FiveF

Alkasystems

Alka Products Typical Analysis

Typical matrix figures for Alkalage Wheat, Alkagrain Wheat, Alkagrain Barley to be applied through FIM programmes in the UK. All figures in Dry Matter.
They need to be adjusted in light of actual crop / analysis if available and Home n' Dry Application rate.

Feed	Alkalage 40 (Full Cut)	Alkalage 40 (High Cut)	Alkagrain 30 (Wheat)	Alkagrain 30 (Barley)	Alkastraw 40 (Wheat)	AlkabupHa	Alkagrain 150 (Wheat)
Home n Dry Rate kg/t	40	40	30	30	40	n/a	150
Dry Matter %	79	78	83	83	86	93	86
MER (MJ/kg)	11.21	12.3	13.6	13.00	9.0	7.3	13.0
Crude Protein %	15	15.5	17.2	16.3	9.0	97	30
Starch %	40.5	47.5	66	58	4.5	33	58
Starch Rate	0.35	0.35	0.4	0.3	0.5	0.35	0.4
Sugar %	2.5	2.5	2.7	2.8	1.0	2.6	2
Ash %	4.0	3.5	2.0	2.5	7.0	10.7	20
Crude Fibre %	19.5	16.5	2.7	5.4	76	10.0	3.2
PAL meq	-500	-350	-200	-250	-750	-10000	-2250
NDF %	42.5	37.5	12.0	18.1	69.5	20.5	10.7
sN	0.53	0.53	0.31	0.29	0.25	0.47	0.32
aN	0.66	0.66	0.38	0.42	0.35	0.74	0.39
bN	0.19	0.19	0.62	0.56	0.60	0.19	0.60
cN	0.08	0.08	0.129	0.128	0.05	0.170	0.129
sDM	0.25	0.25	0.07	0.06	0.06	0.27	0.07
aDM	0.28	0.28	0.50	0.41	0.20	0.70	0.50
bDM	0.44	0.44	0.37	0.32	0.40	0.21	0.37
cDM	0.05	0.05	0.195	0.128	0.02	0.11	0.195
Oil (AH) %	2.1	2.3	2.6	3.3	1.2	7.2	4.8
ADIN %	0.05	0.05	0.05	0.05	0.07	0.1	0.07
GE (MJ/kgDM)	18.3	18.3	18.3	18.3	16.0	11.7	18.1
Ca (g)	1.9	1.9	0.5	0.7	0.4	23.2	0.5
Ca (Avail)	43	48	60	60	43	69	0.60
P (g)	2.7	2.7	3.5	4.0	1.0	3.2	3.5

Feed	Alkalage 40 (Full Cut)	Alkalage 40 (High Cut)	Alkagrain 30 (Wheat)	Alkagrain 30 (Barley)	Alkastraw 40 (Wheat)	AlkabupHa	Alkagrain 150 (Wheat)
P (Avail)	68	68	70	70	68	70	68
Mg (g)	1.2	1.3	1.4	1.2	0.8	11.2	1.4
Salt (g)	2.0	2.0	1.9	2.4	2.0	2.7	2.1
K (g)	8.6	6.3	4.9	5.8	7.0	7.8	4.9
Cu (mg)	5.2	5.0	4.7	5.8	9.0	7.0	4.7
Zn (mg)	31	32	35	29	23	34	35
Zn (Avail)	15	15	15	15	15	15	15
Na (g)	0.4	0.3	0.1	0.1	0.5	0.2	0.2
Cl (g)	3.0	2.0	0.9	1.0	6.0	1.0	1.0
Co (mg)	0.07	0.05	0.02	0.01	0.05	0.04	0.02
I (mg)	0.14	0.12	0.10	0.05	0.18	0.1	0.1
Se (mg)	0.02	0.02	0.03	0.05	0.02	0.3	0.03
Se (Avail)	50	50	50	50	50	50	50
Mn (mg)	31	32	34	19	23	55	34
Mn (Avail)	3	3	3	3	3	3	3
Fe (mg)	93	93	63	74	130	155	68
Mo (mg)	0.45	0.40	0.33	0.38	1	1	0.35
S (g)	1.9	1.9	1.8	1.8	2	2	1.9
Vit E (iu)	3	2	1	1	4	13	1
Vit A (iu)	2500	2500	1000	1000	2000	0	1000
Vit D (iu)	70	70	20	20	50	0	20
Lys (g/100gAA)	2.45	2.45	2.45	3.00	2.45	6.0	2.45
Thr (g/100gAA)	2.32	2.32	2.38	2.84	2.32	4.6	2.38
Leu (g/100gAA)	4.59	4.59	5.10	5.62	4.59	8.0	5.10
Met (g/100gAA)	1.12	1.17	1.27	1.31	1.15	2.4	1.27
Cys (g/100gAA)	1.33	1.41	1.62	1.75	1.30	2.2	1.62
His (g/100gAA)	1.66	1.66	1.90	1.92	1.66	3.2	1.90

This information is provided using the best of our current knowledge. Formulators need to assure themselves that they are a correct representation of the crop produced as analysis will depend on the crop preserved. All diets need to be adjusted in light of actual animal performance. We therefore take no responsibility for diet problems experienced using diets formulated using this data.

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Alkaline Feeding Solutions

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Alkasystems

Protein in Alka Products

"Alkaline Feeding Solutions for Every Farm"

In recent times there have been a number of questions about how the protein in Home n' Dry® pellets is made up and used. There is obviously confusion, and in some cases misinformation and untruths, out at farm level. The purpose of this paper is to answer these issues.

WHAT ARE THE PELLETS MADE OF?

At the outset, extensive trial work was undertaken to establish the best method of releasing the required amount of ammonia from the smallest amount of raw material. The solution worked out at equal parts Urea and selected sources of Full Fat Soya Bean. There are a very small percentage of other feed ingredients to stabilise the pellet.

SO UREA PRESERVES THE CROP?

Not exactly. When using Home n' Dry the urea is ENTIRELY broken down to ammonia, by enzyme action. Ammonia destroys microbes, particularly moulds, and mycotoxins and, in effect, sterilises the crop. The ammonia also reacts with lignin in plant cell walls to enhance digestibility. The ammonia is Alkaline giving the high pH to counter acidity in the rumen after feeding. Eventually further reaction with water occurs leaving behind ammonium salts, mainly Ammonium Bicarbonate.

THERE IS VIRTUALLY NO RESIDUAL UREA IN A CLAMP OF ALKALAGE® OR ALKAGRAIN®.

(In fact urea whole crop and urea moist grain treatment relies on fermentation to produce acid to breakdown the urea. There is OFTEN residual urea left in these materials and urea application rate is much higher.)

SO HOW CAN THE PELLETS BE 146% PROTEIN?

All feeds and forages are reported on the basis of Crude Protein as this can be analysed at low cost. Crude Protein is simply the Nitrogen content of a material multiplied by 6.25. (6.25 represents the average proportion of nitrogen in amino acids, the building blocks of protein). All feed materials contain a mix of true protein (made up of amino acids) and nitrogen components.

Nevertheless for ruminant animals – cattle and sheep – this none protein nitrogen can be utilised in the rumen by the microbes as they grow to produce microbial protein on which the animal exists. That is why they can live on grass and pigs and chickens can't. In fact the majority of protein in grass and grass silage is in the form of none protein nitrogen as well. Alkalage is often LOWER in none protein nitrogen than grass silage.

HOW DO RUMINANTS UTILISE THIS PROTEIN THEN?

Given a properly functioning rumen the microbial protein from rumen bacteria provides between 60% and 90% of the animals protein. In fact much true protein is broken down to none protein nitrogen and ammonia before being captured by the rumen microbes. It is possible to reduce rumen function by not providing enough rumen available protein.

The ammonium salts in the Alkalage and Alkagrain only balance the shortage of rumen degradable protein in the crop itself. In many low grass diets additional urea is often fed to balance the rest of the diet.

Improving rumen function when feeding Alkalage, through the buffering effect and improved forage intake, INCREASES the requirement for rumen degradable protein.

YOU'RE TELLING ME THAT ALKALAGE HAS BETTER BALANCED PROTEIN THAN GRASS SILAGE?

In a way, yes, this is true! A Grass Silage at 15% protein is likely to be about 50% True Protein and about 30% By Pass Protein. Alkalage at 15% protein is likely to be made up of 5 % protein from Home n' Dry (Remember some of this is Soya) and 10% protein from the mature cereals, which are very high % True Protein so that the Alkalage will be about 60% True Protein and about 35% By Pass Protein.

Of course in Grazed Grass the Protein level might be 23% of which as little as 35% could be True Protein with minimal levels of By Pass Protein. Alkalage and Alkagrain are excellent supplements to grazed grass.

Similarly when we look at Alkagrain made from mature grain the background Protein in the grain is actually of low solubility and high in by pass protein. Therefore the Ammonium salts balance that with the animal's requirements giving protein balance similar to, say, distiller's dark grains.

BUT THERE ARE HORROR STORIES ABOUT FEEDING UREA ALONGSIDE GRASS AND GRASS SILAGE!

Remember in Alkalage and Alkagrain you will NEVER feed urea because it is all converted to Ammonia. Urea alone may unbalance the diet and produce excess levels of Degradable protein. However in Alkalage and Alkagrain the ammonium salts only serve to balance the HIGH quality protein in the cereal crop itself.

SO HOW MUCH ALKALAGE AND ALKAGRAIN CAN I SAFELY FEED?

That depends on the other ration components. Alkalage and Alkagrain are very safe feeds and can represent up to 100% of the diet depending on performance levels etc. Ideally for high production and younger animals, high feed rates are best suited to diets that contain good levels of sugar (Molasses, lactose, fodder beet, sugar beet, grazed grass etc.)

Typical effective feed rates for dairy cows are 5 to 10 kg of Alkalage and 2 to 6 kg of Alkagrain.

HOW DO I DETERMINE THE PROTEIN LEVEL?

The cheapest and most effective method of knowing the analysis is to analyse the UNTREATED grain at harvest for dry matter, protein and starch – it is the most variable component.

Then simply add 1.4 units of protein for every 10kg/t of Home n Dry applied.

Correct analysis of Alkagrain requires protein to be measured directly on fresh samples.

NOT dried samples and NOT on rapid test grain equipment and NOT by NIR.

So this is slow costly and specialist work. It is a new technique and can still produce misleading results in a proportion of analyses.

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