

Products

Animal disease diagnostic kits

Cirad distributes or sub-contracts the distribution of several diagnostic kits. The following are available: ELISA kits (serodiagnosis) for CBPP, goat plague and cattle plague; CFR diagnostic kits (complement fixation reaction diagnostic) for CBPP, etc.

<http://www.cirad.fr/innovation-expertise/produits-et-services/produits-veterinaires>

Vaccine against goat plague

The vaccine developed by Cirad and its partners against goat plague is the result of work conducted since 1980. To date it remains the most effective way of combating this disease. A mass campaign was conducted with the Moroccan production company Biopharma and the Moroccan veterinary services in 2008.

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Patents

Titre: Interfering RNA targeting the morbillivirus N gene

Inventor(s): Albina Emmanuel; Libeau Geneviève; Keita Djebena; Servan de Almeida Ranata

Title: New gene vaccination liposome

Inventors: Laurence Dedieu; Michael Mockey; Carolina Tafalla (INIA); Alberto Cuesta (INIA)

Learning about the tse-tse fly

What are the means of protection? What is a trypanosome? Why is it a hindrance to development? In 56 pages, this "compilivre" (part-book, part CD-ROM) is an educational reconfiguration of knowledge with the aim of a better understanding of the complexity of vector parasitic diseases. It brings together scientists' knowledge alongside that of farmers and camel drivers.

Bilingual French/English, 56 pages, 65 drawings, 2 maps, € 30. [espace. idees@cirad.fr](mailto:idees@cirad.fr)

Training

Since 2004 Cirad, in partnership with the National Veterinary School at Alfort, has designed RANEMA, an interactive distance training tool in epidemiology: you are a vet working for the Veterinary Services of Ranema, a virtual country divided into two administrative zones corresponding to two distinct climate zones. For the purposes of your assignment you are reviewing the basics of epidemiology... This scenario helps you acquire the basics of animal epidemiology and consider various epidemiological situations, employing the most commonly used tools.

Hence there are nine non-taught remote training modules, including Ranema Stat (statistical concepts necessary to understand the complex concepts of epidemiology) and Ranema Flu (prevention and control of Highly Pathogenic Avian Influenza (HPAI), freely available from the Cirad e-learning platform: <http://elearning.cirad.fr/>)

A host of modular training sessions can also be organised on request: basics of animal disease epidemiology (remote training); wild fauna and development; molecular diagnostics for early detection of type A avian influenza and Newcastle disease viruses; food hygiene and veterinary public health in Southern countries; epidemiological monitoring methodology; pastoral farming: societies and territories; tropical aquaculture; diagnostic techniques for CBPP; diagnostic techniques for goat plague; information systems applied to epidemiological monitoring.

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> www.cirad.fr/enseignement-formation/offre-de-formation



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VIP

TECHNOLOGY TRANSFER
AND DEVELOPMENT NEWSLETTER

Animal health

Epidemiologists know no boundaries: diseases travel with animals, foods and their vectors. They are also capable of bridging the gap between species, which appeared to safeguard humans from animal contamination. Avian influenza, prions, foot-and-mouth disease and other recent public health events (chikungunya, blue tongue, etc.) have confirmed joint analyses by a host of players in research, monitoring, animal health and public health: the threats posed by infectious animal diseases are serious; the need to study the vectors and pathogen agents, and to model the epidemic risks, is becoming urgent due to the acceleration of global changes (climate context, changing modes of consumption and distribution, intensification of international movements of people and foodstuffs).

Cirad is a national and worldwide benchmark laboratory for Rift Valley Fever, blue tongue, goat plague (PPR), cattle plague and animal pox viruses. It is also the benchmark centre of the OIE and FAO for contagious bovine pleuropneumonia (CBPP), contagious caprine pleuropneumonia (CCPP), cowdrioses, goat plague, cattle plague and animal trypanosomes. As a benchmark laboratory for diagnostics, epidemiological study and tropical animal disease control, we are at the heart of the animal health research networks.

Whether for cattle or wildlife, poultry farming or fish farming, there is an apparent need to study animal diseases to protect humans and prevent any contamination. The emergence or re-emergence of diseases, associated with the extension of diffusion zones of some tropical diseases, show the importance of the research that we are conducting in Southern countries. Hence Cirad is a central player and a favoured partner in animal health.

FOCUS

75 % of emerging viral entities analysed over the past ten years were of animal origin, or animals formed a major component of the dynamic of their infection process.

www.cirad.fr/en/innovation-expertise/

 **cirad**
LA RECHERCHE AGRONOMIQUE
POUR LE DÉVELOPPEMENT

Expertise, project and partnership

EDENext (2011–2014): “Biology and control of vector-borne infections in Europe”, a research project of the Health aspect of the European Commission 7th framework programme for research and technological development.

“EDEN (2004–2010) targeted the effect of environmental changes on the emergence of vector transmission diseases (mosquitoes, ticks, etc.). EDENext will go further in understanding the ecological and biological mechanisms leading to epidemics of such diseases. The project emphasises the social and economic factors promoting contamination. Besides understanding and modelling these risks, the main thrust of the project relates to the intervention and control strategies of diseases for which vaccines are rarely available. The objective is to suggest prevention actions tailored to the constraints of exposed populations. For this project, Cirad is coordinating the activities of its 46 partners across 22 countries.”

Dominique Martinez, Cirad

More information on: <http://www.edenext.eu/>
and on the site www.cirad.fr



RESEARCH issues

Participating in international networks

The development of international animal health and veterinary public health networks is essential. A host of exotic diseases are threatening zones currently disease-free, especially in Europe. In a context of global change due to environmental alterations, increasing world trade in animals and animal products, as well as increasing movements of human populations, are major factors to take into account for studying contamination risks.

The complexity of the pathogen system and the increasing instability of its environment influence the evolution of these major parasitic diseases. So their management relies both on knowledge of the parasites-vectors-hosts set, and on knowledge of climate, environmental and socio-economic factors.

See also “Perspective” no.13 on www.cirad.fr “Avian influenza in Africa: targeting vigilance”, Marie-Noël de Visscher, Véronique Chevalier, Nicolas Gaidet-Drapier

Cirad coordinates the French culicoides monitoring network

The genus *Culicoides* has more than 1300 species of midge, 84 of which are present in France. The adults, small biting insects of 1 to 4 mm, are vectors of blue tongue. In 2002, the General Directorate for Food [Ministry for Food, Agriculture and Fisheries] instructed Cirad to coordinate the monitoring of *Culicoides* activity in France [at the time only Corsica was infected], track the changing distribution of these vectors across the Mediterranean basin and study the transmission of the blue tongue virus across the continent.

Since 2009, the whole of Mainland France has been covered by a monitoring network which enables inventorisation of *Culicoides* species, tracking their population dynamics and determining the activity start and end dates.

Online dictionary of animal sciences

Accessible via the Internet, this version of the “Dictionary of Animal Sciences” contains 29,818 articles on words and expressions about animals or relating to animals, such as their ecosystems (especially Mediterranean flora) and husbandry.

Meyer C., ed. sc., 2012, Dictionary of Animal Sciences.
<http://dico-sciences-animales.cirad.fr/>

Diagnostics of infections by trypanosomatidae

Cirad represents a pool of multi-discipline skills, with the ability to provide a quick response to any human or animal trypanosomiasis alert situation in conventional or non-conventional contexts, such as the appearance of new trypanosome sites in France following imports of infected animals.

Other expertise

Worldwide support to diagnostic laboratories and confirmations of diagnostics made by national or regional laboratories.

Spatial analyses of ecological and epidemiological data

Setting up infectious disease monitoring systems at national or regional level in the South

Evaluation of monitoring networks, national or regional

Management plan for protected areas and peripheral zones

Control and management of invading animal species in island environments.

Definition of eco-epidemiological surveys and studies.

Support to fauna industries and organisation of players (local communities, public institutions, private sector, etc.).

> Joint Research Unit UMR Emerging and Exotic Animal Disease Control

> Joint Research Unit UMR Host-Vector-Parasite Interactions in Infections by Trypanosomatidae (UMR InterTryp)

> Internal Research Unit UPR Animal and Integrated Risk Management (UPR Agiris)

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“Les savoirs partagés” collection [shared knowledge]

- Avian influenza
- Blue tongue
- Foot-and-mouth disease

These educational booklets, aimed at the general public, offer validated knowledge of scientific or topical subjects. Produced with the support of Cirad researchers and partners, these booklets do not simplify knowledge, but reconfigure it so that it is universally comprehensible. They can be used for individual learning or collective training, and are available on request from espace.idees@cirad.fr

