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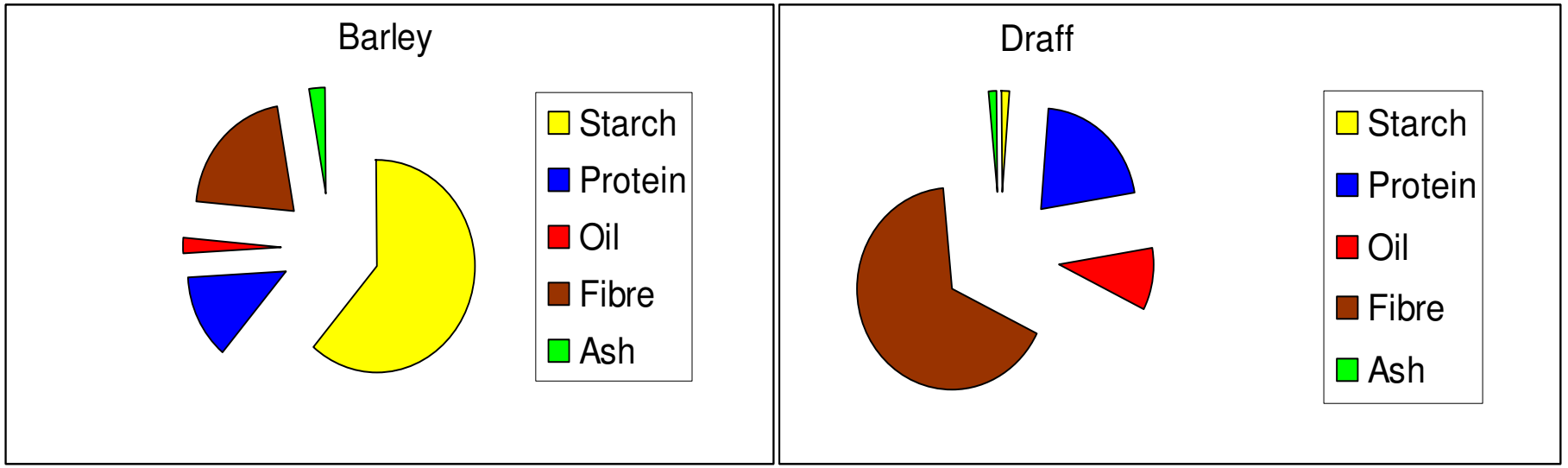
Barley and Draff compared

- Distillers/ Brewers extract the starch for alcohol production
- Water extraction process takes out other solubles (mins, TE & vits)
- Draff / Brewers Grains is what's left



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Draff storage methods

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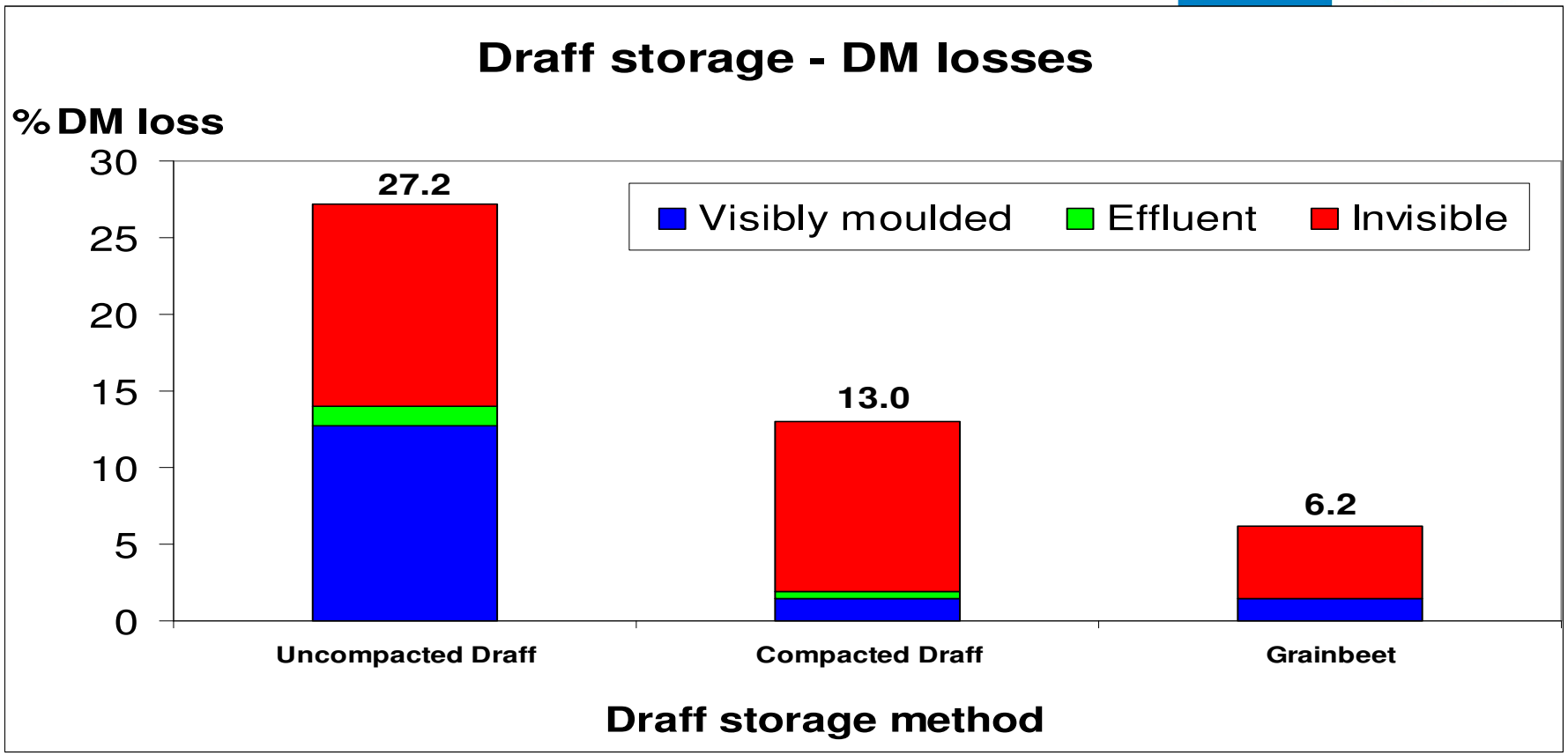
- Draff can be stored on-farm in many ways

- On its own in a pit
- On its own in a temporary silo
- Underneath grass silage

Draff storage - Dry matter losses



- Poorly stored draff (typical on-farm) has high DM losses at 27 %
- Well stored draff still has 13% DM loss
- Grainbeet minimises DM loss to 6%

Draff alone - compaction with tractors ?

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It does

not

work.

They

sink !

So, farmers don't bother too much !

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Draff alone - compaction with Telescopics & LGP

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Both methods

work very well

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Storing Draff

- **Let it sit for half a day before building up**
- **Pit should be side sheeted**
- **Build up Draff and if a front loader can be sued , pat it down.**
- **Quad bike can roll it**
- **Sprinkle white salt over the top before sheeting. Looks like a dusting of snow**

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Storing Draff

- **Fold in side sheets.**
- **Add at least 2 top sheets – preferably 3**
- **If not sealed , mould can appear very quickly.**
- **If feeding any signs of mouldy draff then nothing to pregnant animals**

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Draff storage alone - practical tips

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- Weigh entire surface area (tyres etc)
- Minimise exposure to air & rain when emptying

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Issues

- Storage- deterioration and mould
- Minerals - low
- High Oil content to have to restrict
  - Fattening cattle
  - Dairy Diets (negative impact on Butterfat)

Draff

Typical analysis	Draff	
DM (g/kg)	**230**	(180-260)
CP (g/kg DM)	**210**	(180-230)
Oil "	**100**	(84-126)
NDF "	**672**	(656-689)
Ash "	**34**	(28-41)
Starch "	**17**	(11-220)
ME (MJ/kg DM)	**10.8**	(9.5-11.7)

Draff

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Minerals & TE	**Draff**	
Ca (g/kg DM)	**1.5**	(0.8-2.4)
P "	**3.8**	(2.1-5.3)
Mg "	**1.8**	(1.4-2.3)
Na "	**0.1**	(0-0.1)
K "	**0.1**	(0-0.1)
Mn (mg/kg DM)	**39**	(28-46)
Zn "	**80**	(70-93)
Cu "	**17**	(9-24)

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Rules

- 2 to 3 kg /100kg liveweight
- 600kg Cow = 12 to 18kg

Rules (KW)

- Dairy – up to 20kg (most 8 to 10kg)
- Dry – 4kg
- Heifers – up to 10kg (30% DMI)
- Calves (up to 12 weeks) 5kg
- Sucklers – up to 15kg
- Sheep- up to 3kg

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Silage and Draff

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	Scarista Park	Horgabost MacNair	Draff
Dry Matter	219	424	200 -230
ME	10.5	10.6	9.81- 11.3
CP	104	96	180 - 230
Oil	32	33	84 - 126

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Silage and Draff

FARM ADVISORY SERVICE

	Scarista Park	Horgabost MacNair	Draff	ECV Nut	Barley	WC Oats
Dry Matter	219	424	200 -230	870	860	385
ME	10.5	10.6	9.81-11.3	13.2	12.5	10.5
CP	104	96	180 - 230	115	170	77
Oil	32	33	84 - 126	28	45	14.8

ECV Beef Nuts

- ME – 12.5
- CP- 17% dm
- 30% to 40% Barley (Starch)
- Good Mins / Vitamins for Growing Cattle

Silage and Draff

FARM ADVISORY SERVICE

	Bullers	Weaned	Bullers	Weaned	
Scarista Silage	26	18			
Horgabost Silage			15	10	
Draff	7	6	6	4	
ECV Beef Nut	1.5	1.5	1.5	1.5	

Silage and Draff (Dry Cow)

FARM ADVISORY SERVICE

- Draff inclusion rates depending on silage quality

	Poor silage	Average silage	Average silage alone
Silage kg	**23**	**23**	**33**
Draff kg	**15**	**10**	

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Suckler rations - coping with poor silages

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- **Spring calvers 9% CP when dry**
- **Autumn calvers 12% CP when suckling**
- **Many grass or silage based diets will supply this with minimal supplementation**
- **BUT bad silages will not**

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Draff - practical feeding tips

- Change diets gradually
- Clean out feed troughs regularly
- Re-sheet daily after every removal from pit
- Ensile with as much care as grass silage
- Ensure effective mineral supplementation
- Complete diets are best
- All other “wet distillery draff’s” are drier & higher in both ME and CP
  - i.e. Supergrains, Vitagold, Curne Gold

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Draff - Mineral supplements

- Animal requirements
- Additional considerations
  - what & why ?
  - Ca & Mg - draff's high oil content
  - Na, K, TE & Vits - low due to water extraction process
- Rules of thumb
  - draff @ < 50% of diet DM - normal mineral supplementation OK
  - draff @ > 50% of diet DM - high draff minerals needed
    - i.e. high in Ca, Mg, TE & vits - adequate in Na & K

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UF Cattle and Sheep Minerals

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- Cattle/sheep mineral so there is always compromise - there is 5% magnesium and no copper (sheep) so for growing stock
- Watch the copper levels (nuts should provide) and for cows watch the magnesium levels especially around staggers risk time and pre calving

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Thank You

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Quantity and Quality

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Last year a farmer made 1400 tonnes at 30% Dry Matter = 420 tonnes Dry Matter.

Says he has loads more this year and so cows will be fine. No problem.

To date he has made 1800 tonnes at 23% DM = 414 tonnes Dry Matter

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Forage Analysis - the key to rationing

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Grass Silage Report

Your reference:	First Cut

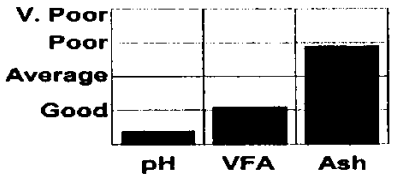
Lab sample no:	26300603
Batch no:	A79057
Date received:	21/07/2006
Date reported:	26/07/2006

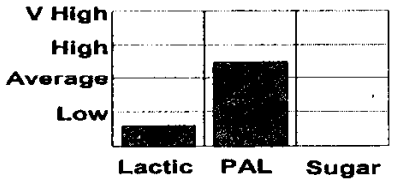
Feeding value

Dry Matter (g/kg) *	241
D-value (%)*	66
ME (MJ/kg DM)	10.6
Protein (g/kg DM) *	124
SIP (gDM/kgLW^0.75) *	93
NDF (g/kg DM) *	574
Sugar (g/kg DM)	0
Oil (g/kg DM)	37
Ash (g/kg DM)	102
TFA (g/kg DM)	103
PAL (meq/kg DM)	835

Fermentation quality

pH (NIR)*	4.1
Lactic Acid (g/kg DM)*	88.4
VFA (g/kgDM)	14.2





Degradability Characteristics

These values can be typed directly into FeedByteFIM

	s	a	b	c
Dry Matter	0.37	0.32	0.53	0.04
Nitrogen	0.58	0.75	0.16	0.05

* The above silage results were produced using the Forage Assurance Analysis Models on fresh silage material.

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Key Points from Silage analysis:-

- DM
- D Value
- ME
- CP

+ fermentation indicators

Must be from FAA approved lab

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Which silages cause you concern?

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	A	B	C	D
DM g/kg	250	400	180	300
D Value %	65	69	65	59
ME MJ/kgDM	10.5	11.0	10.5	9.5
CP g/kgDM	130	140	170	110
SIP	95	105	70	85
Lactic g/kgDM	80	50	10	70
VFA g/kgDM	20	10	60	20
pH	4.1	4.7	5.5	4.2

They all need balanced in a different way.

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Dry Matter Matters!

How do you know you are feeding enough silage?

Example 10kg of Dry matter of silage to satisfy a cow

- Wettest silage = 48kg fresh weight
- Driest Silage = 16kg fresh weight

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Importance of knowing your silage for sucklers

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Energy content of your silage why it matters:

To meet the needs of dry suckler cow

Example:

- 9ME silage = 35kg
- 11.5ME silage = 25kg

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Targeting forage

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Match what you've got to what animals need

- Best stuff should go to
  - suckling cows (autumn 1st, then spring)
  - replacement heifers & 1st calvers
  - finishing stock (if you have any)
  - weaned calves or stores or sheep

- Poorer stuff can go to
  - dry spring calvers (esp. fat ones)
  - other stock

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Dealing with Soil Contamination

FARM ADVISORY SERVICE

Indicators:

- High ash level on silage above 10%
- High pH but a low dry matter indicating poor fermentation

Clostridia bacteria need a high pH to survive (above pH 4.2) and anaerobic conditions (no air)

Listeria bacteria also risk but need air to survive so more risk if bales are punctured or badly consolidated pits.

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Dealing with soil contamination

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- Establish the worst affected bales and avoid feeding to sensitive stock (pregnant or lactating animals)
- If you need to use it for them dilute it with good better forage
- Don’t feed any obviously mouldy silage discard it and rotting silage at the edges/top of the pit
- Remove refused silage every couple of days to avoid build up of spoiled material.
- Mycotoxin binders????

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Issues with suckler cows this winter

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- **Managing cow condition**

- Knowledge of cows requirements and making the most of your forages to meet them

- Act early - Get cows into right condition before the end of the year then allowing them to tick over to calving

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Scanning / Pregnancy Diagnosis

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- Sorting out those in calf or not
- Eases management
- Feeding up cull cows and selling?
- Scan early and identify those with twins

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Weaning

When do you wean?? On sale day or before?

- 1st and 2nd Calvers that need prioritised
- They are the ones most in need of recovery and preferential feeding throughout the winter along with thin cows

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Feed According to Condition

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Sort cows out early and plan feeding for each group

More feed to thin cows

= the same amount of overall feed

Less feed to fat cows

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The importance of right body condition

BCS at calving	Calving interval
1-1.5	418 days
2	382 days
2.5-3	364 days

Source: Dreenan and Berry, 2006

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Know condition score of cows

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One unit BCS loss is around 13% of liveweight

= 85kg for 650kg cows

If your cows are fat or thin and take off /need to put on condition this takes time…..

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Example

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Requirements for cows in different condition

	FAT 650kg cow -0.5kg/day	NORMAL 650kg cow no loss or gain	THIN 650kg cow to gain 0.5kg/day
Silage*	25	32	40
Conc.	-	-	(may need depending on silage quality)
Minerals	0.15	0.15	0.15

Note this is an average 10ME silage; analysis of your own forage must be used for rations.

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Poorer silages need supplementing

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Poorer silages will need supplemented

	Poor silage	Average silage
Silage	40kg	35kg
Concentrates	0.3kg	-

Feeding as if it were average silage at 35kg/head would result in weight loss of around 0.5kg/day

Be prepared to feed more earlier on in the winter so cows don't lose condition on poorer forage

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ME for maintenance

- Depends on cow weight

Weight (kg)	ME (MJ)
550	59
650	67
750	74
850	81

Do you know what your cows weigh?

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Cow energy requirements

700kg cow

20wks before calving 75MJ

8wks before calving 90MJ

2wks before calving 113MJ

Silage and Draff

FARM ADVISORY SERVICE

- Draff inclusion rates depending on silage quality

- Example average cow in calf over winter:-

	Poor silage	Average silage	Average silage alone
Silage kg	23	23	33
Draff kg	15	10	

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Feeding guidelines for spring calvers

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- If cows are losing excessive weight near to end of pregnancy consider possibility of twins/feed issues (access) and other vet issues
- Twins will increase ME requirement by 20-25MJ/d

  near end of pregnancy
- Avoid excessive weight loss
- Take condition off fat cows gradually early in pregnancy
- Keep calves on longer to reduce condition

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Pre Calving

- More moving to Pre Calving Minerals
- More Iodine, Vit E, Selenium and Magnesium

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when things go wrong…

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- Has ration been formulated taking into account forage quality?
- Is the ration on paper actually being fed?
- Is the ration actually being eaten by the stock?
- Other issues e.g. health?

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Silage composition and rations

FARM ADVISORY SERVICE

Silage composition

	Poor	Average	Good
DM g/kg	240	240	240
ME MJ/kgDM	9.6	10.6	11.2
CP g/kgDM	100	130	140
Intake Factor	85	95	100

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Silage composition and weaned calf rations

FARM ADVISORY SERVICE

300kg gaining 0.7kg/d

Silage Quality

	Poor	Average	Good
Silage kg	12.0	16.0	18.0
Beef nuts kg	3.5	2.1	1.6

Over double the concentrates required on a poor silage compared to good silage to get same weight gain.

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Silage composition and weaned calf rations

FARM ADVISORY SERVICE

350kg gaining 1.0kg/d

	Silage Quality		
	Poor	**Average**	**Good**
Silage kg	13.0	17.0	18.0
Beef nuts kg	4.6	3.5	3.0

4.6kg required on poor silage compared to 3kg on good silage. If you only fed 3kg on the poor silage cattle would only do 0.7kg gain – longer in sheds or lighter at sale

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Buying in Compounds

Example label:-

Super Beef Nuts

A complementary compound feeding stuff for beef cattle

Directions for use:- To be fed with silage or grass or other roughage. All raw materials used in this feed are from a non-genetically modified source (max 1%)

Oil (B) 3.7% Protein 15% Fibre 7.9% Ash 6.6%

Vit A 8000iu/kg Vit D3 2000iu/kg Vit E 40iu/kg

Copper 35mg/kg (From Copper Sulphate) Selenium 0.25mg/kg

Ingredients used in descending order by weight are:- **Barley, Distillers Dark Grains (barley), Sugar Beet Pulp**, Wheatfeed, Malt Residuals, Distillers Dark Grains (maize), molasses, Calcium Carbonate, Trace Elements + Vitamin Supplements, Sodium Chloride

==========

This feedstuff contains added Copper DO NOT FEED TO SHEEP

==========

Best Before/Vitamins present until 09/11/2012 Manufactured 92days before the “best before” date indicated. Berry Farm Feeds Ltd, 1000kg nett weight Store in cool dry place. UFAS cert end 30.04.13

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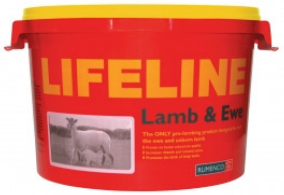
Buckets & Blocks



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- Various buckets and blocks on the market:-
  - -Feed buckets & blocks
  - -Mineral buckets & blocks
- Labour saving & convenience
- Prevents bullying at a trough
- Care not to over supply mins and vits
- They are a supplement not a cure all

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Alternative feeds

- Limits to use: composition/stock/other feeds in ration/etc
- Variability in composition
- Availability/consistency in supply
- Transport
- Storage
- Feeding
- Farm assurance

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Take Home Messages

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- Assess the condition of your stock regularly
- Get your forage analysed, know what you've got (quality & quantity) and use this information to plan feeding to make the most from your forage and buy in the best matched supplementary feeds
- Prioritise animals & match what you've got to those that need it most
- Feed cows according to condition (and re-assess cows half way through winter)
- Start thinking about winter feeding and planning now to prevent cows losing excessive condition over winter

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SRUC

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Store Rations Rules of Thumb

- Diet should have a minimum of 40% of dry matter as long forage for rumen function unless they are on an intensive ration
- A maximum of 0.5kg/100kg LW of starchy feed should be fed per meal
- Keep crude protein of the ration 140g/kgDM (14% in the dry matter) for a few weeks post weaning (good quality protein) then can reduce to minimum of 120g/kgDM (12% in DM)
- Know the quality of the forage, weight of animal and liveweight gain target expected to work out how much concentrates to give – feeding system will also come into this as well

Rule of thumb:- maintenance is around 10% of LW + 10MJ and to gain 1kg LW needs around 45MJ energy

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