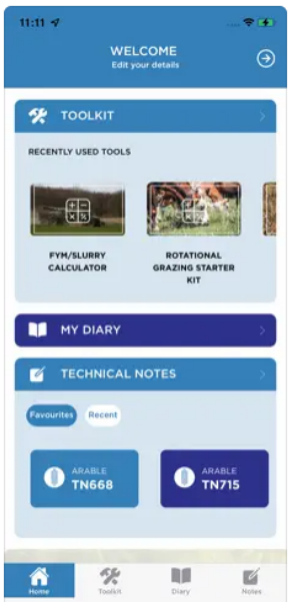

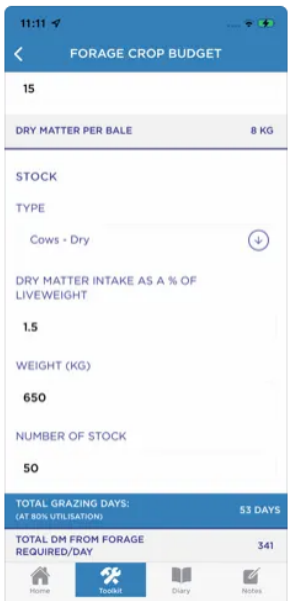

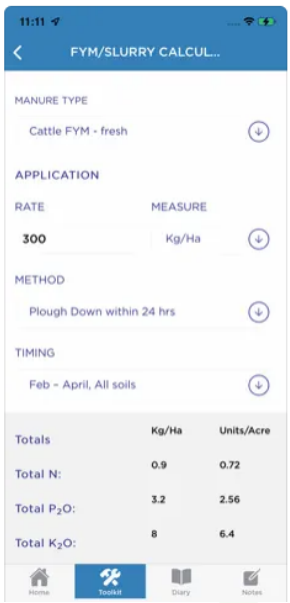

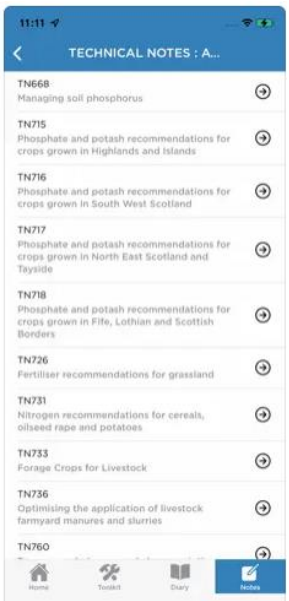

Consider wastage

Silage waste can limit Dry Matter available.

On farm wastage is predicted to be around:

10% when housed

20-30% while grazing with ring feeders

Options to consider if short

1. Can additional forage be harvested without compromising grazing availability?
2. Source alternative feed or forage
3. Can youngstock be finished quicker or sold store before housing?
4. Sell any passengers: breeding not being kept as a replacement? Or cows not meeting performance goals

Where should it go?

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Requirements

Depending on quality of forage

Feed adlib:

- High quality silage will provide around **100MJ**
- Poor quality silage will provide around **80MJ**
- Average hay will provide around **80MJ**
- Straw **50-60MJ** (needs protein to go alongside, adlib straw cannot be fed alone)

Targeting forage

Best stuff should go to:

- Suckling cows (Autumn 1st then Spring)
- Replacement heifers & 1st calvers
- Finishing stock
- Weaned calves

Lower quality stuff should go to:

- Dry spring calvers
- other stock

Predicting intakes

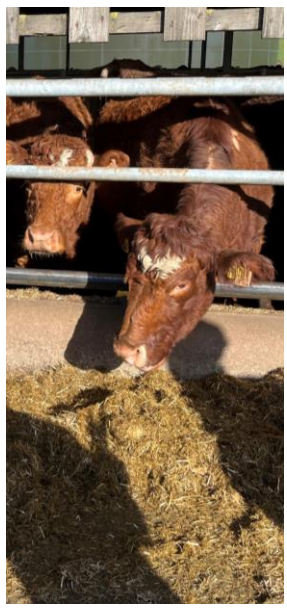
Cattle	Stock class	% of bodyweight
	Dry, mid pregnancy	1.5
	Lactating suckler cows	2-2.5
	Growing cattle/heifer replacements	2.5
	Finishing cattle	2

Example:

700kg dry suckler cow
=10.5kg DMI

700kg Lactating cow
=14kg DMI

550kg Finisher
= 11kg DMI



Sheep	Stock class	% of bodyweight	e.g. 70kg ewe (kg/day)
	Dry, post weaning. Early/mid pregnancy	1.5	1.05
	Late pregnancy	2-2.5	1.45-1.75
	Early lactation	3.5 +	2.45

"The pit is full!"

Just because the pit is full doesn't necessarily mean there is the same amount of feed as last year.

When looking at the number of animals fed per cubic meter of forage, we can see that for every 1% increase in dry matter, we gain an extra animal fed/day. Intakes may vary depending on silage quality with poor-quality forage reducing intake.

Dry Matter (%)	25	27	29	31	33	35
Kg Dry Matter in 1m³ (kg)	165	173	181	189	197	205
Energy ME in 1m³ (MJ)	1733	1817	1901	1985	2069	2153
Crude Protein in 1m³ (kg)	19.8	20.8	21.7	22.7	23.6	24.6
Animals Fed/ m³ (300kg Steer)	40.7	42.7	44.7	46.7	48.6	50.6

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To find out more or to sign up, please contact:

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