



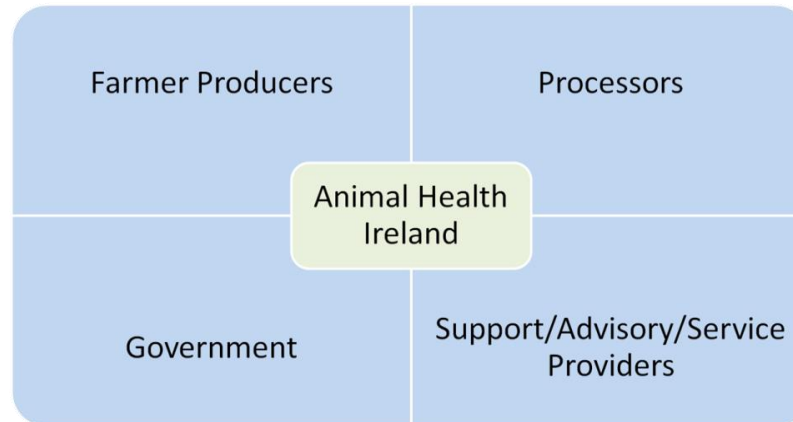
An overview of the CellCheck Programme

Michelle McGrath BAgriSci MAnSci MVB
Acting CellCheck Programme Manager

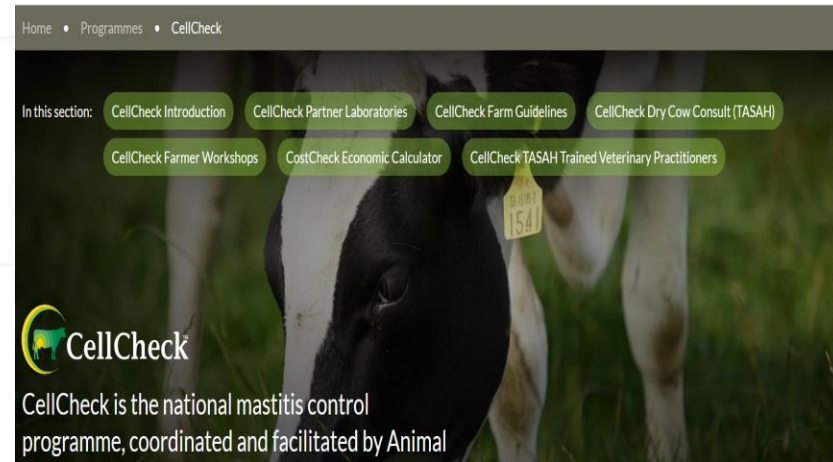
**Milking Machine Technicians,
Rochestown Park, 4th October 2022**

What is CellCheck?

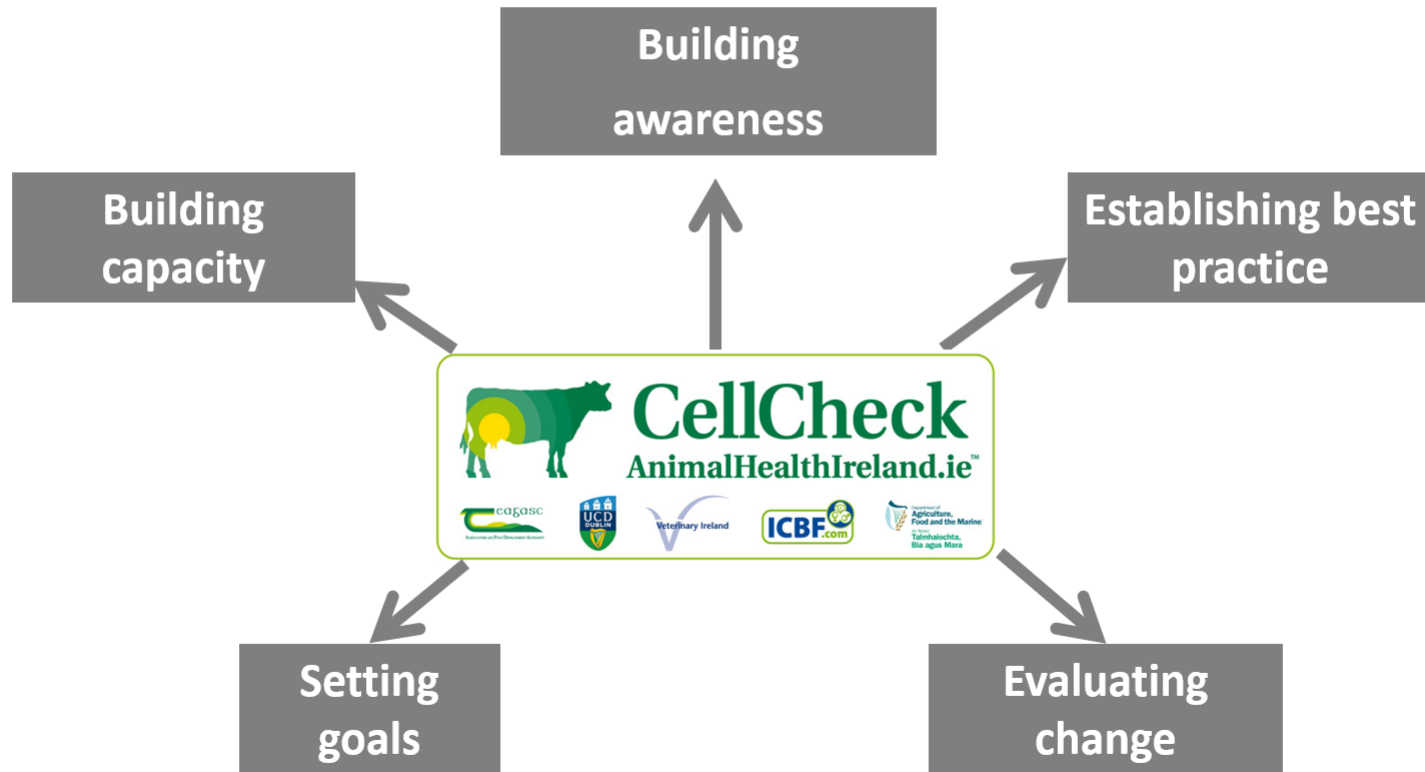
- National mastitis control programme, coordinated and facilitated by AHI.
- It is a new approach to tackling an old problem.
- New thinking and collaboration between:



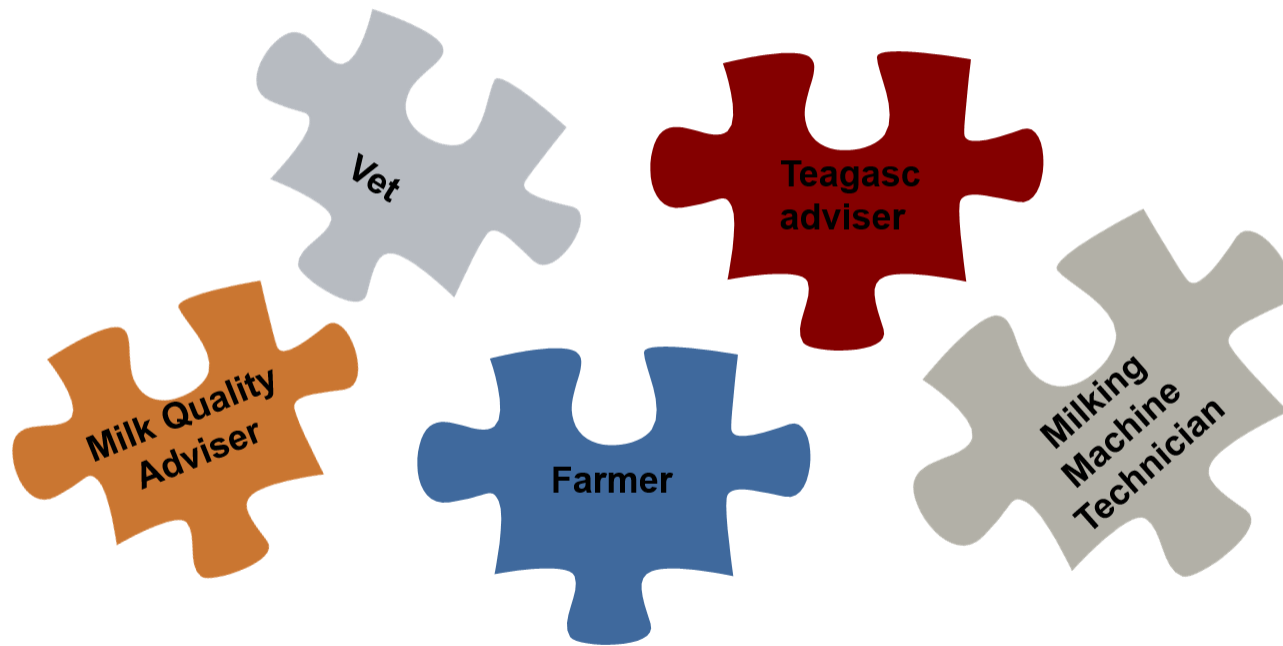
NATIONAL MASTITIS CONTROL PROGRAMME



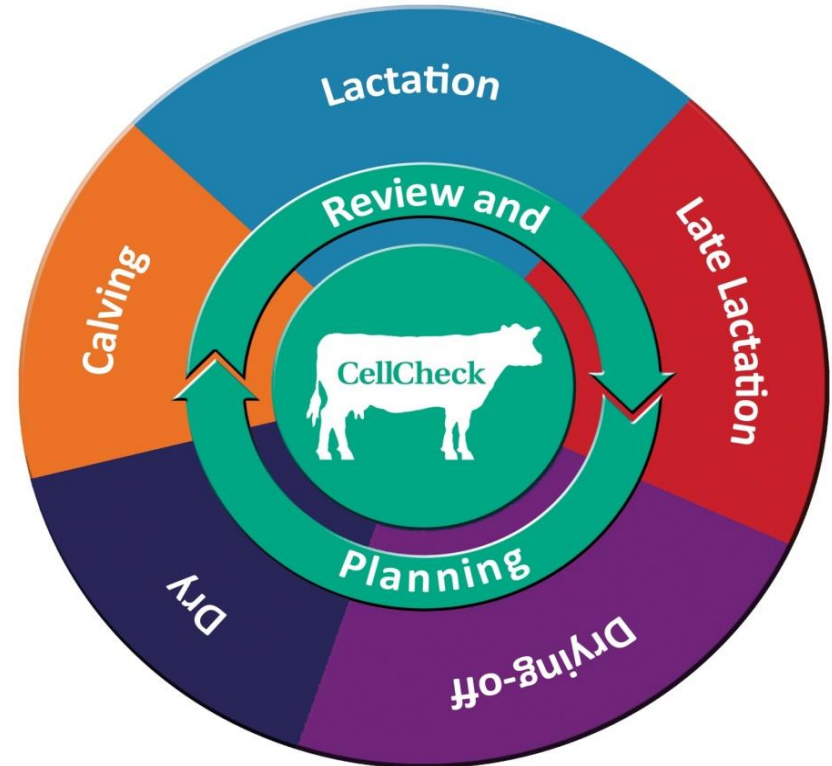
CellCheck is not new science.....but using science in a new way



Service providers working in partnership



CellCheck Farm Guidelines for Mastitis Control



CostCheck


The Mastitis Cost Calculator



CellCheck Resources to help at drying off

ahil **ANIMAL HEALTH IRELAND**

CELLCHECK DRY-COW STRATEGY 2022
for Irish Dairy Farmers



NATIONAL MASTITIS CONTROL PROGRAMME
Animal Health Ireland, 15 The Belfrage, Carrigrohane, Co. Limerick, T62 0N27

CellCheck

ahil **ANIMAL HEALTH IRELAND**

HOW CAN I PREVENT NEW MASTITIS INFECTIONS AT DRYING OFF?

www.cellcheck.ie/drying-off/

Regular identification is essential, whether you are using antibiotics, dry cow ointment, oestrogen and/or both. It's crucial to ensure the quality and quantity of ointment, antibiotics, oestrogen and/or oestrogen and antibiotics, and what happens at drying off this year will influence the incidence of new mastitis infections next year.

STEP 1 - PREPARATION IS KEY!

1. The job in the dry parlour is critical, so that you can do it when possible in the best way possible.
2. Wash the cow and her udder thoroughly. Use the cow preparation routinely whenever you are milking the cow.
3. Remove any debris from the parlour before you start.
 - Use brushes.
 - Remove debris.
 - The udder is a complex organ and can be damaged by debris.
 - Wash udder of dirt, such as mud or dirt.
 - Rinse well.
4. Wash your own hands thoroughly. Wash hands well with soap and water and dry them thoroughly with a clean towel.
5. Wash the udder and teats of the cow with a clean towel and dry them thoroughly with a clean towel.

IT'S NOT AN OBSCURE COMPETITION

It's not a competition to see who can dry off the most cows in the least time. It's a competition to see who can dry off the most cows in the best way possible.


STEP 2 - MAKE THE COMES

1. Identify the cow for whom the ointment is best. It's not a competition to see who can dry off the most cows in the least time. It's a competition to see who can dry off the most cows in the best way possible.

CellCheck
www.cellcheck.ie/resources

ahil **ANIMAL HEALTH IRELAND**

COMMON PROBLEMS AT DRYING-OFF
QUESTIONS FREQUENTLY ASKED BY FARMERS




NATIONAL MASTITIS CONTROL PROGRAMME

CellCheck

www.CellCheck.ie

ahil **ANIMAL HEALTH IRELAND**

PRUDENT PRESCRIBING OF DRY-COW AND IN-LACTATION ANTIBIOTICS: GUIDELINES FOR PVPs



Antibiotics: Information necessary for responsible prescribing.

Resistances: Information to support responsible prescribing.

Antibiotic Usage in Dairy
FACT SHEET

NATIONAL MASTITIS CONTROL PROGRAMME
Animal Health Ireland, 15 The Belfrage, Carrigrohane, Co. Limerick, T62 0N27

CellCheck

ahil **ANIMAL HEALTH IRELAND**

WINTER HOUSING CHECKLIST FOR MASTITIS CONTROL

- How clean are your cows and their housing?
- Hygiene scoring of cows
- Examining housing and management practices



NATIONAL MASTITIS CONTROL PROGRAMME

CellCheck

CellCheck Monthly tips

CELLCHECK PROGRAMME

March Edition | 2022

Understanding your milk recording report

Michelle McGrath, Assistant CellCheck Programme Manager

Milk recording your cows regularly (at least 6 times per lactation), allows you to easily see what is happening within your herd, allowing you to identify both problem cows and top performers. It is also the most reliable way of collecting individual cow information required if a prescription for dry cow antibiotics is needed into the future.

To get the best value from milk recording, the first milk recording should be done within 2 months of calving and the last recording within a month of drying off, and the remainder done during the rest of the lactation.

Following each recording a CellCheck summary report is provided along with individual cow information. The CellCheck summary report is divided into 4 main sections, showing performance against recommended targets for each of the key areas of mastitis control.

- The first section includes a graph displaying the current and recent SCC for your herd and also shows the percentage of your herd with an SCC over 200,000 cells/mL (target is to have less than 15% of herd over 200,000 cells/mL). These cows are likely to have mastitis and if a high proportion of your herd is over 200,000 cells/mL, this indicates a mastitis problem in your herd.
- The next section shows the spread of infection during lactation. By comparing consecutive SCC levels in each cow, recently infected cows can be identified and also the proportion of the herd that is chronically infected. The target here is to have less than 7% of your herd recently infected and less than 8% persistently infected.
- The third section of the report shows the herd SCC distribution in different SCC brackets. A higher proportion (target of 85%) with an SCC below 200,000 cells/mL, means better mastitis control. This

CELLCHECK PROGRAMME

February Edition | 2022

Milk quality for the rest of the year depends on what you do now!

Michelle McGrath, Assistant CellCheck Programme Manager

Milk quality for the whole lactation may depend on the success of mastitis control at calving as the period around calving (from two weeks before calving up to 2 weeks after calving) is the highest risk period for mastitis infection to occur. Cows are very susceptible to infection around calving because their natural defence mechanisms are low. New infections occur and subclinical infections which have persisted through the dry period may flare into clinical cases. Special care in this period will pay off.

- Calve in a clean dry environment with adequate space - if your knees are wet after kneeling, it is not dry enough for calving cows!
- Be alert to the number of cases of mastitis occurring, especially in freshly calved heifers as this is an indicator of the hygiene of the calving and housing environment. If greater than 5% of your cows and 15% of heifers have had mastitis in the first month of calving you should investigate.
- It is recommended that each farm establishes a procedure to ensure that all cows are stripped for the first 8 milkings.
- Look for changes in colour and consistency, including yellowy brown or creamy colours, blood, clots, lumps, flakes or watery milk.
- It is good practice to check all cows with a California Mastitis Test (CMT), before milking them into the bulk tank-this will help you find any cows with subclinical mastitis.



Why is mastitis control important?

- National and international buyers of our milk products demand high standards.
- Good mastitis control means increased production, higher payments for quality milk and reduced treatment and culling costs.
- Difficult to process poor quality milk

National Average Bulk Tank SCC



Industry Targets for milk quality

1. SCC target:

- 80% of milk supplied <200K
- 75% of milk supplied in T1 (Jan-Apr) <200K.

2. MR target:

- Increase of 15 percentage points p.a., for 2 years and 5% increase p.a. thereafter
- Increase the average number of recordings per annum from 4.5 to 6, by 2025.

3. Data collection target:

- 30% of dairy farmers recording mastitis treatments online
- 75% of dairy farmers recording dry cow treatments online

So what is mastitis?

Mastitis



“inflammation of the mammary gland”

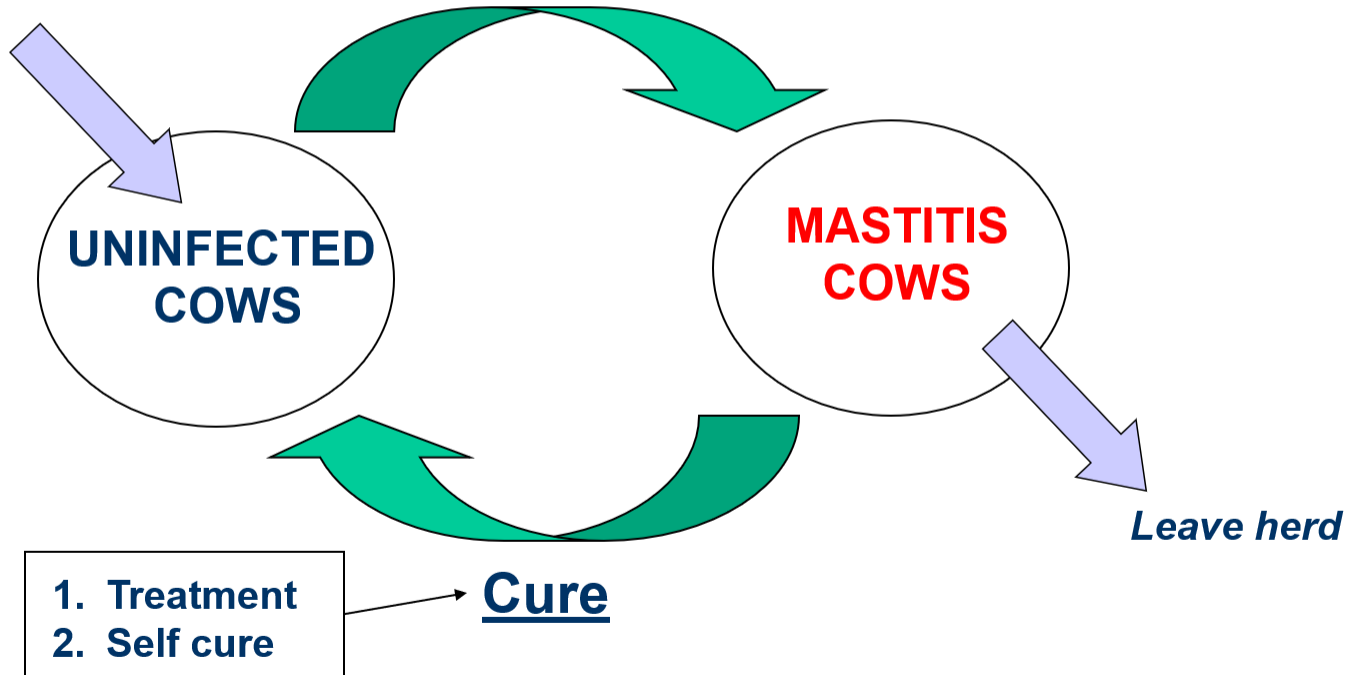
Bacteria



Become infected

1. Environment
2. Milking machine
3. Milking routine
4. Cow factors
5. Hygiene

Enter herd



1. Treatment
2. Self cure

Teat damage

Score 1: Normal



Teat Score 2: Slight ring



Teat score 3: Rough ring



Teat score 4: Very rough ring



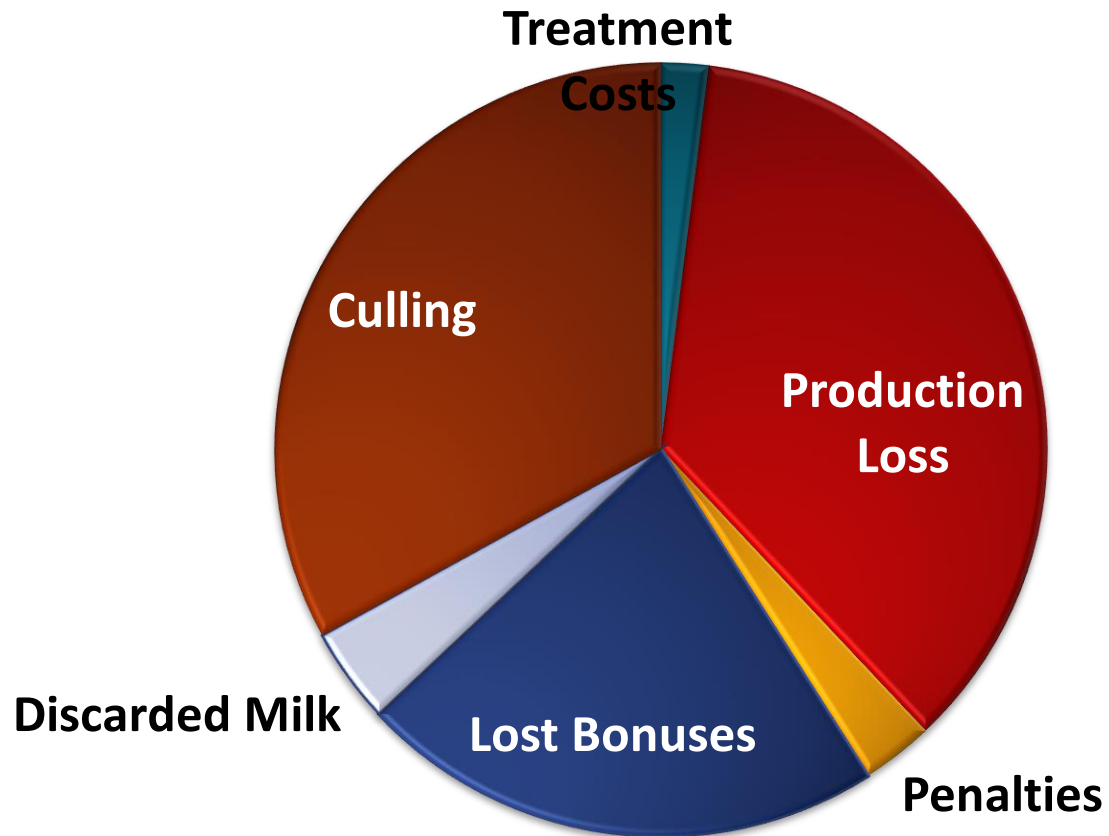
- Hyperkeratosis
 - Oedema
 - Teat end
-
- Target: <20% of teats with scores of 3 and 4

Courtesy of Dr Eoin Ryan, UCD.

Perceived costs of mastitis



True cost of mastitis



What does your average bulk tank SCC mean?

>400,000 cells/ml	<ul style="list-style-type: none">•Crisis point•€€ Gains to be made•Infection controlling farmer
250,000-400,000 cells/ml	<ul style="list-style-type: none">•Changes need to be made NOW•€€ Gains to be made•Infection controlling farmer
150,000-250,000 cells/ml	<ul style="list-style-type: none">•Manageable•Precarious balance for control•Vulnerable to challenge•€€ Gains to be made
<150,000 cells/ml	<ul style="list-style-type: none">•Excellent•Farmer controlling infection





Cow No. 485

• **4th lactation**

• **25L/day**

• **SCC=300,000 cells/ml**

Losing 2L milk/day

= 560 L/lactation

94 cows, 40 hectare farm:

	150,000 cells/ml	350,000 cells/ml
Milk sold, kg	524,614	516,198
Milk Solids total, kg	36,995	36,280
Culling %	20	
Total costs		€141,536
Milk received		€141,279
Profit	€26,771	€16,936
Profit/cow	0.51	0.33

= €105 profit/cow



The value of milk recording

- 11.3 % higher gross margins, 13.5% higher yields and 26.5% lower bulk tank SCC
- Identify best cows to breed replacements from
- Enables collection of data for sire selection and bull proofs
- New legislation (Jan 2022) requires that prescriptions are based on “individual cow information”
- Minimum 6 milk recordings per lactation
- The first milk recording within 2 months of calving
- The last recording within a month of drying off
- **It's never too late in the year to start milk recording**

Milk recording engagement:

	2019	2020	2021	2022 (to 30 th Sept)
Herds milk recording	43%	43.5%	49.7%	57%
Cows recorded	57%	57%	67.5%	74%
Recordings within 30 days of calving	32%	26%	30.6%	27.5%
Recordings within 60 days of calving	68%	56%	68.7%	65%
Average no. of herd tests per lactation	4.8	4.5	4.6	n/a

Milk recording Animal Report

Tel: 022/43228 Test date: 19/11/20

Cow ID	I&R-Tag	Calv. Date	Lact. Days	Last test day / Yield to date / 305 day yield (predicted)									SCC
Cow name		Age	Days	M Kg	M Gall	F%	P%	L%	F Kg	P Kg	F+P Kg	Tests>200	
Sire ID	Cow Classification	Group	Test										No. Treats
13	IE-1519421-8-0013	30/12/19	4	25.6	5.5	4.56	3.98	4.55	1.2	1.0	2.2	67	
Leagh Mc Cutchen Pledge Et		5y 11m	227	8160	1743	3.93	3.45	4.61	320	281	601	0	
S1496	EX 91 2E	Winter	3	9817	2097	4.03	3.57	4.61	396	350	746	0	
507	IE-1413885-3-0507	24/04/20	4	32.6	7.0	2.51	3.11	4.62	0.8	1.0	1.8	5801	
Galleyview Cash Ghost		5y 4m	111	4377	935	3.23	3.05	4.76	141	134	275	2	
S1569	EX 90 2E	Spring	3	9519	2033	3.27	3.22	4.76	312	307	619	0	
768	IE-1518969-4-0768	21/04/20	4	35.2	7.5	2.99	2.87	4.50	1.1	1.0	2.1	16	
Robincrest Bookem Rosita		5y 11m	114	4699	1004	3.41	2.81	4.71	160	132	292	0	
S1221	EX 90 2E	Spring	3	10113	2160	3.40	2.97	4.71	344	300	644	0	
902	IE-1414775-1-0902	25/04/20	2	36.2	7.7	3.31	3.24	4.73	1.2	1.2	2.4	18	
Lisnacunna Cent Luella		3y 10m	110	4233	904	3.43	3.14	4.78	145	133	278	0	
02C	VG 85	Spring	2	9588	2048	3.54	3.29	4.78	340	316	656	0	
209	IE-2720047-1-1209	09/05/20	4	39.8	8.5	2.87	3.06	4.78	1.1	1.2	2.3	20	
ynbrook Flynn Barbie		5y 10m	96	4082	872	3.19	3.04	4.77	130	124	254	0	
646	EX 90	Spring	2	10219	2183	3.27	3.15	4.77	334	322	656	0	
33	IE-1415867-6-1233	01/01/20	2	24.4	5.2	4.04	3.56	4.62	1.0	0.9	1.9	19	
ck Triton Jessie Et		3y 7m	225	6883	1470	3.76	3.25	4.75	259	224	483	0	
2331	VG 85	Spring	3	8469	1809	3.85	3.34	4.75	326	282	608	0	
1	372225117442581	05/03/20	2	30.4	6.5	2.90	3.40	4.92	0.9	1.0	1.9	21	
snacole Beemer Paradise		3y 6m	161	5442	1163	3.51	3.07	4.95	191	167	358	0	
9	VG 85	Spring	3	8649	1848	3.49	3.24	4.95	302	280	582	0	
IE-1517956-3-2811		22/04/20	7	31.2	6.7	3.01	3.48	4.53	0.9	1.1	2	999	
view Jill Sunshine 12		8y 6m	113	4810	1028	3.37	3.20	4.75	162	154	316	2	
EX 94 4E		Spring	3	9754	2084	3.44	3.36	4.75	336	327	663	0	
IE-1517956-1-2850		05/08/19	5	19.8	4.2	4.20	3.78	4.63	0.8	0.7	1.5	238	
374			374	12058	2768	3.07	3.41	4.70	515	442	957	1	

CellCheck Farm Summary Report:

SAMPLE HERD
 Herd ID : IE1234567
 Scheme: A4
 Tests in last 12 mths : 12

CellCheck Farm Summary

Milk Recording Date : 05/07/12



Page 1(2)

Herd Summary - Total Cows Recorded: **62**

Somatic Cell Count



Mastitis Control
During Lactation



Mastitis Control
Dry Period/Calving
N/A

Clinical Mastitis



Recorded SCC
05-JUL-2012

284

Target : Less than 200

July Bulk Tank SCC

323

Target : Less than 200

% of Herd over 200

24%

Target : Less than 15%

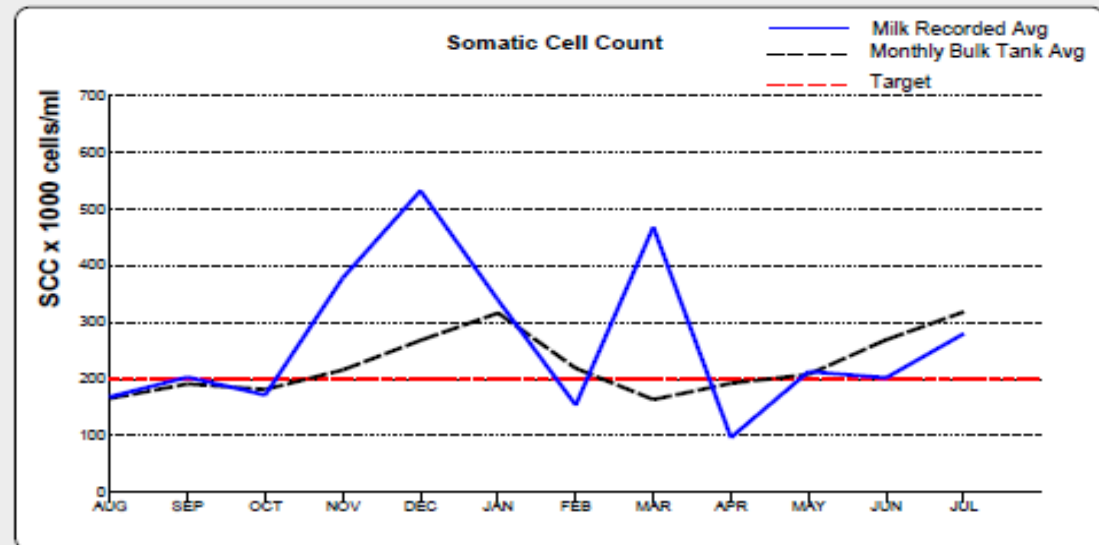
Avoidable Milk Loss
(Ltrs/herd/day) *

52

Somatic Cell Count



National Herd Rank on SCC: 31%



* This figure is an estimation of the total loss of production from the high SCC cows (>200) in your herd.

Mastitis Control During Lactation



Recent Infection Rate since last recording

>200 in latest milk recording (4) and
 <=200 in the previous milk recording (47)
 in the current lactation

9 %

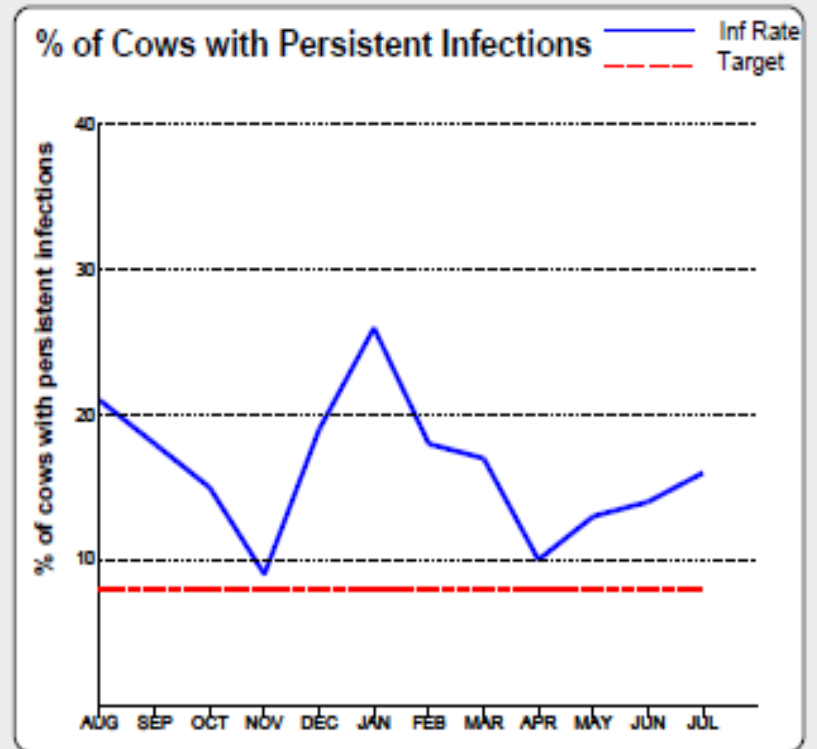
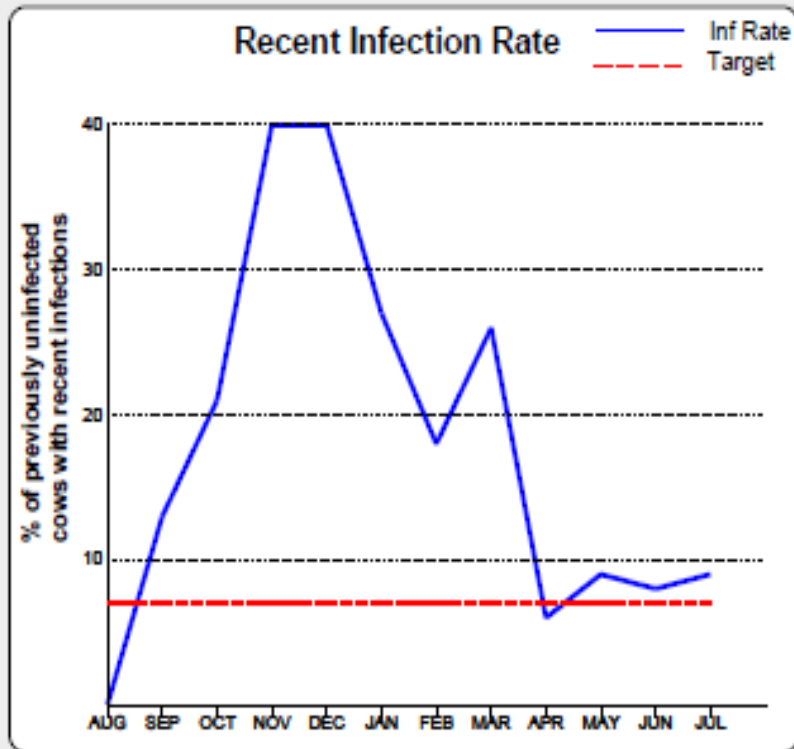
Target : Less than 7%

% of Cows with Persistent Infections

>200 in last two milk recordings (10) as a
 % of all cows recorded for the last two milk
 recordings (61) in the current lactation

16 %

Target : Less than 8%



Mastitis Control: Dry Period/Calving



Note: Cows with first recording >60 days after calving are not included.

	First Test since calving	All calvings in current lactation
New infection rate over the dry period Cows No. of cows calved that had a SCC ≤ 200 in recording prior to calving (0) and > 200 in the current recording (0). Heifers No. of heifers that had a SCC > 200 in the current recording (0) as a percentage of all heifers calved (2).	0% Target: Less than 10%	10% 1/10 Target: Less than 10% 6% 1/17 Target: Less than 15%
Cure rate over the dry period No. of cows calved that had a SCC > 200 in recording prior to calving (2) and ≤ 200 in current recording (2)	100% Target: Greater than 85%	80% 20/25 Target: Greater than 85%

For information on controlling somatic cell counts and clinical mastitis, check the Cell Check Farm Guidelines for Mastitis Control.

Somatic Cell Counts
 Mastitis Control: During Lactation
 Treatments During Lactation
 Mastitis Control: Calving/Dry Period

Farm Guideline No
 11-12
 5-15 & Management Note M
 10 & Management Notes B & G
 1-4 & 16-20



Farm Guidelines book is available from your Co-op and local Veterinary Practitioners.

For further advice on controlling somatic cell counts and mastitis, contact your local CellCheck advisor. Further information on the CellCheck Programme is available on www.cellcheck.ie

Good clinical mastitis records...essential!

Easy way=use the ICBF database

.....any farmer can register, not just milk recording, or HerdPlus

1. Record online
“Health and Disease
Events”:

or

2. Use ICBF text-in
service:

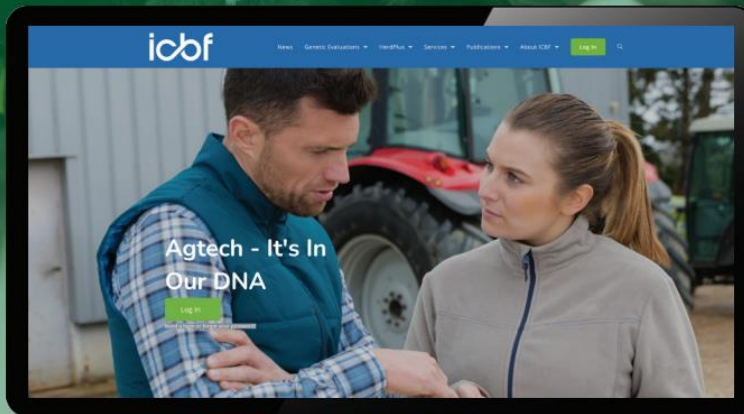
Text “Mast” along
with the cow’s
Freeze brand
number to 089-
4577663

or

3. ICBF APP

www.CellCheck.ie | www.icbf.com

Accessing the CellCheck Dashboard on ICBF



<https://animalhealthireland.ie/assets/uploads/2022/04/CellCheck-ICBF-Guide-2022-FINAL.pdf?dl=1>

AHI Dry Cow Consult:

1. Context:

- Why dry cow therapy is used, and what the risks/opportunities are at this time
- Understand why responsible AB use is so important (challenge of AMR)

2. Assess- what currently happens on farm:

- Udder health performance (using ICBF, milk records, farm records)
- Drying off/Dry cow technique and hygiene (practical exercise)
- What is the capacity for change?

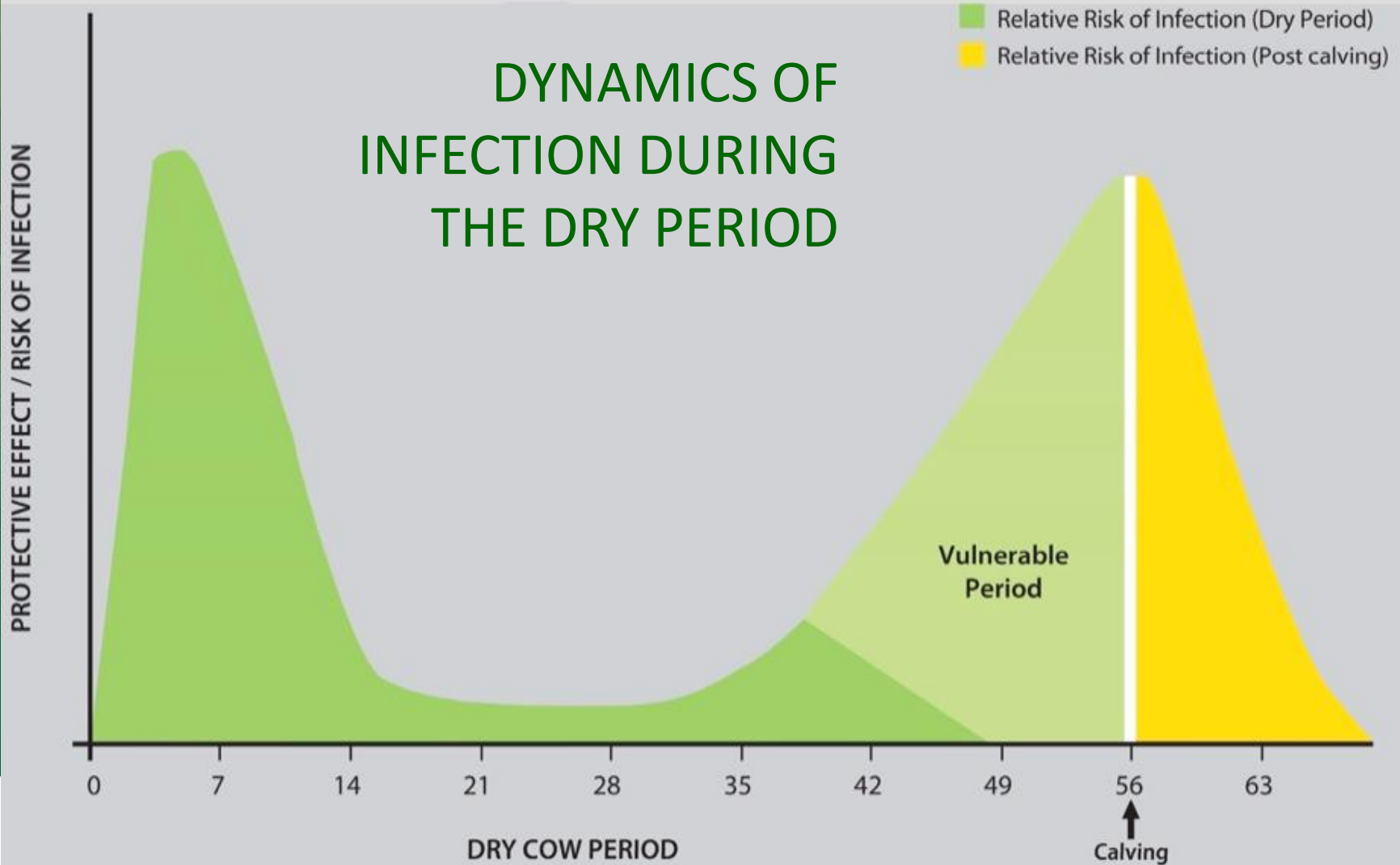
3. How could we improve on this

- Current drying off/dry cow practices? (max 3 recommendations)
- Dry cow treatment strategy? (some suitable for ITS only?)

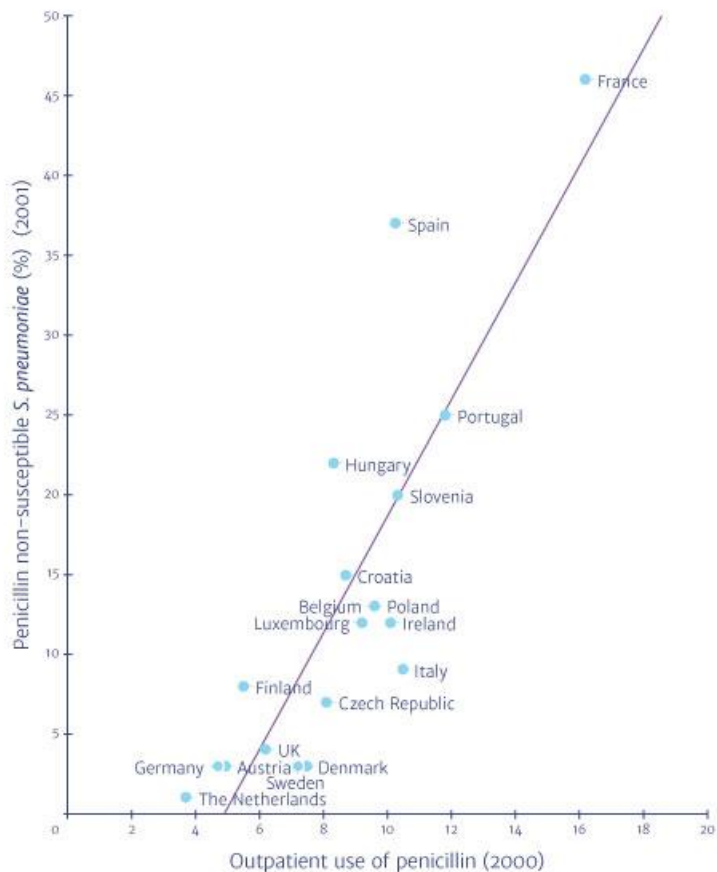
Dry period.....why?

- ❖ Opportunity for cow
 - ❖ Correct BCS for calving
 - ❖ Involution and regeneration of mammary tissue
 - ❖ Maximise cure rates for existing mastitis infections
- ❖ Opportunity for farmer
 - ❖ Mental and physical health and wellbeing
- ❖but there are also **risks!**

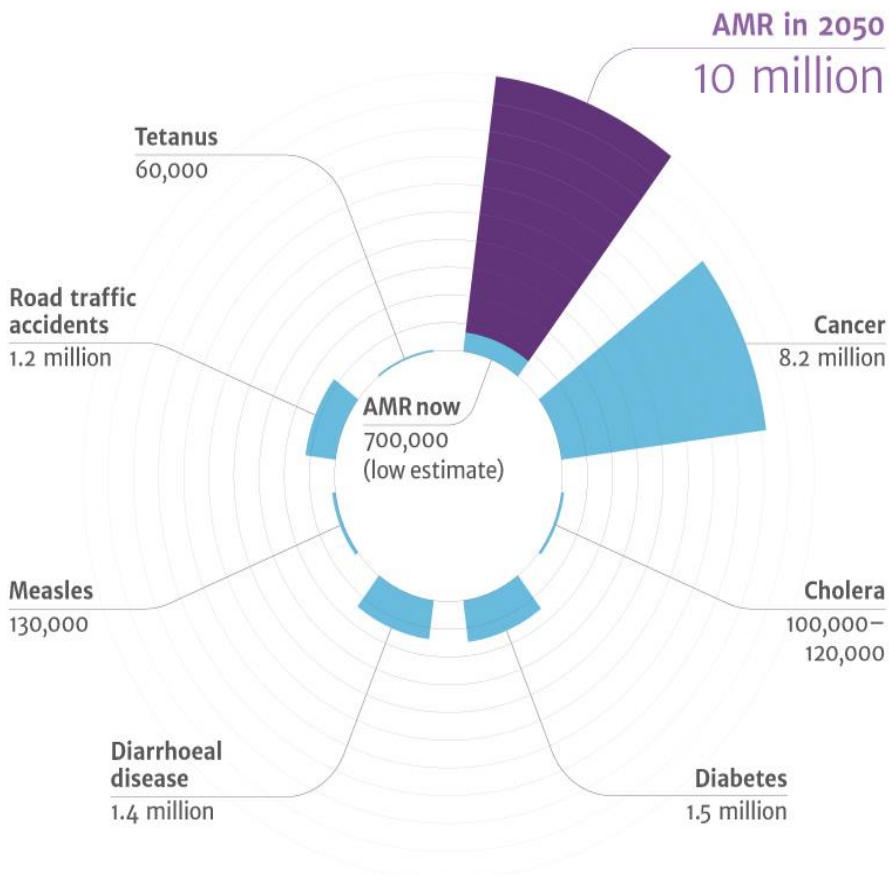
DYNAMICS OF INFECTION DURING THE DRY PERIOD



THERE IS A HIGH CORRELATION BETWEEN ANTIBIOTIC USE AND RESISTANCE



Source: Goossens H, Ferech M, Vander Stichele R, et al. Outpatient antibiotic use in Europe and association with resistance: a cross-national database study. *Lancet* 2005; 365(9459): 579-87.



IF NOT TACKLED, BY 2050 AMR COULD BE RESPONSIBLE FOR THE DEATH OF ONE PERSON EVERY 3 SECONDS

TITIS CONTROL PROGRAMME



Categorisation of antibiotic classes for veterinary use

(with examples of substances authorised for human or veterinary use in the EU)

A

Aminopenicillins

mecillinam
pivmecillinam

Ketolides

telithromycin

Monobactams

aztreonam

Rifamycins (except rifaximin)

rifampicin

Carboxypenicillin and ureidopenicillin, including combinations with beta lactamase inhibitors

piperacillin-tazobactam

Carbapenems

meropenem
doripenem

Lipopeptides

daptomycin

Oxazolidinones

linezolid

Riminofenazines

clofazimine

Sulfones

dapsone

Streptogramins

pristinamycin
virginiamycin

Drugs used solely to treat tuberculosis or other mycobacterial diseases

isoniazid
ethambutol
pyrazinamide
ethionamide

Other cephalosporins and penems (ATC code J01DI), including combinations of 3rd-generation cephalosporins with beta lactamase inhibitors

ceftobiprole
ceftaroline
ceftolozane-tazobactam
faropenem

Glycopeptides

vancomycin

Glycylcyclines

tigecycline

Phosphonic acid derivatives

fosfomicin

Pseudomonic acids

mupirocin

Substances newly authorised in human medicine following publication of the AMEG categorisation

to be determined

AVOID

B

Cephalosporins, 3rd- and 4th-generation, with the exception of combinations with β -lactamase inhibitors

cefoperazone
cefovecin
cefquinome
ceftiofur

Polymyxins

colistin
polymyxin B

Quinolones: fluoroquinolones and other quinolones

cinoxacin
danofloxacin
difloxacin
enrofloxacin
flumequine
ibafloxacin

marbofloxacin
norfloxacin
orbifloxacin
oxolinic acid
pradofloxacin

RESTRICT

C	<p>Aminoglycosides (except spectinomycin)</p> <ul style="list-style-type: none"> amikacin apramycin dihydrostreptomycin framycetin gentamicin kanamycin neomycin paromomycin streptomycin tobramycin 	<p>Aminopenicillins, in combination with beta lactamase inhibitors</p> <ul style="list-style-type: none"> amoxicillin + clavulanic acid ampicillin + sulbactam 	<p>Amphenicols</p> <ul style="list-style-type: none"> chloramphenicol florfenicol thiamphenicol 	<p>Macrolides</p> <ul style="list-style-type: none"> erythromycin gamithromycin oleandomycin spiramycin tildipirosin tilmicosin tulathromycin tylosin tylvalosin 	CAUTION
D	<p>Aminopenicillins, without beta-lactamase inhibitors</p> <ul style="list-style-type: none"> amoxicillin ampicillin metampicillin 	<p>Aminoglycosides: spectinomycin only</p> <ul style="list-style-type: none"> spectinomycin 	<p>Sulfonamides, dihydrofolate reductase inhibitors and combinations</p> <ul style="list-style-type: none"> formosulfathiazole phthalylsulfathiazole sulfacetamide sulfachlorpyridazine sulfaclozine sulfadiazine sulfadimethoxine sulfadimidine sulfadoxine sulfafurazole sulfaguanidine 	<p>Rifamycins: rifaximin only</p> <ul style="list-style-type: none"> rifaximin 	PRUDENCE
<p>Tetracyclines</p> <ul style="list-style-type: none"> chlortetracycline doxycycline oxytetracycline tetracycline 		<p>Anti-staphylococcal penicillins (beta-lactamase-resistant penicillins)</p> <ul style="list-style-type: none"> cloxacillin dicloxacillin nafcillin oxacillin 	<p>Cyclic polypeptides</p> <ul style="list-style-type: none"> bacitracin 		<p>Nitroimidazoles</p> <ul style="list-style-type: none"> metronidazole
<p>Natural, narrow-spectrum penicillins (beta lactamase-sensitive penicillins)</p> <ul style="list-style-type: none"> benzathine benzylpenicillin benzathine phenoxymethylpenicillin benzylpenicillin penethamate hydriodide 		<ul style="list-style-type: none"> pheneticillin phenoxymethylpenicillin procaine benzylpenicillin 	<p>Steroid antibacterials</p> <ul style="list-style-type: none"> fusidic acid 		<p>Nitrofurans derivatives</p> <ul style="list-style-type: none"> furaltadone furazolidone

Friday,
January
28,
2022

New Veterinary Medicinal Product Regulations come into effect

What does it mean for dairy farmers?

5
Days

All antimicrobials (antibiotics), including those administered in feed, will require a prescription which will be valid for a maximum of 5 days from date of issue. The prescription must be filled within this 5-day timeframe. You can treat the animals for as long as is specified by the vet on the prescription.

Tuesday

February

Any existing prescriptions that you have for specific antimicrobials like mastitis tubes for cows will no longer be valid from 2nd February 2022.




A requirement for farmers to move towards Selective Dry Cow Strategies for mastitis control, which involve a more targeted use of antimicrobial treatments. This will mean a move away from blanket dry cow therapy, and reducing overall use of dry cow tubes.



Tighter controls in relation to certain antimicrobials called Highest Priority Critically Important Antimicrobials (HP-CIAs), as these are drugs of last resort in human health. Certain mastitis tubes contain these HP-CIAs, and these tubes will no longer be routinely prescribed for use, instead a suitable alternative will be chosen by your vet.



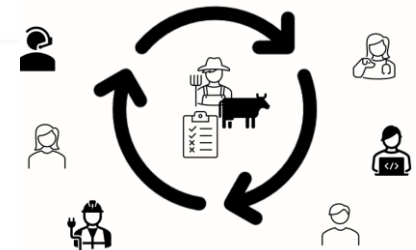
Only a small quantity of antimicrobials can be kept on your farm, to cover a specified risk of disease, as determined by your vet.

Wednesday

June

The requirement to only supply antiparasitic medicines on foot of a veterinary prescription has been deferred until 1st June 2022. A veterinary prescription will not be required for antiparasitic products until that date.



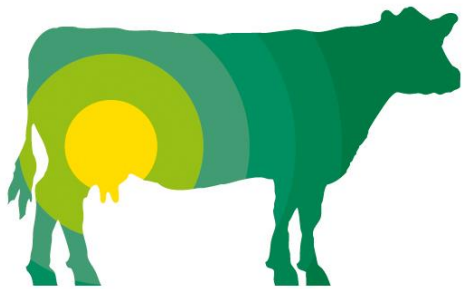
Cell Count Solutions consult



- A pilot TASAH consult currently being trialed.
- A multidisciplinary approach
 - The perspectives of the farm advisor, milk quality advisor, milking machine technician and veterinary practitioner are facilitated.
- Targeting herds where mastitis not being optimally controlled.
- An opportunity to commence the process of mastitis problem-solving and act as a catalyst for **ongoing** multi-disciplinary engagement.
- Stage 1 training available to all service providers on AHI website-great resource

Objectives of consult

1. Exploring motivations with the farmer- how is SCC problem is affecting them
2. Work through economic value of it- costcheck calculator, other various tools- who gets involved
3. Identify and link relevant people - milk advisors, milking machine technicians, farm staff, vet
4. First assessment based on what records are available- observe milking routine, ability to explain MR reports, review milking machine reports
5. Detailed plan (Goal setting) with the farmer, how to overcome various barriers, agree what else needs to be done and by who -time lines set
6. 'Hub' available with actions for all those involved to see.



CellCheck

AnimalHealthIreland.ie



NATIONAL MASTITIS CONTROL PROGRAMME

