

Regupro vs Regumaize

In a ration, the aim is for total dietary sugar to make up around 6% of the dry matter

Depending on other ingredients in the ration, and the type of forage being used the size of the sugar gap can vary massively!

The **sugar gap** is the difference between the sugar requirement of the dairy cow and the amount of sugars actually supplied in the ration.

$$\boxed{\text{Sugar Requirement}} - \boxed{\text{Sugar Supplied}} = \boxed{\text{Sugar Gap!}}$$

Most forage and concentrate diets cannot supply 6% sugars without the addition of molasses-based liquid feeds.

Low sugar silages such as

- Maize
- Wholecrop
- Over fermented grass silage with a low pH and high acid level

These are all indicators that the overall ration will have a sugar content of around 2-3% and will need a high sugar blend to fulfil this gap.

Higher sugar silages or high sugar feeds for example

- High dry matter with low acid content
- Big bale silage/haylage
- Poorly fermented grass silages with remaining sugars
- Fodder beet, sugar beet and biscuit blends

Diets with these ingredients will likely have a starting ration sugar content of around 4-5% and a high sugar blend may not be necessary to reach the optimum 6%.

The two diets highlight the difference that forage and ingredient choice can make to the base sugar level in a ration.

- For these diets, the low sugar has 50% of the forage made up as maize silage
- There is a sugar gap of at least 3.4% DM to fill
- **Regumaize** is the best fit as a higher sugar option
- The high sugar diet has no maize silage, average and big bale grass silage plus biscuit blend and sugar beet in the diet
- There is a sugar gap of at least 1.2% DM to fill
- **Regupro** is the best fit here as a lower sugar blend

Diet Name	Low Sugar	High Sugar
Feeding Plan (kg as fed/head/day)		
Grass silage – average	25.0	35.0
Grass Silage – Big Bale	-	10.0
Maize Silage	25.0	-
Straw	1.0	-
Biscuit Blend	-	2.0
Brewers Grains	6.0	-
Molassed Sugar Beet Feed	-	0.5
Wheat	1.0	3.0
Rapeseed Meal	1.5	1.5
Hipro Soya	1.0	1.0
Nutrients (units as stated)		
DM intake (kg/d)	18.1	18.9
Forage DM (kg/d)	13.6	12.3
Forage (%DM)	75	65
Concentrate (%DM)	25	35
ME (MJ/d)	200	213
ME (M/D)	11.0	11.3
Milk from ME (kg)	24.5	26.9
Protein (%DM)	16.0	16.1
Milk from MP (kg)	29.3	27.9
DUP (%DM)	4.9	4.4
Starch (%DM)	12.6	10.6
Sugar (%DM)	2.6	4.8
Starch plus Sugar (%DM)	15.2	15.3
NDF (%DM)	45.2	38.2

The Solution

In the low sugar diet, 1.8kg of Regumaize 44 was added and 0.5kg of wheat and rapeseed meal was removed to rebalance the ration. This achieves the 6% sugar as DM required and predicted milk yield increases by 0.5kg when analysed in DietCheck.

Diet Name	Low Sugar	+ Regumaize44
Nutrients (units as stated)		
DM Intake (kg/d)	18.1	18.5
Forage DM (kg/d)	13.6	13.6
Forage (%DM)	75	74
Concentrate (%DM)	25	26
Protein (%DM)	16.0	17.5
ME (MJ/d)	200	203
ME (M/D)	11.0	11.0
Milk from ME (kg)	24.5	25.0
Milk from MP (kg)	29.3	30.0
Starch (%DM)	12.6	10.7
Sugar (%DM)	2.6	6.0
Starch plus Sugar (%DM)	15.2	16.7
NDF (%DM)	45.2	43.4

In the high sugar diet, 1.6kg Regupro 38 was added and 0.5kg of biscuit blend was removed to rebalance the ration. This achieved the 6% sugar as DM required and predicted milk yield increases by 1kg when analysed in DietCheck.

Diet Name	High Sugar	+ Regupro 38
Nutrients (units as stated)		
DM Intake (kg/d)	19.3	19.8
Forage DM (kg/d)	12.3	12.3
Forage (%DM)	63	62
Concentrate (%DM)	37	38
Protein (%DM)	16.6	17.7
ME (MJ/d)	219	226
ME (M/D)	11.4	11.4
Milk from ME (kg)	28.0	29.1
Milk from MP (kg)	29.0	29.1
Starch (%DM)	10.3	9.8
Sugar (%DM)	4.9	6.0
Starch plus Sugar (%DM)	15.2	15.8
NDF (%DM)	37.9	36.7

What if....?

If Regumaize 44 was added to the high sugar diet, not only would the diet be more expensive but the overall sugar level would be 7.6% and crude protein is raised to 18.2% supplying 112% of the required protein. This can have detrimental effects on feed efficiency, with a lot of the protein being wasted. Although the utilisation of protein is strongly influenced by the levels of sugars and starches within the diet, balance is always key!

Did you know?

Overfeeding protein not only wastes money, in order for the animal to excrete the excess this takes up a lot of energy – this is energy that could have been put towards milk production or liveweight gain! It is also of utmost importance to correctly feed protein so as not to contribute to potential environmental pollutants!

By choosing the right protein option when feeding this can ensure maximum animal health and productivity, reducing potential environmental pollutants as well as being the best value for money.



Want to know more?

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