Research Activities
The projects listed here reflect the most recent VEERU activities since the year 2000.

Research contracts as a main or joint partner:

2004-2007 An integrated approach to biosecurity on UK cattle and sheep farms; evaluating current measures for endemic diseases against exotic threats (in collaboration with the Scottish Agricultural College and The Royal Veterinary College).

The overall objective is to characterise best biosecurity practice against endemic and exotic diseases on UK cattle and sheep farms in ways that facilitate uptake by:

- analyzing existing, voluntary biosecurity initiatives among sheep and cattle farmers in order to assess their development, uptake, suitability and operational mechanisms, provide evidence of potential efficacy and cost/benefit of the approaches and to assess their potential impact on the spread of a list of exotic diseases that pose a current threat to UK cattle and sheep populations; and
- creating a knowledge base for biosecurity that aims to categorise, structure and link sources of information on biosecurity in ways that add value to existing data and provide a framework for future development after the project is over and developing policy recommendations for industry and government.

This project is funded by DEFRA.
For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk.
2004-2006 Development of information useful as management tools in the dairy industry, using existing routinely recorded data.

Working in association with the PAN Livestock Services Limited (www.panlivestock.com) and the National Milk Records plc. (NMR) this project will concentrate on improving the use of existing information available at the level of the milk recording organisation. The project objective is to assess the information needs of key entities in the dairy industry and design, develop and promote commercially viable outputs. Potential customers for outputs (farmers, MDC, BCVA, drug companies, DEFRA, milk buyers, farm assurance etc) and their precise requirements will be identified.

The key activities are likely to include:

- Review existing information sources in the industry and their strengths/weaknesses
- Review contents of the milk recording database and identify potential avenues of analysis with commercial opportunities
- Prepare business development plans that match commercial potential and prioritise analyses and reports
- Develop outputs that provide management information for customers
- Coordinate programmers/statisticians / customers to develop reports
- Support promotion and implementation in UK market
- Promote the important contribution of recording organisations to improving animal welfare, disease surveillance and other aspects of farm assurance

The project is funded by DTI/DEFRA via the Knowledge Transfer Program.
For further information about this project, contact Nick Taylor at n.m.taylor@reading.ac.uk.

2004 -2005 Detailed investigation of the methods and characteristics of spread of FMD in specific geographic clusters and the effects of control measures during the 2001 epidemic (in collaboration with Euro-Edge, Scotland)

The aim of the project is to:
- describe in detail the epidemiology of the FMD epidemic in the Cumbria, Settle and possibly South West clusters. Epidemiological parameters will be quantified and the possible relationships between control measures and development of the epidemic within clusters and sub-clusters will be examined; specifically examine the possible importance of milk tankers as a means of spread of FMD during the epidemic in Cumbria and to quantify the relative importance of possible farm level risk factors associated with FMD infection during the epidemic.

This project is funded by DEFRA.
For further information about this project, contact Nick Taylor at n.m.taylor@reading.ac.uk.

2004 - 2005 Best practice in animal health planning and disease prevention in the UK (in collaboration with the Scottish Agricultural College).

The objective of this project is to investigate the current best practice in health and welfare planning in all four major livestock
systems in the UK in order to produce a comprehensive picture of where the industry is at with regard to
  o extent and ownership of the schemes and
  o content and potential impact of the schemes.
This project is funded by DEFRA and supports the work of the DEFRA Working Group on Positive Animal Health.
For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk.

2004 Assessing livestock farmers’ attitudes towards consequential loss insurance (Principal Investigator: Professor Chris Garforth, International Rural Development, School of Agriculture, Policy and Development, The University of Reading)
This project is funded by DEFRA.
For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk.

2003-2004 Using milk protein content as an indicator of fertility performance in dairy cows
A PhD study in to the potential of milk protein as an indicator of energy balance in early lactation. Negative energy balance in early lactation is known to correspond with poor fertility. Reduced levels of milk protein are also known to be associated with energy deficiency in the diet of the cow. This study compared the subsequent fertility performance of cows against the milk constituents in early lactation. In particular this examined the difference between the recorded level of milk protein and a level predicted from analysis of previous milk records on the farm. The study used in excess of 1.9 million cow records obtained from milk recording data on nearly 9,000 UK commercial dairy herds over a five year period.
This project was funded by Consejo Nacional de Ciencia y Tecnología and Universidad Michoacana de San Nicolás de Hidalgo, Mexico
For further information about this project, contact James Hanks at panveeru@panveeru.net.

2003 -2005 Sustaining animal health and food safety in organic farming:
This project is aimed at improving food safety and animal health in organic livestock production systems in existing and candidate member countries of the EU through exchange and active communication of research results and conclusions between researchers, policy makers, farmers and the wider stakeholder community, including consumers
  o by providing a network in which consumer and policy maker concerns about food safety and animal health and welfare in the expanding field of organic production can be addressed; and
  o by supporting the process of development and implementation of EU-standards on organic livestock production in the diverse climate of agricultural production systems in the member countries.
VEERU is one of five coordinators of this project. More information and access to project publications are available at www.safonetwork.org.
This project is funded by the EU Commission.
For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk.
2002-2004 The use of data analysis, feedback and decision support in dairy veterinary practice and the development of business models for the future
Working in association with the PAN Livestock Services Limited (www.panlivestock.com) and the National Milk Records plc. (NMR) the project worked on establishing different user-models of InterHerd, a dairy management software developed by VEERU/PAN Livestock Services, in UK dairy veterinary practices. Case studies were carried out to assess how the veterinary-client relationship developed and business models were produced for different user interfaces, in order to explore how a practice could change its services by using InterHerd.

The project was funded by DTI/DEFRA via the Teaching Company Scheme (currently Knowledge Transfer Program).
A copy of the MPhil-thesis, written by the TCS Associate and detailing the project outcomes is available in pdf format (Report).
For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk.

2002-2004 Constraints to uptake of adequate biosecurity on UK cattle and sheep farms, with special reference to zoonotic diseases (in collaboration with the Scottish Agricultural College)
Five surveys were carried out:
- to identify issues that cattle and sheep farmers considered as key constraints and incentives to uptake of better biosecurity measures on cattle and sheep farms
- to identify issues that the members of the British Cattle Veterinary Association and the Sheep Veterinary Society consider as key constraints to uptake of better biosecurity on cattle and sheep farms
- to carry out case studies and associated cost-benefit analyses on the establishment of adequate biosecurity measures on a number of cattle and sheep farms
- to identify issues that the auxiliary industries (livestock markets, hauliers and cattle dealers) consider as key constraints and incentives to uptake of better biosecurity measures on cattle and sheep farms; and
- to identify constraints on the uptake of and adherence to animal health schemes offering accreditation for disease freedom or disease monitoring.

A copy of the final report to DEFRA is not available yet.
This project was funded by DEFRA.
For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk.

2002-2003 Cost benefit analysis to underpin the establishment of a permanent animal movement control regime in the UK.
Working in association with PAN Livestock Services Limited (www.panlivestock.com), a cost benefit analysis was conducted of the animal movement regime that was imposed following the FMD outbreak. Findings resulted in the Minister announcing a relaxation of the movement restriction from twenty to six days.
The final report of the project is available here http://www.defra.gov.uk/animalh/diseases/movements/veeru-report.pdf
This project was funded by DEFRA.
For further information about this project, contact Martin Upton at m.upton@reading.ac.uk

**2002-2003 Review of epidemiological models in informing disease control policy development and adjustment**
The aim of this project was to produce a document that would
- present a background to the techniques of modeling;
- discuss specific roles which models may play in animal health decision making;
- discuss different types of model, their scope, basic principles and constraints;
- provide examples of the use of modeling in animal disease and control planning and evaluation;
- discuss, in particular, earlier models of foot-and-mouth disease (FMD) and modeling of the 1997/98 classical swine fever (CSF) epidemic in the Netherlands;
- examine the influence of modeling during the FMD epidemic in the UK in 2001; and
- provide recommendations for the future research and development required to support decisions involved in control of FMD and presents guidelines to be followed when using models to support decision making.


This project was funded by DEFRA.

For further information about this project, contact Nick Taylor at n.m.taylor@reading.ac.uk

**2002 Economic analysis of FMD vaccination in the UK**
Following the recent foot and mouth disease (FMD) epidemic in the UK, the Royal Society, as part of the official inquiry into infectious diseases in livestock, invited an examination of vaccination policies with regard to:
1. Barriers to protect the country from the importation of the disease; and
2. Methods of controlling and eradicating FMD if it is imported.

These issues are distinct and required separate analyses, however both require information on the use of vaccination against this disease. Prophylactic vaccination is an option in the analysis of the range of strategies available to prevent the entry of FMD into the UK livestock population. Vaccination in the face of an outbreak is an option available for the control and eradication of the disease. The resulting report presents an analysis of prophylactic vaccination and also a structure to help decision makers on the choices of control and eradication strategies in the face of an epidemic. This information has been placed in the context of the history of FMD in the UK, livestock systems in the country and information on movement and the export environment.


This project was funded by the Royal Society.

For further information about this project, contact Nick Taylor at n.m.taylor@reading.ac.uk

**2002-2003 Vaccine used in organic cattle and sheep systems: development of a decision support tool (DeSTVAC) based on**
risk assessment (in collaboration with the Scottish Agricultural College)
The aim of the project was to support a consistent approach to decision making on vaccine use among organic dairy, beef and sheep farmers and their advisers, including veterinarians, by developing a decision support tool on vaccine use in order to help organic producers and their veterinarians;
  o to assess an individual farm situation in relation to a specific disease risk;
  o to implement specific risk management measures;
  o to communicate the decision with adequate precision to the certification bodies; and
  o to provide certification bodies with baseline information on risk factors and risk management measures and their significance so that they could judge veterinary/farmer decisions on vaccine use adequately.
DeSTVAC is an electronic, web-based decision support tool available free of charge at www.destvac.reading.ac.uk
This project was funded by DEFRA.
For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk
2001-2003 Animal welfare in organic farming
This was a policy research project with the aim of defining potential animal welfare benefits and problems in organic livestock production systems and developing recommendations for welfare assessment and promotion within the UK organic certification system.
The final report of the project is available here in pdf format (Report).
This project was funded by SEERAD.
For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk
2000-2004 Assessment of factors influencing the development of resistance to fluoroquinolone antibiotics used in pigs and poultry (in association with the Veterinary Laboratories Agency)
The aim of the project was:
  o To assess at the national level the farm prevalence of fluoroquinolone resistant Campylobacter and E.coli in pigs and poultry on-farm under different production systems;
  o To identify risk factors associated with fluoroquinolone resistance; examine the dissemination of resistant clonal lines through poultry and pig breeding networks;
  o To study the dynamics of the transfer of resistant organisms through hatcheries, and on-farm between subsequent poultry flocks or batches of pigs through the survival of resistant organisms;
  o To assess the development of fluoroquinolone resistance in farms where fluoroquinolones are used for the first time and the persistence of fluoroquinolone resistance in farms where therapy has been withdrawn; and
  o To produce draft guidance pamphlets for veterinarians and farming company livestock managers on the optimum use of fluoroquinolones to reduce the problem of antimicrobial resistance.
The final report of the project is not available yet.
2000-2001 Organic dairy cows: milk yield and lactation characteristics in thirteen established herds and development of a herd simulation model for organic milk production

Monthly milk records for 13 organic herds for three years were collected and converted into a Microsoft Access™ database, using InterHerd™ (Agrisoft Plc., UK) herd management software. The data were sorted and analysed using the InterHerd™-herd management, Excel for Windows™ and Statistix for Windows™ software programmes. Estimated parameters were used to examine the importance of two important indicators: lifetime yield/lactation length and economic efficiency. To assess the first, a spreadsheet model based on the Wood's lactation curve was developed. With regard to the latter, a model calculator was used. The final report of the project is available here in pdf format (Report).

This project was funded by MAFF.
For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk

2000 An epidemiological survey of vitamin E deficiency in the UK sheep flock

The questionnaire study of sheep farmers investigated the extent of the problem of vitamin E deficiency in the UK sheep flock and identified some of the key influential factors and provided recommendations for further research. The final report of the project is not available.

This project was funded by MAFF.
For further information about this project, contact Steve Roderick at s.roderick@cornwall.ac.uk.


This was a concerted action project and had the aim:

- To provide a joint platform for organisations and institutions involved in organic livestock production, particularly in animal health and welfare research;
- To enable sharing of information and ideas along with development of new research priorities and to analyse the conventional research methodologies and their suitability to organic livestock research;
- To create a forum for an on-going discussion on animal production and welfare and their interrelationship within the framework of organic livestock production in order to contribute to the development of organic regulations;
- To provide back-up material for advisory bodies working within organic farming by producing a series of publications from the workshops;
- To contribute towards the utilization of preventive veterinary medicine, alternative animal health and management practices and animal behaviour and welfare sciences within livestock production systems and towards teaching these issues in agricultural and veterinary education; and
- To increase information availability and sharing on animal health and welfare issues both in organic and conventional
livestock production.
VEERU was the main coordinator of this project. More information and access to project publications are available at
www.veeru.reading.ac.uk/organic.
This project was funded by the EU Commission.
For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk.

The project created a database and archive of information on animal health, welfare and husbandry relevant to livestock production under organic standards; assessed the database and its relevance to organic livestock production and developed a series of compendia of advisory resource materials on CD-ROM and in printed format, in consultation with relevant sector bodies, the veterinary profession and organic livestock producers. The compendia have been reviewed by specialist veterinarians, advisors and farmers.
The compendium has been produced in a CD ROM format and is internet accessible at http://www.organic-vet.reading.ac.uk/
This project was funded by MAFF.
For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk.

Other major activities:

2003-2004 Twinning Light Project, Malta: capacity building in the food and veterinary regulation division in the area of milk production – a consultancy project.
The objective of the project was to develop capacity in the Food and Veterinary Division and farmers’ organizations to provide effective support for farmers to improve productivity and comply with current and forthcoming EU legislation relating to milk production, specifically Council Directive 92/46/EEC laying down health rules for the production and placing on the market of raw milk, heat-treated milk and milk based products. The project initiated an improvement in the quality of cow’s milk, especially with regard to the somatic cell count (SCC) and total bacterial count (TBC). The project has identified a follow up programme to ensure that the improved management practices are maintained and extended to all dairy farms in Malta and Gozo.
This project was funded by the EU Commission.
For further information about this project, contact Andrew James at panveeru@panveeru.net.

of potential benefits, costs and risks of improved disease control in three provinces
This study was carried out within the framework of the EU-funded Strengthening Veterinary Services in Vietnam (SVSV) Project, and was a collaboration between the local project staff and two external consultants from VEERU. The study met two objectives:
- to develop strategy options for the control of Classical Swine Fever (CSF) in the Red River Delta (RRD) for further discussion and selection by decision makers; and
- to provide capacity building to the Vietnamese Veterinary Services,
The approach was based on the principles of consultation, triangulation and interaction. The study was carried out in three phases.
This project was funded by the EU Commission.
The final report of the project is available here in pdf format (Report).
For further information about this project, contact Nick Taylor at n.m.taylor@reading.ac.uk

2002-2003 The options for a livestock disease-free zone (DFZ) in the Red River Delta of Vietnam
A feasibility study was carried out within the framework of the EU-funded Strengthening Veterinary Services in Vietnam (SVSV) Project to assist DAH in identifying the necessary steps, as well as their technical and economic implications, to develop DFZ in the Red River Delta (RRD). It is considered to be an essential contribution for a future OIE SEAFMD Working Group on the Red River Basin Disease-free Zoning Proposal, as well as for the present national programme.
This project was funded by the EU Commission.
The final report of the project is available here in pdf format (Report).
For further information about this project, contact Nick Taylor at n.m.taylor@reading.ac.uk

2001-2002 VEERU staff were heavily involved in the foot and mouth disease outbreak in the UK
Two members of staff worked for MAFF at both farm level and in the main epidemiology unit in Carlisle.
If you are interested in finding out how a small research unit coped with and benefited from being involved in a major, national animal disease incidence, contact Nick Taylor at n.m.taylor@reading.ac.uk.

Research subcontracts and consultancies:

2003-2006 Assessment of animal welfare on organic and conventional dairy farms – a consultancy agreement with the Scottish Agricultural College
VEERU provides expertise on animal health and welfare issues in organic farming to this project.
This project is funded by DEFRA.
For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk.
2003-2004 Workshops on FMD outbreak investigation – a consultancy agreement with the FAO
VEERU staff ran two workshops under the auspices of FAO’s EUFMD Committee. The workshops, in Athens and in Budapest involved countries from the Balkans, Turkey and the Transcaucasus regions. The objective of the workshops was to develop FMD outbreak investigation and tracing guidelines and develop guidelines on post-outbreak sero-surveillance and follow-up. This project was funded by the FAO.
For further information about this project, contact Nick Taylor at n.m.taylor@reading.ac.uk

2003 - 2004 Excretion of VTEC 0157 in cattle: intervention study – a subcontract with the Veterinary Laboratories Agency
VEERU’s primary input to this study is to develop data collection framework for financial (cost) data for the interventions and to collate and analyse these data. The aim is
- to produce estimates of the cost of different intervention approaches on different farms based on partial budgeting; and
- to carry out a limited sensitivity analysis based on cost variation in different farm situations and where input costs may vary due to external forces.
Secondly, VEERU will develop data collection framework for qualitative farmer attitude and perception data and to collate and analyse this data. The aim is
- To develop a “tolerance profile” of different interventions; and
- To create a list of major constraints and perceived benefits to/from implementation of the chosen interventions.
This project is funded by DEFRA.
For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk.

2001-2005 Efficacy of homeopathic nosodes in mastitis control – a consultancy agreement with the University of Bristol
VEERU provides expertise on organic animal health and welfare to this project.
This project is funded by MAFF/DEFRA.
For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk.

2003 Identification of research needs in the development of organic poultry breeding systems – a subcontract with ADAS - Gleadthorpe
The aim of this project was to identify potential problems and gaps in knowledge in the development of organic poultry breeding systems that would be compliant with the EU legislation. VEERU provided animal health and welfare expertise to this project.
The final report for the project is available from Andrew Walker at andrew.walker@adas.co.uk
This project was funded by DEFRA.
For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk.

2003-2004 Development of animal based welfare assessment as part of certification inspection on organic livestock farms – a consultancy agreement with the University of Bristol
VEERU provided expertise on organic animal health and welfare to this project. The project outcomes can be accessed from the web-site: http://www.vetschool.bris.ac.uk/animalwelfare. This project is funded by DEFRA. For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk.

2001-2004 Epidemiological studies on the influence of antimicrobial agent usage, medication policy and management strategies on the occurrence and persistence of antimicrobial resistance in food animal production – a consultancy agreement with the Veterinary Laboratories Agency
VEERU provided expertise on organic animal health and welfare to this project. This project is funded by the VMD. For further information about this project, contact Malla Hovi at m.hovi@reading.ac.uk.

2001-2003 Epidemiological studies of salmonella in pigs and control by intervention – a subcontract with the Veterinary Laboratories Agency
VEERU provided economic and socio-economic expertise to the study. This project was funded by DEFRA. For further information about this project, contact Anni McLeod at Anni.McLeod@fao.org.