



TREATING MASTITIS

MORE SUSTAINABLY AND SUCCESSFULLY

A study in which farmers used culture to reduce and refine antibiotic use, while improving cure rates.

IN A NUTSHELL

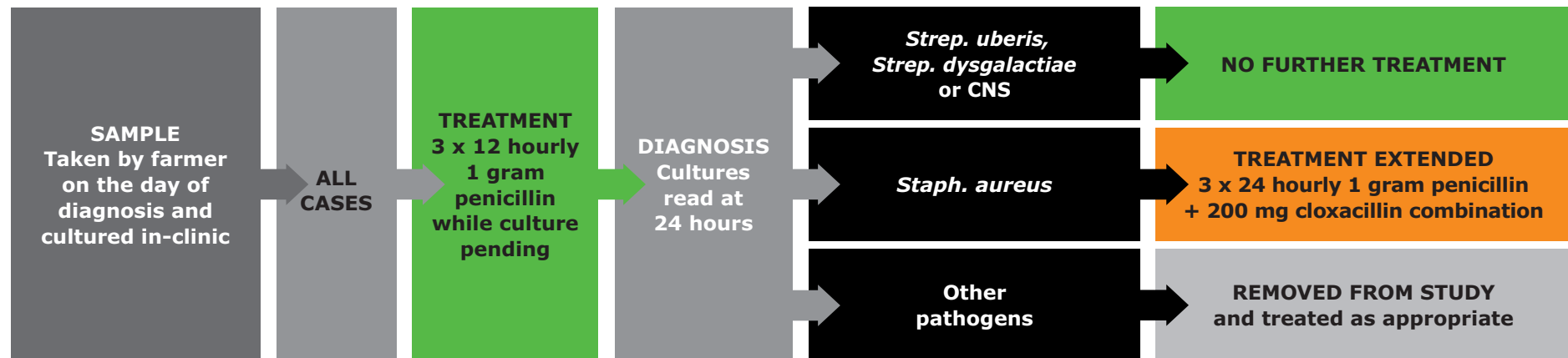
- Farmers in the study **cultured every mastitis case**, and treatment was decided based on what was identified.
- **Cure rates were higher** when treatment was tailored to the bacteria.
- The cost of culture was offset **by reduced milk discard** and **lower treatment costs**.
- **Less total antibiotics** were used, and those used were **more responsible**.

TAKE HOMES

- It is practical and cost effective to culture every mastitis case on-farm.
- Use of products containing penicillin (such as Intracillin® 1000 Milking Cow and Penclox® 1200) is responsible and provides high cure rates.

USING MILK CULTURE TO DECIDE TREATMENT

CASE BY CASE PROTOCOL (CBC)



- When a mastitis case was identified, a sample was taken by the farmer before treatment and a course of penicillin was started (Intracillin[®] 1000 Milking Cow, 1 tube every 12 hours for 3 treatments).
- The sample was cultured at a vet clinic on the same day, and a result was available after 24 hours, once the Intracillin[®] 1000 Milking Cow course had finished.
- A decision was made to change to a different treatment only if *Staph. aureus* or an “unusual” bug was cultured.

THE “TRADITIONAL” APPROACH

DAYS IN MILK PROTOCOL (DIM)

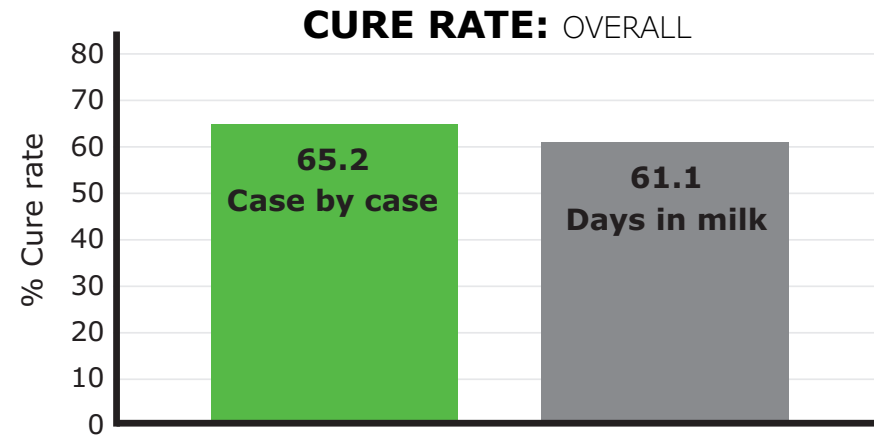


- A second group was included, to help determine if culturing each case was as effective as a more traditional approach of using one drug for calving mastitis, and changing to another later.
- In this group all cows were given a course of a course of penicillin (3 tubes of Intracillin® 1000 Milking Cow 12 hours apart) if they had calved less than 7 days. If they had calved longer, they were given a course of cloxacillin (5 tubes of Orbenin® LA 24 hours apart).
- As a treatment decision was made based on how many “days in milk” a cow was, this was known as the **Days in Milk (DIM) Protocol**.

WAS CULTURING WORTH THE EFFORT?

OVERALL FINDINGS

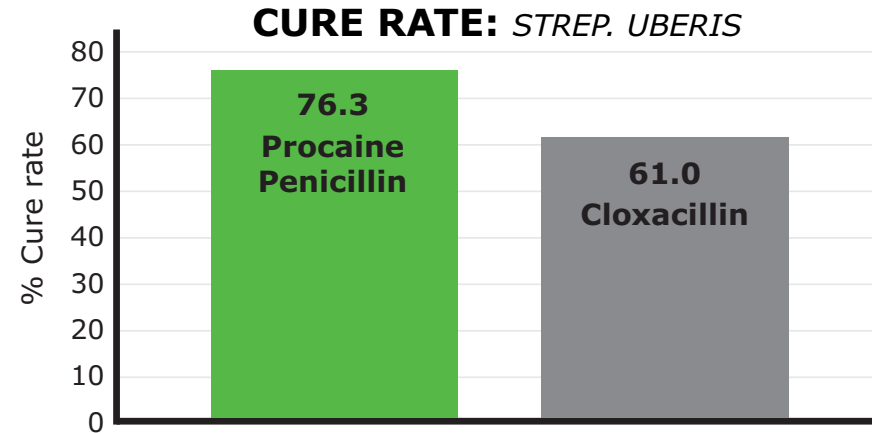
- Case by Case treatment was slightly (but not significantly) better than the traditional DIM approach.
- Less antibiotics were used in total, and a higher proportion of more responsible antibiotics were used.
- Less milk was discarded.
- In most cases the costs of a culture were offset by the lower treatment costs and reduction in lost milk.



WHICH ANTIBIOTIC IS BEST FOR STREPS?

PENICILLIN

- Penicillin (Intracillin® 1000 Milking Cow) produced significantly higher cure rates than cloxacillin (Orbenin® LA) for *Strep. uberis*.
- This was achieved in spite of a much shorter treatment course and total time out of the vat.



HOURS OUT OF VAT: STREP. POSITIVE – CBC VS DIM PROTOCOLS

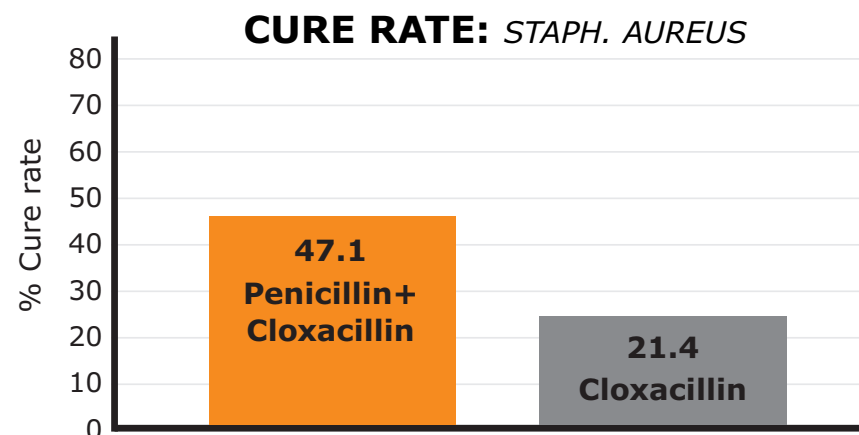
HOURS PASSED	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
CBC Protocol	PENICILLIN ONLY: 3 x 12 hourly			Withholding period (TAD)																
DIM Protocol (>7 days calved)	Withholding period (TAD)			CLOXACILLIN ONLY: 5 x 24 hourly						Withholding period (TAD)										

■ Intracillin® 1000 Milking Cow: WHP (TAD) 96 hours ■ Orbenin® LA: WHP (TAD) 96 hours ■ Withholding period (TAD)

IS THERE A BETTER WAY TO TREAT *STAPH. AUREUS*?

PENICILLIN + CLOXACILLIN

- Treatment with both penicillin and cloxacillin (Intracillin® 1000 Milking Cow and Penclox 1200®) was superior to using just cloxacillin (Orbenin® LA) against *Staph. aureus*.
- Treatment course and time out of the vat is similar between treatments.



HOURS OUT OF VAT: *STREP.* POSITIVE – CBC VS DIM PROTOCOLS

HOURS PASSED	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240		
CBC Protocol	PENICILLIN ONLY: 3 x 12 hourly		PENICILLIN AND CLOXACILLIN: 3 x 24 hourly																			
DIM Protocol				CLOXACILLIN ONLY: 5 x 24 hourly																		

■ Intracillin® 1000 Milking Cow: WHP (TAD) 96 hours
 ■ Penclox® 1200: WHP (TAD) 108 hours
 ■ Orbenin® LA: WHP (TAD) 96 hours
 ■ Withholding period (TAD)



CONCLUSIONS

- **Culturing mastitis cases was practical and financially sound, and resulted in better cure rates and more responsible antibiotic use.**
- **Penicillin alone (Intracillin[®] 1000 Milking Cow) or in combination with cloxacillin (Penclox[®] 1200) is a better treatment option than cloxacillin (Orbenin[®] LA) for both *Strep.* and *Staph.***

REFERENCES

Treatment outcomes of clinical mastitis treated with penicillin or cloxacillin on either a case by case basis after milk culture or by prescription based on numbers of days post partum. M. Clews, A. Kenyon, K. Johnston, S. Oehley, H. Pike, K. Taylor, K. Wyatt, L. Durel. Proceedings of the 2018 International Bovine Mastitis Conference.

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