Knowledge Exchange for the Monitoring and Control of Paratuberculosis on Scottish Farms

Huntley, S.J., Adam, K., Baughan, J., Tongue, S.C., Gunn, G. J.
Epidemiology Research Unit, Scottish Agricultural College
Email: selene.huntley@sac.ac.uk

PARABAN
Knowledge exchange for control of Johne's Disease

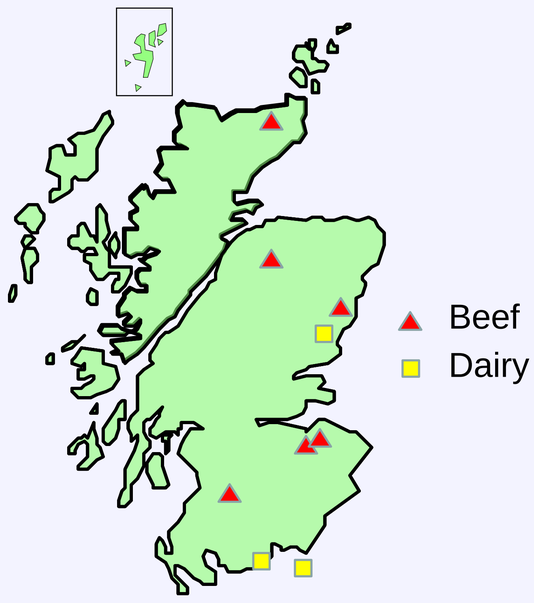
What is PARABAN?

PARABAN is a framework for knowledge exchange amongst all stakeholders involved in the reduction of bovine paratuberculosis on Scottish farms.

What is the aim?

The aim is to identify feasible best practice advice for the monitoring and control of Johne's disease (paratuberculosis) in the Scottish cattle population.

Nine Champion Farmers and Vets



What is Paratuberculosis?

•Paratuberculosis is caused by the bacterium *Mycobacterium avium ssp. paratuberculosis* (MAP).

•Clinical disease (Johne's) in cows results in a thickened small intestine, diarrhoea and chronic wasting eventually resulting in death.

•Subclinical disease can result in poor performance.

Why do we need PARABAN?

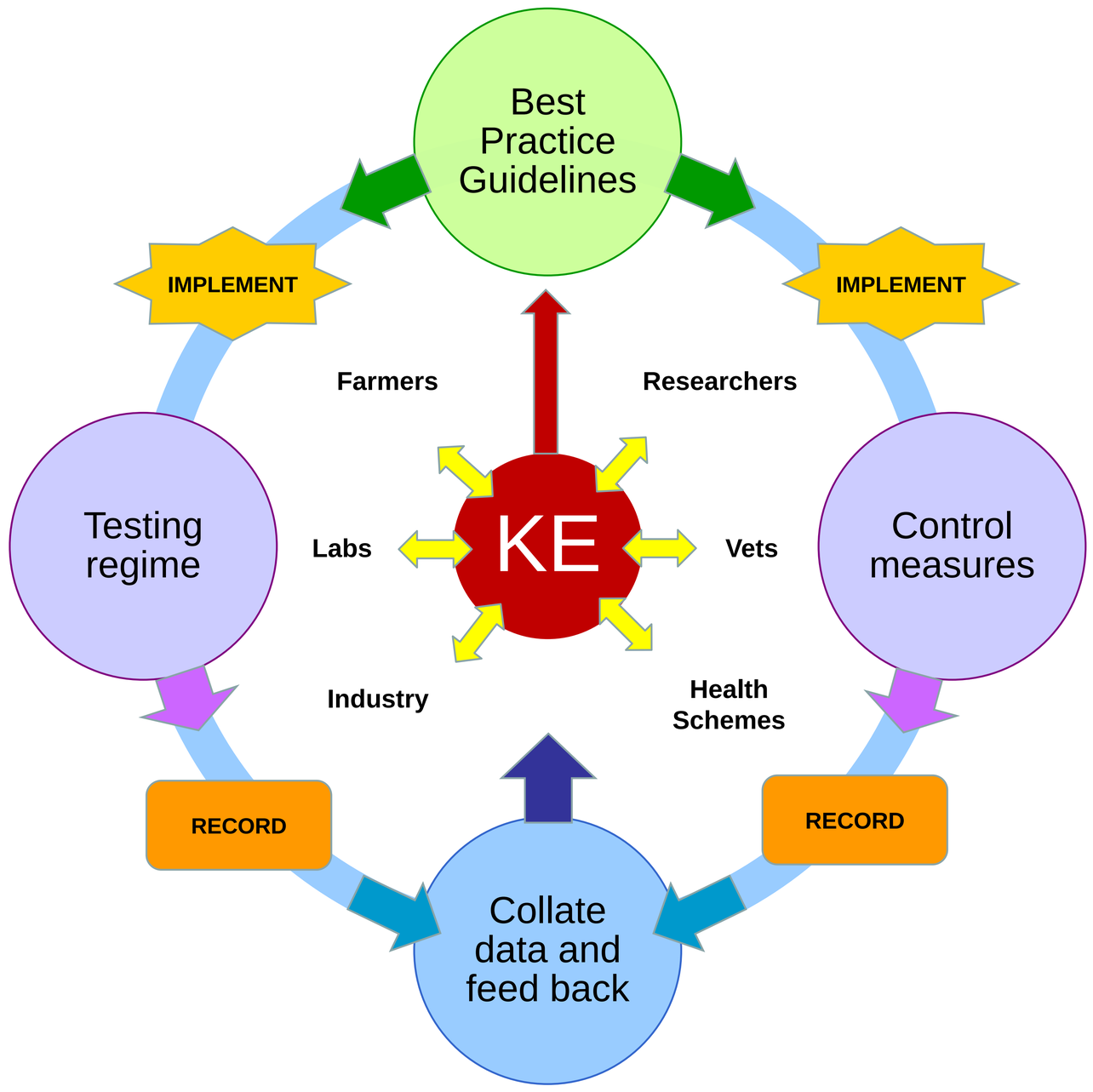
•Paratuberculosis in the herd can be difficult and frustrating to manage.

•Control is best achieved by early removal of infected animals from the herd to prevent further spread.

BUT….this can be difficult to achieve because:
- of a long incubation period (most cows are infected as calves),
- diagnostic tests often fail to pick up infection in earlier stages,
- subclinically infected animals frequently shed bacteria via the faeces.

What testing regimes of live animals help us to make the best on-farm decisions?

•Blood only?
•Blood +/- faeces +/- milk (dairy)?
•Twice yearly?
• Whole herd screening?
• >1 year of age?



What are the most effective and feasible control strategies for each farm?

•Cull positives?
•Isolate then cull?
•Isolate and re-test?
•Isolate and manage?

Within project stakeholder KE	"Wider world" KE
Steering group meetings Knowledge exchange network Results summaries Bulletins	Open days Leaflets DVD Website

Legacy of a framework for the use of KE for disease control

Live animal test results (SAC)	+	Post mortem sampling (University of Glasgow)	+	Environmental sampling (James Hutton Institute)	=	Picture of paratuberculosis on each farm
What combination of blood testing for antibody (ELISA), faecal testing for bacteria (PCR or culture) and, in the case of dairy cows, milk screening for antibody (ELISA) is best?		Can we use abattoir testing as a method to monitor infection in a herd? Post mortem testing may provide greater understanding of the disease process.		What environmental conditions are favourable or detrimental to environmental persistence of MAP? Environmental sampling may help us to understand more about the long term on farm control possibilities.		Improved knowledge of pathogenesis and environmental stability of MAP. Greater understanding of feasible effective practical measures for on farm disease monitoring and control.

Acknowledgements

The PARABAN project is funded by the Scottish Funding Council. under the SPIRIT initiative, with additional funding from Scottish Government for the work undertaken by James Hutton Institute