



Cow & Heifer Nutrition in Winter with 2022's Poor Quality Forage

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Discussion Points



Why was 2022 such a bad year for forage?



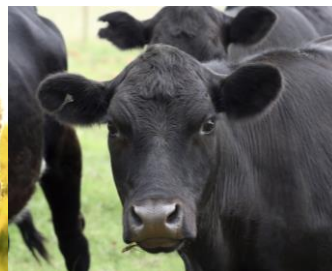
Feed analysis averages for pasture silage, hay and oaten hay.



Heifer and cow requirements

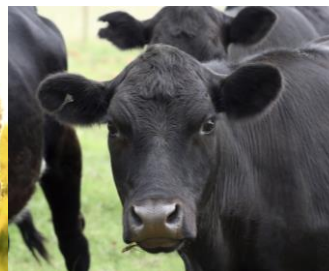
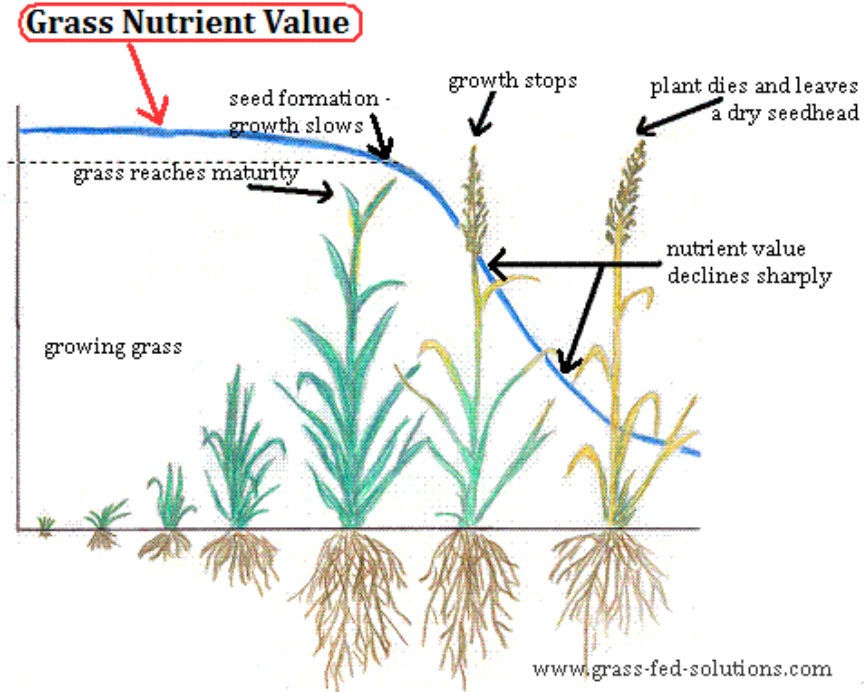


How to put it all together to manage feed on hand through a wet winter



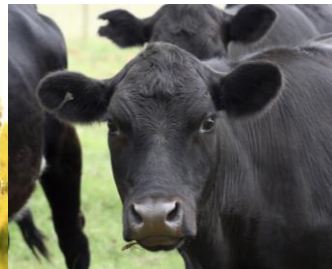
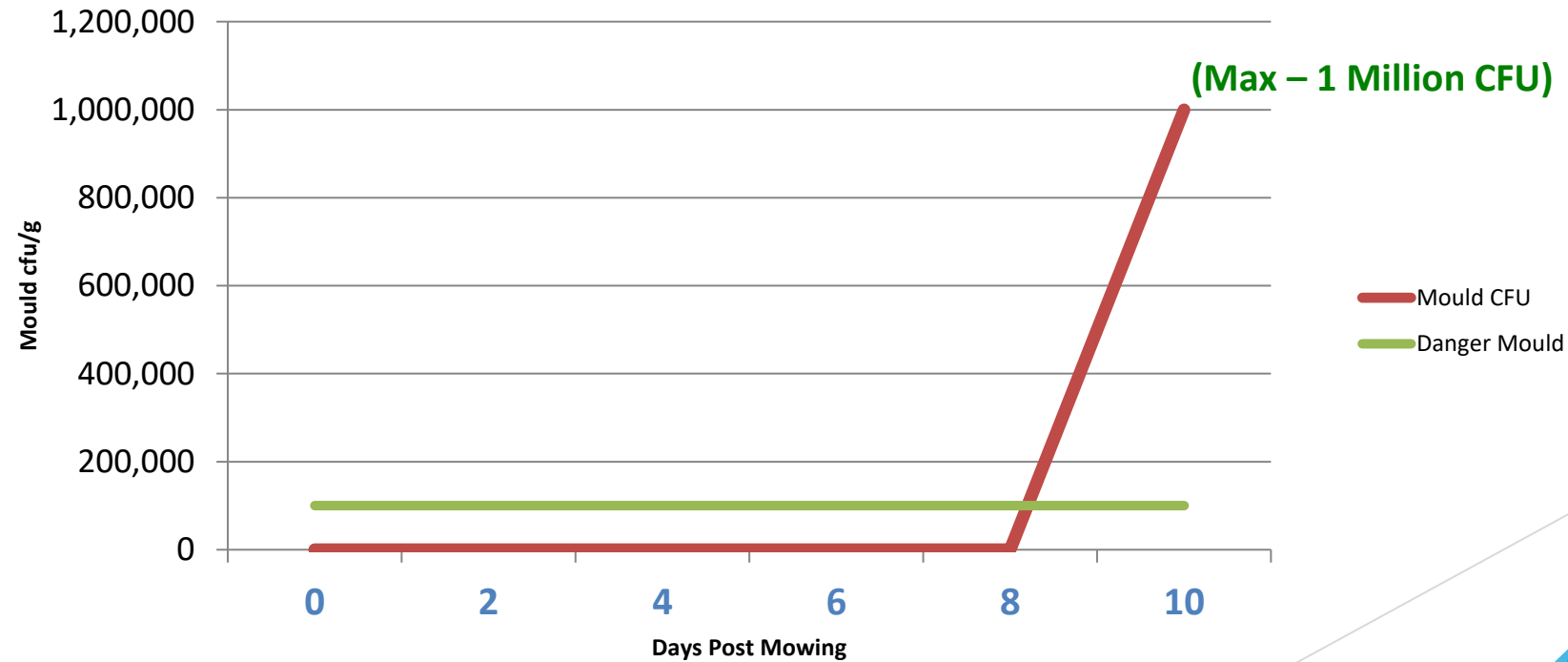
2022 Harvest

- Paddocks too wet to get onto
- Continuous rain – no drying days
- Plant maturity kept increasing
- Rain on cut forages – wash out nutrients
- Mould growth

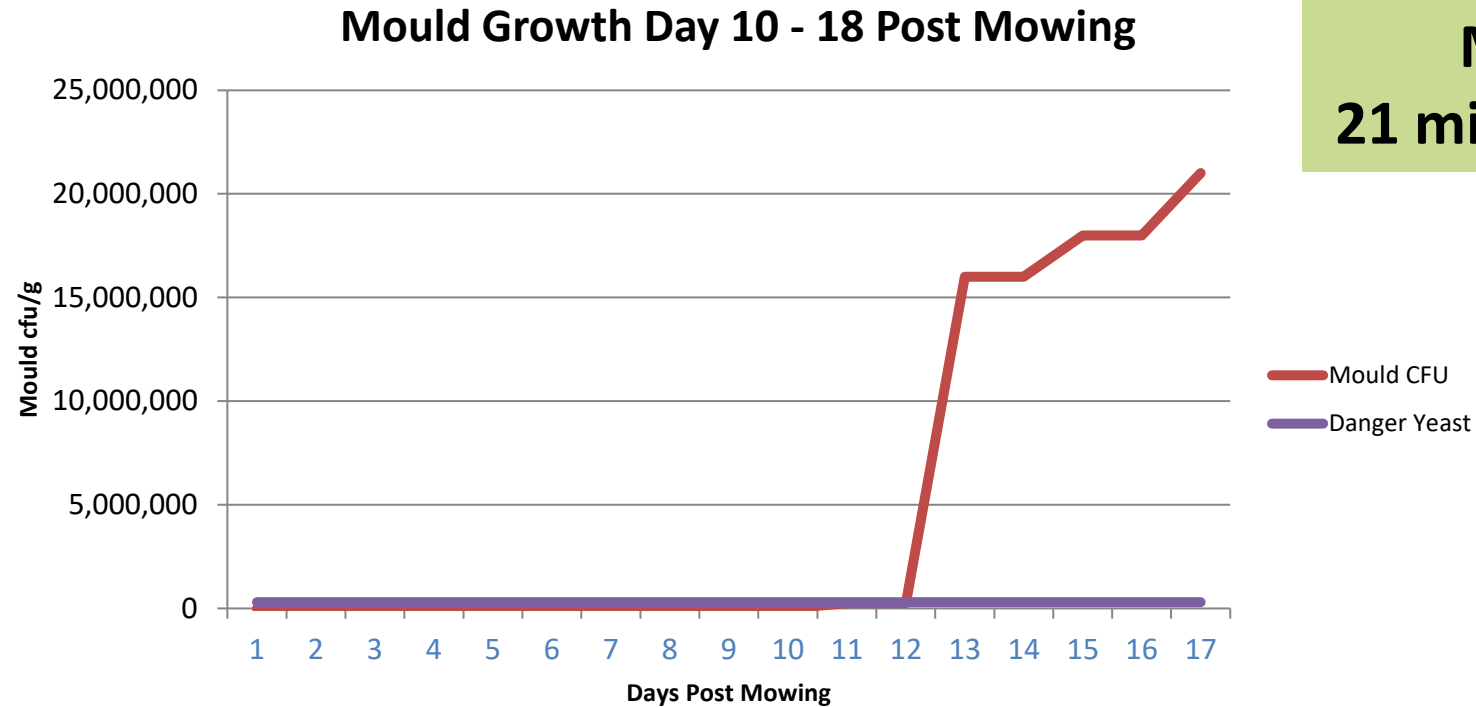


This Hay Had Rain On It Day 2 In The Windrow

Mould Growth On Hay Day 0 - 10

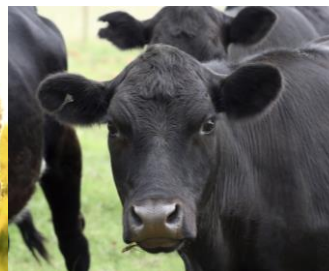


Same Hay 3 Weeks After Rain Event



**Max:
21 million CFU**

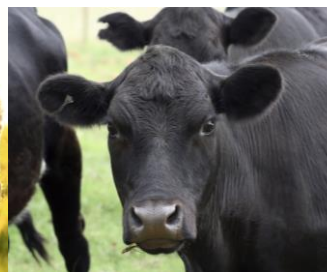
YIKES!! It's Dangerous 200X Safe Level



Oaten Hay: Nutritional Ranges

- 2020, 2021 & 2022

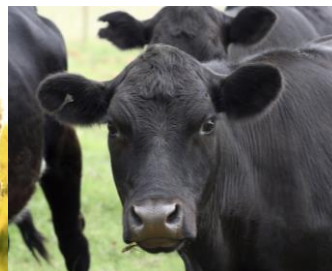
Analysis Results	2020	2021	2022
Dry Matter %	89.5	88.8	89.1
Crude Protein %	8.08	7.82	6.72
NDICP %	1.46	1.69	1.57
ADF %	35.0	35.0	41.7
NDF %	56.8	54.4	62.6
Lignin %	4.76	4.79	6.65
NDF 30 Hr Dig %	54.3	52.2	44.6
WSC (Sugar) %	17.8	19.8	14.6
MJME (Energy)	9.38	9.52	8.65



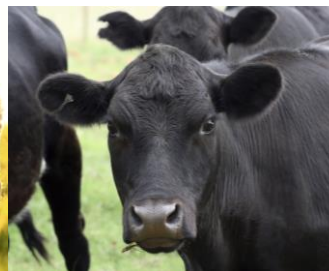
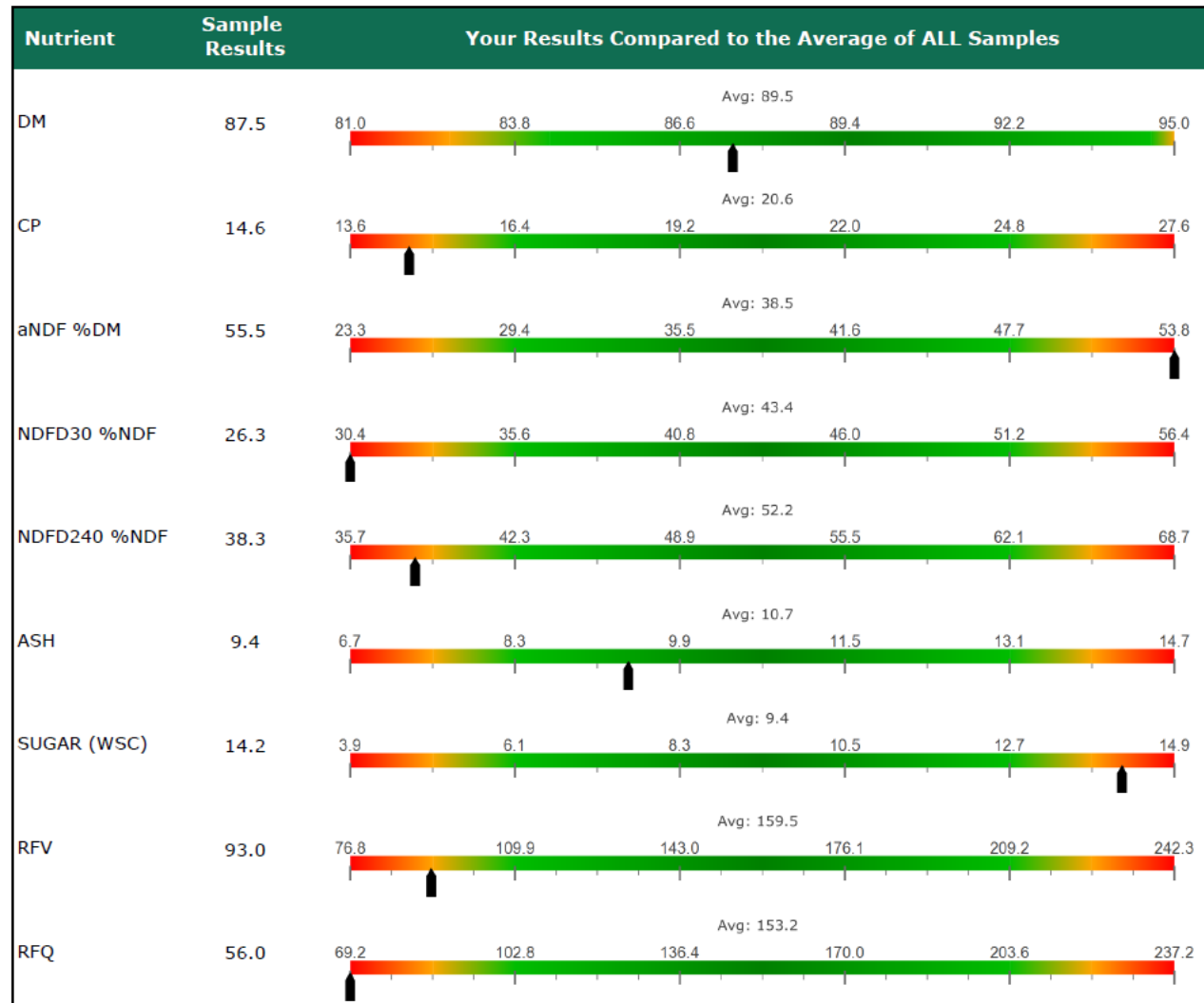
Pasture Hay: Nutritional Ranges

- 2020, 2021 & 2022

Analysis Results	2020	2021	2022
Dry Matter %	88.7	88.7	88.5
Crude Protein %	9.24	9.1	8.92
NDICP %	2.55	2.59	2.54
ADF %	36.8	38.9	40.7
NDF %	58.9	61.7	61.3
Lignin %	4.75	5.49	6.09
NDF 30 Hr Dig %	51.1	51.1	48.3
WSC (Sugar) %	14.1	12.8	13.1
MJME (Energy)	9.17	8.74	8.54

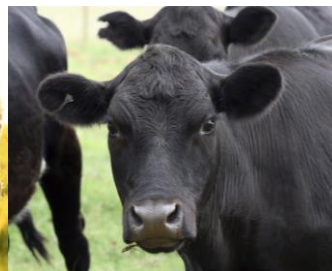


Nutrient Comparison for : LEGUME DRY



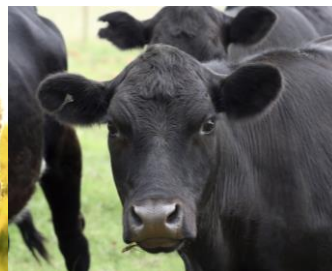
Heifer Nutrition

- Beef and Dairy heifer nutrition relatively similar
- Growing an animal for lifetime production
- Focus:
 - Well grown structure and strong skeletal development
 - Slow, consistent gain
 - Well-developed rumen, muscles and organs
 - Dietary protein between 16-18%
 - Strategic mineral supplementation for optimal development



Heifer Nutrition: Mating Heifers

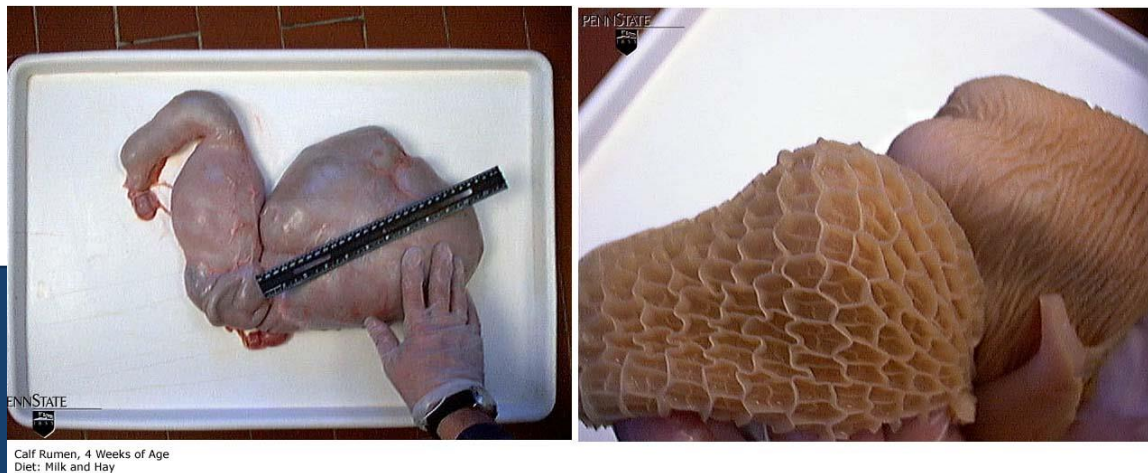
- Rising plane of nutrition
- Managing transition onto grass – NPN issues
 - Short grass – high protein, low fibre
 - Rapid change from grass to hay - shock to the system
- Glucose for fertility – Starchy grains



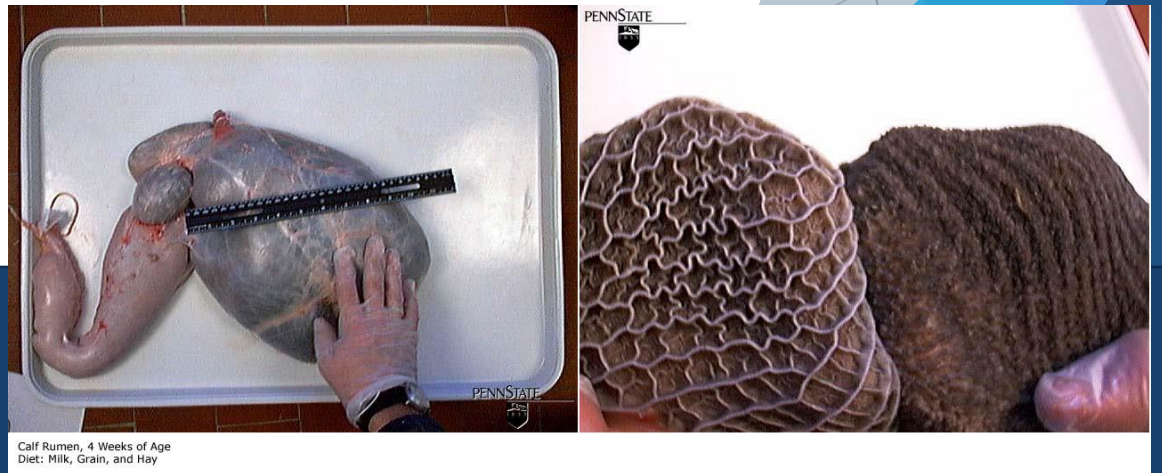
Heifer Nutrition: Calves

- Milk supply from mother
- Introduction to feeds
- Grain introduction - support weaning and rumen development
- Weaning management – familiar foods, high energy

Calf Rumen 4 weeks of age. **Diet: Milk & Hay**



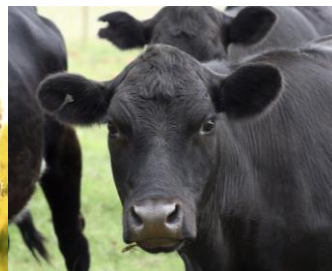
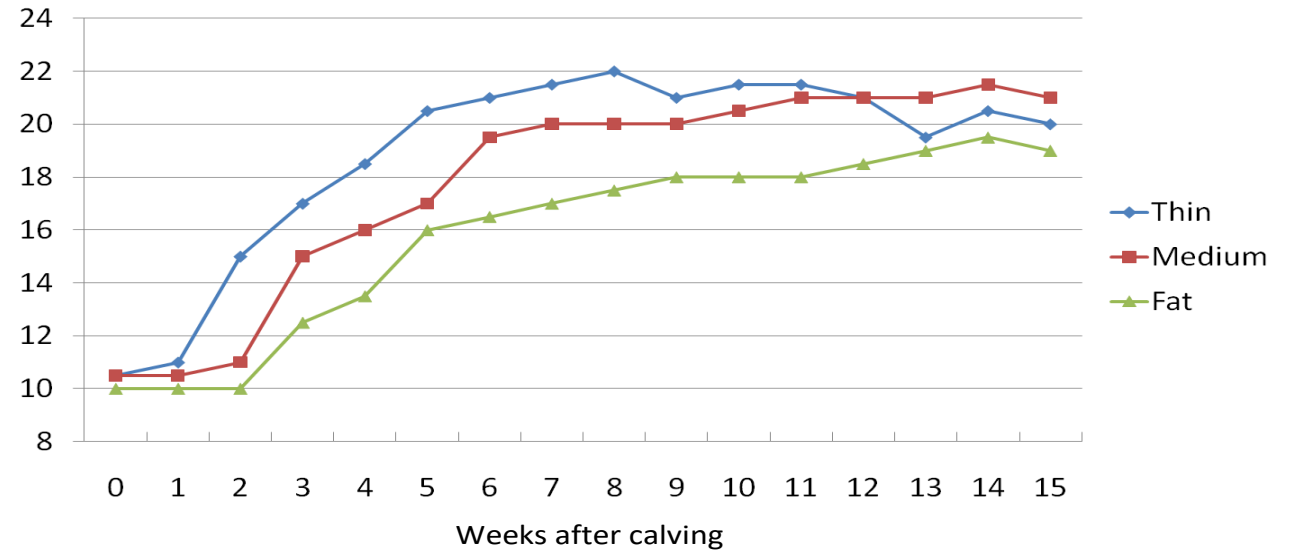
Calf Rumen 4 weeks of age **Diet: Milk, Hay & Grain**



Cow Nutrition

- Lower CP, Lower ME to manage weight
- Managing fertility and milk production
- Managing body condition
- Longevity of animals
- Dietary protein between 14-16%

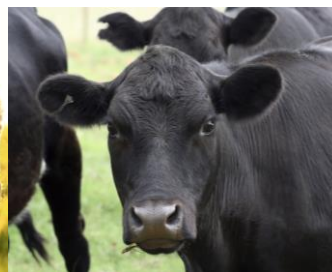
Effect of condition score at calving on dry matter intake in the first part of lactation
(Garnsworthy and Topps, 1982)



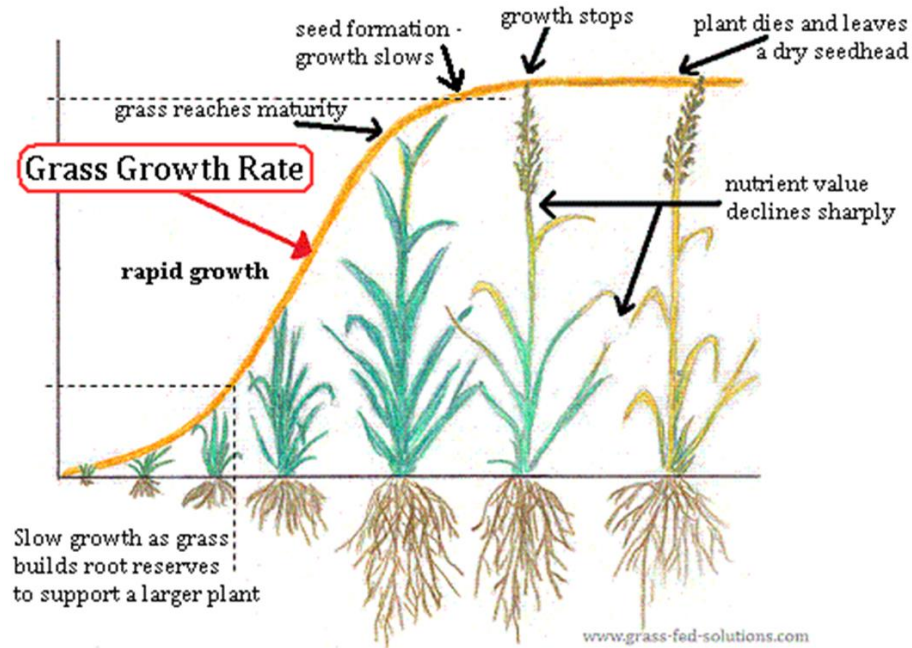
Minerals & Vitamins

- Essential to complete the building blocks of nutrition in a Ruminant
- Mineral Nutrition is constantly changing based on seasonal, and stage of the production cycle
- Typical challenges in **winter** include low magnesium resulting in
 - Grass tetany / hypomagnesaemia
 - Poor calcium utilisation – lactating cows resulting in low milk production
 - Reduced intake and performance
- Mg is absorbed in the rumen, Required for Ca, P and Vitamin D absorption, and glucose production and many enzyme reactions. High Potassium affects Mg absorption
- Occurs from rapidly digestible pasture, legume forages and high fertiliser use (specifically K)

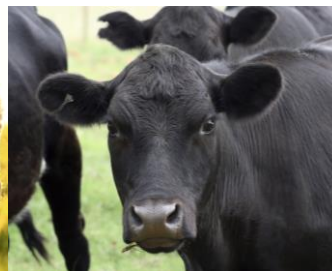
Manage: Fibre to slow rumen passage & daily supplementation of magnesium & salt + balanced minerals



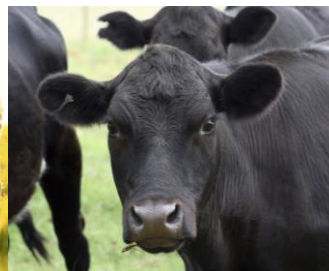
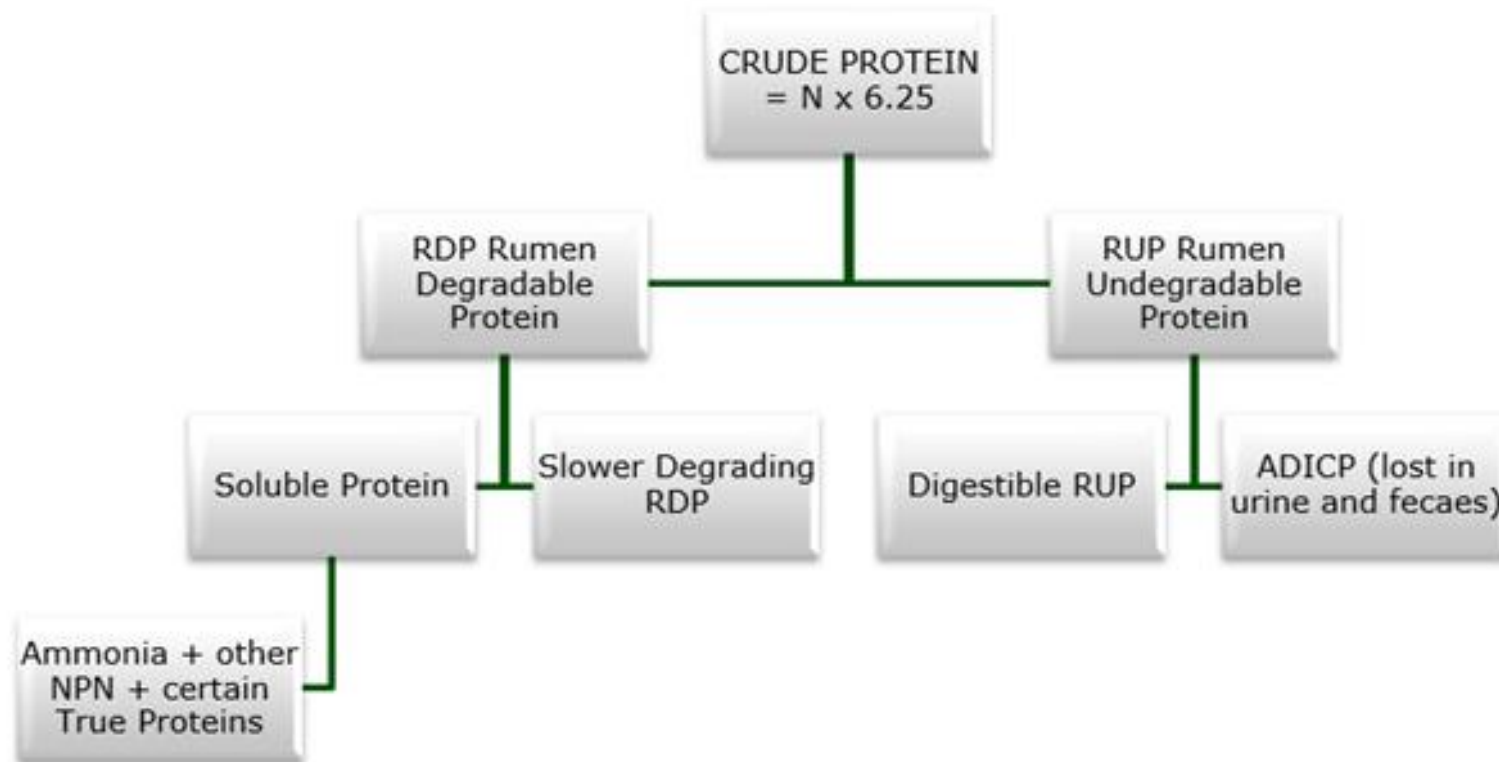
Fibre



- NDF% measures total fibre content in feeds
- NDF% predicts GUTFILL.
 - Lower NDF means animals eat more
 - Higher NDF means more fill, less energy
- More intake means more ME in = GOOD
- NDF% increases with plant maturity.
- As plant sugars and ME get converted to lignin. Intake crashes.



Protein

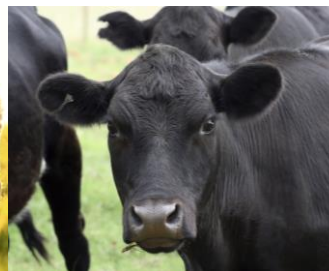


Protein

- Referred to as Crude Protein
 - $6.25 \times \text{Nitrogen} = \% \text{CP}$
- Protein Ranges for Cows 12-18%
- Higher protein for younger animals, and lower protein for mature animals

Too Low Protein <12%: Muscle breakdown, undigested food passing through and not utilised, weight loss.

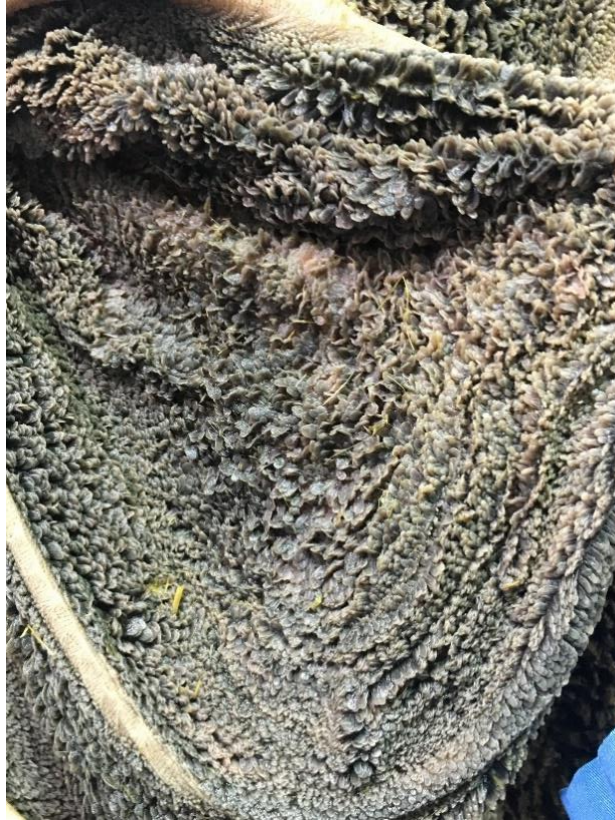
Too high Protein >18%: Animal must use energy to convert the protein to excrete in urine, influence fertility, inefficient energy use.



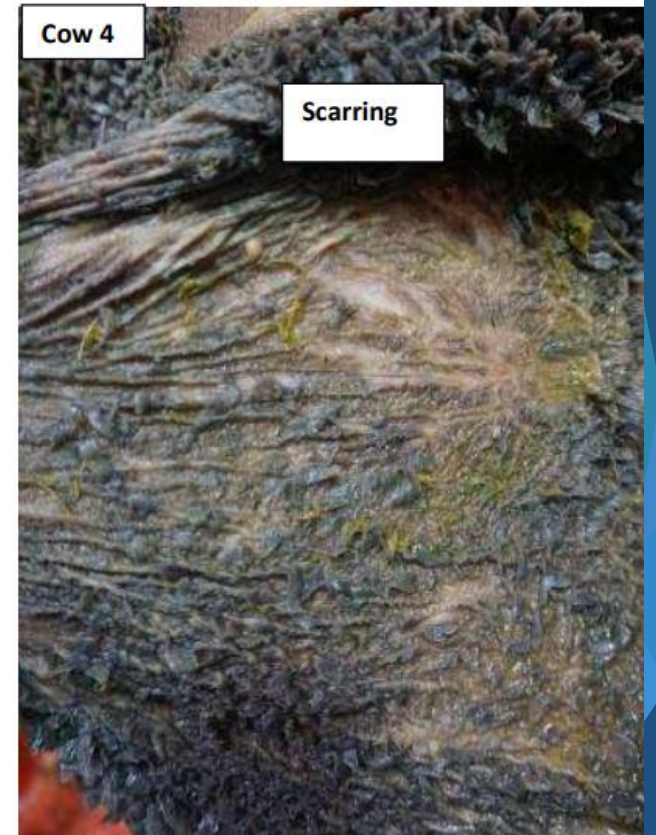
Acidosis on Grass



Cow 5 - Thick, long, flat and good density in papillae

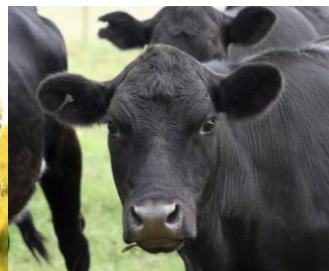


Cow 3 (heifer) Papillae



How do we manage the transition?

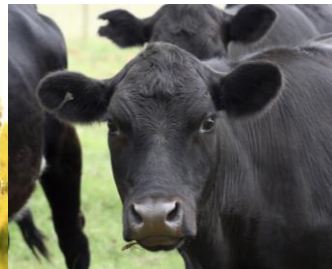
Strategically using conserved forages.



All Hay Scenario

- Let's look at a 300kg Heifer and what it looks like to put weight on her
- The input and returns on the whole exercise

A common scenario which might be cereal hay only or pasture hay



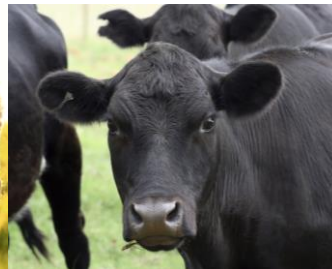
The Hay On Offer To Our Heifer

<u>Hay type</u>	<u>Good cereal</u>	<u>OK Cereal</u>	<u>Poor Cereal</u>
• ME	11	9.5	8.2
• NDF%	45	50	65
• ADF%	30	36	45
• Protein%	13	11	8
• \$/t	270	230	190
• <<<Less mature<<<		>>> more mature>>>	



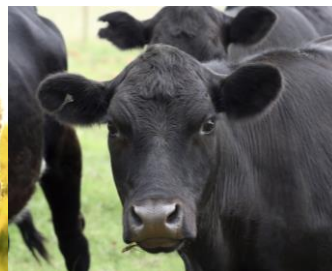
The Numbers On Heifer Growth

<u>Hay type</u>	<u>Good</u>	<u>OK</u>	<u>Poor</u>
• Intake KGDM/d	8	7	5.5
• Energy intake	88	66	45
• Growth rate g/d	930	480	30
• Days to gain 50kg	54	105	LOTS
• Kg Feed/kg gain	8.6	14.6	171



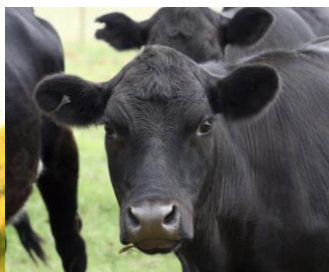
The Outcome

Hay type	Good	OK	Poor
• Growth rate g/d	930	480	30
• % of feed going to gain	50%	15%	3%
• Kg Feed/kg gain	8.6	14.6	171
• Feed cents/kg	27	23	19
• Cost to gain 1kg	\$2.32	\$3.37	\$32



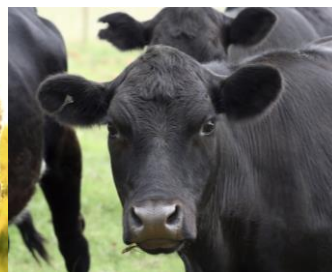
Scenario 2: Grass

<u>Hay type</u>	<u>Grass</u>	<u>Outcome</u>
• ME	10	75 ME 800g gain
• NDF%	42	3.3 kg
• Protein%	25	25 %
• KgDM	7.5	7.5
• \$/t	200	\$1.87/ 1 kg gain



Scenario 3: Grass & Poor Hay

<u>Hay type</u>	<u>Grass</u>	<u>Poor Cereal</u>	<u>Outcome</u>
• ME	10	8.2	59 ME 500g gain
• NDF%	42	65	3.3 kg
• Protein%	25	8	18 %
• KgDM	3.8	2.5	6.3 kgDM
• \$/t	200	190	\$2.66 / 1kg gain





THANK YOU FOR TIME

HAPPY TO TAKE ANY QUESTIONS

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