KVALITETA KUKURUZNE SILAŽE U BIH I SUSJEDNIM ZEMLJAMA

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PRETPOSTAVKE USPJEŠNE PROIZVODNJE MLIJEKA

1. Zdravlje – kao temelj
2. Uspješna reprodukcija – (DIM)
3. **Efikasna ishrana krava** – uravnoteženost proizvodnje i pokrivanja potreba za tu proizvodnju

KVALITETAN OSNOVNI OBROK – ŠTO TO ZNAČI?

1. Što je to „**kvaliteta**“ osnovnog obroka?
2. Što je ključno da se proizvede „**kvalitetan**“ **osnovni obrok**?
3. Zašto nam je bitno proizvesti **„kvalitetan osnovni obrok“?**

SASTAVLJANJE OBROKA DANAS

Poznavanje kvalitete voluminoze ključan faktor – situacija

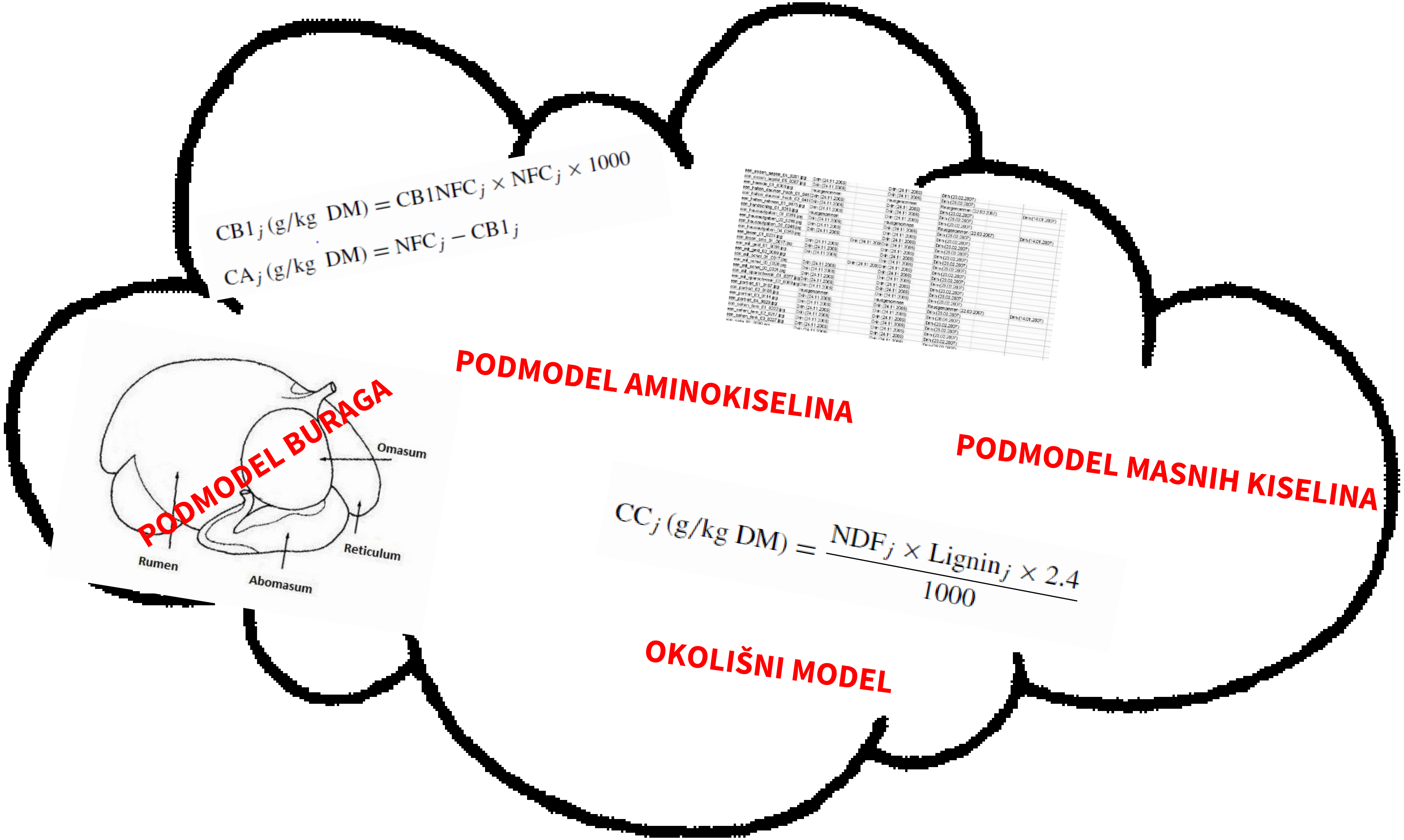
1. Moguća kvalitetna detaljna analiza krmiva – SANO LAB
2. Razvijanje svijesti farmera o potrebi detaljnog poznavanja kvalitete krmiva
3. Detaljni podaci o kemijskom sastavu i dinamičkim svojstvima krmiva
4. Velika podudarnost sa stvarnom situacijom
5. Vjerojatnost/realizacija postizanja željene (moguće) proizvodnje puno veća

INTENZITET PROIZVODNJE MLIJEČNIH KRAVA STALNO SE POVEĆAVA

- Genetika
- Komfor (smještaj)
- Management

- **Kvaliteta osnovnog obroka – suvremena analitika**
- **Precizna ishrana**

CNCPS - Cornell Net Carbohydrate and Protein System



UNOS PRECIZNIH PODATAKA

Sano

parametri farme

- dizajn staje
- gustoća naseljenosti
- udaljenosti za hodanje
- management stada
- klimatski podaci

parametri životinja

- Interval telenja
- dob kod 1. telenja
- ocjena kondicije (BCS)
- količina mlijeka (ml.mast/protein)
- pasmina
- tjelesna težina
- prosječni dnevni prirast

cijene

- cijene mesa
- cijene mlijeka
- cijene krmiva

izvještaj analize krmiva

- fermentacijski profil
- probavljivost
- sastav masnih kiselina
- sastav aminokiselina
- kemijska svojstva
- makro i mikro elementi

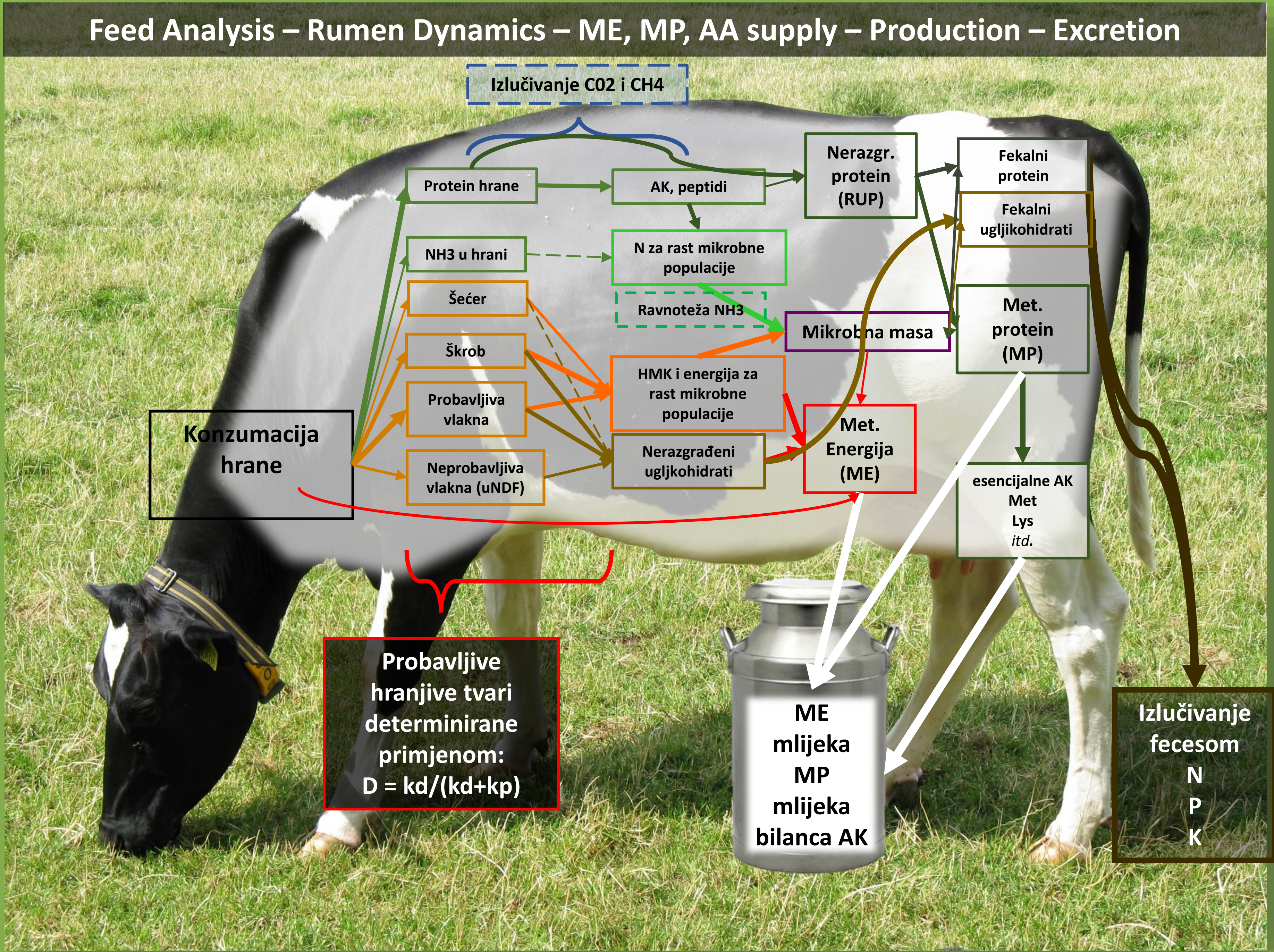
Odgovarajući obrok za

optimalno zdravlje, proizvodnju i prihod farme (IOFC)

AMTS

AMTS.Cattle.Pro

- Primjena najnovijeg CNCPS modela
- Dinamički sistem koji omogućuje interakciju između krmiva i mikrobne populacije
- Precizan sistem koji predviđa proizvodnju temeljem raspoložive hrane na farmi, osobina krava na farmi, u raspoloživim uvjetima držanja



KVALITETNA KUKURUZNA SILAŽA

KAKO TREBA IZGLEDATI SILAŽA?

PREPORUČENI PROFIL FERMENTACIJE KUK. SILAŽA (PROF. M. HUTJENS)

Parametar	Kukuruzna	VVK
Suha tvar (%)	30 - 35	70 - 75
pH	3,8 – 4,2	4,0 – 4,5
Mliječna kis. (%)	5,0 – 10,0	1,0 – 2,0
Octena kis. (%)	1,0 – 3,0	< 0,5
Propionska k. (%)	< 0,10	< 0,10
Maslačna k. (%)	< 0,10	< 0,10
Etanol (% ST)	< 3,0	< 2,0
Amonijak (% SP)	< 8,0	< 10,0
Mliječna/octena	> 3,0	> 3,0
Mliječna (% svih)	> 70	> 70

NAJVAŽNIJI PARAMETRI KVALITETE KUKUR. SILAŽE

Analytischer Befund	Einheit	Durchschnittswerte
TS	%	32,5
aNDFom	% TS	40
Stärke	% TS	32,5
NDFDom 30h	% NDFom	60
NDFDom 120h	% NDFom	70
NDFDom 240h	% NDFom	75
Stärke Verd. (7 hr, 4 mm	% Stärke	80
XP	% TS	7.5
XL	% TS	2.5
XA	% TS	4
FFS	% TS	8
WSC/ESC	% TS	2
ADICP	% XP	8
NDICP	% XP	12
Lösl. Protein	% XP	45

Reported: **01/11/2022**

Sano

KUK SIL,SILOS BR 1,#HR0000006808#

SAMPLE INFORMATION			
Lab ID:	31573 098	Version:	1.0
Crop Year:		Series:	
Feed Type:	CORN SILAGE	Cutting#:	
Package:	BASIC NIR		

NIR ANALYSIS RESULTS	
Moisture	66.0
Dry Matter	34.0

PROTEINS	% SP	% CP	% DM
Crude Protein			7.4
Adjusted Protein			7.4
Soluble Protein		55.5	4.1
Ammonia (CPE)	16.3	9.1	0.67
ADF Protein (ADICP)		11.1	0.82
NDF Protein (NDICP)		12.3	0.91
NDR Protein (NDRCP)			
Rumen Degr. Protein		77.7	5.7
Amino Acid Protein, Total		62.6	4.63

FIBER	%NDFom	NDFom %DM	% NDF	% DM
ADF			61.3	27.0
aNDF		43.3		44.0
NDR (NDF w/o sulfite)				
Crude Fiber				
Lignin			8.46	3.72
NDF Digestibility (12 hr)	30.1	13.0	31.1	13.5
NDF Digestibility (24 hr)				
NDF Digestibility (30 hr)	48.4		48.1	21.1
NDF Digestibility (72 hr)				
NDF Digestibility (120 hr)	59.5	25.7	59.0	26.0
NDF Digestibility (240 hr)	62.0	26.8	61.6	27.1
uNDF (12 hr)	69.9	30.3		
uNDF (30 hr)	51.6	22.4	51.9	22.8
uNDF (120 hr)	40.6	17.6	41.0	18.0
uNDF (240 hr)	38.0	16.5	38.4	16.9

CARBOHYDRATES	% Starch	% NFC	% DM
Silage Acids		18.3	7.9
Ethanol Soluble CHO (ESC-Sugar)		2.0	0.9
Water Soluble CHO (WSC-Sugar)			2.2
Starch		70.1	30.3
Soluble Starch			
Soluble Fiber		13.6	5.87
Starch Dig. (7 hr, 4 mm)	77.7		
Crude Fat			2.95
Fatty Acids, Total			2.39
C16:0			0.43
C18:0			0.06
C18:1			0.42
C18:2			1.20
C18:3			0.15

MINERALS	
Ash (%DM)	3.36
Calcium (%DM)	0.21
Phosphorus (%DM)	0.24
Magnesium (%DM)	0.20
Potassium (%DM)	0.79
Sulfur (%DM)	0.12
Sodium (%DM)	
Chloride (%DM)	
Iron (PPM)	
Manganese (PPM)	
Zinc (PPM)	
Copper (PPM)	
Molybdenum (PPM)	

QUALITATIVE	
pH	3.76
Total VFA (%DM)	7.89
Lactic Acid (%DM)	6.18
Lactic as % of Total VFA	78
Acetic Acid (%DM)	1.71
Butyric Acid (%DM)	
1, 2 Propanediol (%DM)	0.26
Nitrate Ion (%DM)	
Nitrate-Nitrogen, ppm	
Soil Contamination Probability	Probable low to none
NIR Statistical Confidence	Excellent prediction potential

ENERGY & INDEX CALCULATIONS	
TDN (%DM)	70.0
Net Energy Lactation (mj/kg)	6.67
Net Energy Maintenance (mj/kg)	7.32
Net Energy Gain (mj/kg)	4.73
ME (mj/kg)	11.16
AA Protein as % of Total Protein	62.6
NDF Dig. Rate (Kd, %HR, Van Amburgh, Lignin*2.4)	2.94
NDF Dig. Rate (Kd, %HR, uNDF)	4.2
Starch Dig. Rate (Kd, %HR, Mertens)	22.8
Relative Feed Value (RFV)	
Relative Forage Quality (RFQ)	
Milk per Ton (kg/tonne)	1508
Dig. Organic Matter Index (kg/tonne)	
Non Fiber Carbohydrates (%DM)	43.2
Non Structural Carbohydrates, ESC (%DM)	31.2
Non Structural Carbohydrates, WSC (%DM)	32.5
DCAD (meq/100gdm)	
RFC - Fill Index	2.24
Summative Index % (Mass Balance)	101.1

Additional sample information submitted

Nutrient Comparison for : CORN SILAGE

Nutrient	Sample Results	Your Results Compared to the Average of ALL Samples						
		Avg						
DM	32.1	Avg: 35.3	22.1	27.4	32.7	38.0	43.3	48.6
CP	8.6	Avg: 7.8	5.6	6.5	7.4	8.3	9.2	10.1
aNDFom %DM	36.4	Avg: 38.6	27.6	32.0	36.4	40.8	45.2	49.6
NDFD30 %NDF	61.5	Avg: 56.3	45.3	49.7	54.1	58.5	62.9	67.3
NDFD240 %NDF	79.8	Avg: 69.6	56.1	61.5	66.9	72.3	77.7	83.1
Starch %DM	38.7	Avg: 33.3	18.3	24.3	30.3	36.3	42.3	48.3
Starch Dig. (7 hr, 4 mm)	83.7	Avg: 73.2	55.7	62.7	69.7	76.7	83.7	90.7
ASH	3.0	Avg: 3.8	1.1	2.2	3.3	4.4	5.5	6.6
Total VFA %DM	6.5	Avg: 6.7	0.2	2.8	5.4	8.0	10.6	13.2
Lactic Acid %DM	3.2	Avg: 4.3	0.0	1.8	3.5	5.3	7.0	8.8

The graphs above represent 2 years of CVAS data. Green represents 86.6% of population data; orange represents 8.8% of population data; Red represents 3.4% of population data. The black pointer indicates your data relative to the population distribution.

PROBAVLJIVOST KUKURUZNE SILAŽE

Sano

SAMPLE INFORMATION

Lab ID:	33419 129	Version:	1.0
Crop Year:	2022	Series:	
Feed Type:	CORN SILAGE	Cutting#:	
Package:	BASIC NIR		

NIR ANALYSIS RESULTS

Moisture	52.4
Dry Matter	47.6

PROTEINS	% SP	% CP	% DM
Crude Protein			7.8
Adjusted Protein			7.8
Soluble Protein		45.6	3.6
Ammonia (CPE)	18.3	8.3	0.65
ADF Protein (ADICP)		10.9	0.85
NDF Protein (NDICP)		12.1	0.94
NDR Protein (NDRCP)			
Rumen Degr. Protein		72.8	5.7
Amino Acid Protein, Total		57.8	4.50

FIBER	%NDFom	NDFom %DM	% NDF	% DM
ADF			62.5	31.2
aNDF		49.2		50.0
NDR (NDF w/o sulfite)				
Crude Fiber				
Lignin				4.82
NDF Digestibility (12 hr)	24.5	12.1	25.6	12.6
NDF Digestibility (24 hr)				
NDF Digestibility (30 hr)	39.6		39.5	19.7
NDF Digestibility (72 hr)				
NDF Digestibility (120 hr)	51.4	25.3	51.2	25.6
NDF Digestibility (240 hr)	53.7	26.4	53.4	26.7
uNDF (12 hr)	75.5	37.1		
uNDF (30 hr)	60.4		60.5	30.2
uNDF (120 hr)	48.6	23.9	48.8	24.4
uNDF (240 hr)	46.3	22.8	46.6	23.3

CARBOHYDRATES	% Starch	% NFC	% DM
Silage Acids		11.0	3.9
Ethanol Soluble CHO (ESC-Sugar)		8.3	2.9
Water Soluble CHO (WSC-Sugar)			3.1
Starch			23.2
Soluble Starch			
Soluble Fiber		19.5	6.92
Starch Dig. (7 hr, 4 mm)	60.4		

MINERALS	
Ash (%DM)	4.51
Calcium (%DM)	0.24
Phosphorus (%DM)	0.27
Magnesium (%DM)	0.23
Potassium (%DM)	0.75
Sulfur (%DM)	0.13
Sodium (%DM)	
Chloride (%DM)	
Iron (PPM)	
Manganese (PPM)	
Zinc (PPM)	
Copper (PPM)	
Molybdenum (PPM)	

QUALITATIVE	
pH	4.17
Total VFA (%DM)	3.92
Lactic Acid (%DM)	3.64
Lactic as % of Total VFA	93
Acetic Acid (%DM)	0.28
Butyric Acid (%DM)	
1, 2 Propanediol (%DM)	
Nitrate Ion (%DM)	
Nitrate-Nitrogen, ppm	

Soil Contamination Probability	Probable low to none
NIR Statistical Confidence	Good prediction potential

ENERGY & INDEX CALCULATIONS	
TDN (%DM)	65.6
Net Energy Lactation (mj/kg)	6.22
Net Energy Lactation NASEM (mj/kg)	6.61
Net Energy Maintenance (mj/kg)	6.62
Net Energy Gain (mj/kg)	4.10
ME (mj/kg)	10.34
AA Protein as % of Total Protein	57.8
NDF Dig. Rate (Kd, %HR, Van Amburgh, Lignin*2.4)	2.33
NDF Dig. Rate (Kd, %HR, uNDF)	3.7
Starch Dig. Rate (Kd, %HR, Mertens)	14.0
Relative Feed Value (RFV)	
Relative Forage Quality (RFQ)	
Milk per Ton (kg/tonne)	1073
Dig. Organic Matter Index (kg/tonne)	
ROM (Residual Organic Matter)	12.56

SAMPLE INFORMATION

Lab ID:	33145 348	Version:	1.0
Crop Year:	2022	Series:	
Feed Type:	CORN SILAGE	Cutting#:	
Package:	BASIC NIR		

NIR ANALYSIS RESULTS

Moisture	64.2
Dry Matter	35.8

PROTEINS	% SP	% CP	% DM
Crude Protein			7.2
Adjusted Protein			7.2
Soluble Protein		53.1	3.8
Ammonia (CPE)	18.4	9.8	0.70
ADF Protein (ADICP)		10.2	0.73
NDF Protein (NDICP)		12.9	0.92
NDR Protein (NDRCP)			
Rumen Degr. Protein		76.6	5.5
Amino Acid Protein, Total		65.6	4.69

FIBER	%NDFom	NDFom %DM	% NDF	% DM
ADF			57.5	20.5
aNDF		35.2		35.7
NDR (NDF w/o sulfite)				
Crude Fiber				
Lignin				2.29
NDF Digestibility (12 hr)	40.0	14.1	40.8	14.4
NDF Digestibility (24 hr)				
NDF Digestibility (30 hr)	62.1		61.6	22.0
NDF Digestibility (72 hr)				
NDF Digestibility (120 hr)	76.6	27.0	76.0	27.1
NDF Digestibility (240 hr)	80.0	28.2	79.2	28.3
uNDF (12 hr)	60.0	21.1		
uNDF (30 hr)	37.9		38.4	13.7
uNDF (120 hr)	23.4	8.2	24.0	8.6
uNDF (240 hr)	20.0	7.0	20.8	7.4

CARBOHYDRATES	% Starch	% NFC	% DM
Silage Acids		16.0	8.4
Ethanol Soluble CHO (ESC-Sugar)		0.3	0.2
Water Soluble CHO (WSC-Sugar)			1.2
Starch			38.4
Soluble Starch			
Soluble Fiber		13.6	7.13
Starch Dig. (7 hr, 4 mm)	72.8		

MINERALS	
Ash (%DM)	2.83
Calcium (%DM)	0.20
Phosphorus (%DM)	0.25
Magnesium (%DM)	0.18
Potassium (%DM)	1.00
Sulfur (%DM)	0.11
Sodium (%DM)	
Chloride (%DM)	
Iron (PPM)	
Manganese (PPM)	
Zinc (PPM)	
Copper (PPM)	
Molybdenum (PPM)	

QUALITATIVE	
pH	3.68
Total VFA (%DM)	8.35
Lactic Acid (%DM)	5.39
Lactic as % of Total VFA	65
Acetic Acid (%DM)	2.96
Butyric Acid (%DM)	
1, 2 Propanediol (%DM)	0.31
Nitrate Ion (%DM)	
Nitrate-Nitrogen, ppm	

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

ENERGY & INDEX CALCULATIONS	
TDN (%DM)	75.3
Net Energy Lactation (mj/kg)	7.22
Net Energy Maintenance (mj/kg)	8.17
Net Energy Gain (mj/kg)	5.46
ME (mj/kg)	12.15
AA Protein as % of Total Protein	65.6
NDF Dig. Rate (Kd, %HR, Van Amburgh, Lignin*2.4)	4.03
NDF Dig. Rate (Kd, %HR, uNDF)	4.4
Starch Dig. Rate (Kd, %HR, Mertens)	19.7
Relative Feed Value (RFV)	
Relative Forage Quality (RFQ)	
Milk per Ton (kg/tonne)	1764
Dig. Organic Matter Index (kg/tonne)	
Non Fiber Carbohydrates (%DM)	52.3
Non Structural Carbohydrates, ESC (%DM)	38.6
Non Structural Carbohydrates, WSC (%DM)	39.6

PROBAV. VLAKANA KUK. SILAŽE – MOŽE LI BOLJE?

Sano

SAMPLE INFORMATION			
Lab ID:	33145 348	Version:	1.0
Crop Year:	2022	Series:	
Feed Type:	CORN SILAGE	Cutting#:	
Package:	BASIC NIR		

NIR ANALYSIS RESULTS	
Moisture	64.2
Dry Matter	35.8

PROTEINS	% SP	% CP	% DM
Crude Protein			7.2
Adjusted Protein			7.2
Soluble Protein		53.1	3.8
Ammonia (CPE)	18.4	9.8	0.70
ADF Protein (ADICP)		10.2	0.73
NDF Protein (NDICP)		12.9	0.92
NDR Protein (NDRCP)			
Rumen Degr. Protein		76.6	5.5
Amino Acid Protein, Total		65.6	4.69

FIBER	%NDFom	NDFom %DM	% NDF	% DM
ADF			57.5	20.5
aNDF		35.		35.7
NDR (NDF w/o sulfite)				
Crude Fiber				
Lignin				2.29
NDF Digestibility (12 hr)	40.0	14.1	40.8	14.4
NDF Digestibility (24 hr)				
NDF Digestibility (30 hr)	62.		61.6	22.0
NDF Digestibility (72 hr)				
NDF Digestibility (120 hr)	76.6	27.0	76.0	27.1
NDF Digestibility (240 hr)	80.0		79.2	28.3
uNDF (12 hr)	60.0	21.1		
uNDF (30 hr)	37.9	13.3	38.4	13.7
uNDF (120 hr)	23.4	8.2	24.0	8.6
uNDF (240 hr)	20.0	7.0	20.8	7.4

CARBOHYDRATES	% Starch	% NFC	% DM
Silage Acids		16.0	8.4
Ethanol Soluble CHO (ESC-Sugar)		0.3	0.2
Water Soluble CHO (WSC-Sugar)			1.2
Starch			38.4
Soluble Starch			
Soluble Fiber		13.6	7.13
Starch Dig. (7 hr, 4 mm)	72.8		

MINERALS	
Ash (%DM)	2.83
Calcium (%DM)	0.20
Phosphorus (%DM)	0.25
Magnesium (%DM)	0.18
Potassium (%DM)	1.00
Sulfur (%DM)	0.11
Sodium (%DM)	
Chloride (%DM)	
Iron (PPM)	
Manganese (PPM)	
Zinc (PPM)	
Copper (PPM)	
Molybdenum (PPM)	

QUALITATIVE	
pH	3.68
Total VFA (%DM)	8.35
Lactic Acid (%DM)	5.39
Lactic as % of Total VFA	65
Acetic Acid (%DM)	2.96
Butyric Acid (%DM)	
1, 2 Propanediol (%DM)	0.31
Nitrate Ion (%DM)	
Nitrate-Nitrogen, ppm	
Soil Contamination Probability	Probable low to none
NIR Statistical Confidence	Excellent prediction potential

ENERGY & INDEX CALCULATIONS	
TDN (%DM)	75.3
Net Energy Lactation (mj/kg)	7.22
Net Energy Maintenance (mj/kg)	8.17
Net Energy Gain (mj/kg)	5.46
ME (mj/kg)	12.15
AA Protein as % of Total Protein	65.6
NDF Dig. Rate (Kd, %HR, Van Amburgh, Lignin*2.4)	4.03
NDF Dig. Rate (Kd, %HR, uNDF)	4.4
Starch Dig. Rate (Kd, %HR, Mertens)	19.7
Relative Feed Value (RFV)	
Relative Forage Quality (RFQ)	
Milk per Ton (kg/tonne)	1764
Dig. Organic Matter Index (kg/tonne)	
Non Fiber Carbohydrates (%DM)	52.3
Non Structural Carbohydrates, ESC (%DM)	38.6
Non Structural Carbohydrates, WSC (%DM)	39.6

SAMPLE INFORMATION			
Lab ID:	33222 042	Version:	1.0
Crop Year:	2022	Series:	
Feed Type:	CORN SILAGE	Cutting#:	
Package:	BASIC NIR		

NIR ANALYSIS RESULTS	
Moisture	70.4
Dry Matter	29.6

PROTEINS	% SP	% CP	% DM
Crude Protein			9.4
Adjusted Protein			9.4
Soluble Protein		59.6	5.6
Ammonia (CPE)	21.7	12.9	1.21
ADF Protein (ADICP)		8.9	0.83
NDF Protein (NDICP)		11.3	1.06
NDR Protein (NDRCP)			
Rumen Degr. Protein		79.8	7.5
Amino Acid Protein, Total		60.8	5.69

FIBER	%NDFom	NDFom %DM	% NDF	% DM
ADF			56.1	21.6
aNDF		3		38.3
NDR (NDF w/o sulfite)				
Crude Fiber				
Lignin				1.73
NDF Digestibility (12 hr)	44.5	16.8	45.3	17.2
NDF Digestibility (24 hr)				
NDF Digestibility (30 hr)	70.		69.4	26.6
NDF Digestibility (72 hr)				
NDF Digestibility (120 hr)	81.6	30.8	80.9	31.0
NDF Digestibility (240 hr)	85.		84.4	32.3
uNDF (12 hr)	55.5	20.9		
uNDF (30 hr)	30.0	11.3	30.6	11.7
uNDF (120 hr)	18.4	6.9	19.1	7.3
uNDF (240 hr)	14.9	5.6	15.6	6.0

CARBOHYDRATES	% Starch	% NFC	% DM
Silage Acids		23.3	10.9
Ethanol Soluble CHO (ESC-Sugar)		1.6	0.7
Water Soluble CHO (WSC-Sugar)			1.8
Starch			31.2
Soluble Starch			
Soluble Fiber		13.1	6.12
Starch Dig. (7 hr, 4 mm)	68.3		
Crude Fat			3.07

MINERALS	
Ash (%DM)	3.59
Calcium (%DM)	0.28
Phosphorus (%DM)	0.32
Magnesium (%DM)	0.21
Potassium (%DM)	1.45
Sulfur (%DM)	0.15
Sodium (%DM)	
Chloride (%DM)	
Iron (PPM)	
Manganese (PPM)	
Zinc (PPM)	
Copper (PPM)	
Molybdenum (PPM)	

QUALITATIVE	
pH	3.83
Total VFA (%DM)	10.91
Lactic Acid (%DM)	6.04
Lactic as % of Total VFA	55
Acetic Acid (%DM)	4.87
Butyric Acid (%DM)	
1, 2 Propanediol (%DM)	0.78
Nitrate Ion (%DM)	
Nitrate-Nitrogen, ppm	
Soil Contamination Probability	
NIR Statistical Confidence	Good prediction potential

ENERGY & INDEX CALCULATIONS	
TDN (%DM)	75.1
Net Energy Lactation (mj/kg)	7.20
Net Energy Maintenance (mj/kg)	8.13
Net Energy Gain (mj/kg)	5.43
ME (mj/kg)	12.11
AA Protein as % of Total Protein	60.8
NDF Dig. Rate (Kd, %HR, Van Amburgh, Lignin*2.4)	4.58
NDF Dig. Rate (Kd, %HR, uNDF)	5.0
Starch Dig. Rate (Kd, %HR, Mertens)	17.3
Relative Feed Value (RFV)	
Relative Forage Quality (RFQ)	
Milk per Ton (kg/tonne)	1845
Dig. Organic Matter Index (kg/tonne)	
Non Fiber Carbohydrates (%DM)	46.8
Non Structural Carbohydrates, ESC (%DM)	31.9
Non Structural Carbohydrates, WSC (%DM)	33.0

PROBENINFORMATION			
Labor ID:	34840 265	Version:	1.0
Erntejahr:		Serie:	
Futterart:	MAISSILAGE	Schnitt#:	
Analyse:	NIR & X ELEMENTS		

NIRS ANALYSE RESULTATE	
Feuchtigkeit	66.3
Trockenmasse (TS %)	33.7

PROTEINE	% SP	% XP	% TS
Rohprotein (XP)			7.5
Adjustiertes Protein			7.5
Lösliches Protein (SP)		77.4	5.8
Ammonium XP Äquivalente	21.5	16.6	1.24
ADICP		7.5	0.56
NDF Protein (NDICP)		8.6	0.64
NDR Protein (NDRCP)			
Rumen abbaub. Protein		88.7	6.6
Amino Acid Protein, Total		60.4	4.50

FASER	%NDFom	NDFom %DM	% NDF	% TS
ADF			61.7	20.1
aNDF		31.2		32.6
NDR (NDF ohne Sulfite)				
Rohfaser (XF)				
Lignin			6.47	2.11
NDF Verdaulichkeit (12 h)	32.6	10.2	31.2	10.5
NDF Verdaulichkeit (24 h)				
NDF Verdaulichkeit (30 h)	60.9		58.7	19.2
NDF Verdaulichkeit (72 h)				
NDF Verdaulichkeit (120 h)	72.1	22.5	69.3	22.6
NDF Verdaulichkeit (240 h)	75.0	23.4	72.3	23.6
uNDF (12 h)	67.4	21.0		
uNDF (30 h)	39.1	12.2	41.3	13.5
uNDF (120 h)	27.9	8.7	30.7	10.0
uNDF (240 h)	25.0	7.8	27.7	9.1

KOHLEHYDRATE	% Stärke	% NFC	% TS
Ethanol löslicher Zucker		0.9	0.5
Wasser löslicher Zucker			2.9
Stärke			38.2
Lösliche Stärke			
Lösliche Faser		6.3	3.44
Stärke Verdaulichkeit (7h,	88.0		
Rohfett (XL)			3.31
Fettsäuren, gesamt			2.45
C16:0			0.43
C18:0			0.05

MINERALSTOFFE	
Rohasche (XA %TS)	2.66
Kalzium (Ca %TS)	**0.20**
Phosphor (P %TS)	**0.22**
Magnesium (Mg %TS)	**0.15**
Kalium (K %TS)	**1.15**
Schwefel (S %TS)	**0.13**
Natrium (Na %TS)	**0.02**
Chlor (Cl %TS)	**0.27**
Eisen (Fe ppm)	**95.00**
Mangan (Mn ppm)	**28.00**
Zink (Zn ppm)	**22.00**
Kupfer (Cu ppm)	**7.00**
Molybdän (Mo ppm)	

QUALITÄTSPARAMETER	
pH	3.50
Flüchtige Fettsäuren FFS (%TS)	11.95
Milchsäure (%TS)	9.11
Milchsäure (% FFS)	76
Essigsäure (%TS)	2.84
Buttersäure (%TS)	
1, 2 Propandiol (%TS)	0.27
Verschmutzung	Gering bis Null
NIRS statistische Genauigkeit	Gute Vorhersage

ENERGIE & INDEX BERECHNUNGEN	
Verdauliche Masse, gesamt (TDN %TS)	77.3
Netto Energie Laktation (NEL MJ/kg)	7.42
Netto Energie Erhaltung (MJ/Kg)	8.46
Netto Energie Zuwachs (MJ/Kg)	5.72
ME (MJ/kg DM)	12.51
AS-Protein,% des Gesamtproteins	60.4
NDF Verdaulichkeitsrate (Kd, %h, Van Amburgh, Lignin*2.4)	3.71
NDF Verdaulichkeitsrate (Kd, %h, uNDF)	4.7
Stärke Verdaulichkeitsrate (Kd, %h, Mertens)	38.2
Relativer Futterwert (RFV)	
Relative Futterqualität (RFQ)	
Milch (kg/t)	1784
Verdauliche organische Masse Index (kg/t)	
Nicht Faser Kohlenhydrate (NFC %TS)	54.6
Nicht Struktur Kohlehydrat - EIZ, %TS	38.7
Nicht Struktur Kohlehydrat - WIZ, %TS	41.1
DCAD (meq/100 g TS)	14.6
RFC - Index Pansenfüllung	4.28
Summativer Index % (Massenausgleich)	97.3

KVALITETA KUKURUZNE SILAŽE 2023. – SANO LAB

KUKURUZNA SILAŽA	16 zemalja	MIN	MAX	BiH	HR	SI
ST (%)	35,4	18,7	56,2	34,9	36,2	34,6
SP (%)	7,7	3,1	13	7,1	7,3	6,9
ADF (%)	22,6	13,1	45,9	26,8	24,3	24,3
aNDFom (%)	37,2	25,4	69,1	42,9	38,8	38,3
Lignin (%)	2,8	1,6	5,5	3,3	3,1	3,1
aNDFomD30/NDF	56,6	34,6	78,9	54	52,9	51,7
Škrob (%)	35,4	0,8	50,1	30,1	35,2	35,3
Probavljivi škrob/7h (%)	73,6	43,2	88	76,2	76,6	79,1
Mast (%)	3,5	1,7	5,3	3	3,2	3,2
Pepeo (%)	3,2	1,2	10	3,9	3,6	3,1
pH	3,83	3,19	5,06	3,93	3,89	3,81
Silažne kiseline (%)	7,24	0,5	14,8	6,57	6,68	7,71
Mliječna kiselina (%)	5,34	0,2	12,3	4,11	4,34	5,56
Mliječna/ukup. sil.kis. (%)	74,8	24	100	63,94	67	73
NEL (MJ/kg)	7,11	4,95	7,75	6,71	6,91	6,98

KVALITETA KUKURUZNE SILAŽE 2024. – SANO LAB

KUKURUZNA SILAŽA	16 zemalja	MIN	MAX	BiH	SR	HR	SI
ST (%)	36,5	18,3	57,4	35,8	35,0	37,8	37,2
SP (%)	7,1	4,2	13,3	7,7	8,7	7,3	7,0
ADF (%)	24,1	16,3	40,5	27,7	28,0	25,1	23,7
aNDFom (%)	39,1	28,1	61,8	44,4	45,2	40,5	38
Lignin (%)	2,9	1,7	5,7	3,3	3,0	3,2	3,0
aNDFomD30/NDF	55,8	32,9	84,5	55,6	58,7	54,9	53,3
Škrob (%)	34,1	0,6	48,6	26	23,4	32,6	36,1
Probavljivi škrob/7h (%)	74,8	46,3	88	76,9	77,2	76,5	76,9
Mast (%)	3,3	1,4	11	2,7	2,6	2,9	3,0
Pepeo (%)	3,2	1,0	8,5	3,8	4,1	3,4	3,2
pH	3,9	3,3	4,6	4,0	4,0	3,9	3,9
Silažne kiseline (%)	7,1	0,5	18,2	5,9	6,9	6,2	7,1
Mliječna kiselina (%)	4,8	0,3	13,3	4,0	5	3,9	5,1
Mliječna/ukup. sil.kis. (%)	68	10	100	70	75	62	70
NEL (MJ/kg)	7,0	5,5	7,9	6,6	6,6	6,8	7,0

ŠTO JE SILIRANJE?

Siliranje je konzerviranje do kojeg dolazi zbog 2 efekta:

1. Skladištenje hrane **bez prisutnosti zraka**

2. **Sniženje pH vrijednosti** (s 5,5 – 6 → 3,8 - 4,2) zbog stvaranja mliječne kiseline (10 – 12 puta jača od drugih NMK)

Siliranje = vrenje (fermentacija) + konzerviranje

CILJ

- **Napraviti silažu veće hranidbene vrijednosti i aerobne stabilnosti!**
- **Postići veću proizvodnju mlijeka/mesa iz voluminoze!**
- **Proizvoditi jeftinije, povećati profit!**

MIKROORGANIZMI NA MASI ZA SILIRANJE

DODATAK ZA SILIRANJE:

ŠTO JE LABACSIL DUO?

Labacsil je posebna kombinacija sa
5 različitih homofermentativnih MKB i kiselina za siliranje.

Homofermentativne MKB

-Poboljšanje fermentacije
stimuliraju smanjenje pH

Kiseline

-Suzbijaju gram negativne bakterije,
pljesni i kvasce.
-Sprečavaju zagrijavanje i naknadnu fermentaciju silaže.

ŠTO RADI LABACSIL DUO?

- Kiseline brzo spuštaju pH
- Bakterije MK vode proces fermentacije pravim smjerom
- Kiseline uništavaju kvasce i plijesni
- Smanjuje rizik naknadnog zagrijavanja
- Rezultat je silaža koju krave rado jedu

NAPOMENA KOD KORIŠTENJA DODATAKA ZA SILIRANJE

- **Silirni dodatak nije čudotovorno sredstvo protiv grešaka u siliranju!**

Kombinacija bioloških i kemijskih dodataka je optimalna:
Homofermentativne MKB optimalno zakisele masu
Kiselina djeluje protiv kvasaca i plijesni

TEHNOLOGIJA POKRIVANJA


1.
Zidna folija se postavlja preko bočnih stranica silosa


2.
Po završetku punjenja zidna folija se prebaci preko mase za siliranje


3.
Podfolija sa smanjenom propusnošću za kisik


4.
Na podfoliju stavljamo pokrivač i vreće po rubovima

POKRIVANJE SILOSA

- **Profesionalno**

- **10 godišnja garancija**

HERMETIČKO ZATVARANJE

- **Profesionalno**

- **I kada nema zidova (silosa)**

HERMETIČKO ZATVARANJE

- < od 2 sata od zatvaranja

- Kasnije

OPTIMALNA TEHNOLOGIJA – NEMA ODBACIVANJA

OPTIMALNO VRIJEME KONZERVIRANJA - KS

- **Minimalno 42 dana zatvoren silos**
- **Optimalno – 2,5 - 3 (6) mjeseci => uvijek imati rezervu od prethodne godine („zrenje" škroba)**

CNCPS = PRECIZNA HRANIDBA = PRECISION FEEDING

Dubinska analiza krmiva **+** detaljni podaci o životinjama koje hranimo

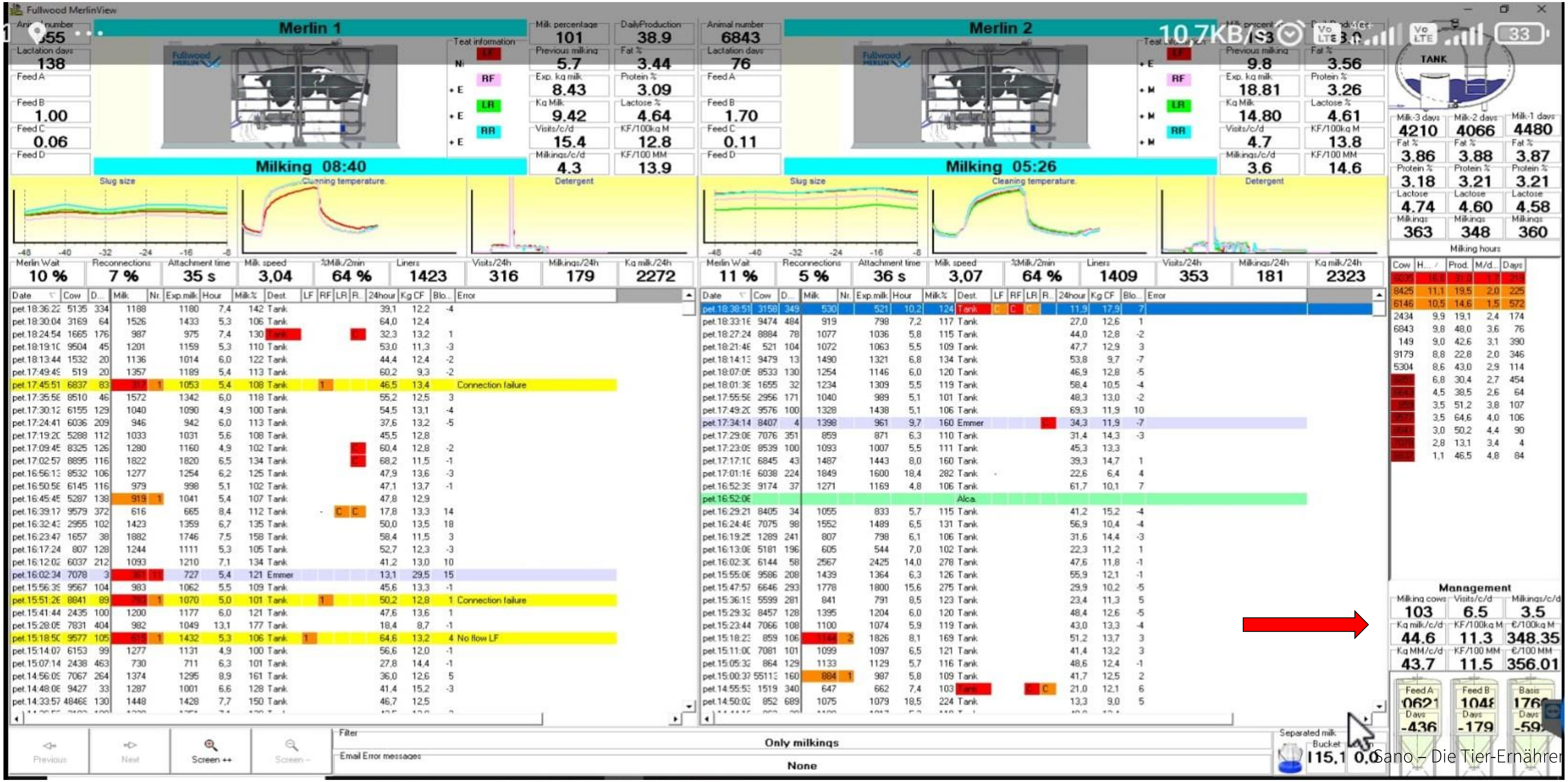
=

Precizna hranidba prema životnim i proizvodnim fazama

7 KORAKA DO VIŠE MLIJEKA

PRIMJERI REZULTATA POSTIGNUTIH PRIMJENOM CNCPS SUSTAVA ANALIZA, PRECIZNIM OBLIKOVANJEM OBROKA ZA KRAVE I UKUPNIM SAVJETOVANJEM

VISOKA PROIZVODNJA MLIJEKA



TREBA LI OVAKVA GENETIKA PRECIZNU ISHRANU?

UZ GENETIKU I ..... ZDRAVLJE JE PREDUVJET VISOKE PROIZVODNJE

ZAKLJUČAK :

- **Poboljšanjem tehnologije proizvodnje silaže možemo:**
- **1. Napraviti ukusne silaže, visoke probavljivosti i visokog sadržaja energije, koje životinje rado jedu**
- **2. Napraviti stabilne silaže s očuvanom kvalitetom proteina i poželjnim smjerom i obujmom fermentacije**
- **3. Poboljšati proizvodne rezultate (količinu mlijeka, reprodukciju, dnevne priraste, zdravlje životinja, zaradu…)**
- **Da li to hoćemo postići ovisi prvenstveno o svakom farmeru….**
- **Cijena obroka ovisi o tome što je farmer napravio….**

ZAKLJUČCI:

1. KVALITETAN OSNOVNI OBROK (SILAŽA) PREDUVJET JE ZA DOBRE PROIZVODNE REZULTATE.

2. ZA OSIGURANJE ZDRAVLJA, USPJEŠNE REPRODUKCIJE I VISOKE PROIZVODNJE POTREBNO JE POZNAVATI SVOJSTVA HRANIVA I KORISTITI TE INFORMACIJE ZA PRECIZNU ISHRANU PRIMJENOM ADEKVATNOG SOFTVERA.

Sano – Die Tier-Ernährer

DUGOVJEČNOST

LACT (cour	Pen (avg)	EART (count)			
1 (428)	33	428		23.87%	
2 (356)	31	356		19.85%	
3 (399)	35	399		22.25%	
4 (240)	33	240		13.39%	
5 (175)	31	175		9.76%	0.206358
6 (105)	10	105		5.86%	
7 (49)	10	49		2.73%	
8 (25)	10	25		1.39%	
9 (11)	9	11		0.61%	
10 (3)	11	3		0.17%	
11 (2)	9	2		0.11%	

PITANJA...