DISCONTOOLS

Symposium

Filling the knowledge gaps in animal disease control

20 October 2021
Brussels, Belgium

#DISCONTOOLS

Organised in collaboration with STAR-IDAZ IRC & hosted by AnimalhealthEurope

Filling the knowledge gaps in animal disease control

Assessing animal health research needs for a healthy planet

Background

Improving animal health is a key factor to address today's global challenges. It is an essential component to improve animal welfare, to secure the provision of safe and nutritious food of a growing world population, to improve livelihoods and stimulate economic growth in rural areas and to reduce natural resource use and climate emissions of the livestock sector. At the same time, global changes such as increased mobility of people and animals, changing consumer behaviours and climate change are altering disease risk and leading to disease spill-over events between animals and humans. Public and private sectors act upon these challenges and invest in research for the development of new animal health solutions. This has improved our knowledge on pathogens & immune mechanisms and led to the development of new medicines, diagnostics and control methods. But with the renewed attention for the control of infectious diseases, what are the most pressing gaps that need to be filled, and where will future research have the largest impact?

The symposium will draw on the DISCONTOOLS and STAR-IDAZ IRC initiatives to identify current research gaps and provide research road maps for innovations in animal health. It hopes to bring together scientists, policy makers, and representatives from the animal health industry, funding bodies and stakeholder organisations to enhance collaboration for animal health and discuss research priorities from different perspectives.

Objectives

With DISCONTOOLS having completed the update of near 53 disease chapters, the time is right to summarise the gaps in control tools, identify disease-specific as well as cross-cutting research needs and define the path towards required new control tools. The symposium aims to

- Highlight DISCONTOOLS animal health research gaps for epizootic, production and zoonotic animal diseases;
- Disseminate STAR-IDAZ research road maps for new animal health solutions;
- Couple the research gaps and road maps with recent and future animal health funding initiatives (Horizon Europe, European Partnership Animal Health & Welfare);
- Increase the mutual understanding of animal health research needs by different stakeholders;
- Discuss animal health research priorities to deliver on the sustainable development goals.

Programme

Moderated by: Florence Ranson, REDComms

TIMING	TOPICS	SPEAKERS
08:30	Registration	
STATE OF PLAY		
09:00	High level introduction speech	Stephan Zientara, ANSES and Claire Bury, Deputy Director General DG SANTE
09:20	Identifying research gaps (DISCONTOOLS)	Johannes Charlier, DISCONTOOLS Project Manager, AnimalhealthEurope
09:45	Epizootic – African Swine Fever	José Manuel Sánchez-Vizcaíno, Universidad Complutense de Madrid
10:05	Epizootic – Animal Influenza	Timm Harder, Friedrich-Loeffler-Institut
10:25	Production - Endoparasites	Diana Williams, University of Liverpool and Jozef Vercruysse, Ghent University
10:45	**COFFEE BREAK**	
11:15	Zoonotic - Bovine tuberculosis	Glyn Hewinson, Aberystwyth University
	COLLABORATING FOR ANIMAL HEALTH	
11:35	Public-private partnerships in animal health research - a view from a pharma company	Nigel Swift, Global Head of Veterinary Public Health at Boehringer Ingelheim
12:00	**NETWORKING BUFFET & POSTER SESSION BY DISCONTOOLS EXPERT GROUPS**	
	FILLING THE GAPS	
13:30	STAR-IDAZ IRC road maps to coordinate research	Alex Morrow, coordinator STAR-IDAZ secretariat (SIRCAH)
13:50	Towards a European Partnership in Animal Health & Welfare (EUPAHW): status and priorities	Jean-Charles Cavitte, Research Policy Officer DG AGRI and Hein Imberechts, coordinator EUPAHW application, Sciensano
14:30	**COFFEE BREAK**	
15:00	**PANEL DISCUSSION: SETTING DISEASE AND CROSS-CUTTING PRIORITIES** Paula de Vera – Copa Cogeca Nancy De Briyne – FVE David John - AnimalhealthEurope Jonathan Rushton - University of Liverpool Suzanne Rasmussen, DG SANTE	
16:15	Concluding moments	

Dr. Johannes Charlier

DISCONTOOLS

Bio

Johannes is a veterinary scientist and founding manager of the animal health research & consulting agency Kreavet. He obtained his PhD in veterinary sciences from Ghent University where he specialised during 13 years in the diagnosis, epidemiology, control and economics of parasitic helminth infections in ruminants. His research contributions were published in > 90 scientific publications and received 2 international awards. He served 2 years as scientific director at Avia-GIS and founded Kreavet in 2017. He is project manager of DISCONTOOLS at AnimalhealthEurope with the aim to maintain updated information on research gaps for infectious animal diseases in an open-access database and contributes in this function to the secretariat of the STAR-IDAZ international research consortium on animal health. Johannes is also chair of the COST Action COMBAR "Combatting Anthelmintic Resistance in Ruminants" and regularly acts as guest-editor of various scientific journals.

Thoughts on the matter

Animal diseases impact on the productivity of farms by at least 20%. Control and prevention of animal disease is essential for securing food provision, safeguarding animal welfare and public health and reducing undesired emissions and resource use from livestock. DISCONTOOLS is a stakeholder driven and open-access database that collects and prioritises research needs for infectious animal disease control. It is used by funders of research and animal health researchers globally to identify and address critical research gaps. Through the support of individual member states, wide stakeholder engagement and collaboration with the STAR-IDAZ International Research Consortium on animal health, it is a reference point for funders of research, research organisations and private industry to prioritise research and develop their research agendas. DISCONTOOLS has supported numerous gap analyses, scientific opinions and research applications in the field of animal health and the development of 26 new medicines marketed in Europe over the last 5 years. In order to stay relevant, the database needs to evolve further to embrace a global perspective and address (re-)emerging societal challenges. As such, expert groups have started to produce outputs on the links between animal diseases and climate change pandemic preparedness and reducing the need for antimicrobials. This will deliver new control tools such as vaccines, diagnostics and control practices and deliver benefits in terms of animal health and welfare, public health, societal benefits and a safe and secure food supply.

Prof. José Sanchez-Vizcaino

Universidad Complutense of Madrid

Bio

José is a full professor of Animal Health at the Veterinary School of the Universidad Complutense of Madrid, Spain, and the Director of the OIE Reference laboratory for African swine fever.
Prof. Sánchez-Vizcaíno has more than 40 year of experience on the control and eradication of (ASF) as well as training veterinarians to prevent and control ASF in four continents. Author of more than 200 publications in international scientific journals about ASF. He has directed many national and international research projects. Currently he is the coordinator of the EU VACDIVA project (A Vaccine for ASF) and received different international awards and recognition as the Medal of Merit of the OIE, for his outstanding services to veterinary science (24.05.09).
His current scientific interest is related to the development of novel diagnostic techniques, epidemiological tools and new strategies for the control and eradication of ASF, including vaccination.

Thoughts on the matter

ASF is a serious infectious disease of domestic and wild pigs of all breeds and ages. Its importance is due to the high lethality in domestic pig and wild boar, the great diffusion capacity and the lack of treatment and vaccine.
The current situation of ASF has acquired a pandemic dimension and suggests an imminent risk for the global swine production. The disease has spread to 47 countries on three continents and the 77% of total swine population is already living in an infected area. China, the main pig producer, with about half the head of pigs from around the world, has lost more than 37% of its porcine population. Globalization has increased the risk of ASF being introduced into free areas. The main risks of ASF spread are the continuous movement of infected wild boar populations, the poor levels of biosecurity in some farms and the movement of live pigs and risk products coming from infected areas and use as swill feeding or infected wild boar. This current epidemiological situation will affect the swine global industry in the next year.
At this point, vaccination is considered to be the most efficient strategy and solution for emerging infectious diseases. Regrettably, attempts over many years to develop a vaccine have failed. Last year new several vaccines prototypes for domestic pig and wild boar have been described with very promising results. In this critical situation, an EU project, "VACDIVA", has been financed with 10 million euros by the European Union with the objective to develop an effective, safe and DIVA vaccine against ASF over the next four years (VACDIVA H2020 Grant ID: 862874). ASF vaccination could be in the near future a real possibility.

Prof. Timm Harder

Friedrich-Loeffler-Institut

Bio

Timm, Germany, is a veterinary virologist with a broad interest in influenza viruses. Study fields range from diagnostic improvements, molecular epidemiology, and pathogenicity, to applied preventive measures. His work focuses on animal influenza viruses, particularly of avian and porcine hosts. He is head of the national avian influenza reference laboratory at Friedrich-Loeffler-Institute, Isle of Riems, Germany. The laboratory is an active member in international networks of the World Health Organization for Animal Health (O.I.E., OFFLU) and the Food and Agriculture Organization (FAO) of the UN for research and diagnosis on animal influenza.

Thoughts on the matter

High pathogenicity avian influenza (HPAI) and some low pathogenicity (LP) AI are among the most significant epizootic diseases of poultry. They continue to cause severe economic losses in poultry production and threaten endangered wild bird populations. Swine influenza viruses (swIAV) are endemic worldwide in many domestic swine populations. HP, LP AIV and swIAV harbour considerable zoonotic potential, and a swIAV has caused, in 2009, the most recent human influenza pandemic. Better understanding of factors influencing animal influenza is required to ensure production of safe food products at all scales of poultry and pork production (agro-economy), to optimize possible intervention strategies including biosecurity and vaccine-driven protection of holdings (epidemiology), to reduce risks of zoonotic influenza virus infections (public health), and to protect wild bird populations against virus incursions from poultry (conservation-ecology). Answers to several important research gaps are required to inform sustainable development goals:

- Transmission modes at interfaces of wild bird/poultry populations: How does virus enter premises along the “last mile”? Internationally orchestrated wild bird surveillance for early warning.
- Role of airborne virus spread and relevance of transmission efficacy in horizontal transmissions between industrial holdings.
- Transmission modes at interfaces of swine and human populations: What is the frequency and impact of zoonotic and reverse zoonotic transmissions?
- Identification of viral molecular mechanisms and genetic markers within variable genomic context signaling zoonotic risks and human adaptation of animal influenza viruses.
- Interrelation of herd sizes, agro-economical marketing strategies and epidemiology of animal influenza infections.
- Development and implementation of safe, efficacious non-injectable DIVA vaccines.

Prof. Diana Williams

University of Liverpool

Bio

Diana obtained a BSc (Hons) in Zoology and a PhD from the University of Nottingham, spent three years at the Cambridge Vet School working on calf pneumonia before going to the International Livestock Research Institute in Kenya where she spent eight years working on control of bovine trypanosomiasis (sleeping sickness or nagana), one of the most serious diseases affecting cattle in sub-Saharan Africa. She was appointed lecturer in veterinary parasitology at the Liverpool School of Tropical Medicine in 1994 and moved to the School of Veterinary Science, University of Liverpool, in 2008 as Professor of Veterinary Parasitology.
Diana was the Head Department of Infection Biology in the Institute of Infection and Global Health at Liverpool for five years and leads a large research programme that focusses on improving control of the parasite, Fasciola hepatica (the common liver fluke). Liver fluke is a leading cause of disease globally, and has a major impact on productivity, health and welfare, particularly in farmed ruminants.

Prof. Jozef Vercruysse

Ghent University

Bio

Jozef graduated in 1974 as Doctor in Veterinary Medicine (Ghent University) and in 1975 as Doctor in Tropical Veterinary Medicine and Zootechny (Tropical Institute, Antwerp). Between 1975 and 1983 he worked in Africa for FAO and for the Belgian Bilateral Aid Programme. Between 1983 and 2015 he was Professor of Parasitology at the Veterinary Faculty of Ghent

University, Belgium and between 2000 and 2014 Director of the Department of Virology, Parasitology and Immunology. At Ghent University he taught the courses of parasitology and his research topics are the diagnosis, epidemiology, treatment and control of helminth infections of both livestock and humans. Since October 2016 het is Emeritus Professor at Ghent University. He is author and coauthor of approximately 1000 scientific papers and abstracts. He is since 2007 the overall coordinator of the WHO Collaboration Centre for the monitoring of anthelmintic drug efficacy for soil-transmitted helminthiasis. Since 2013 he is Member of the Bill and Melinda Gates Foundation Neglected Infectious Disease team, External Advisory Board for Soil-Transmitted Helminthiases.

Thoughts on the matter

Helminth infections have significant negative impacts on production efficiency in ruminant farming systems worldwide, and their effective management is essential if livestock production is to increase to meet future human needs for dietary protein. The control of helminths relies on pasture management practices combined with the use of chemotherapeutics. Frequently, the dependence on chemotherapeutics is high and this approach is unsustainable as resistance to anthel¬mintic drugs is widespread and increasing. At the same time, infection patterns are being altered by changes in climate, land-use and farming practices. In the future, farms will need to adopt more efficient, robust and sustainable control methods, integrating new scientific advances.

Rather than relying solely on anthelmintic treatment using the small number of anthelmintic drug classes available, the future of helminth control should be based on an array of complementary control options that can be used flexibly, building on local farm management, informed by helminth epidemiological patterns. Research priorities for helminth control in farmed ruminants are: (1) the development of pen side tests and associated decision support diagnostic tools (2) innovative control approaches based on vaccines, (3) improved therapeutics for helminth parasites in ruminants e.g. there is an urgent need for the identification of novel active pharmaceutical and/or phytochemical ingredients with alternative mode of action and/or expanded therapeutic response against resistant populations of helminth parasites, and (4) rational integration of control practices e.g. there is a need to build and evaluate harmonization guidelines or best practice advice for alternative helminth control methods.

Prof. Glyn Hewinson

Aberystwyth University

Bio

Glyn holds a Sêr Cymru (Star of Wales) Chair and is Head of the Centre of Excellence for Bovine Tuberculosis at Aberystwyth University which is funded by Welsh Government and the European Regional Development Fund (ERDF). Previously, he led research into bovine tuberculosis at the Animal and Plant Health Agency, Weybridge for 29 years developing vaccines and diagnostic tests for cattle and badgers and tools for improving the understanding of risk pathways for bovine tuberculosis including genotyping of M. bovis. He also led the Mycobacterium bovis genome sequencing project He has produced over 250 peer reviewed journal publications and 5 book chapters which have over 22,800 citations and an h-index of 78. He was Chief Scientist of the Animal Health and Veterinary Laboratories Agency, UK. He is a named OIE expert on bovine tuberculosis and was inaugural chair of the Global Research Alliance for Bovine Tuberculosis (GRAbTB). He was an author of the recent Bovine TB Strategy Review for the Secretary of State, Defra, UK.

Thoughts on the matter

Bovine tuberculosis (BTB) is an infectious disease that affects cattle, other domesticated animals and certain free or captive wildlife species. BTB is caused by members of the *Mycobacterium tuberculosis* complex. In Europe the majority of BTB cases are caused by *M. bovis* but in other counties there is increasing evidence of infection caused by *M. tuberculosis* and *M. orygis*.

BTB remains of great concern worldwide. Many risk factors, at individual, herd and region/country levels exist and show great geographical variation. Historically, the breakthrough in BTB eradication was achieved through mandated tuberculin testing, compulsory slaughter of reactors, meat inspection and pasteurisation of milk. The main failures of eradication programmes based on test-and-slaughter have been associated with the existence of infected wildlife in the same areas as susceptible cattle. In many countries test-and-slaughter strategies cannot be implemented due to either financial, ethical or religious considerations.

Recently the WHO, OIE and FAO published a roadmap for zoonotic tuberculosis, detailing ten priorities for addressing zoonotic tuberculosis in people and bovine tuberculosis in animals. It calls for concerted action through broad engagement across political, financial and technical levels, including government agencies, donors, academia, non-governmental organizations and private stakeholders.

Priority development areas include improved quality control of current tuberculins, development of a defined tuberculin, development of other sensitive, specific and cheap tests, development of tests that distinguish between exposed, infected and infectious animals (underpinned by improved knowledge of host-pathogen interaction), the development of vaccines along with tests that differentiate between vaccinated and infected animals (DIVA tests), use of whole genome sequencing to better understand transmission pathways of infection, development of wildlife vaccines and diagnostic tests, development of diagnostic tests for non-bovine species and improved understanding of disease transmission and effective biosecurity measures that can be applied to prevent such transmission.

Dr. Nigel Swift

Global Head of Veterinary Public Health, Boehringer Ingelheim

Bio

Nigel is a veterinarian with broad global experience: After private practice in the UK, he took academic roles at Onderstepoort and UC Davis. He subsequently established a specialty practice in Sydney, then joined industry leading technical services in the US. He has spent 10 years focusing on vaccines, initially in sales, and then marketing in Germany, before moving to China to lead vaccine research and development. More recently he was global head of vaccine R&D, before his current position leading Veterinary Public Health for BI.

Thoughts on the matter

From working on vaccination programs for animal shelters, to collaborating with universities, biotechs, NGOs and governments, some of the best vaccine developments have come from public-private collaborations. These collaborations are not only in new vaccine research and development, but also more broadly on disease control and industrial partnerships, where the focus is always win-win. Understanding the goals of each party (financial, social, mission, timelines etc.), their relative strengths, and where these align, is key to successful long term partnerships.

For all partners, the best starting point is a clear strategy: what are your goals and priorities to reach them. For our organization, this includes prioritization of disease targets and regions, and a clear understanding of customer needs. This last point is critical: is the issue lack of efficacy, or safety? Perhaps it is about strain coverage, or overcoming maternal antibodies. But intelligence on the field may indicate that the critical issue to solve is in fact integrity of the cold chain.

An unmet need alone is not sufficient, there needs to be a clear understanding of how to turn an unmet need into a sustainable business opportunity. Often the need may be clear, but the business model may not be. Once you have a product, is there really a market willing to buy at a sustainable price? Is there a way to share the risk in vaccine development given the market uncertainties? In this field, the Bill & Melinda Gates Foundation and GalvMed have been leaders in finding creative solutions for partnering. Beyond vaccine development, how clear is the plan for disease control, and what does the final value chain look? Sharing the value chain with local partners can lead to long-term sustainability, and some examples will be discussed.

Dr. Alex Morrow

STAR-IDAZ International Research Consortium on Animal Health

Bio

Alex, BA, MVB, PhD, MRCVS is veterinary surgeon with seventeen years' experience in research working on the pathogenesis and control of Amblyomma variegatum-associated dermatophilosis, followed by four years in a research support capacity at Edinburgh University and seventeen years in research programme management with Defra where he was International Evidence Lead for Animal Health and Welfare. He is currently a CABI Associate.

He established and coordinated for 10 years the European Collaborative Working Group (CWG) on Animal Health and Welfare Research, under the EU Standing Committee on Agriculture Research, and led the associated EU-funded EMIDA ERA-NET on Emerging and Major Infectious Diseases of Animals. This ERA-NET ran two common calls funding 26 transnational research projects with a combined budget of over €40million. He led the STAR-IDAZ global network, "Global Strategic Alliances for the Coordination of Research on the Major Infectious Diseases of Animals and Zoonoses" during the first six years of its existence, and oversaw the formation of the associated International Research Consortium (IRC), with a higher level of commitment to collaboration, which was launched by the European Commission in January 2016. He now also heads the EU-funded IRC secretariat.

Thoughts on the matter

Many of the major disease problems or threats faced by the livestock industry are of a global nature and should therefore be addressed through a common and coordinated research effort. To achieve this an international forum of R&D programme owners/funders and international organisations was established to share information, improve collaboration on research activities and work towards common research agendas and coordinated research funding on the major diseases affecting livestock production and/or human health.

STAR-IDAZ International Research Consortium (IRC) is a global initiative to coordinate research programmes at international level to contribute to the development of new and improved animal health strategies for priority diseases/infections/issues. To achieve this the partners agree to coordinate/align their research programmes to address identified research needs relating to the various topics and to share results.

Knowledge gaps identified in the DISCONTOOLS databases and expanded on by disease Working Groups are organised into research roadmaps for the development of (i) candidate vaccines, (ii) diagnostics, (iii) therapeutics and (iv) disease control strategies, mapping out the research questions needing to be addressed, working from the desired output, or target product profile, back to the basic science knowledge gaps. Current research projects are then mapped against the identified knowledge gaps allowing users to assess the extent to which the challenges are being addressed and identify areas requiring further attention.

Dr. Hein Imberechts

Sciensano

Bio

Hein holds a degree of Veterinary Medicine from the University of Ghent and of Molecular Biology, and obtained a PhD in 1992. His main topics of research were E. coli infections in pigs, Salmonella and antimicrobial resistance. From July 2001 until January 2015 he was the Head of Department of bacteriology at CODA-CERVA, the Belgian reference laboratory for infectious animal diseases. Since February 2015 he is Scientific Support Advisor at Sciensano.

Since October 2018 Hein is Vice-President of the MedVetNet Association. He was member of the European ERA-Nets EMIDA and ANIHWA and he is member of the CWG on Animal Health and Welfare Research, of which he is elected Coordinator since October 2019. In 2016, he created with the veterinary faculties of UGent and ULiège STAR-IDAZ.be, a regional consortium of the global animal health network. Since January 2018 Hein is scientific coordinator of the One Health European Joint Programme together with ANSES. This 5-year project is a network of 44 animal and public health partners in 22 member states and manages a budget of €90M (50% co-fund).

Dr. Jean-Charles Cavitte

European Commission - DG Agri

Bio

Jean-Charles holds a doctorate in veterinary medicine from "École Nationale Vétérinaire d'Alfort" and a subsequent specialisation at the French national school of veterinary services. He is now research policy officer at the European Commission, in Directorate-General for Agriculture and Rural Development (DG AGRI).

After having led the food safety department in the French regional veterinary service, Dr Cavitte joined the European Commission in 1994. He started as a veterinary inspector in the Food and Veterinary Office, where he led the BSE team until he moved to veterinary legislation in DG Health and Consumer Protection at the end of 1999. He was in particular responsible for the revision of the EU zoonoses legislation, in particular the Directive on zoonosis monitoring and the Regulation on Salmonella control.
At the end of 2005, he moved to DG «Research and Innovation» - Directorate for Food, Agriculture and Biotechnology. There he was responsible for defining orientations and supervising EU funded research projects in the domain of animal production and food safety. Jean-Charles Cavitte joined DG Agriculture and Rural Development in May 2014, in the "Research and Innovation" Unit. He is in charge of policy development and research programming in the animal sector; from animal health, including zoonoses and AMR, and animal welfare, to animal breeding, feeding and husbandry, as well as livestock production systems. He is also working on strengthening the European Research Area and international cooperation in the domain (e.g. Susan and ICRAD ERA-NETs, STAR-IDAZ International Research Consortium) and he is the contact person for the planned Horizon Europe Partnership on Animal Health and Welfare.

Thoughts on the matter

The European Commission has proposed a European Partnership "Animal Health and Welfare" (PAHW) to be set up under the Research & Innovation Framework Programme Horizon Europe. PAHW aims to foster generation of key knowledge, reinforce preparedness against on-going and upcoming health threats for both animals (terrestrial and aquatic) and humans, promote and strengthen animal welfare, generate innovative methodologies and products, and support evidenced based policymaking.
The partnership is planned for the Work-Programme 2023/2024 of Horizon Europe under Cluster 6. In a participatory approach, the Standing Committee on Agriculture Research, through its Collaborative Working Group on Animal Health and Welfare is preparing the PAHW dossier together with DG Agriculture and Rural Development. The EC will review the dossier during the first half of 2022. Both animal health and animal welfare scientists and representatives of the animal health industry including DISCONTOOLS, are giving input to this process. In 2022, a draft Strategic Research and Innovation Agenda (SRIA) will be developed.

One important component of the PAHW dossier is the definition of scope, objectives, activities and outputs (the "What") following an intervention logic. At the end of June 2021, a webinar with potential actors and stakeholders was organized as a first step to guide further progress towards a relevant and ambitious partnership. Later this year, the tools and governance have to be proposed and defined in order to achieve the identified objectives (the "How"). Finally, Member States and private partners will be consulted and encouraged to take part in PAHW, be it as funder, stakeholder or observer. This laborious process should lead to the launch of the Partnership somewhere at the end of 2023 at the earliest.

Paula de Vera

COPA-COGECA

Bio

Paula (Senior Policy Advisor in Copa-Cogeca) graduated in Veterinary Medicine in 2014 from the Complutense University of Madrid and holds a Master's degree in Animal Production and Health from the Complutense and Polytechnic Universities of Madrid. Since 2018 she has been working as Policy Advisor at Copa-Cogeca, representing farmers and agri-cooperatives across the EU as responsible for all topics related to plant health and plant protection, animal health and welfare, and risk management and insurance.

Thoughts on the matter

Nobody would argue the fact that animals are sentient beings and that they deserve treatment when suffering from treatable infectious disease. The inability to treat an infection has serious implications for animal health, welfare and also for public health. If a bacterial disease can't be treated in animals, the causative bacteria can spread, which can constitute a very significant risk for subsequent infections to in-contact animals and/or people, as well as potentially for food safety and security. It is in the EU farmers and cooperatives' interests to ensure sustainable livestock production, with healthy and productive animals. Based on the principles of "prevention is better than cure" and "as little as possible, as much as necessary", improving animal health by other means rather than treatment (better housing conditions, better management, proper nutrition, vaccination) is one of the best ways to reduce the need for antibiotic use, for instance.

In particular, prevention is a key measure to tackle antimicrobial resistance, both on the human and on the animal health side. The development of innovative and/or improved preventive technologies (e.g. vaccination) by the industry has increased and improved too, widening the possibilities for future avoidance of disease outbreaks in the EU territories. In addition, a firm commitment to biosecurity and hygiene as tools for disease prevention must be endorsed by all stakeholders, both from the animal and human health side.

Last but not least, the risk for disruption caused by the outbreak of some disease epidemics in the EU can also be reduced using prevention measures (e.g. biosecurity, periodic controls for imports from third countries, etc), ensuring better preparedness for managing future outbreaks of transboundary diseases. Ideally, the responsibility and engagement for these actions are equally shared and are based on consensus between all public and private stakeholders in European livestock production, including veterinary authorities, farmers, veterinary professionals, farm suppliers, and rendering companies.

Nancy De Briyne

Federation of Veterinarians of Europe (FVE)

Bio

Nancy studied veterinary medicine in Ghent (Belgium), graduating in 1996. After working as a veterinary practitioner in Belgium and the UK, she works since 2000 for the Federation of Veterinarians of Europe (FVE) being currently Executive Director of the FVE.
In respect to medicines, she published papers on antimicrobials, antibiotic sensitivity testing and adverse events of medicines. She is member of the Management Board of the European Medicines Agency representing the veterinary profession.
She is also a diplomate of the European College of Animal Welfare and Behavioural medicine, subspecialty Animal Welfare Science, Ethics and Law and is member of the EU Platform on Animal Welfare.

Thoughts on the matter

DISCONTOOLS has over the years collected an impressive overview of disease information, including identifying gaps in control tools and further research needs. There are great challenges for livestock farming today: keeping disease out (e.g. ASF, AI), reducing the climate footprint of farming (to make climate-neutral by 2050), reducing the use of antibiotics (by 50% by 2030), to make animal farming more welfare-friendly and sustainable (e.g. closer farming cycles) and more generally, to rebuild trust in farming. It is important to see them holistically and invest in 'One Health'. The health of people, animals and ecosystems are interconnected, a cross-sectoral and trans-disciplinary One Health approach is crucial to prevent as much as possible future zoonotic outbreaks becoming pandemics. Another challenge to prepare for are climate change disasters. We see temperatures rising, more rainfall with floods and more excessive dry periods, all these have an influence on the health and welfare of animals and can enhance disease transmission. We need to be prepared for them with good contingency plans including mitigating and correcting factors.
DISCONTOOLS helps here, with showing per disease what preventive tools e.g. vaccines are available and which can be advised by veterinarians doing regular veterinary visits at farms.
However, even with the best preventive measures in place and animals kept in ideal conditions, animals can still get sick. DISCONTOOLS helps there to show the diagnostic tools per disease and the treatment options.
The biggest problem of DISCONTOOLS? Too little people know about it and use it.

David John
AnimalhealthEurope

Bio

David John moved to Brussels in 2011 to join the technical group at AnimalhealthEurope, and he is currently Senior Technical Manager responsible for immunologicals and biologicals. Prior to joining AnimalhealthEurope he spent many years working for Covance initially responsible for conducting livestock metabolism and residue studies before moving to ecotoxicology to conduct both aquatic and terrestrial studies. He graduated in Agricultural Chemistry from Leeds University in 1988.

Thoughts on the matter

Through medical advances, development of digital tools and other innovative means to protect animal health, the veterinary medicines industry can help vets and farmers find new solutions for current and future farming challenges, and support pets and their owners with improved health care. Europe's citizens benefit from a robust innovation framework that supports such advances but it is important to first understand where disease control gaps exist and for which illnesses. Continued investment in basic research lies at the heart of an innovative European animal health sector, and with projects like DISCONTOOLS, researchers can look to priority areas for the best cross-cutting results.

While disease treatments will always be important, the animal health industry is focusing increasingly on keeping animals healthy. That means research needs to look beyond developing cures for diseases, focussing more on preventing it in the first place. Improved disease prevention options as well as earlier detection methods for signs that could indicate a problem will facilitate better interventions to improve animal health and welfare. Vaccines are one important tool to have in the vet's arsenal: on farms they help ensure the welfare of farm animals, the efficiency and sustainability of farming practices, and the safety and availability of food. Vaccines are also important for the good health and welfare of family pets and assistance animals.

The challenges of today's world, including climate change, brings diseases to new areas. This means there is a constant need for setting priorities in terms of research needs. AnimalhealthEurope's members are driving advances in health and well-being to support vets in their work with all these new challenges, and with different species of animals. Continued investment in R&D for animal health ensures continued support for all people with animals in their care. The animal health industry remains committed to focusing greater investment in innovations for disease prevention and earlier diagnosis, allowing us to find new and better ways to improve the overall health and wellbeing of animals, while still improving treatment options.

Prof. Jonathan Rushton

University of Liverpool

Bio

Jonathan is an agricultural economist who specialises in the economics of animal health and food systems. His principal research interests are the: Global Burden of Animal Diseases (GBADs) where he directs a global programme with OIE; economics of antimicrobial use and resistance in livestock; and assessment of the multidimensionality of food quality and public health. He has recently completed studies on the economics of antimicrobial use in livestock in SE Asia for FAO and the economics of new livestock vaccines for the EU funded SAPHIR project and is currently involved in research on antimicrobial use in livestock in Vietnam (VIPARC), India (DARPI) and the EU (ROADMAP). He is working with IIAD on the economic dimensions of sustainable laboratory systems, a project funded by OIE. Jonathan embraces One Health approaches in the search for solutions to society's health problems.
Jonathan is professor of animal health and food systems economics at the Institute of Infection, Veterinary and Ecological Sciences, University of Liverpool, leads a University Centre of Excellence for Sustainable Food Systems and is part of the N8 Agrifood programme. He is also adjunct Professor in the School of Behavioural, Cognitive & Social Sciences of the University of New England, Australia and president of the International Society for Economics and Social Sciences of Animal Health. In 2020 he became a Senior IIAD Fellow in Epidemiology at Texas A&M.

Thoughts on the matter

GBADs is a programme motivated with the need to improve data and information on the burden of animal diseases at local, country and global levels. It seeks to provide information that:

- Improves the investment in animal health systems – our target audience being the finance ministries, financial directors and farmers themselves
- Improves the allocation of the animal health budget to the most pressing issues on research, education, coordination and farm-level actions – our target audience will be the research programme managers, veterinary services, private veterinarians and farmers themselves
- Develops datasets that allow the assessment of animal health policies and actions in order to learn lessons from what has happened in the past – our target audiences are the policy makers, CEOs of companies and farmers.

The talk will provide information on the overall framework and the data flow and analytics leading to the estimations of disease burdens.

Suzanne Rasmussen

European Commission - DG SANTE

Bio

Susanne worked for more than 25 years in the Danish Veterinary and Food Administration. Her domains included food safety as well as animal health and welfare. Susanne was also deputy-head at a regional microbiological laboratory for 5 years. She worked at international level with projects in countries like Western Balkan, Columbia, Ukraine and Belarus on food safety and disease outbreak related crisis preparedness and management. Currently Susanne works since 2 and a half year as national expert in DG SANTE. Her main responsibilities are to lead a project in Western Balkan on improving the capacity of the veterinary services, managing the information campaign on the new Animal Health Law as well as following the development of Horizon Europe projects.

Thoughts on the matter

Prevention is better than cure. First of all, animal disease prevention is important for the wellbeing of animals. Secondly, it impacts on the economy for the farmer and the related industry at many levels. Good animal health can also help to improve animal welfare. Finally, animal disease can have major effects on international trade.
The One Health concept recognises that human health is tightly connected to the health of animals and the environment. One EU initiative is the European One Health Action Plan against antimicrobial resistance.
The EU Animal Health Law is the new framework for animal health legislation that also opens opportunities for research towards needed diagnostics and vaccines.
A major challenge is that all research takes time and needs economic resources.

DISCONTOOLS is funded by a range of national funders of animal health research in Europe, with AnimalhealthEurope providing secretariat support. DISCONTOOLS is also part of the secretariat of the STAR-IDAZ International research consortium on animal health funded by the European Union's Horizon 2020 research and innovation programme (grant agreement No 727494).


DISCONTOOLS
discontools.eu