

Průběh okolo porodního období významně ovlivňuje výskyt mastitid

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5. US-CZ Dairy Plan – Letní škola produkční medicíny dojnic

Seminář Větrný Jeníkov,

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CZECH DAIRY 2013

- **DAIRY SECTOR: SMALL, RELATIVELY MODERN**
- **370 000 DAIRY COWS** (95 % IN MONTHLY CONTROL)
- **> 7 500 KG/COW/YEAR**
- **20,5 KG/COW/DAY**
- **2 800 000 T OF MILK /YEAR (QUOTA)**

- **COWS PER COMPANY – 285**
- **COWS PER STABLE – 240**
- **340 COMPANIES \geq 400 COWS** (TOTALLY 215 000 COWS)
- **20 COMPANIES > 1 000 COWS**



PICTURE OF CZECH DAIRY COW BARNS

- **KVASICKO – STŘIŽOVICE**
- **JESENICE – HODKOVICE**
- **ČECHTICE**
- **NEZVĚSTICE – ŽÁKAVA**
- **OTHER**

































Robotická mléčná farma

www.zdostas.cz



založeno 2006







COMPARISON OF DAIRY COW 1913 VERSUS 2013

- LIVE WEIGHT IN DIM 1 – 380 VERSUS 700 KG (< 2 X)
- WEIGHT OF THE RUMEN – (< 2 X)
- RUMEN MICROBIOME – THE SAME („HISTORIC“)
- DMI IN DIM 50 – 9 VERSUS 27 KG (3 X)
- ENZYMATIC SYSTEMES OF THE TISSUES – THE SAME („HISTORIC“)
- GENOM – SOME CHANGES AFTER BREEDING (MAINLY MILK)
- MILK PRODUCTION IN DIM 50 – 8 VERSUS 55 L/DAY (7 X)!



MODERN COW HAS 3 – 5 X HIGHER PRODUCTION LOAD OF ORGANISM (INCLUDE UDDER)

CZECH DAIRY COWS 2012

- **PRODUCTION LIFE LENGTH 2,4 LACTATIONS**
- **LIFETIME PERFORMANCE IS ABOUT 18 000 KG/COW**
- **AGE OF 1ST CALVING – 26 M 22 D**
- **BETWEEN PARTURITIONS – 407 DAYS**

- *THE NETHERLANDS FARMS HAVE 3,8 LACTATIONS AND LIFETIME PERFORMANCE 30 000 KG/COW, WITH TARGET TO ACHIEVE 40 000 KG/COW!*



CZECH DAIRY COWS 2012

- **36 % COWS ON 1ST LACTATION**
- **26 % 2ND LACTATION**
- **18 % 3RD LACTATION**
- **ONLY 20 % ≥ 4TH LACTATION**



CZECH DAIRY COWS 2012

- **YEARLY CULLING – 140 000 COWS**
- **HEALTH (INCLUDE REPRODUCTION) PROBLEMS – 83 %**
 - **PARTURITION COMPLICATIONS – 12 %**
 - **REPRODUCTION – 22 %**
 - **MASTITIS – 11 – 16 %**
 - **OTHER (LEGS, METABOLIC PROBLEMS, INFECTION DIS., IBR PROGRAMME)**
- **LOW MILK PRODUCTION – 10 %**
- **AGE – 1 %**



HEALTH OF CZECH DAIRY COWS

- **THE BIGGEST PROBLEMS IN CONTROL OF HEALTH EXIST ABOUT QUALITY OF PERIPARTURIENT PERIOD**



- **INFLAMMATION OF UDDER – MASTITIS**
- **LEGS**
- **REPRODUCTION AND OTHER PROBLEMS**
- **PRODUCTION**
- **ECONOMY**

THERE IS STRONG CONNECTION TO FULFILLING OF:

– PHYSIOLOGICAL PREREQUISITES OF MILK PRODUCTION

– BASIC PREREQUISITES OF HIGH AND FULL-VALUE MILK PRODUCTION



PHYSIOLOGICAL PREREQUISITES OF MILK PRODUCTION

- **1. COMFORT OF ANIMALS**
- **2. MAINTENANCE OF HIGH DRY MATTER INTAKE**
- **3. QUALITY OF PROCESSES OF DIGESTIVE TRACT**
- **4. EFFICIENT UTILIZATION OF METABOLITES**
- **5. INTENSIVE MILK SECRETION IN UDDER**



THE BASIC ETIOLOGICAL FACTOR OF PRODUCTION DISEASES is insufficient securing of these existing physiological prerequisites of milk production:

- 1) MAINTENANCE of continuous **comfort** (high level of welfare) of the animals,
- 2) ACHIEVEMENT as high as possible levels of **dry matter intake**, high quality diets,
- 3) GUARRANTEE of proper processes of **rumen fermentation and proteosynthesis**, digestion + absorption in other compartments of the digestive tract and nutrient + transport via the portal circulation,
- 4) ARRANGING of efficient **utilization of metabolites** and substrates (from the digestive tract and from muscles, adipose and bone tissue) in metabolic processes that take place in the body,
- 5) PRESERVING of intensive **milk secretion** in tubuloalveolar mammary cells that does not harm the body.



BASIC PREREQUISITES OF FULL-VALUE MILK PRODUCTION REPRESENT HIGH QUALITY OF:

- 1. MANAGEMENT
- 2. STOCKMANSHIP
- 3. WELFARE
- 4. HERD IMPROVEMENT (GENETIC CONTROL)
- 5. HERD REPLACEMENT (REARING CALVES, HEIFERS)
- 6. PRODUCTION OF FEEDS
- 7. FEEDING, NUTRIENT CONVERSION, CONTROL OF METABOLISM



- 8. PRODUCTION AND PREVENTIVE MEDICINE CONTROL OF HEALTH



**INSUFFICIENT SECURING OF
THESE PREREQUISITES
IS**

**THE BASIC ETIOLOGICAL FACTOR
OF PRODUCTION DISEASES**



PERIPARTURIENT PERIOD OF CZECH DAIRY COWS

- **400 000 PARTURITIONS/YEAR**
- **20 % WITH ACTUAL OR SUBSEQUENT COMPLICATIONS**
- **THE MAIN CAUSES:**
 - **BAD QUALITY OF MANAGEMENT OF 3. TRIMESTER OF PREGNANCY (END OF LACTATION)**
 - **MANAGEMENT OF PERIPARTURIENT PERIOD**



DISEASES IN PERIPARTURIENT PERIOD

MAJOR PART (70 %) OF PRODUCTION DISEASES,

INCLUDE MASTITIS,

HAVE CONNECTION TO PERIPARTURIENT PERIOD



PERIPARTURIENT PERIOD IS

CRITICAL PHASE OF THE RE/PRODUCTION CYCLE



NORDLUND, 2008

PERIPARTURIENT PRODUCTION DISEASE

ARE CONSEQUENCES OF BAD FILLING OF THESE PREREQUISITIES WHICH EVOKE 5 BASIC PERIPARTURIENT (SO CALLED) STRESS SITUATIONS:

- ENVIRONMENTAL STRESS (CORTISOL)
- ENERGETICAL STRESS (LIPOMOBILIZATION, NEFA)
- CALCIUM STRESS+ INFECTION INFLAMMATION OF COW UDDER = MASTITIS
- RUMINAL STRESS (SARA)
- IMMUNE STRESS

AS COMPLEX OF STRESSORS EFFECTS AND ORGANISM RESPONSES



RECIPROCAL RELATION BETWEEN STRESSORS AND „THEIR DISEASES“ WHICH EVOKE PP CIRCULUS VITIOS

- HYPOCALCEMIA+ MUSCLE WEAKNESS+ INFECTION INFLAMMATION = MASTITIS
- PERIPARTURIENT IMMUNOSUPPRESSION + INFECTION MASTITIS
- HYPOCALCEMIA IMMUNOSUPPRESSION + INFECTION MASTITIS
- KETOSIS IMMUNOSUPPRESSION MASTITIS
- KETOSIS HYPOCALCEMIA MASTITIS
- KETOSIS LOWERING OF DMI SARA MASTITIS
- KETOSIS LOWERING OF DMI HYPOCALCEMIA MASTITIS
- ENVIRONMENTAL STRESS IMMUNOSUPPRESSION MASTITIS
- ENVIRONMENTAL STRESS LOWERING OF DMI KETOSIS OR/AND HYPOCALCEMIA
..... IMMUNOSUPPRESSION MASTITIS
- LOWERING OF DMI HYPOCALCEMIA MASTITIS
- LOWERING OF DMI INCREASE OF DMI SARA IMMUNOSUPPRESSION
..... MASTITIS
- HYPOCALCEMIA LOWERING OF DMI KETOSIS IMMUNOSUPPRESSIONMASTITIS
- HYPOCALCEMIA LOWERING OF DMI WORSENERD HYPOCALCEMIA
- KETOSIS LOWERING OF DMI WORSENERD KETOSIS
- KETOSIS LOWERING OF DMI WORSENERD HYPOCALCEMIA AND OTHER CONNECTIONS



SYNDROM OF PERIPARTURIENT CRISIS

IN SUMMARY,

- **COMPLEX OF DISEASES** RELATED TO TRANSITION PERIOD
BASED ON
CHRONOLOGY,
INTERLINKS
AND CONDITIONALITY
(IN CASCADE EFFECTS AS PERIPARTAL CIRCULUS VITIOSUS)
WE CAN CALLED

A „SYNDROM OF PERIPARTURIENT CRISIS IN THE DAIRY COW“

SKRIVANEK AT AL., 2001



EFFECT OF NUTRITION



SYNDROM OF PERIPARTURIENT CRISIS

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SKRIVANEK AT AL., 2001



CLASSICAL DAIRY RATION 5 WEEKS AFTER DRYING AND 3 WEEKS BEFORE CALVING (IN CLOSE UP PERIOD)

	AFTER DRYING	CLOSE UP PERIOD
ALFALFA SILAGE	17 KG	10 KG
MAIZE SILAGE	5 KG	10 KG
HAY	3 KG	2 KG
WHEAT STRAW	1 KG	-
BREWERY MALT	2 KG	2 KG
MINERAL FEEDSTUFFS	-	0,2 KG
CONCENTRATES (CORN, WHEAT, SOYA)	0,5 KG	3 KG
DMI	13 KG	10,5 KG
NEL/KG OF DM	5,7	6,5
CRUDE FIBER	24 %	21 %
Ca	85 g	75 - 95 g
K	250g	220 g



TYPICAL FEATURES OF IMPACT OF THESE CLASSICAL RATIONS ON COWS IN DIM 1 – 2

BCS ----- 3,50 – **4,00** POINTS

HIGH CONTENT OF **ABDOMINAL FAT**

SERUM NEFA 0,5 – **0,8** MMOL/L

BHB 0,6 – **1,0** MMOL/L

CALCIUM **1,5** – 2,0 MMOL/L

LOW DMI

EMPTY RUMEN

HIGH RISK OF START OF PERIPARTAL PROBLEMS

HIGHER WEIGHT OF CALVES



EFFECT OF STRESS



2 PICTURES OF OUR CLOSE UP PERIOD PENS WITH POSSIBLE RISKS OF:

- ENVIRONMENTAL STRESS
- LOWERING OF DMI KETOSIS HYPOCALCEMIA SARA IMMUNOSUPPRESSION



- AND SUBSEQUENT INFECTION INFLAMMATION = MASTITIS







MASTITIS



INFLAMMATION OF UDDER QUARTER (MASTITIS) IS:

- WELL-BEING **PROBLEM** OF COWS
- DISEASE WITH **MULTI-FACTORIAL ETIOLOGY**
- MANIFESTATION OF RELATIONS BETWEEN ANIMAL – HUMAN – TECHNOLOGY
- RESULT OF BATTLE BETWEEN (BACTERIAL) INFECTION AND IMMUNITY OF ORGANISM
- **MOST FREQUENTLY** TREAT DISEASE OF DAIRY COWS (2 – 30 % OF NEW CASES OF CLINICAL MASTITIS PER NUMBER OF LACTATING ANIMALS PER MONTH)
- REASON OF HIGHEST **FINANCIAL LOSSES** OF FARMER
- ONE OF TYPICAL DISEASE IN **FIRST WEEKS AFTER CALVING**



ECONOMICAL IMPACT OF MASTITIS

- **IT CAUSE LOSSES AS CLINICAL OR SUBCLINICAL FORM**
- **COSTS OF TREATMENT (FOR VETERINARIAN, EMPLOYMENT, DIAGNOSTIC, DRUGS)**
- **LOSE OF DISCARDER MILK**
- **LOWER QUALITY OF MILK**
- **LOWER LACTATION**
- **RISK OF FORMATION OTHER CONDITIONED DISEASES (DA, LEGS PROBLEMS, IMPACT ON REPRODUCTION)**
- **HIGHER CULLING AND REPLACEMENT OF COWS**
- **PROBLEMS WITH ANTIMICROBIAL RESISTANCE**

- **WE WILL DEBATE ABOUT ALL OF THESE PROBLEMS NEXT 2 WEEKS**



ECONOMICAL IMPACT OF MASTITIS

- MASTITIS IS DISEASE WITH HIGH **RISK OF RECURRENCE** AND CULLING OF COWS
- WHICH EXISTS ALSO **FOR HEIFERS** (WHICH DIDN'T PRODUCE ANY PROFIT)

- TOTAL LOSSES PER ONE CLINICAL CASE OF MASTITIS ARE ABOUT 500 – 15 000 CZK (20 – 575 EURO) *KVAPILÍK, 2009*
AVAREGE ABOUT 2000 CZK *OSIČKA, 2013*
- 0 – 260 USD, WITH AVERAGE 97 USD *RUEGG 2003*

- IN SOME FARMS ABOUT 0,80 CZK (0,03 EURO, 0,04 USD)/L OF PRODUCE MILK – AND SOMETIMES MORE



ECONOMICAL IMPACT OF MASTITIS

- MASTITIS IS MOST EXPENSIVE DISEASE OF DAIRY HERD**
- MORE EXPENSIVE THAN REPRODUCTION OR LEGS PROBLEMS**
- WITH STRONG CONNECTION TO DRY AND PERIPARTAL PERIOD**

WE CAN DEBATE ABOUT ALL OF THESE PROBLEMS NEXT 2 WEEKS



ACTUAL SITUATION

- **FARMERS GROW UP FROM ECONOMICAL CRISIS NOW**
- **THEY BUILD NEW BARNs FOR LACTATION COWS, BUT NOT FOR COWS IN PERIPARTURIEN T PERIOD**
- **THEY UP TO NOW DON´T GENERALLY ACCEPT PREVENTIVE MEDICINE PRINCIPLES**
- **AND REPEAT DAILY THE SAME MISTAKES IN CONTROL OF PERIPARTURIEN T PERIOD, UDDER, LEGS, REPRODUCTION OF COW**



- **THEY MUST NECESSARILY CHANGE THEIR PROCEDURES!**



WHAT TO DO?

IT IS EXCELLENT TO DESCRIBE PROBLEM

BUT BETTER IS

TO RESOLVE IT!



OUR PROPOSAL FOR SOLVING OF THESE PROBLEMS

IS

„NEW CONCEPT OF PERIPARTURIENT MANAGEMENT“

WITH 10 + 1 ELEMENTS



ELEMENT 1

- **SYSTEMATICAL CHECKING OF THE UDDER, CLAW AND BCS BEFORE DRYING AND**
- **TREATMENT OF DISCOVERED PROBLEMS**

ACHIEVEMENT OF VERY GOOD HEALTH AND OPTIMAL BCS OF COWS (INCLUDE HEIFERS)



ELEMENT 1

- **INDIVIDUAL CONTROL OF UDDER AND SCC 100 DAYS BEFORE CALVING**
- **MOTHLY CONTROL OF SCC TO TIME OF DRYING**
- **TREATMENT OF SUB/CLINICAL MASTITIS**



OPTIMAL DRYING PROCESS

ELEMENT 2

- **CHANGES IN DRY PERIOD AND CLOSE UP (PRE-FRESH) NUTRITION OF COWS**
- **APPLICATION OF ONE HIGH FIBER, LOW ENERGY, LOW CALCIUM, LOW POTASSIUM DIET**

DRACKLEY, 2006, 2011

JONES 2009, 2011,2012

REDUCTION OF ENERGETICAL STRESS



NEW HIGH FIBER, LOW ENERGY, LOW CALCIUM, LOW POTASSIUM DIET (ONE FROM DRYING TO CALVING)

AFTER DRYING = CLOSE UP PERIOD

ALFALFA SILAGE	4 KG
MAIZE SILAGE	17 KG
HAY	-
WHEAT STRAW	4 KG
BREWERY MALT	4 KG
X	
MINERAL FEEDSTUFFS	0,2 KG
PROTEIN SUPPLEMENT	2 KG

DMI	13 KG	
NEL/KG OF DM	5,5 BETTER FOR PREVENTION OF LPM
CRUDE FIBER	28 %	
Ca	65 g	
K	160 g DCAD BETTER FOR NORMOCALCEMIA



TYPICAL FEATURES OF IMPACT OF THESE NEW TYPE OF RATIONS ON COWS IN DIM 1 – 2

BCS ----- **3,00 – 3,25 POINTS**

LOW CONTENT OF ABDOMINAL FAT

SERUM NEFA **0,4 – 0,6 MMOL/L**

BHB **0,5 – 0,7 MMOL/L**

CALCIUM **1,8 – 2,2 MMOL/L**

HIGH DMI

MORE FULL RUMEN

MORE SLOW START OF LACTATION (LOWER NEB)

LOWER RISK OF START OF PERIPARTAL PROBLEMS

LOWER WEIGHT OF CALVES, EASY CALVING













ELEMENT 3

- **ACHIEVEMENT OF COMFORT IN PERIPARTURIENT PERIOD**
- **ENOUGH OF BUNK SPACE IN BOTH THE PRE-FRESH AND FRESH COW PENS**
- **MINIMIZING OF PEN MOVES AND SOCIAL STRESS, PARTICULARLY 10 DAYS PRIOR TO CALVING (SOCIAL STABLE GROUPS OF ANIMALS)**
- **SUITABLE RESTING SURFACES MATERIAL TO LIE (SAND?)**

NORDLUND, 2008, 2013,

COOK, 2012

REDUCTION OF ENVIRONMENTAL STRESS























ELEMENT 4

OPTIMAL CARE IN CALVING



ELEMENT 5

SYSTEMATICAL PHYSICAL POSTPARTAL PROTOCOL

- GENERAL CONTROL OF COWS IN DIM 1 – 12
- DMI
- RUMENI FILLING AND FUNCTION (RUMINATION)
- RECTAL TEMPERATURE (USING OF HEADLOCKS?)
- MOVING ACTIVITY
- WEIGHT
- MILK PRODUCTION
- MILK, URINE AND BLOOD ANALYSING OF KETONE BODIES AND OTHER PARAMETERS (PH)
- CONTROL OF SCC IN STABLE
- MICROBIOLOGICAL CULTIVATION IN STABLE

**AN EFFICIENT AND EFFECTIVE SCREENING PROCESS TO IDENTIFY COWS
NEEDING MEDICAL ATTENTION OR NURSING CARE**

*NORDLUND, 2008,
MCGUIRK, 2011, 2013*



CONTROL OF DAILY DRY MATTER INTAKE

IS A VERY IMPORTANT PART OF POSTPARTAL PROTOCOL

**BUT IT'S NOT SO FREQUENT IN THE CZECH REPUBLIC
AS WE NEED!**

***IN SAO PAULO REGION IS CONTROL OF DMI STANDARD
COMPONENT OF SOP FRESH COWS***







LOTE	DOM	SEG	TER	QUA	QUI	SEX	SAB
1 ^o	330	250	300	400	200	400	50
	05	05	05	05	05	05	
2 ^o	1550	1600	1700	1800	1600	1500	
	250	300	350	200		200	
	05	05	05	05	05	05	
3 ^o	1050	1150	1000	1100	1100	1150	
	05	05	05	05	05	05	
COBBAS	99	99	70	63	705	72	
TOTAL	3110	3101					
Nº VAC	65	65	68				
CON VAC	48.0	48.0					
T. MAX						153	
T. MIN							



ELEMENT 6

BIOCHEMICAL CONTROL OF BLOOD SERUM OF COWS

- OUR NEW ELEMENT OF POSTPARTAL PROTOCOL
- 5 – 8 COWS PER MONTH
- IN DIM 1, 7 – 10, 25 – 30

**AS A CONTROL OF ENERGETIC, MINERAL AND
NITROGEN METABOLISM, LIVER HEALTH STATUS**



BIOCHEMICAL CONTROL OF PERIPARTURIENT PERIOD

COW No: 123 456 3rd LACTATION BCS DIM1 -4,00 HEALTH STATUS OK PARTURITION OK	UREA	AST	CK	Ca	an P	Mg	T Bili	NEFA	BHB
REFER. RANGE/ SAMPLE	2,7–5,5 mmol/l	≤ 1,4 μkat/l	≤ 4,2 μkat/l	2,2 -3,0 mmol/l	1,7-2,3 mmol/l	0,8-1,2 mmol/l	≤ 5,0 umol/l	≤ 0,6 mmol/l	≤ 0,8 mmol/l
I. DIM 1	4,8	2,8	5,3	1,4	1,8	1,1	7,8	0,8	0,9
II. DIM 7-10	4,9	1,9	4,5	2,0	2,0	1,0	6,6	0,7	1,5
III. DIM 25-30	5,4	1,8	2,8	2,5	2,3	0,9	4,9	0,5	0,6



ELEMENT 7

HIGH QUALITY OF APPLICATION OF SOP OF MILKING

- **FIRST MILKING OF FRESH COWS**
- **CONTROL OF ANIMALS ENTERING TO THE PARLOR**
- **CONTROL OF NUMBER COWS MILKING TOGETHER (4 – 6)**
- **QUALITY OF STIMULATION OF UDDER**
- **CONTROL OF MILK AND HEALTH OF UDDER**
- **PREDIP**
- **CLEANING (OF TEATS LEAST 5 SECONDS) + CONTROL OF THEIR CLEANNESS**
- **POSTDIP**
- **TOTAL TIME OF MILKING AND OTHER STEPS OF SOP**



ELEMENT 8

- **MILK SCORE EVALUATION WITH USING RESULTS OF CENTRAL MONTHLY CONTROL**
- **TO MAKE IT BETWEEN DIM 10 – 40**

- **CONTROL (COMPARE) OF NUMBER OF SCC IN LAST WEEKS OF PREVIOUS LACTATION AND IN THE FIRST 3 MONTH OF NEW LACTATION**



ELEMENT 9

- USING OF EFFICIENT, MODERN THERAPY**

- TO PROVIDE IT PROMPTLY IN CONNECTION TO POSTPARTAL PROTOCOL (SCREENING PROCESS)**



ELEMENT 10

- IMPLEMENTATION OF INDIVIDUAL **BIOSECURITY** PROGRAMMES AS A PART OF HERD HEALTH PROGRAMMES
- TO ACHIEVE OPTIMAL ENVIRONMENTAL CONDITIONS
- DDDD – SANITATION
- PREVENTION OF PENETRATION INFECTION AGENTS BY PERSON, ANIMALS, TECHNOLOGICAL SYSTEMS, EQUIPMENT AND TRANSPORT.



+ 1 LAST ELEMENT

- **PERMANENT EDUCATION OF MANAGERS AND EMPLOYMENT**
- **APPLICATION OF SOP AND HEALTH PROGRAMMES INCLUDE FARM VETERINARIAN**

WHICH IN THE CZECH REPUBLIC CLASSICALLY VISIT FARM 3 – 5 PER WEEK AND REPRESENT THE MOST FREQUENT HERD VISITING BIOLOGICALLY GRADUATED ADVISORS

WHAT IS THEIR BIG ADVANTAGE – BUT OFTEN UNTAPPED



RESULTS OF CENTRAL SANDS DAIRY FARM, NECOOSA, WI, USA

- FARM WAS BUILT 5 YEARS AGO
- 4 300 COWS
- JERSEY X HOLSTEIN
- **2012:**
- 4 733 CALVINGS
- 936 MASTITIS (< 2, 5 %), SCC 150 – 200 000
- 95 MILK FEVER
- 30 RP



DA 19



























- Dairy Comp
 - Command :
 - Expanded: LIST ID PN DIM DCC:3 MILK THD:3 DIH:3 EVT XT TRDAT TREAT ID
 FOR HPC=32 \U TREAT ID
 - CSANDS ----- CSD ----- 8/23/12 -

ID	PN	DIM	DCC	MILK	THD	DIH	EVT	XT	TRDAT	TREAT	ID
470	3	25	0	32	0	1	MAST	1	8/22	RR-SP	470 SP
1422	6	199	0	59	0	3	MAST	1	8/20	LR-SP	1422 SP
1740	9	253	127	44	0	0	GI	1	8/23	KKDURA	1740 Pleasas
3335	8	262	115	67	16	3	MAST	1	8/20	RR-SP	3335 Corral
3971	3	31	0	59	22	1	MAST	1	8/22	LF-SP	3971 SP
5122	1	4	0	0	5	1	HOSP	1	-	KETOSIS	5122 Pleasas
5324	8	172	125	120	8	0	MAST	1	8/23	LF-SP	5324 SP
5468	9	111	69	95	7	1	HOSP	1	-	PATA	5468 excel
5753	5	39	0	89	8	1	HOSP	1	-	SHITS	5753 Probros DK
7663	8	402	0	79	8	3	MAST	1	8/20	LF-SP	7663 Corral
7923	7	350	143	30	4	1	MAST	1	8/22	RF-SP	7923 SP
8224	8	249	100	76	0	3	MAST	1	8/20	RF-SP	8224 Corral
8537	9	160	86	84	0	1	MAST	1	8/22	RF-SP	8537 SP
8651	9	162	86	63	0	1	GI	1	8/22	KK-CK	8651 Probros
8751	8	150	93	53	0	0	MAST	1	8/23	LR-SP	8751 SP
9634	1	4	0	0	0	3	MAST	1	8/20	RR-SP	9634 off
9984	3	46	0	86	12	2	MAST	1	8/21	LR-SP	9984 SP

Total: 17

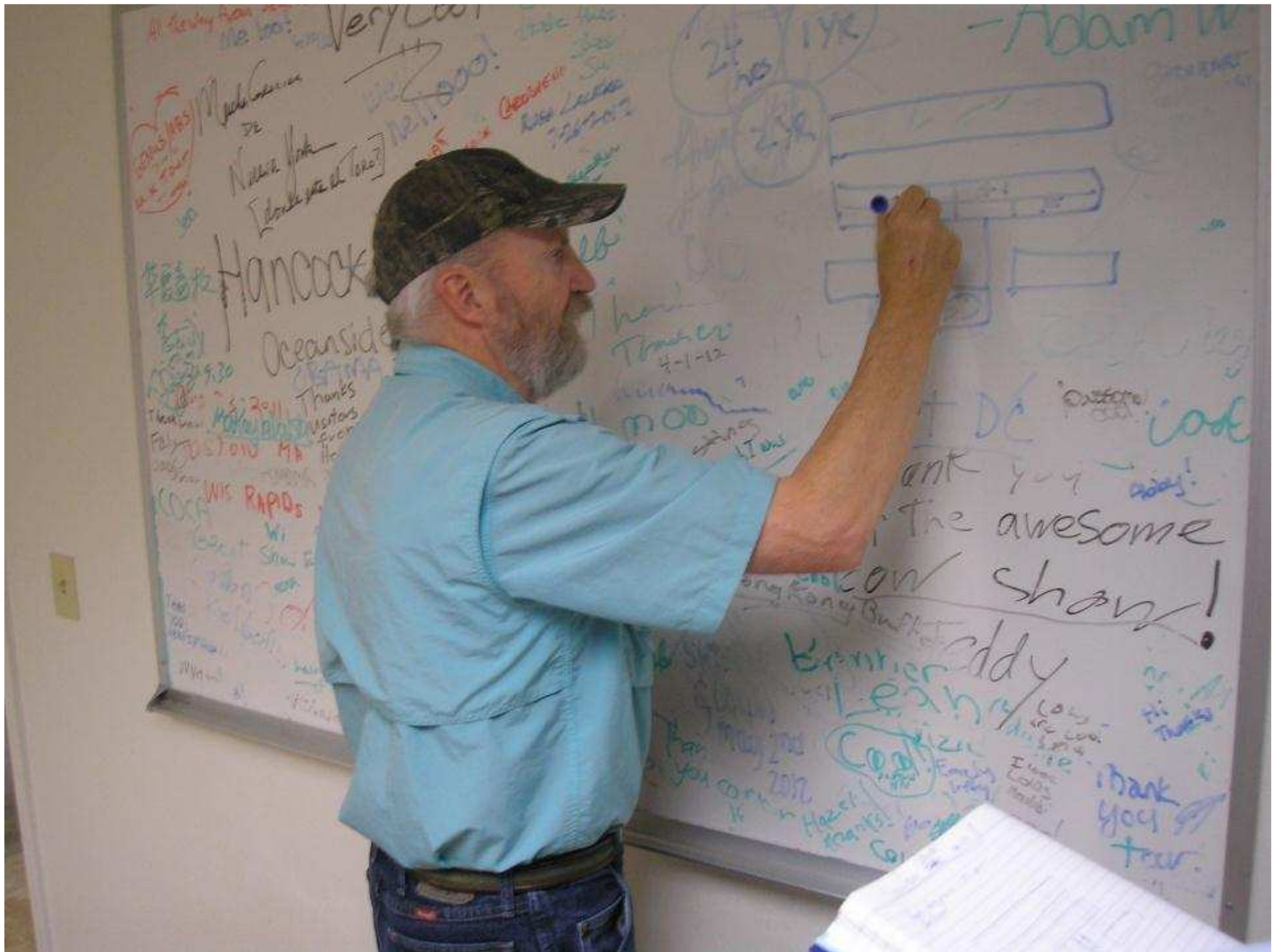
Mesfitis

REVISAR

Corral

fresh

9541-oxi
 9446-oxi
 9584-Loce



HOME MESSAGE:

CZECH DAIRY SECTOR NEED MORE ACTIVE EXERTION OF FARMERS AND VETERINARIANS IN APPLICATION OF PREVENTIVE MEDICINE PROGRAMMES IN CONTROL OF HERD HEALTH, INCLUDE MASTITIS, WITH USING OF PERMANENT MONITORING AND APPLICATION OF RELEVANT DATES (INDICATORS), SOP AND HEALTH PROGRAMMES IN MANAGEMENT OF FARMS

WE HOPE THAT THESE 10 ELEMENTS CONSTITUTE APPLICABLE DESIGN HOW TO DO IT.

