



**Real farming solutions to
reducing antibiotic use**

Wicton Farm

Real farming solutions to reducing
antibiotic use



Who we are



- Wicton Farm milks 95 Holstein Friesian cows on 300 acres and is run by the Howlett family.
- Average 8000lts per cow.
- Calving in a tight 9 week autumn block.



- Organic, with zero tolerance to antibiotic use.
- Holistic management, minimal tillage and all machinery required to follow a closed traffic system.

Treat the cause, not the symptom

This is the simple concept that drives our high yielding organic dairy herd to be successfully antibiotic free.

This presentation will summarise our farming procedures. Behind every action there is a detailed reason and if you require in depth explanations then please ask.

- **Attention to basic detail** – Hygiene, high animal welfare, good organisation
- **Consistency** – focus on doing the same thing better, year on year
- **Communication** – listen to what the cows are telling you!
- **Prioritisation** – make positive change happen efficiently
- **Farm biosecurity** - locked yard gate, all people must disinfect foot wear, machinery contractors are paid extra to arrive clean. Closed herd.



Attention to basic detail

Dry cows – Dairy farm success starts here!

- Dry off early if low condition score or high SCC (self cure)
- Preventive foot trim
- Scrub teats with surgical spirit and teat seal
- Dry cow silage - must be low in phosphorous and potassium.
- Check urine PH and add magnesium chloride to diet as required
- Identify Johnes cows, Neospora cows, twins and other problem cows so that they are given the correct attention at calving time.



Attention to basic detail

Calving procedure

- Calving mat - disinfected between cows
- Colostrum milked out within 10 minutes of birth
- Cow given warm water drink



Attention to basic detail

Calf management



- Test colostrum
- 6lts in 6 hrs
- No pooled milk
- High health status cows identified
- Clean all feeding equipment
- Weaned at 12 weeks
- Only weaned when solid feed intake is correct
- Weigh and take action!

Attention to basic detail

Milking hygiene



- Cluster flush
- Moooving ☺ trolley with dilute peracetic acid to wash gloved hands between cleaning each cow prior to milking

Attention to basic detail

Cow cleanliness / winter housing comfort



- 10 % extra cubicles than cows
- 75cm feed space per cow
- Deep bedded sand: prevents bacteria, comfy, good grip.

Attention to basic detail

Winter

- Cow nutrition – grabs of grass silage and concentrates following ketone testing
- Minerals in water – tailor made blend to suit on farm conditions
- Lots of feed space to ensure good intakes
- 200 lux light levels for 16 hrs
- Lots of ventilation – helicopter fan for youngstock



Attention to basic detail

Summer

- Holistic grazing – 35cm tall grass, 50% eaten and 50 % trampled – “grass matt” ensures cows stay clean
- New paddock every 12 hrs, 35 day rotation average
- Cow tracks to keep cows clean / prevent foot problems
- Eyes – fly masks / eye wash



Attention to basic detail

Clean water



- 10cm space per cow
- Minerals - LMS

Attention to basic detail

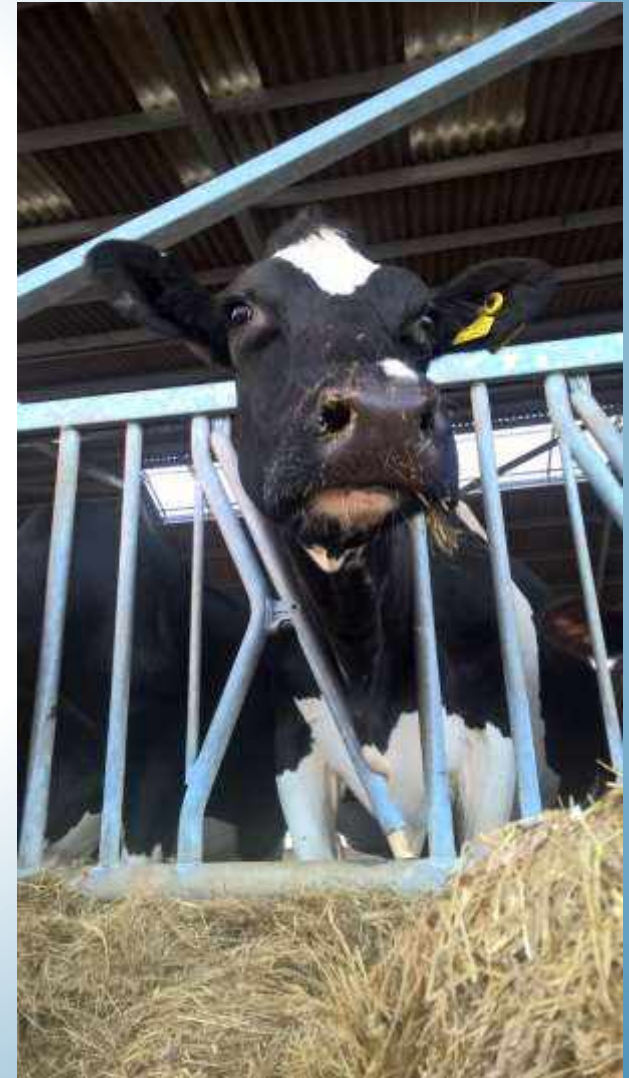
Record keeping



An efficient farm office with 2 doors makes hiring and firing people so much easier!

Consistency

- We are proactive not reactive
- We carry out regular routine checks
- We do not cut corners
- If its brokenfix it. There is no excuse to tie something up with string!



Consistency

We carry out regular routine, in house, checks:

- Blood Ketones
- Dry cow Urines
- Condition Scoring
- Mobility Scoring
- Heifer weighing
- Hoof trimming twice per year



Communication

- White boards
- Clear procedures
- Total transparency or its P45 time
- Immediate and detailed record keeping
- Informed decisions
- Good relationship with vet
- Cow signals – listen to what the cows are saying!



Prioritisation

Cows and humans are equal

- Wicton Farm operates 24/7 – A white board roster in the office ensures somebody is always available to deal with a problem – nothing is “left until the morning”
- This also means that humans get correct time off and can enjoy relaxed time away from the farm knowing that it is all under control
- The farm can be run by one person



Prioritisation

Stress free environment

- For both humans and cows
- Sensible working hours
- Good housing
- Correct animal handling facilities



Conclusion:

- High attention to basic detail and excellent animal welfare make money.
- You do not need a cow palace and a mixer wagon to be a successful farm – a ring feeder, an IBC of water, a crush and a milking bucket will be an amazing farm under the right management.
- There is no such word as “can’t”.
- Less is better – focus on getting the simple things 100% correct: Light, air, water, feed, cow comfort, good management.

Food for thought:

As you travel home to your farm tonight, imagine you find a sick cow waiting for you

a) Do you look over the gate, make a snap decision and inject the cow with £50 course of antibiotics “to make yourself feel better”. Then you wait to see what she is like in the morning.

or

b) Do you open the gate, chat gently to the cow and assess her situation – listen to what she is saying! - take her temperature, check her ketones, check for mastitis, stomach drench her with 25lt warm water, maybe give her some pain relief and bring her a wheel barrow of fresh silage to eat. Then ring the vet for a quick chat over the phone. This will have cost you £20.

Organic cows have simple tastes – they expect
the best in everything!



Please help the world by reducing your antibiotic usage.....

Time waits for nobody!

Happy days from Wicton Farm



@wictonfarm



Wicton_Farm



A practical approach to reducing antibiotic use



Ed Bailey BVSC CertAVP (Cattle) MRCVS



High welfare



Better health



Lower antibiotic use

It doesn't work if you try to work 'up' the flowchart – not using antibiotics where necessary can result in INCREASED usage due to recurrence and spread of infection



Where to start?

- Health review
- How do you compare to industry targets/previous results?
- Do certain areas stand out?
- Antibiotic audit is part of this process

Health, Performance & Antibiotic Usage Review

Vet review of data and recommendation
of actions/priority areas

It is a requirement that your vet annually completes a review of health and performance records and medicine usage.

Below is a template that covers the information needed to meet the standard. As part of the review the vet will need access to the records that have been used to collate data (e.g. medicine records). Your vet may use a different template, but a similar review must be undertaken.



Antibiotic audit

- What have you used in the last 12 months?
- Which groups of animals?
- What diseases were treated?
- Don't use antibiotics critically important for human health



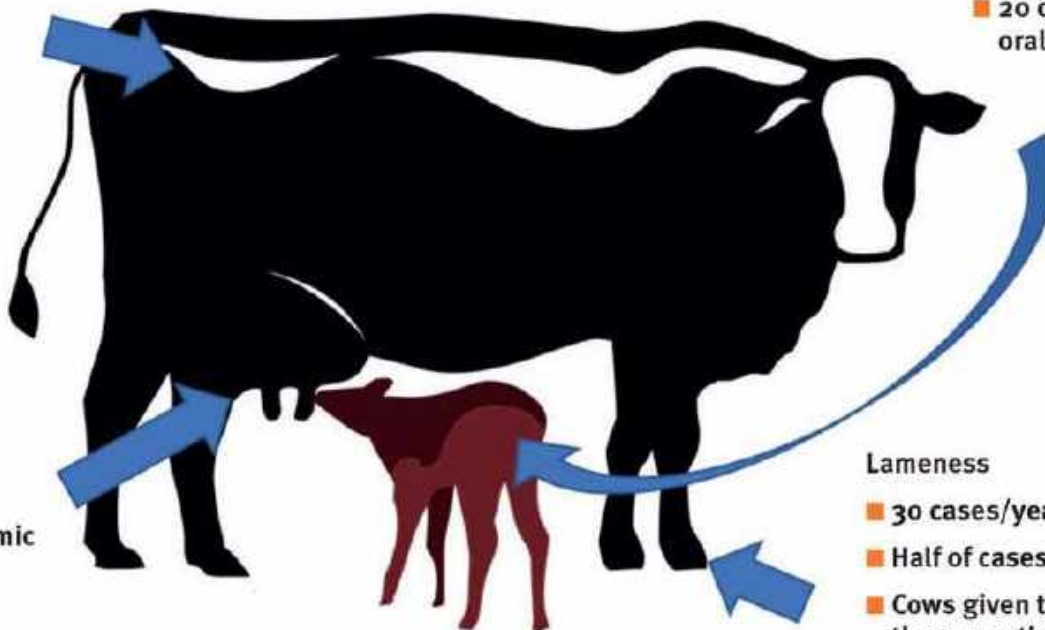
Cattle Example

Fertility

- 10 cases metritis treated with ceftiofur
- 20 cases of endometritis treated with intrauterine cephalosporin
- 5 cases of retained fetal membranes treated with systemic amoxicillin

Mastitis

- 40 cases/year
- All cases treated with five intramammary tubes
- 20 cases treated with systemic amoxicillin
- Blanket antibiotic dry cow therapy



Youngstock

- 20 cases/year of pneumonia treated with gamithromycin
- 20 cases/year of scour treated with oral chlortetracycline

Lameness

- 30 cases/year
- Half of cases treated with amoxicillin
- Cows given tylosin antibiotic foot bath every three months

Credit: Diagram from Hyde et al (2019) Reducing antimicrobial use on dairy farms using a herd health approach. *In Practice*, 41:368-382



Use an antibiotic calculator to quantify your use



	TOTAL	Critical
Total mg/PCU in herd	14.64	0.00
Total DDD	4.98	0.00
Total DCD	4.58	0.00

Route	Product	Amount used	Units	mg/PCU	Critically important?
Injectable	Pen & Strep Suspension For Injection	2400.00	ml	6.05	
Injectable	Tylan 200, 200mg/ml Solution for Injection	1000.00	ml	1.36	
Lactatingtube	Tetra-Delta Intramammary Suspension	240.00	Tubes	0.60	
Drytube	Cepravin Dry Cow 250 mg Intramammary suspi	800.00	Tubes	1.36	
Footbath	Tylan Soluble Powder for Oral Solution Footbat	600.00	grams	4.07	
Other	Metricure 500 mg Intrauterine suspension	25.00	Units	0.08	
Injectable	Resflor 300/16.5 mg/ml Solution for Injection f	500.00	ml	1.02	
Other	Synulox Bolus 500 mg film-coated tablet	40.00	Units	0.11	

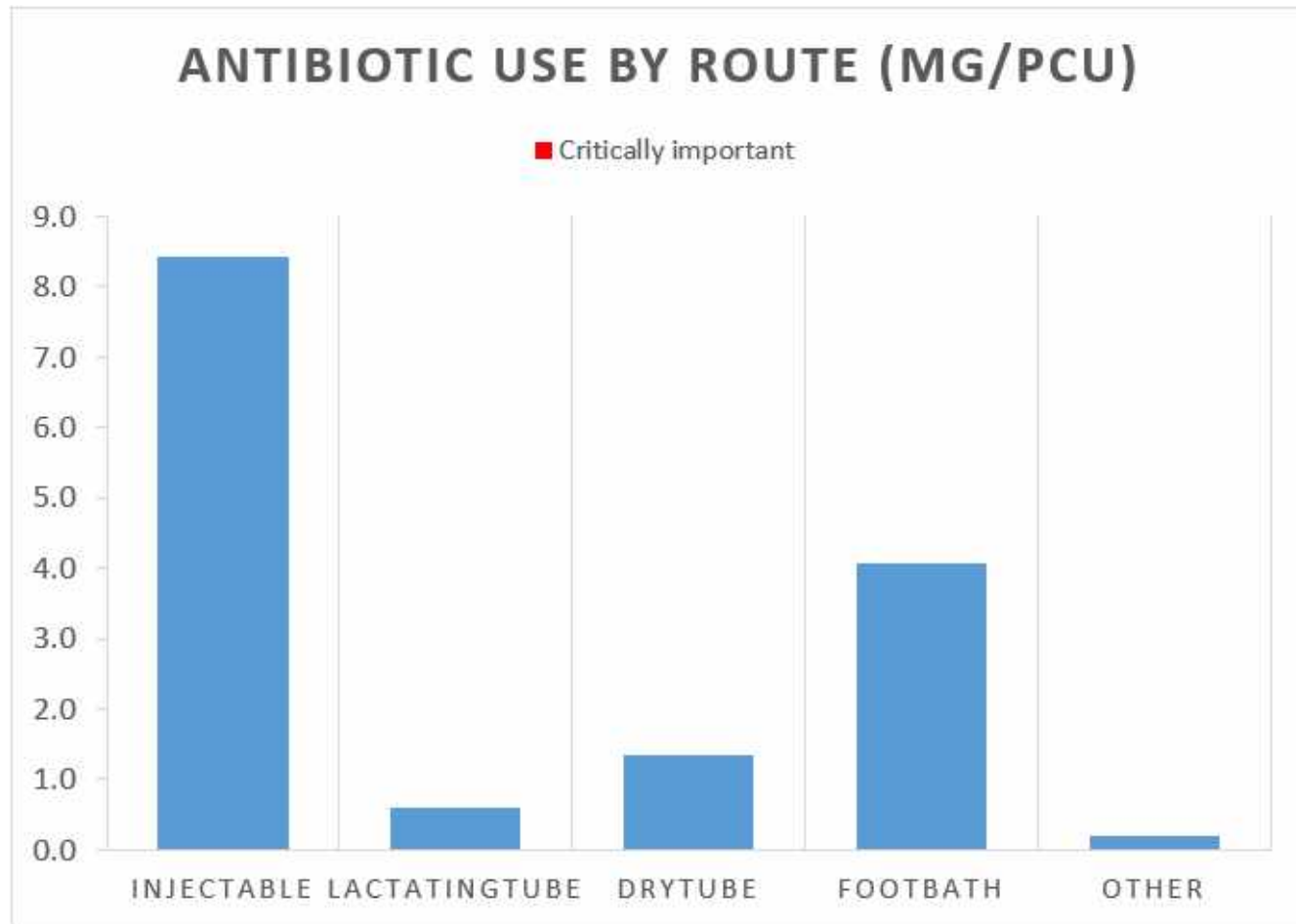
Freely available from AHDB for use in cattle or sheep:

<https://dairy.ahdb.org.uk/technical-information/animal-health-welfare/amu-calculator/>

For pigs or chickens, use the e-Medicines book

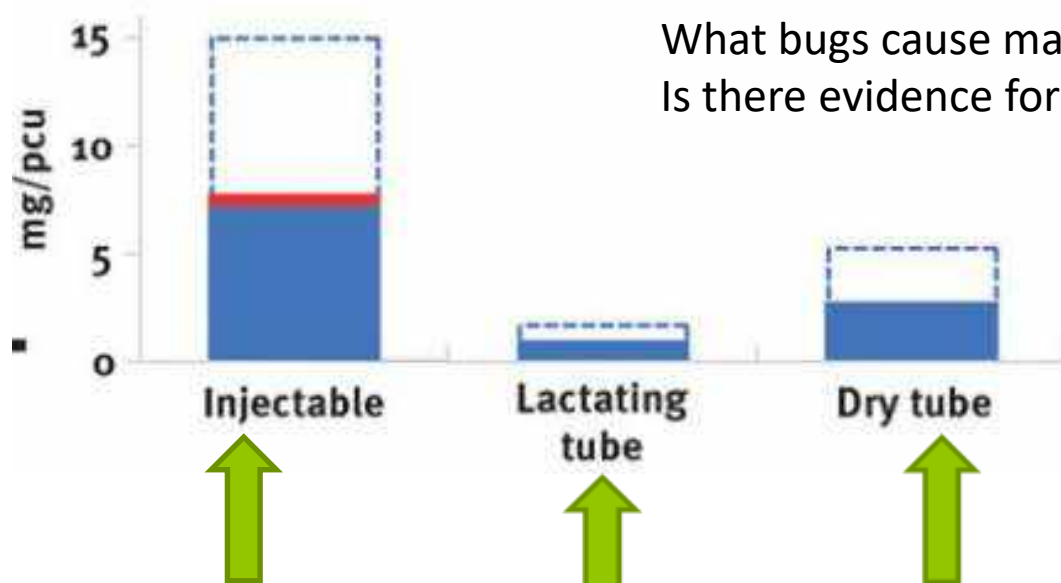


What routes are used?



What scope is there for improvement in each area?

1. Udder health



What bugs cause mastitis on your farm?
Is there evidence for antibiotic use?

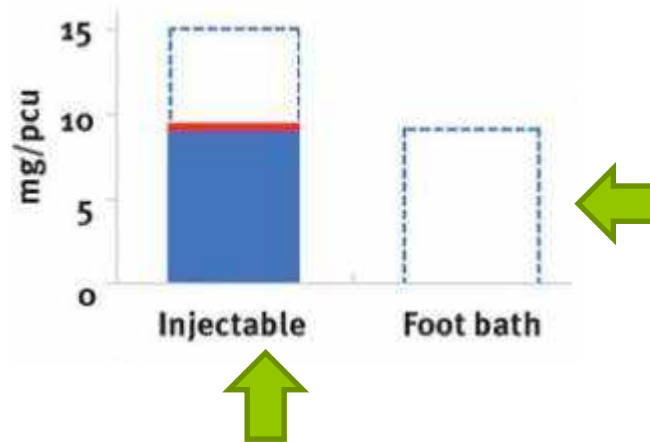
Stop using systemic treatments

AHDB mastitis control plan

Selective dry cow therapy



2. Lameness



- AHDB Healthy Feet Programme
 - Reduce the development of new cases
 - Prompt detection and treatment
 - Avoid antibiotics for the majority of cases

- Stop antibiotic foot bathing
 - Treat clinical cases topically
 - Use non-antibiotic alternatives for group treatment
 - Environment changes



3. Youngstock

- Use in youngstock nearly always due to pneumonia and scour



...and very simple!

Correct body condition score

+

Correct feeding and mineral balance pre and post calving (including feed space)

+

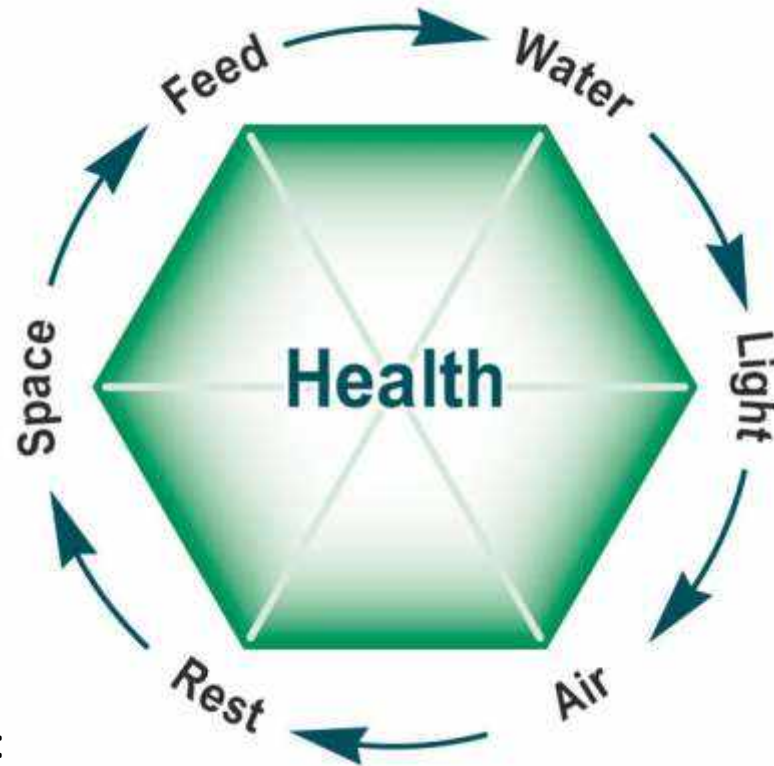
Sensible choice of bull (direct calving ease)

= **Success**



Maximising natural immunity

- Underlying disease? BVD/Johne's disease
- Rumen health and appropriate nutrition for breed and yield



Sheep Example



The University of
Nottingham

UNITED KINGDOM · CHINA · MALAYSIA



	TOTAL	Critical
Total mg/PCU in flock	22.15	0.00
Total DDD	10.18	0.00
Total DCD	1.54	0.00

Route	Product	Amount used	Units	mg/PCU	Critically important?
Injectable	Alamycin LA 200mg/ml Solution for Injection	1200.00	ml	7.38	
Oral	Spectam Scour Halt oral solution 50 mg/ml	1500.00	ml	2.31	
Injectable	Betamox LA 150mg/ml Suspension for Inject	1500.00	ml	6.92	
Injectable	Draxxin 100 mg/ml solution for injection for	800.00	ml	2.46	
Footbath	Tylan Soluble Powder for Oral Solution Footb	100.00	grams	3.08	

3 main areas of use in sheep:

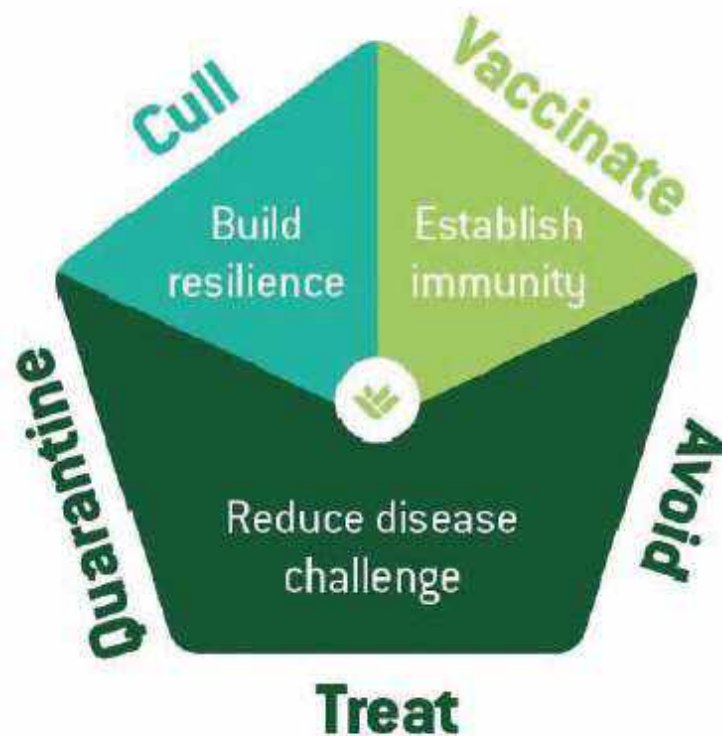
1. Lameness
2. Watery mouth and joint Ill
3. Enzootic abortion



Lameness

Box 3: Five-point plan for reducing lameness in sheep*

- Cull badly or repeatedly affected animals
- Quarantine incoming animals
- Treat clinical cases promptly
- Avoid propagation of infection on farm
- Vaccinate against footrot biannually



* Clements and Stoye (2014)



Watery Mouth and Joint Ill

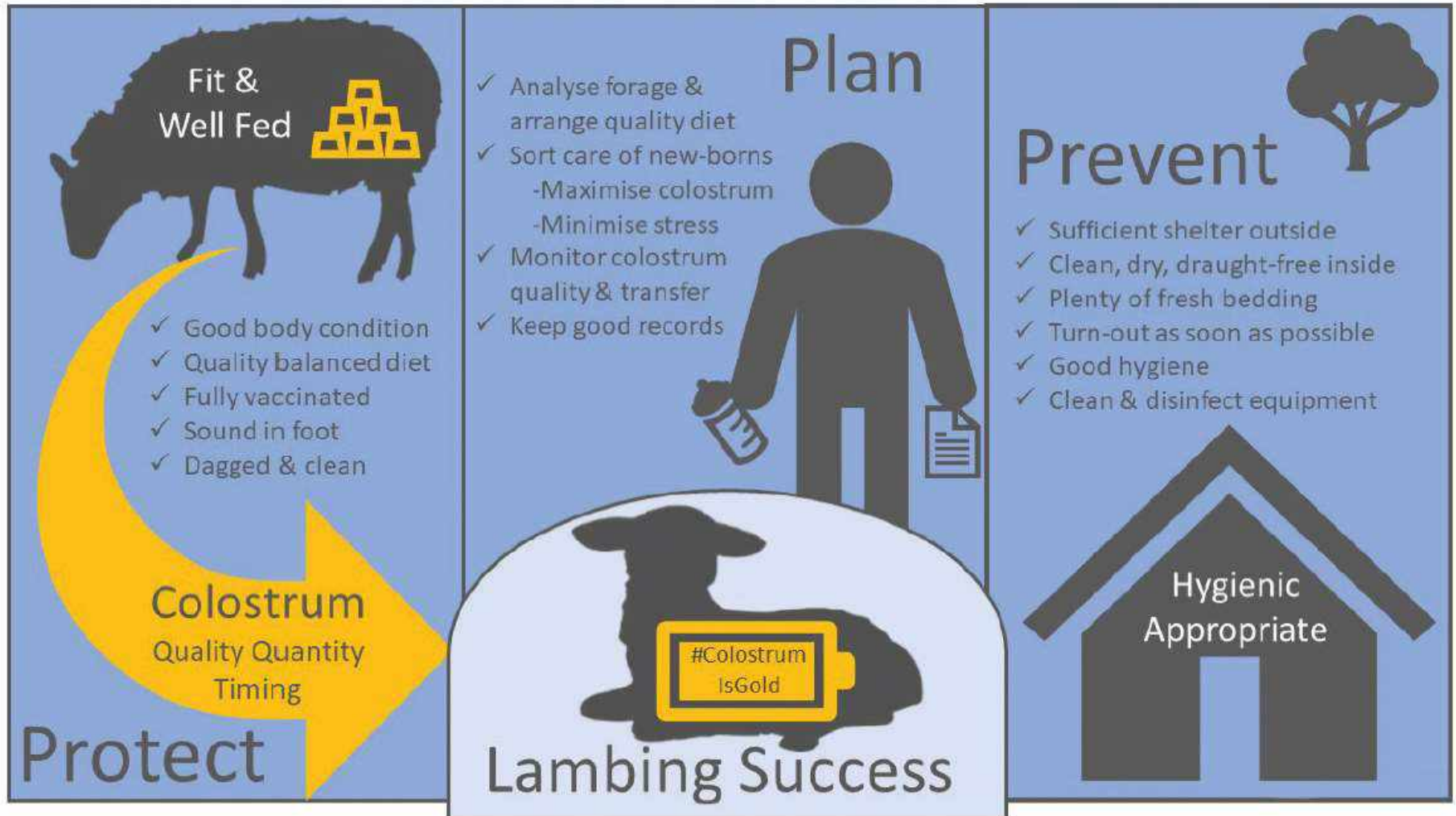


Fig 8: Infographic depicting the plan, prevent, protect strategy with respect to controlling bacterial neonatal lamb diseases (Picture, Flock Health Ltd 2017)

Abortion

- Enzootic abortion caused 35 per cent of all ovine abortions in the UK from 2012 to 2018
- Effective vaccines are available
- Whole-flock prophylactic antibiotics are not considered necessary



Key Points

- Establish what the main causes are on your farm for disease, mortality and antibiotic use
- Systematically address CAUSES rather than treating EFFECTS





**Real farming solutions to
reducing antibiotic use**

Reducing antibiotics by using a new on farm culture test for mastitis

Shona Phillips, Sparsholt College

Kate Still, Soil Association



Bacteriological Cure Rates of Bacteria (2+ Lactation Cows), Pinzon-Sanchez et al. 2011

Bacterium	No Treatment	5 day treatment
Staph aureus	0 %	20 %
CNS	55 %	75 %
Strep uberis	25%	65 %
E coli	75 %	85 %
Klebsiella	35 %	45 %
No growth	90 %	90 %

Scope and limitations for on farm culture

- ONLY to help with individual treatment decisions, based on Gram positive/Gram negative
- For troubleshooting mastitis problems and background surveillance an accredited lab has to be used

Vetorapid Trial

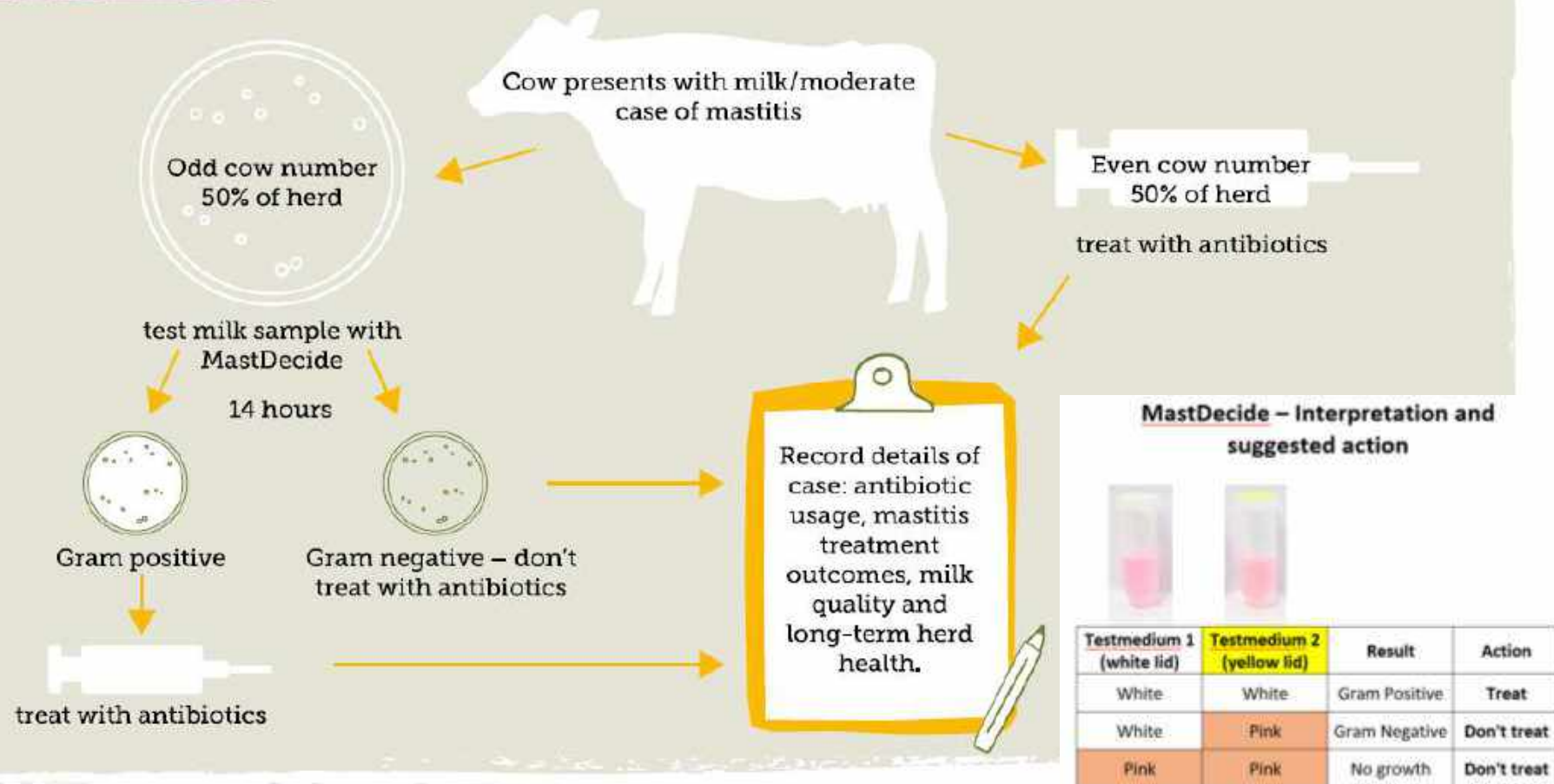
- Only treating cases which were likely to respond resulted in :
 - 24% reduction in antibiotics
 - Milk from untreated cows could be returned to the bulk tank in 4 days (8.6 days less than those treated)
 - Value of milk to be sold off set the cost of the test kit

The screenshot displays a website for the 'Improving the Targeting Of Mastitis Treatments' field lab. The page features a navigation bar with 'Home', 'Field Labs', and 'Improving the targeting of mastitis treatments'. A 'My Account' button is visible in the top right. The main content area includes a 'Price Of Wales Charitable Foundation' logo, a 'STATUS: CONCLUDED' badge, and a 'Return Field Lab' button. The title 'Improving The Targeting Of Mastitis Treatments' is prominently displayed, followed by a description of the field lab's aim. A 'Show More' dropdown is present. Below this is a 'Field Lab Timeline' section with two visible events: 'First Meeting' and 'Ethical Issues Reviewed'. On the right side, there is a 'Field Lab Documents' list containing 'Field lab newsletters - Jan 2016', 'Field lab newsletters - Feb 2016', 'Methods and Results', 'Background presentation - 2015', and 'Research background'. A 'Meet the Team' section introduces 'Researcher Kristen Reyher' as 'Active' with the email 'kristen.reyher@rvtatol.ac.uk'. The footer contains copyright information for the Royal Veterinary College.

MastDecide Trial

Trial Design

Summary of the protocol





Hear from a trial farmer: Shona Phillips

How are things so far?

- Results are coming in, many more to be collected from farms
- Over 100 cases collected, 50 of them cultured
- Of the cultured results 45 % did not receive antibiotics (selected farms)
- Clinical cure rates comparable with treated cows, statistics still to be done
- Comparison with reference bacteriology: 14 % risk of withholding treatment for Gram positives, similar to the reported 84 % sensitivity
- Total cure rates (incl cell counts) still to be analysed

Who benefits most?

- Farms with moderate mastitis incidence where prevention measures (like the Dairy Mastitis Control Plan) have been carried out
- Farms with a significant amount of Gram negative bacteria or “No growth”
- Farms with dedicated staff and clean, safe facilities away from the milk tank and parlour

- **To develop solutions for replacement of antibiotics use in organic livestock production**

Animal Health and Welfare Planning (AHWP) protocol



to adapt and efficiently implement well-proven preventive herd health management measures to various conditions in Europe

Using natural compounds (Essential oils)



To refine farmer's experience and innovation into new options for mastitis control using essential oils

Adapt strategies and validate them on farm





Litsea EO (Litsea cubeba)

Oregano EO (Origanum heracleoticum)



ARELACS
PREVENIR INFECCIONES ORGANOCAASINAS

¿Cómo recoger las muestras de leche de forma aseptica?

- 1** **1. Preparar el material:**
 - Guantes.
 - Tubos estériles 20 ml.
 - Bata aséptica.
 - Rubicador permanente.
- 2** **2. Lavar las manos:**
- 3** **3. Lavar y secar las uddes afectadas:**
- 4** **4. Descartar la primera fracción de leche:**
- 5** **5. Desinfectar el peón con alcohol durante 15-20 segundos:**
- 6** **6. Lo más rápido posible, recoger 9 ml de leche del cuarterón afectado en tubo estéril:**
Con cuidado, sujetar el tapón del tubo entre el pulgar y el dedo índice que sujeta el tubo (ver foto).
- 7** **7. Anotar en tubo:**
 - Fecha.
 - Vaca n°.
 - Cuarterón afectado.

DD Cerecha Delante
ID Inguiente Delante
IA Inguiente Atrás
DA Detecha Abajo
- 8** **8. Agitar y congelar el tubo (confirmar con LISA). Ordenar la vaca y aplicar el tratamiento de aceites esenciales tras ordeño.**



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