

Predicting Clinical Mastitis: No Need for a Field Trial?!

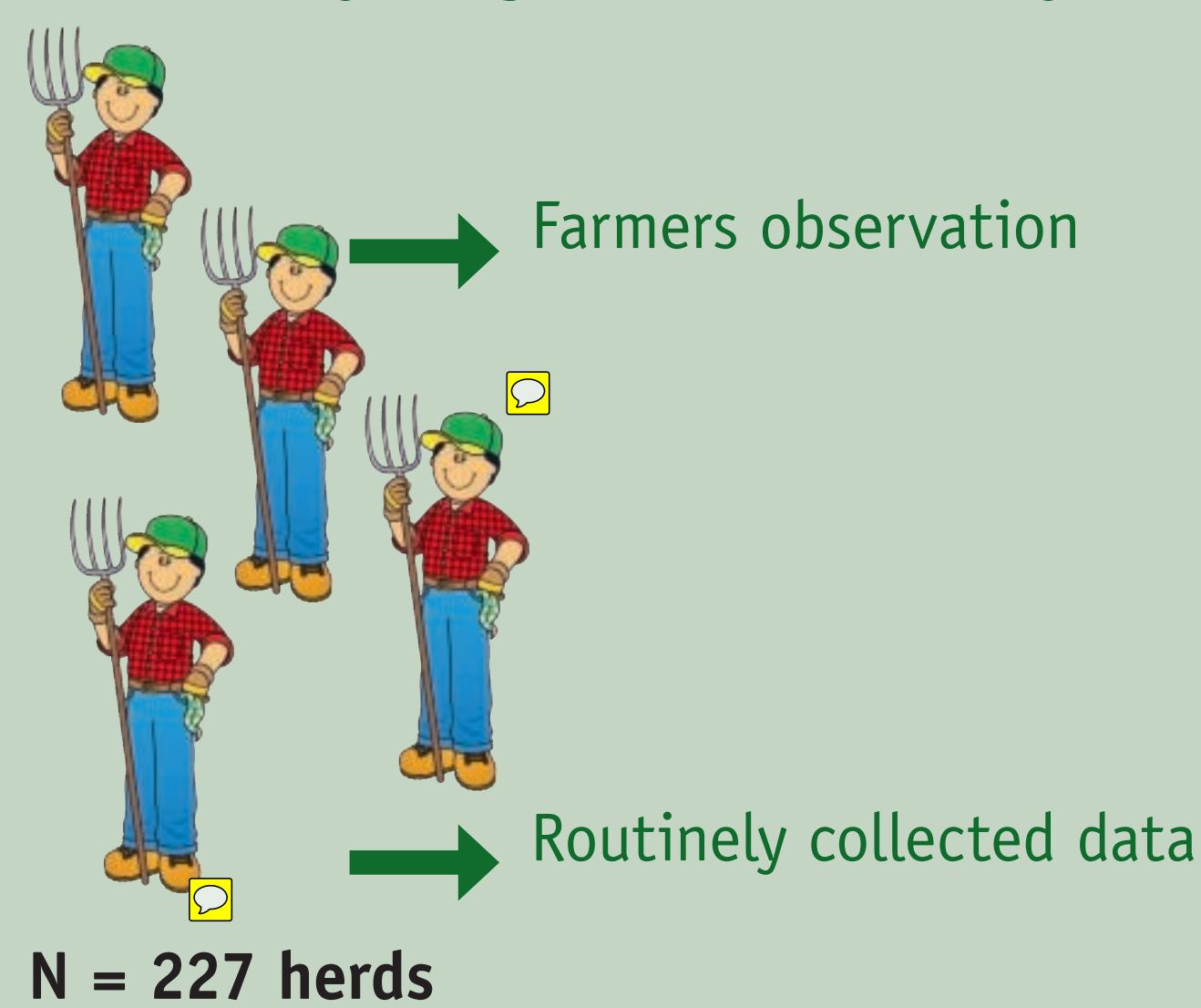
Inge M.G.A. Santman-Berends, Theo J.G.M. Lam, Judith Keurentjes, Gerdien van Schaik

The aim was to develop a model that can:

1. Predict clinical mastitis incidence on routine herd data for all dairy herds
2. Detect individual dairy herds with an elevated clinical mastitis incidence

Developing these models required 1) data on mastitis incidence based on farmers observation and 2) routinely collected data of these herds

Field study: Registration of every Clinical Mastitis case on a monthly basis in 2013 and collecting routinely available data



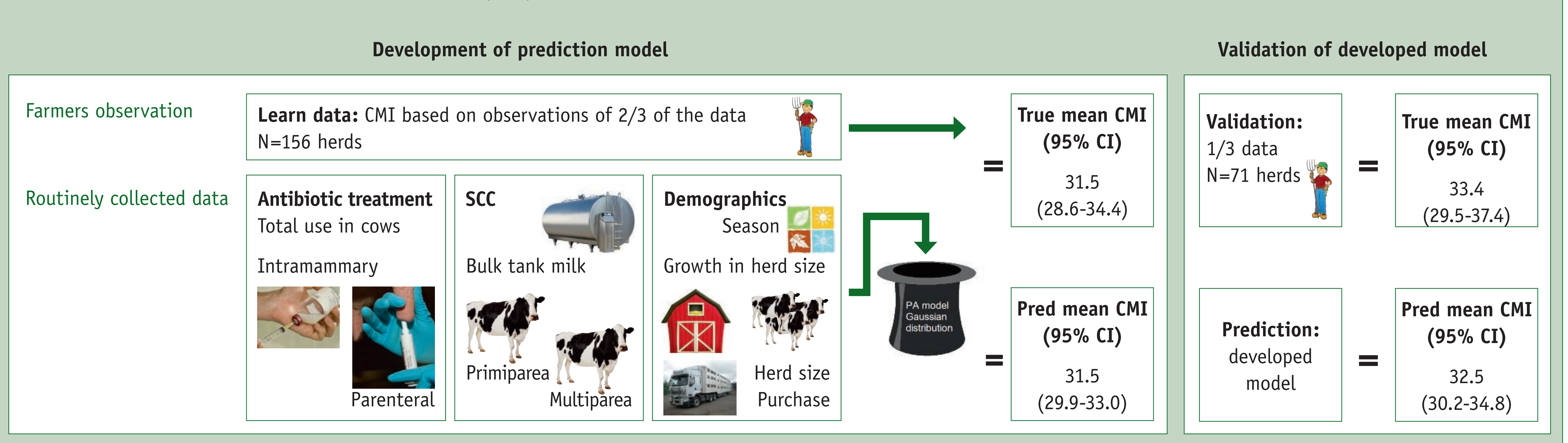
Clinical Mastitis (CM): aspect changes in color and/or consistency and/or presence of clots
Udder: heat, pain and/or swelling of the udder

Clinical Mastitis Incidence (CMI): Number of CM cases divided by the number of cow days at risk (DAR) multiplied by 365 days and 100 cows

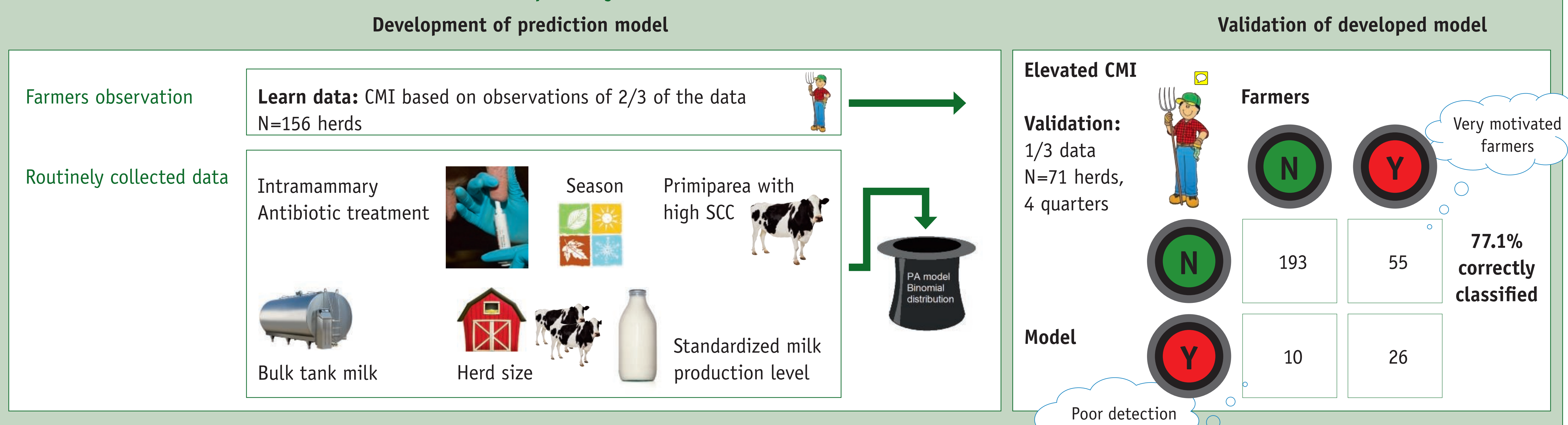
Monthly registration forms

I&R data, metabolic records on test-day level, SCC data on bulk tank milk (3 day level) and test-day level, supplies of antibiotics, results of bacteriological culture

Model 1: Prediction of Clinical Mastitis incidence (CMI) for all herds on year level



Model 2: Detection of herds with an elevated CMI on quarterly level



Discussion

- Model 2 misclassified 23% of the observations. Studying these observations learned that it was questionable whether misclassification occurred. Because, some farmers might have under- or overestimated the amount of CM cases as indicated by the subclinical parameters.
- Although the models show potential predictive capabilities it remains important to re-validate the models every 3 to 4 years because associations between independent and dependent variables may change.

Conclusion

There is no need for yearly field trials to estimate and monitor the average CMI in the dairy population and to detect herds with CM problems. Both can be predicted based on routine herd data.

Acknowledgements: This study was financed by the Dutch Dairy Association (NZO) and the Dutch Commodity board for Dairy (PZ).

I.santman@gdanimalhealth.com

