

**Balanced feeding.
Development of animal ration
according to possibilities and
needs of small producers.**

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associate professor of National
University of Life and
Environmental Sciences of Ukraine
(Kyiv)

What affects milk productivity of a cow?

- Nutrition
- Genetics
- Individual features
- Comfort
- Body weight
- Lactation period
- Season of the year
-

World records!



Hartje-Meyer 9792
(March, 2005,
Wisconsin, USA)



Hartje-Meyer 9792



Daily ration:

41 kg corn silage

18 kg high moisture corn

9 kg alfalfa hay

6 kg soybean meal

0,7 kg premix

38 kg DM (!!!)

34533 kg in 365 days – 3,2% fat, 2,9% prtotein

– 1105 kg butterfat, 1001 kg protein

Peak yield 125,9 kg, average yield 94,9 kg

New record — 2009!!

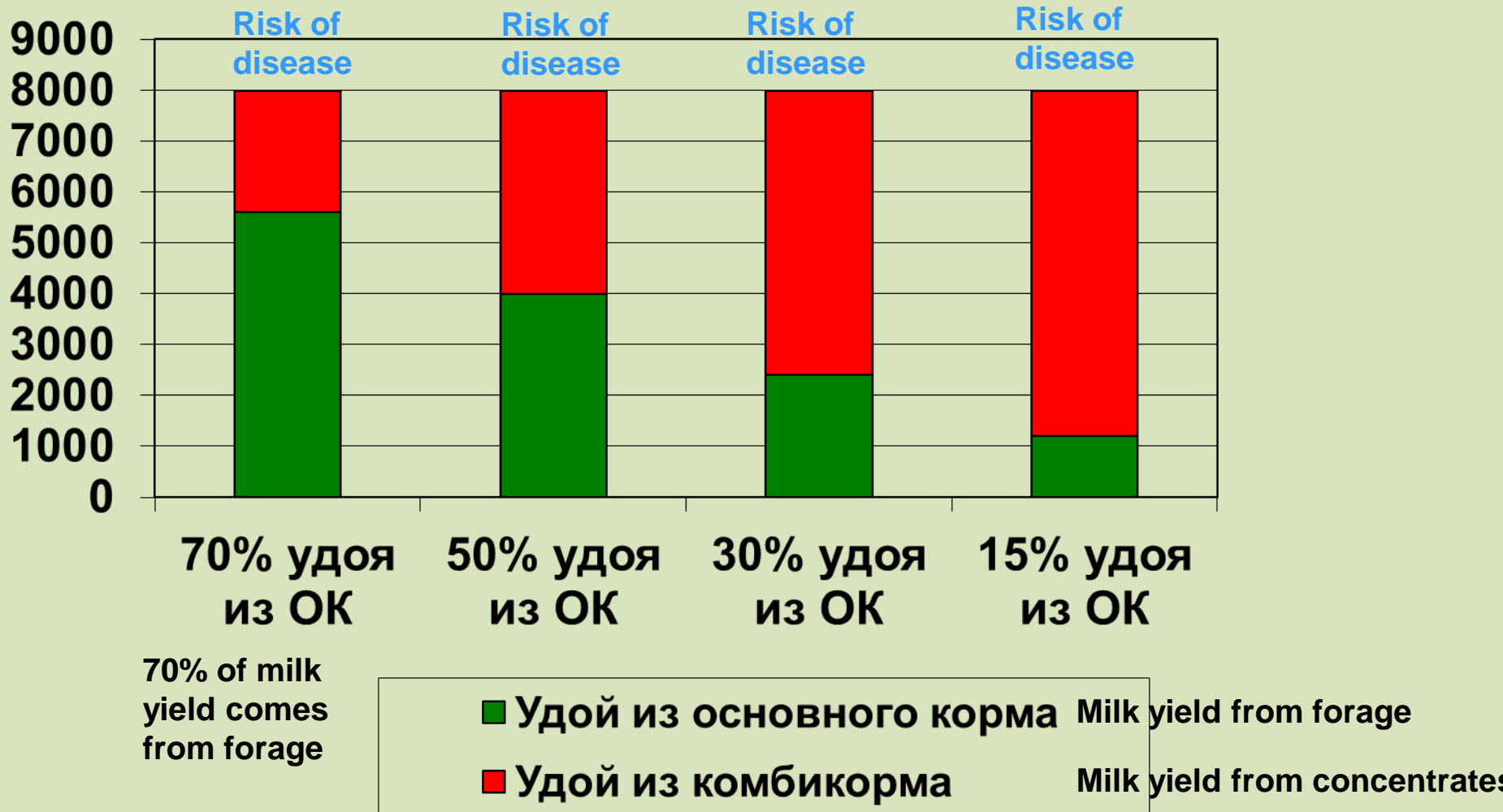
Ever-Green-View My 1326-ET, Wisconsin



32,909 kg in 365 days 3 lact. – 3.86% fat, 3.2%
protein — **1,271 kg MF, 1,053 kg MP**

Source <http://www.holsteinworld.com/>

8,000 kg of milk – how is it possible to get them?



Remember!

- The aim of “**healthy**” feeding of dairy cattle is to produce maximum milk from **FORAGE**, with a minimum use of concentrates and feed supplements
- As they say in Germany: “Kraftfutter wie viel wie noetig aber wie wenig wie moeglich!”

**What affects nutritional value
of forage?**

What affects nutritional value of forage?

- Botanical composition
- Stage of maturity at harvest
- Management of harvest and storage

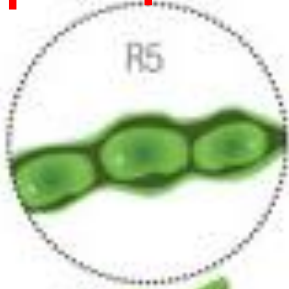
25%
protein

18-20%
protein

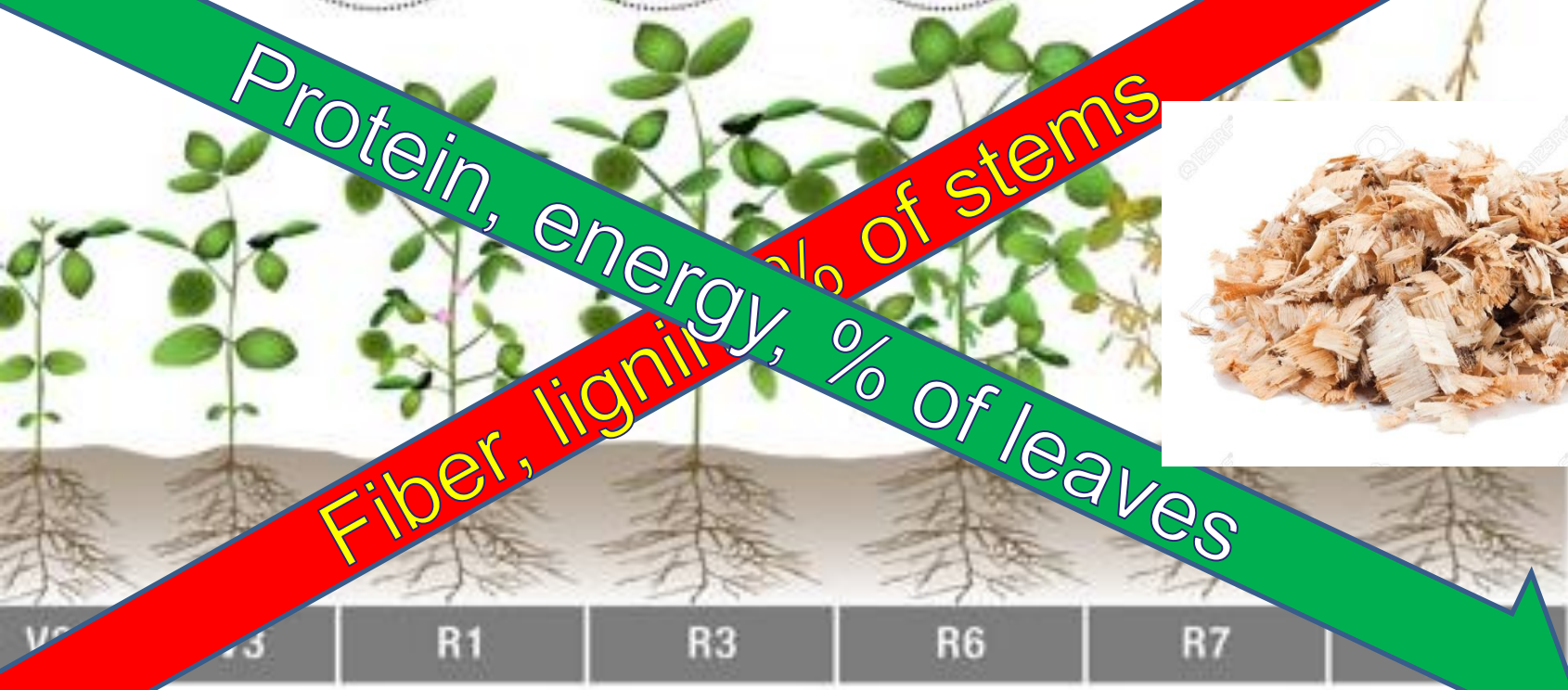
16-18%
protein

12-14%
protein

10-12%
protein



Protein, energy, % of stems
Fiber, lignin, % of leaves



V5

R5

R1

R3

R6

R7

Alfalfa hay – early bud stage



**22% protein – 26% fiber (Premium
= 270\$/t)**



Alfalfa hay - flowery stage



10 - 14% protein – 40% fiber





New approaches to assessing feed value



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NIR Testing

As the largest chemistry based forage lab in the U.S., we have the resources to generate some of the most extensive NIR calibrations in the industry. As well as providing NIR services at the three CVAS facilities, we support a number of NIR labs in the U.S. and abroad.



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- [Explanation of Report Terms](#)
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LAB SERVICES SUBMITTING SAMPLES INTERNATIONAL SUBMISSIONS REPORTING AND DATA SERVICES RESOURCES

Welcome livestock-solutions@ukr.net

Dashboard **Forage and Feed Data** Manure Data Water Data Global Data Summary Sample Submission Bulk Export

Viewing Sample Information & Analysis Results Report [Create Excel template](#) Select Report Select Export

Report Ver	Status	Lab ID	Acc Last Name	Farm Name	Sample Description	Feed Class	Sampled	Arrived	Date
<input type="checkbox"/> All	Select	Batch Code from Code to	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>			11/1/2015 1/28/2016
	Pending	19633010	BONDARENKO	AF - MAYAK	WHEAT SILAGE	WHEAT FORAGE	01/14/2016	01/27/2016	
	Pending	19633009	BONDARENKO	AF - MAYAK	CORN SILAGE	CORN SILAGE	01/14/2016	01/27/2016	
	Pending	19633008	BONDARENKO	UAH - MAXIMIVKA	ALFALFA SILAGE	LEGUME FORAGE	01/14/2016	01/27/2016	
	Pending	19633007	BONDARENKO	UAM-ROZHNIVKA	3 ALFALFA SILAGE	LEGUME FORAGE	01/14/2016	01/27/2016	
	Pending	19633006	BONDARENKO	UAH - MAXIMIVKA	2 CORN SILAGE	CORN SILAGE	01/14/2016	01/27/2016	
	Pending	19633005	BONDARENKO	UAH-ROZHNIVKA	1 CORN SILAGE 2014	CORN SILAGE	01/14/2016	01/27/2016	
					CORN SILAGE - KWS				



CUMBERLAND VALLEY ANALYTICAL SERVICES

Laboratory services for agriculture ... from the field to the feed bunk.

Farm: V. PROMETHEY-MELNYTSIA
Desc: CORN SILAGE - KWS BOGATYR
Submitter: BONDARENKO, GENNADII
Account: NAT. UNIV. OF LIFE AND ENV. SCIENCE

Copies to: JONES, LARRY
 MORSE, DALE - UKRAINE

Lab ID: 19371 326
Sampled: 12/08/2015
Arrived: 12/29/2015
Completed: 12/31/2015
Reported: 01/28/2016

CORN SILAGE - KWS BOGATYR

SAMPLE INFORMATION

Lab ID:	19371 326	Version:	1.0
Crop Year:	2015	Series:	
Feed Type:	CORN SILAGE	Cutting#:	
Package:	NIR Wet Minerals, CI, S		

NIR ANALYSIS RESULTS

Moisture	69.2
Dry Matter	30.8

PROTEINS	% SP	% CP	% DM
Crude Protein			7.4
Adjusted Protein			
Soluble Protein		70.4	5.2
Ammonia (CPE)	22.9	16.1	1.19
ADF Protein (ADICP)		9.6	0.71
NDF Protein (NDICP)		10.9	0.81
NDR Protein (NDRCP)			
Rumen Degr. Protein		85.2	6.3
Rumen Deg. CP (Strep.G)			

FIBER	%NDFom %DM	NDFom %DM	% NDF	% DM
ADF			62.0	24.3
aNDF		38.9		39.3
NDR (NDF w/o sulfate)				
peNDF				
Crude Fiber				
Lignin			6.93	2.72
NDF Digestibility (12 hr)			32.6	12.8
NDF Digestibility (24 hr)				
NDF Digestibility (30 hr)	58.9	22.9	58.1	22.8
NDF Digestibility (48 hr)				

MINERALS

Ash (%DM)	3.42
Calcium (%DM)	0.37
Phosphorus (%DM)	0.22
Magnesium (%DM)	0.15
Potassium (%DM)	0.92
Sulfur (%DM)	0.12
Sodium (%DM)	0.008
Chloride (%DM)	0.27
Iron (PPM)	144
Manganese (PPM)	38
Zinc (PPM)	20
Copper (PPM)	6

Nitrate Ion (%DM)
 Selenium (PPM)
 Molybdenum (PPM)

QUALITATIVE

Total VFA (%DM)	10.04
Lactic Acid (%DM)	7.50
Lactic as % of Total VFA	75
Acetic Acid (%DM)	2.54
Butyric Acid (%DM)	
1, 2 Propanediol (%DM)	0.05
Titratable Acidity (meq/100gm)	10.83

Soil Contamination Probability Probable low to none
 Nitrate Probability Probable low nitrate level
 NIR Statistical Confidence Excellent prediction potential

ENERGY & INDEX CALCULATIONS

pH	3.53
TDN (%DM)	74.5
Net Energy Lactation (mcal/lb)	0.77
Schwab/Shaver NEL (Processed)	0.79



Ideal silage

1-CORN SILAGE - LG3285

SAMPLE INFORMATION

Lab ID:	17386 392	Version:	1.0
Crop Year:	2014	Series:	
Feed Type:	CORN SILAGE	Cutting#:	
Package:	BASIC NIR		

NIR ANALYSIS RESULTS

Moisture			64.3
Dry Matter			35.7

Dry matter 35%

PROTEIN

Crude Protein			17.8
Adjusted Protein		6.8	
Soluble Protein		51.3	3.5
Ammonia		9.1	0.62
ADF Protein (ADICP)		9.9	0.67
NDF Protein (NDICP)		13.2	0.90
NDR Protein (NDRCP)			
Rumen Degr. Protein		75.7	5.1
Rumen Deg. CP (Strep.G)			

FIBER

	% NDF	% DM
ADF	33.3	11.9
aNDF	38.5	13.7
aNDFom	32.8	11.7
NDR (NDF w/o sulfite)	32.8	11.7
peNDF	32.8	11.7
Crude Fiber	32.8	11.7
Lignin	7.22	2.44

NDR 32.8%

MINERALS

Ash (%DM)	3.37
Calcium (%DM)	0.19
Phosphorus (%DM)	0.19
Magnesium (%DM)	0.16
Potassium (%DM)	0.87
Sulfur (%DM)	0.10
Sodium (%DM)	
Chloride (%DM)	
Iron (PPM)	
Manganese (PPM)	
Zinc (PPM)	
Copper (PPM)	
Nitrate Ion (%DM)	
Selenium (PPM)	
Molybdenum (PPM)	

Ash 3.37%

QUALITATIVE

pH	3.85
Total VFA (%)	5.65
Lactic Acid (%)	4.20
Lactic as %	7.4
Acetic Acid (%)	1.43
Butyric Acid (%)	
1, 2 Propanoic Acid (%)	0.09
Titrateable Acidity (meq/100g DM)	2.09

pH 3,85

Lactic acid 5.2

Acetic acid 1.74

Butyric acid 0

Soil Contamination Probability	Probable low to none
Nitrate Probability	Probable low nitrate level
NIR Statistical Confidence	Excellent prediction potential

ENERGY & INDEX CALCULATIONS

TDN (%DM)	75.4
Net Energy Lactation (mcal/lb)	0.79
Schwab/Shaver NEL (Processed)	0.77
Schwab/Shaver NEL (Unprocessed)	0.73
Net Energy Maintenance (mcal/lb)	0.82
Net Energy Gain (mcal/lb)	0.53
NDF Dig. Rate (Kd, %HR, Van Amburgh, Lignin*2.4)	3.69
NDF Dig. Rate (Kd, %HR, Van Amburgh, INDF)	4.61
Starch Dig. Rate (Kd, %HR, Mertens)	24.9
Relative Feed Value (RFV)	
Relative Feed Value (RFV)	
Milk per ton of DM	1,571 kg
Dig. Organic Matter Index (DOMI)	
Non Fiber Carbohydrates (%DM)	53.8
Non Structural Carbohydrates (%DM)	43.0
DCAD (meq/100gdm)	
CNCPS / CPM Lignin Factor	3.2
Summative Index %	100.5
Additional sample information, source and lab picture	

Milk / t DM 1,571 kg



«dust» 14,4%

Starch 41.6%

80.6

2.78

88.5

3.14





Доступность крахмала важна не менее, чем его количество!



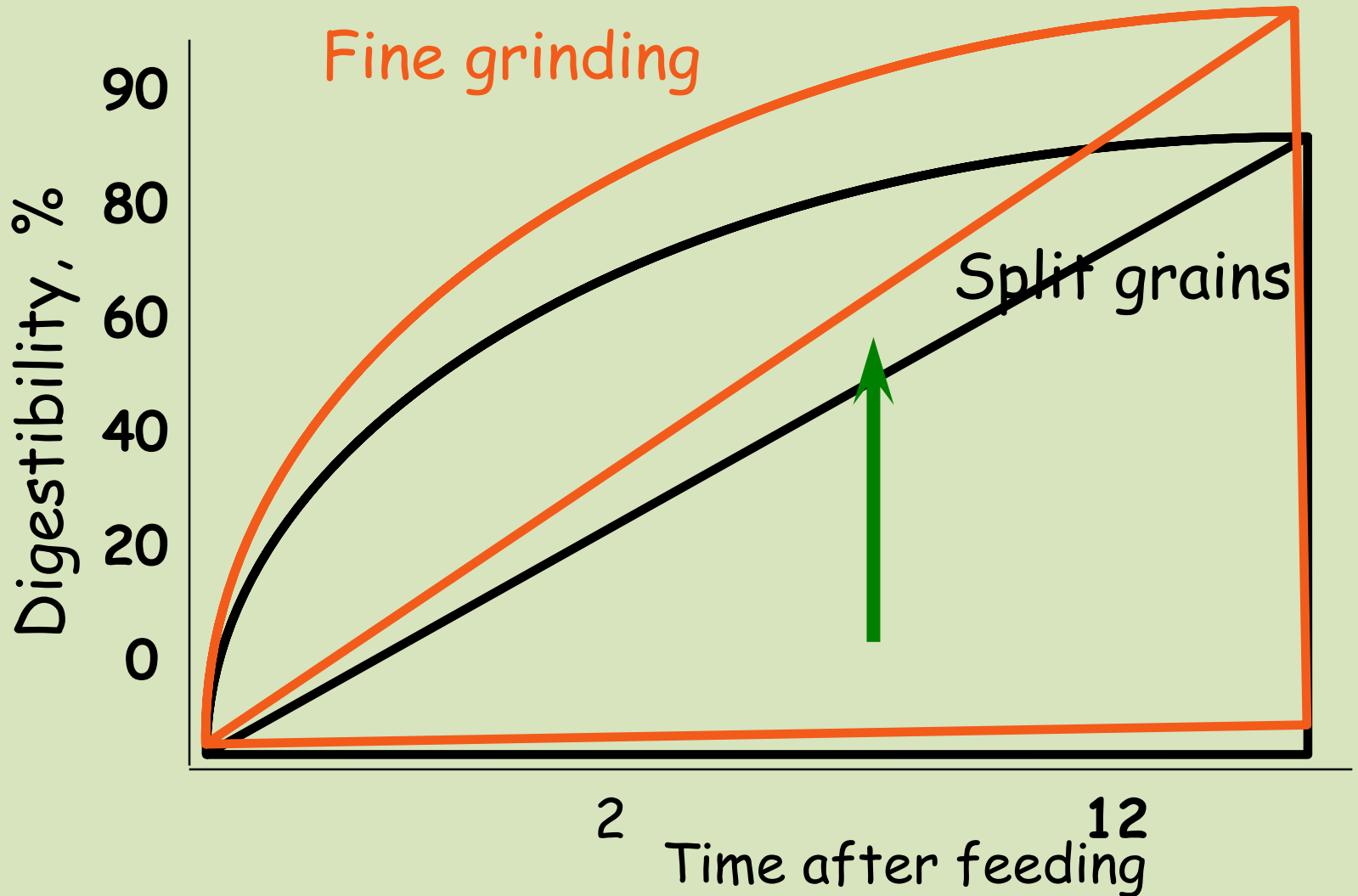








Corn starch digestibility depending on the degree of fineness



Ideal haylage

(Vitchyzna LLC, Sumy Oblast, 1000 cows)

7 ALFALFA SILAGE CUT 4			
SAMPLE INFORMATION			
Lab ID:	19015 102	Version:	1.0
Crop Year:	2015	Series:	
Feed Type:	LEGUME FORAGE	Cutting#:	4
Package:	NIR Wet Minerals, Cl, S		
NIR ANALYSIS RESULTS			
Moisture (%)			64.0
Dry Matter (%)			36.0
PROTEINS			
	% SP	% CP	% DM
Crude Protein			22.6
Adjusted Protein			15.7
Soluble Protein			15.7
Ammonia	16.4	11.4	2.58
ADF Protein (ADICP)			6.3
NDF Protein (NDICP)			7.6
NDR Protein (NDRCP)			
Rumen Degr. Protein		84.7	19.1
Rumen Deg. CP (Strep.G)			
FIBER			
	% NDFom	NDFom % DM	% DM
ADF			27.6
aNDF			31.8
NDR (NDF w/o sulfite)			
peNDF			
Crude Fiber			
Lignin			6.29
NDF Digestibility (12 hr)			
NDF Digestibility (24 hr)			
NDF Digestibility (30 hr)	44.7	13.5	42.3
NDF Digestibility (48 hr)			
NDF Digestibility (120 hr)	50.7	15.3	48.1
NDF Digestibility (240 hr)	55.3	17.1	51.7
uNDF (30 hr)	55.3	17.1	51.7
uNDF (120 hr)	49.4	14.9	51.9
uNDF (240 hr)	46.7	14.1	49.3
CARBOHYDRATES			
	% Starch	% NFC	% DM
Silage Acids		33.2	11.0
Ethanol Soluble CHO (Sugar)		9.7	3.2
Water Soluble CHO (Sugar)			
Starch		13.5	4.5
Soluble Fiber		47.7	15.8
Starch Dig. (7 hr, 4 mm)			
Fatty Acids, Total			2.53
Fatty Acids (%Fat)			62.8
Crude Fat			4.03
MINERALS			
Ash (%DM)			10.2
Calcium (%DM)			2.04
Phosphorus (%DM)			0.29
Magnesium (%DM)			0.51
Potassium (%DM)			1.25
Sulfur (%DM)			0.34
Sodium (%DM)			0.224
Chloride (%DM)			0.46
Iron (PPM)			310
Manganese (PPM)			59
Zinc (PPM)			24
Copper (PPM)			10
Nitrate Ion (%DM)			
Selenium (PPM)			
Molybdenum (PPM)			
ENERGY INDEX CALCULATIONS			
pH			4.50
TDN (%DM)			66.6
Net Energy (Mcal/lb)			0.68
Net Energy Maintenance (mcal/lb)			0.68
Net Energy Gain (mcal/lb)			0.41
NDF Dig. Rate (Kd, %HR, Van Amburgh, Lignin*2.4)			4.92
NDF Digestibility (%DM)			4.43
Starch Dig. Rate (Kd, %HR, Mertens)			
Relative Feed Value (RFV)			197
Relative Feed Quality (RFQ)			202
Milk Production (lb/cow)			3270
Dig. Organic Matter Index (lb/ton)			515
Non Fiber Carbohydrates (%DM)			31.5
Non Structural Carbohydrates (%DM)			7.7
DCAD (meq/100gdm)			7.63
CNCPS / CPM Lignin Factor			6.5
Summative Index % (Mass Balance)			99.3
Additional sample information, source and lab pictures			

Ash 10.2%

Dry matter 36%

Protein 22.6%

NDF 31.8%

«dust» 18.3%

pH 4.2

Lactic acid >5

Acetic acid < 2.5

Butyric acid <0.5

Milk / n DM 1.486 kg



Ideal hay (Krym Farming, 2,600 cows)

8 ALFALFA HAY 2014 504012				
SAMPLE INFORMATION				
Lab ID:	18831 319	Version:	1.0	
Crop Year:	2014	Series:		
Feed Type:	LEGUME FORAGE	Cutting#:		
Package:	NIR Wet Minerals, CI, S			
NIR ANALYSIS RESULTS				
Moisture	8.5			
Dry Matter	91.5			
PROTEINS				
	% SP	% CP	% DM	
Crude Protein			20.5	
Adjusted Protein			20.5	
Soluble Protein		39.2	8.0	
Ammonia	18.1	7.1	1.45	
ADF Protein (ADICP)		7.4	1.52	
NDF Protein (NDICP)		14.6	2.99	
NDR Protein (NDRCP)				
Rumen Degr. Protein		69.6	14.2	
Rumen Deg. CP (Strep.G)				
FIBER				
	% NDFom	NDFom %DM	% NDF	% DM
ADF			84.8	33.1
aNDF			89.5	39.1
NDR (NDF w/o sulfite)				
peNDF				
Crude Fiber				
Lignin			18.4	7.18
NDF Digestibility (12 hr)				
NDF Digestibility (24 hr)				
NDF Digestibility (30 hr)	45.6	17.1	43.8	17.1
NDF Digestibility (48 hr)				
NDF Digestibility (120 hr)	52.5	19.7	50.4	19.7
NDF Digestibility (240 hr)	55.4	20.8	50.1	20.7
uNDF (30 hr)	47.5	17.4	46.6	22.0
uNDF (120 hr)	47.5	17.8	49.6	19.4
uNDF (240 hr)	44.6	16.7	46.9	18.3
CARBOHYDRATES				
	% Starch	% NFC	% DM	
Silage Acids				
Ethanol Soluble CHO (Sugar)		22.6	6.8	
Water Soluble CHO (Sugar)				
Starch		5.9	1.8	
Soluble Fiber				
Starch Dig. (7 hr, 4 mm)				
Fatty Acids, Total			1.06	
Fatty Acids (%Fat)			44.5	
Crude Fat			2.38	
MINERALS				
Ash (%DM)	10.9			
Calcium (%DM)	2.04			
Phosphorus (%DM)	0.27			
Magnesium (%DM)	0.29			
Potassium (%DM)	2.35			
Sulfur (%DM)	0.24			
Sodium (%DM)	0.084			
Chloride (%DM)	0.62			
Iron (PPM)	355			
Manganese (PPM)	47			
Zinc (PPM)	16			
Copper (PPM)	9			
Nitrate Ion (%DM)				
Selenium (PPM)				
Molybdenum (PPM)				
QUALITATIVE				
Total VFA (%DM)				
Lactic Acid (%DM)				
Lactic as % of Total VFA				
Acetic Acid (%DM)				
Butyric Acid (%DM)				
1, 2 Propanediol (%DM)				
Titratable Acidity (meq/100gm)				
Soil Contamination Probability	Probable low to none			
Nitrate Probability	Probable moderate nitrate level			
NIR Statistical Confidence	Excellent prediction potential			
ENERGY & INDEX CALCULATIONS				
pH				
TDN (%DM)	60.7			
Net Energy Lactation (mcal/lb)	0.61			
Net Energy Maintenance (mcal/lb)	0.58			
Net Energy Gain (mcal/lb)	0.32			
NDF Dig. Rate (Kd, %HR, Van Amburgh, Lignin*2.4)	4.64			
NDF Dig. Rate (Kd, %HR, uNDF)	6.16			
Starch Dig. Rate (Kd, %HR, Mertens)				
Relative Feed Value (RFV)	150			
Relative Feed Quality (RFQ)	145			
Milk per ton of DM	2794			
Dig. Organic Matter Index (lbs/ton)	1229			
Non Fiber Carbohydrates (%DM)	27.2			
Non Structural Carbohydrates (%DM)	8.6			
DCAD (meq/100gdm)	31.21			
CNCPS / CPM Lignin Factor	7.6			
Summative Index % (Mass Balance)				
Additional sample information, source and lab pictures				

Ash 10.9%

Protein 20.5%

NDF 37.5%

«dust» 20.4%

Milk / t DM 1,270 kg



Well-balanced feeding criteria



Minor nutrients

Vitamins

Major nutrients
(Ca, P, Mg, Na, S)

PROTEIN

ENERGY

How many types of cow
diets are there?



1. Diet composed on paper

Futter 2003 / Розрахунок раціону / Розрахунок

Корови / Раціон Жир 3,80 % Білок: 3,20 % Молоко: 30,00 л

9133 Раціон раздой 21. Дійна корова, жива маса: 600 кг, підтрим. потреба * 23.01.2016 22:59:37

Номер	Позначення	Кілограм	Показн. поживн.	Мін.	Вміст	Макс.
5716	0 Силос кук. 32%СР-22%СК-5,9NEL	18,000	Суша речовина	г	19874	20000
5707	0 Силос кукур. 36%СР-19СК-6,0NEL		%СР/кг корму		47,32	
5717	0 Сінаж злаковий 34%СР-16%СП	6,000	СР-основн. корм	г	9126,00	13700,00
5632	0 Сінаж 47%СР-24%СК-21%СП		% СР Осн. корм		45,92	
5466	0 Сіно люцернове 17%СП-30%СК	1,500	ОЕ-Жуйні	МДж	210,75	
8359	0 Сіно лугове 9%СП-подрібн.		ЧЕЛ-Жуйні	МДж	130,48	127,84
4532	0 Солома подрібнена!!!		Сирий протеїн	г	2989,00	3198,02
5320	К Конс. зерно кукурудз. 62%СР	5,000	СП : ЧЕЛ, МДж	г	=25,0 : 1	
5733	К/корм_роздій і виробництво	8,500	Дост. прот.	г	2860,00	3003,30
100	Вода	3,000	БРА	г	10,00	31,15 60,00
			%СП/кг СР			16,09
			%-ДП / кг СР		14,00	15,11
			%-нерозч. Прот.			30,00
					
			Сира клітковина	г	3041,44	3780,00
			структ. СК	г	1800	1866
			%СК/кг СР		15,00	15,30
			%стр. СК/кг СР			9,39
			НДК % в СР		28,00	30,63 40,00
			КДК % в СР		16,00	20,94 24,00
			НДК-ОК % в СР		22,00	22,18 32,00
					
			Сирий жир	г	682,56	900,00
			%-СЖ/кг СР		3,43	4,00
					
			Крокмаль+Цукор	г	6269,22	7500,00
			нерозч. Крохм.	г	450,00	1495,84 1500,00
			%-Крохм. СР			28,19
			%-Цукор / кг СР	%		3,35
			%-Кр+Цук. СР			31,55
			% розч.Крокмаль	%		20,66
			%Шук +плзч Кп	%		24,02

Сума: 42,000 Без прайслист: Стандарт

Комендар Зберегти Друкувати Оптимізація Беспроводное сетевое соединение сейчас подключен

Очистити Калькуляция Огляд Подключен к: AG

Новий розрахунок Матриця Графік Мощность сигнала: Очень низкий

Windows taskbar: пуск, Рационы с своей о..., Отправлено - Googl..., Futter 2003, 19:39

Diet composed on paper

Nutritional Dynamic System - NDS Professional

NDS PROFESSIONAL Ver. 3.8.10.05

Feedbank: BASE FEEDBANK
Working group: First Working group
Set costs: (€/Tonne) SET 1

Units system: Metric, English
Energy Units: Mcal, MJoule

Main: 1st herd template - Demo Heifer Lactation 2013 7 07

Animals Inputs | Recipe [Lactating Dairy Cow] | Comparisons [1] | Optimizer | P-Size | Mixer Wagon | Step Feeding | Info

Recipes | Save | Save as | Feeding to... | Feeds details | Guidelines | Create Mix | Re-Mix | Report | Historical recipe | Close

Feeds [19]	As fed kg	DM kg	% DMI	€/Tonne
Corn Grain Ground Fine	1,3608	1,1975	5,23	313,0584
Corn Grain Flaked 22 lb	3,4019	2,9257	12,77	330,8934
Citrus Pulp Dry	1,3608	1,2056	5,26	330,8934
Canola Meal Expelled	1,3608	1,2247	5,35	340,0000
Corn Dist Ethanol	0,9072	0,8056	3,52	308,8472
Soybean Meal 47.5 Solvent	0,6804	0,6123	2,67	528,0071
Cottonseed Fuzzy	1,3608	1,2519	5,47	340,8142
Blood Meal	0,2268	0,2041	0,89	1 405,4489
Megalac	0,1134	0,1100	0,46	1 543,2358
MinVit	0,0676	0,0642	0,26	551,1557
Sodium Bicarbonate	0,1361	0,1354	0,59	275,5778
Sodium Bentonite	0,0680	0,0677	0,30	110,2311
Salt White	0,0338	0,0336	0,15	110,2311
Magnesium Ox	0,0454	0,0451	0,20	66,1387
Limestone Ground	0,1859	0,1850	0,81	110,2311
RUMENSIN 90 USA November	0,0010	0,0010	16	534,8697

Days in milk	125,0	ECM kg	38,83
Milk production kg	38,56	Mean FBW kg	589,7
Milk Fat % w/w	3,55	LN	1,00
Milk Protein % w/w	3,39		

Nutrients	DM %	Supply
CP	16,0999	3 687,8700
Soluble Protein	5,3834	1 233,1280
aNDFom	32,9660	7 551,2600
NFC	39,0455	8 943,8450
Sugar	4,8823	1 118,3600
Starch	24,3362	5 574,5070
Soluble Fiber	7,7477	1 774,7060
EE	4,8397	1 108,5910
TFA	3,9510	905,0339
Ash	7,0489	1 614,6300
Ca	0,8994	206,0215
P	0,3774	86,4420
Mg	0,3632	83,1889

Diet evaluation	ME	MP
Supply	56,41	2 647,6
Requirements	60,03	2 705,8
Balance	-3,62	-58,1
% Req.	94,0%	97
Maintenance	56,41	855,1
Pregnancy	39,62	0,0
Lactation	39,62	1 812,7
Growth	-2,69	37,9
Reserves	-3,62	-58,1

Intake	Check DMI	Forages/Concentrates	Other items
As Fed tot.kg	39,4334	DMI tot.kg	22,9062 F 56,04%
Wgt TMR kg	39,4334	DMI TMR kg	22,9062 C 43,96%
DMI pred kg	23,590	-0,68 (97,1%)	3,88 %BW 58,1%
DWI pred kg	91,513	uNDF1%BW 0.39%	NDF1%BW 1.28%

Costs	Production efficiency	Milk price
Cost at last save	€/head 0,0000	Total 0,0000 Purchased SET 1
Cost/head	€/head 7,6114	3,0584 1st herd template
Cost/kg DM	€ 0,3323	0,1335
Cost/kg milk	€ 0,1974	0,0793 0,2159

Rumen Balance	% MP Available	MP from Bacteria g	1 291,2	48,8	% MP
MP from RUP g	1 356,5	51,2	% MP		
MP from BCS change g					
NH3-N g	52,7	132,8			
Peptide-N g	133,4	172,6			
N excess g	0,0				
Urea Cost Mcal	0,00				

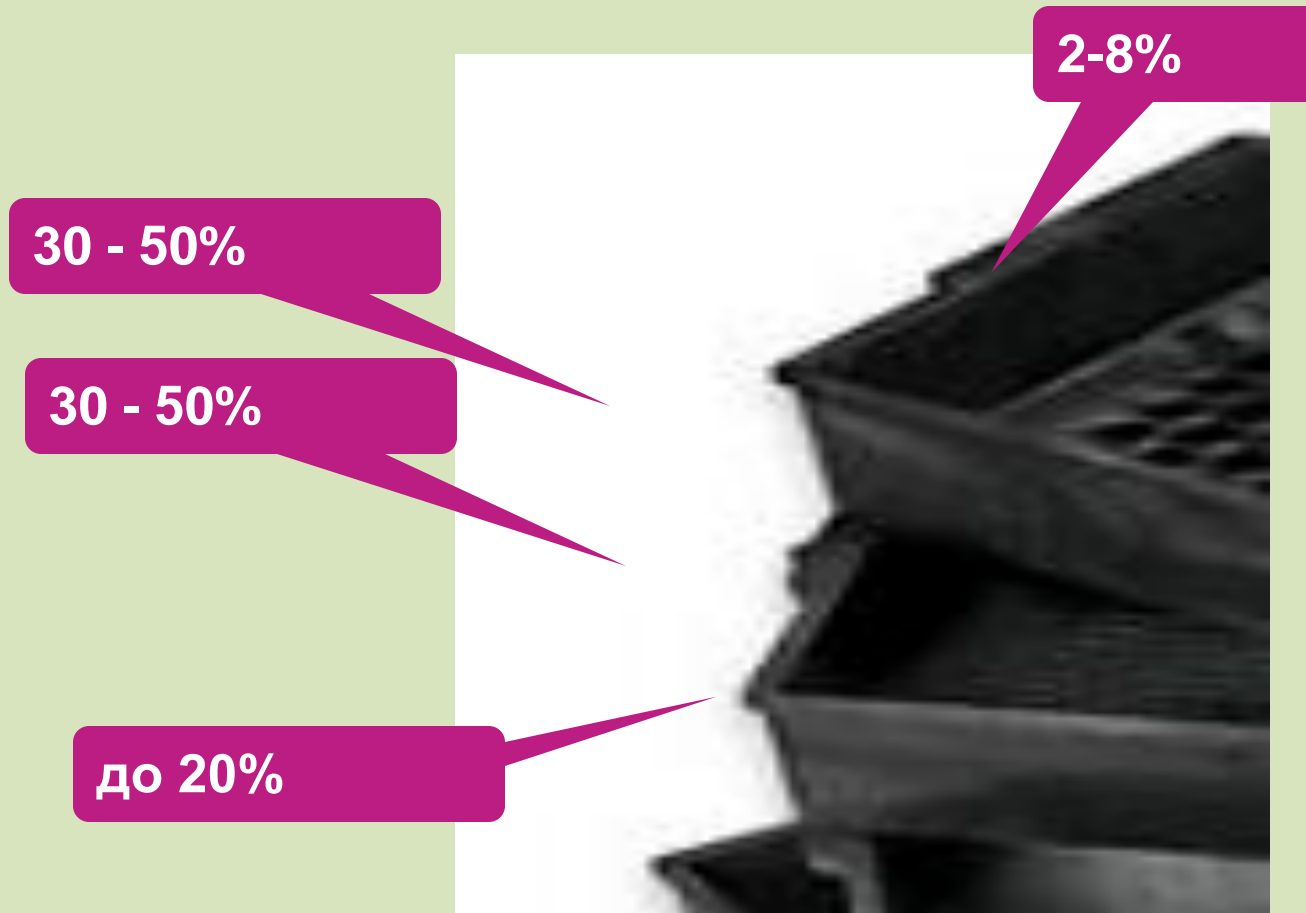
Organic Matter	% DM	%	% Fermentability	Escape
Proteins	49,38	53,1	% DM	50,62 46,9
Totals CHO	8,87	55,1	% DM	7,23 44,9
NDF	40,51	56,3	% DM	31,50 43,7
Starch	10,66	32,3	26,32	22,30 67,7
Soluble fiber	19,15	78,7	47,28	5,18 21,3
Suoaars	6,58	84,9	16,23	1,17 15,1
Other NFC	3,63	74,3	8,96	1,25 25,7
	0,49	23,4	1,20	1,59 76,6

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2. Prepared and fed diet



Pensilvanian feed separator



3. Diet, eaten by a cow

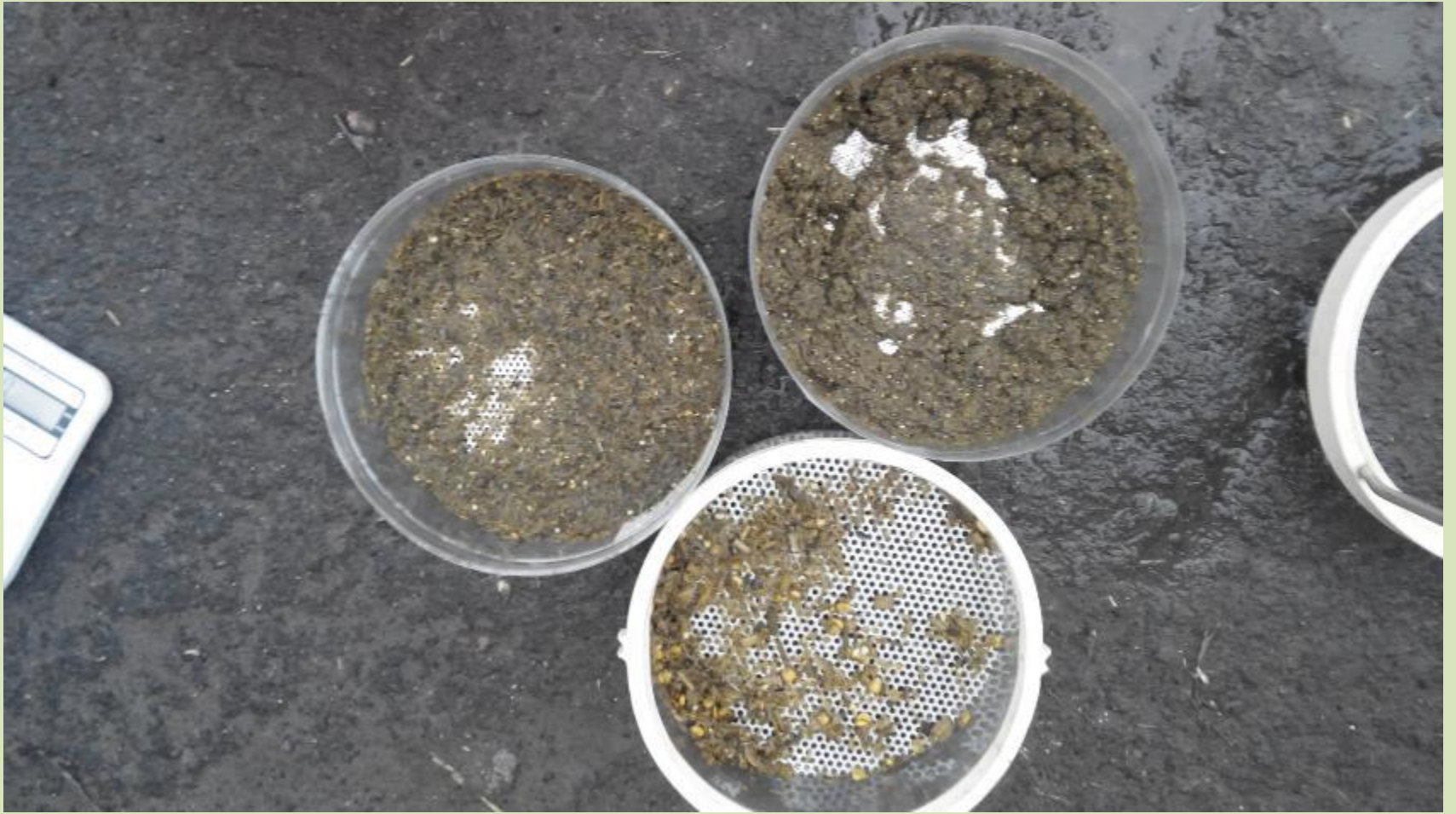


4. Digested diet









Important to understand!

When does “theoretical” milk yield correspond to actual milk yield?

- Accuracy of diet preparation = 100%
- Accuracy of distribution = 100%
- Consumption level = 100% (0% leftovers)

Actual milk yield \neq “theoretical” milk yield

Example:

- Accuracy of diet preparation = 98%
- Accuracy of distribution = 98%
- Consumption level = 95%

□ Actual milk yield = $0.98 \times 0.98 \times 0.95 =$
0.90 of “theoretically” estimated milk
yield (*not 25, but **22** l maximum*)

Feeding standards for lactation cows

INDEX	VALUE
Dry matter	3.5% of weight of the cow
Net energy of lactation	6.0 – 7.0 MJ/ kg of dry matter
Crude protein	14-16%of dry matter
Crude fiber	16 – 18% of dry matter
Crude fat	3 – 4% of dry matter
Starch	25 – 30% of dry matter
Ca	0,8 – 1,2% of dry matter
P	0,4 – 0,6% of dry matter

Feeding standards for dry cows

INDEX	ЗНАЧЕНИЯ
Dry matter	2.5% of weight of the cow
Net energy of lactation	5.0 – 5.5 MJ/ kg of dry matter
Crude protein	12-14% of dry matter
Crude fiber	25 – 28% of dry matter
Crude fat	3 – 4% of dry matter
Starch	14 - 16% of dry matter
Ca	0.6 — 0.8% of dry matter
P	0.3 – 0.4% of dry matter



Thank you for attention!