QUANTEC® and agriculture

Can QUANTEC® replace fine matter?

An interesting test from the world of agriculture

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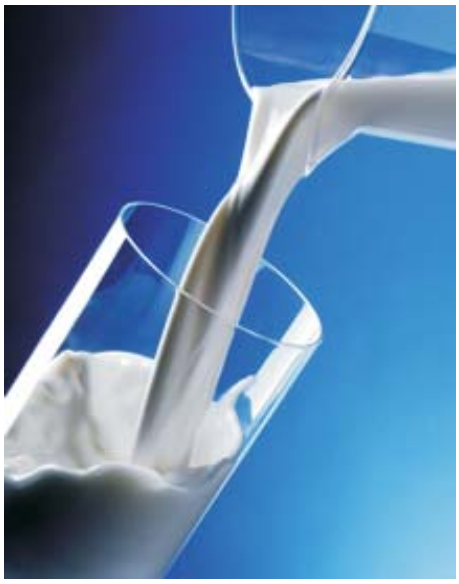
Summary

Our customer, farmer G. Bruns, uses his QUANTEC®, amongst other things, successfully in milk production. Since he also produces milk in the winter, he regularly lays in large quantities of grass silage in spring as a feed supply.

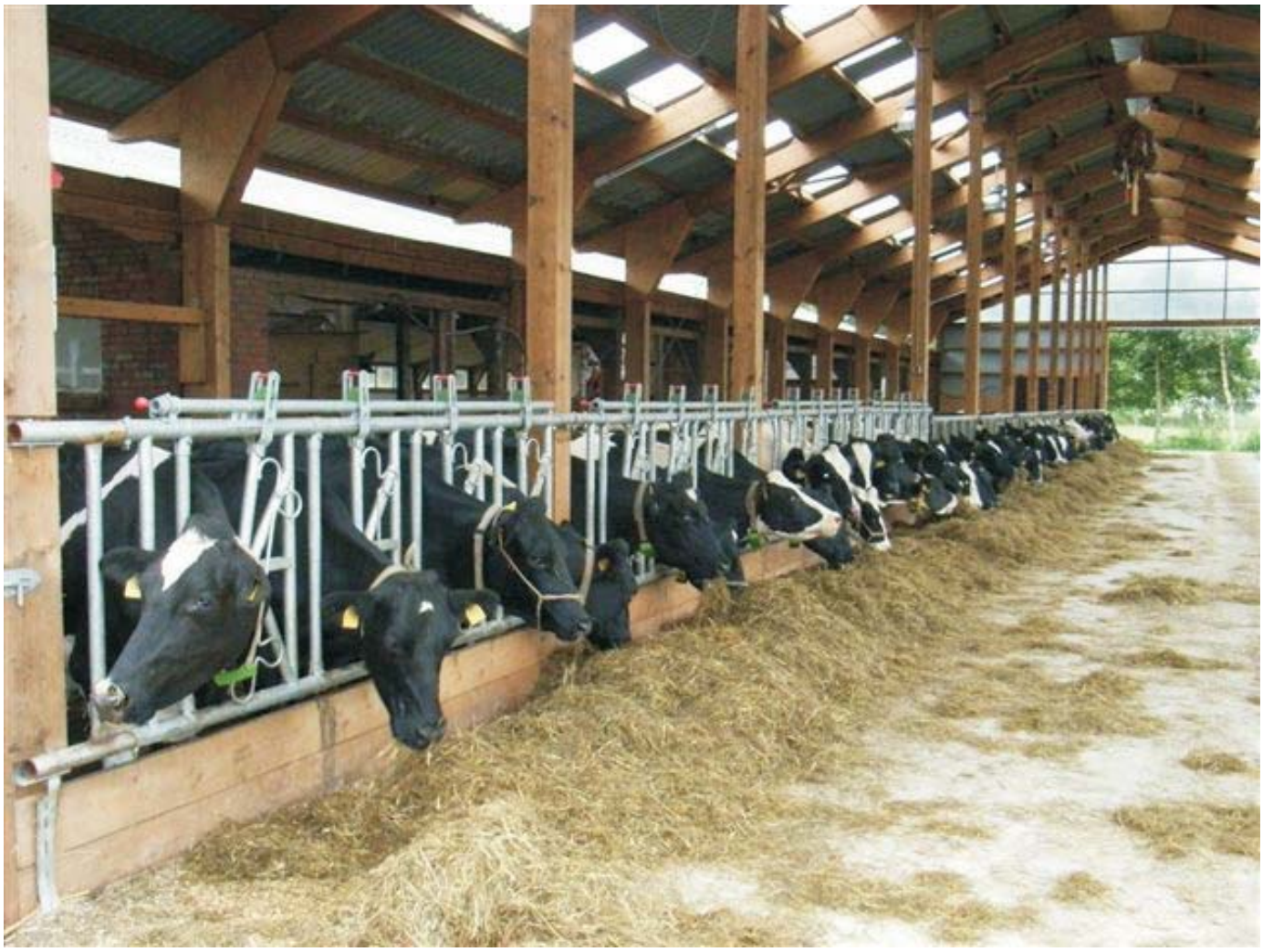
But when he wanted to harvest 30 acres of grass, as every year, and store it in the silos, he found that he had forgotten to order enough silage additive in time (silage additive improves the nutritional value of the grass by better fermentation by means of various strains of milk bacteria). According to the manufacturer's information, he needed about 100 kg of silage additive for 75 acres, but he only had 15 kg in stock.
Instead of ordering the missing 85 kg, he decided instead to treat the silage with QUANTEC®. When the silo was opened later, he took a sample and had it examined by a laboratory.



The result

The laboratory certified to Mr. Bruns the quality of the highest classification:

Very good (90 to 100 points)!



QUANTEC® is used in agriculture throughout the world: arable farming, wine-growing, vegetables and livestock farming are some examples of the wide range of applications.

Farmers like QUANTEC® because it can reduce the quantities of fertiliser and chemical pesticides year after year, without reducing the quantity or quality of the harvest - quite the contrary.

On the one hand, they save direct costs, and on the other their production is increasingly environmentally friendly, even allowing them to make the transition to organic farming.

Silage additive - a particular challenge

Silage additives however are not only a material substance, not only matter - they contain various strains of lactic acid bacteria, which improve the fermentation of grass silage and thereby increase the nutritional value. These are therefore organisms which by their metabolism can affect the processes taking place inside a silo. The question of whether QUANTEC® can also simulate this virtually was answered by our customer, the farmer and dairy producer Gerriet Bruns: He uses his QUANTEC®, amongst other things, successfully in milk production.

Since he also produces milk in the winter, he regularly lays in large quantities of grass silage in spring as a feed supply.

But when he wanted to harvest 75 acres of grass, as every year, and store it in the silos, he found that he had forgotten to order enough silage additive in time (silage additive improves the nutritional value of the grass by better fermentation by means of various strains of milk bacteria). According to the manufacturer's information, he needed about 100 kg of silage additive for 75 acres, but he only had 15 kg in stock.

Even decided to use this emergency situation as a chance for QUANTEC®, and to treat the grass silos. But to take things in order:

He had given the job to a contractor with two agricultural loaders; these loaders have dosing devices for silage additives, and since it was not worthwhile to divide the 15 kg between both loaders, one of the loaders received all the silage additive. The driver of this loader set the dosage to a significantly lower level than that recommended by the manufacturer, to stretch the silage additive as far as possible. Both loaders now charged the silo load by load, so that the low dosage was halved again, because the second loader had no silage additive on board. When the silo was one-third charged, the first loader had used up its silage additive; the rest was then loaded on top completely without silage additive, and the silo closed.

When the silo was opened during the winter period, Mr. Bruns arranged for a sample to be taken. Such a sample is taken as a core drilling from top to bottom, i.e.: a hollow tube is driven down into the silo and then removed. In this way, all the layers in the silo can be taken into account equally in the laboratory analysis. Since it is not so easy to drive the sampling tube fully into the silo, it can be assumed that the lower third of the silo, which had received a small dose of silage additive, was not even fully represented in the sample.

The result of the laboratory analysis

Nevertheless the test in the laboratory produced a clear result: the highest points and quality classification "Very good" with 90 -100 points (see pages 4 and 5). And that, even though with 15 kg instead of 100 kg, only 15% of the recommended minimum quantity had been added!

Gerrit Bruns

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Strückhauser Str. 108
26939 Ovelgönne

Oldenburg, 04.02.2011

Prüfbericht für wirtschaftseigene Futtermittel

Kunden-Nr: 822029 S
Analysen-Nr: 34 11 **061922**
Beginn der Prüfung: 28.01.2011
Probenart: Grassilage
Erntetermin: 12.08.2010 3. Schnitt
Bezeichnung: Gerriet Bruns, Bernd Buchhlz

Probeneingang: 28.01.2011
Ende der Prüfung: 03.02.2011

Leistung [Methode]	Ergebnis in der Frischsubstanz	**Berechnet auf Trockensubstanz**	*Zielwerte 3. Schnitt*	Einheit
Sinnenprüfung Aussehen [1]	Normal / Produkttypisch			
Sinnenprüfung Geruch [1]	Normal / Produkttypisch			
Trockensubstanz (TS) [2]	42,6		*30 - 40*	%
Rohprotein (NIR-Verfahren) [3]	7,1	**16,6**	*< 17,0*	%
Rohfaser (NIR-Verfahren) [3]	11,4	**26,8**	*22 - 25*	%
ADF om (NIR-Verfahren) [3]	12,4	**29,0**	*25 - 30*	%
NDF om (NIR-Verfahren) [3]	21,8	**51,0**	*40 - 48*	%
Gasbildung (NIR-Verfahren) [3]		**44,7**	*> 47*	ml/200mg
Zucker (NIR-Verfahren) [3]	1,2	**2,9**	*2 - 10*	%
Rohfett (NIR-Verfahren) [3]	1,9	**4,5**		%
Rohasche (NIR-Verfahren) [3]	4,1	**9,7**	*< 10*	%
Sand (ber. aus Rohasche)	1,2	**2,7**	*< 2,0*	%
Strukturwert [5]		**3,15**	*2,6 - 2,9*	
pH-Wert [6]	4,3		*4 - 5*	
ME-Rind [5]	4,3	**10,2**	*> 10,0*	MJ/kg
NEL (Netto-Energie-Lact.) [5]	2,6	**6,1**	*> 6,0*	MJ/kg
Nutzbares Rohprotein [5]	5,8	**13,7**	*> 13,5*	%
Ruminale N-Bilanz RNB [5]	2,0	**4,6**	*< 6,0*	g/kg

Energieermittlung auf der Basis Rohnährstoffe und Hohenheimer Futterwerttest (HFT) - Formel 2007
Durchschnitt 2010 3.Schnitt: TS 42,3 %; Rohprotein 17,7 %; Rohfaser 23,3 %; Rohasche 12,1 %; Gasbildung 41,1 ml/200 mg; Zucker 4,9 %; Strukturwert 2,7; ADF om 27,3 %; NDF om 45,8 %; nXP 13,3 %; RNB 6,9 g/kg; ME-Rind 9,9 MJ/kg; NEL 5,9 MJ/kg; Calcium 0,69 %; Phosphor 0,35 %; Natrium 0,27 %; Magnesium 0,29 %; Kalium 2,40 %

Methoden:
1=LUFA Nord-West 1/3-185
2=VDLUFA Bd. III, Kap. 3.1
3=VDLUFA Bd. III, Kap 31.2
4=VDLUFA Bd. III, Kap. 8.1
5=Ber. gem. GfE, DLG u. FMV
6=VDLUFA Bd. III, Kap. 18.1
7=Ber. gemäß Degussa
8=LUFA Nord-West 1/3-152
9=DIN EN ISO 11885
10=LUFA Nord-West 1/3-164
11=VDLUFA Bd. III, Kap.10.5.1
12=LUFA Nord-West 1/3-163

fE = Untersuchung erfolgte in Fremdlabor; fB = unterliegt nicht der Akkreditierung

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DAkkS Deutsche Akkreditierungsstelle D-PL-14165-01-00
Akkreditiertes Laboratorium für die in der Urkunde aufgeführten Verfahren

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Leistung [Methode]	Ergebnis in der Frischsubstanz	**Berechnet auf Trockensubstanz**	*Zielwerte 3. Schnitt*	Einheit
Gärqualität:				
Essigsäure [12]	0,50	**1,17**	*< 3,0*	%
Buttersäure [12]	< 0,01		*< 0,3*	%
Milchsäure [12]	1,60	**3,75**	*> 5,0*	%
pH-Wert [6]	4,3		*4 - 5*	
DLG-Garfutterschlüssel [5]	100		*90 - 100*	Punkte
Bewertung der Gärqualität	sehr gut (90 - 100 Punkte)			

DLG 2008

Dr. Egert (Institutsleiter)

Duplikat: Graalfs, Uwe, 26655 Westerstede

Methoden:
1=LUFA Nord-West 1/3-165
2=VDLUFA Bd. III, Kap. 3.1
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#5 = Untersuchung erfolgte in Fremdlabor, #0 = umfasst nicht der Akkreditierung