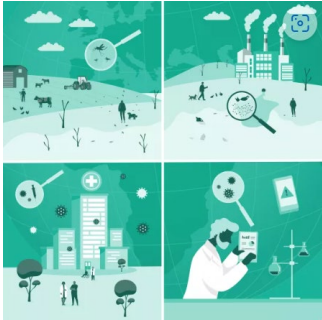




Trends in Animal Health: VMPs as crucial part of the One Health concept

Dr. Niels Krebsfänger, MBA, MDRA, ERT, DABT

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EMA



US EPA



Brot für die Welt



World Bank



BMBF



One Health



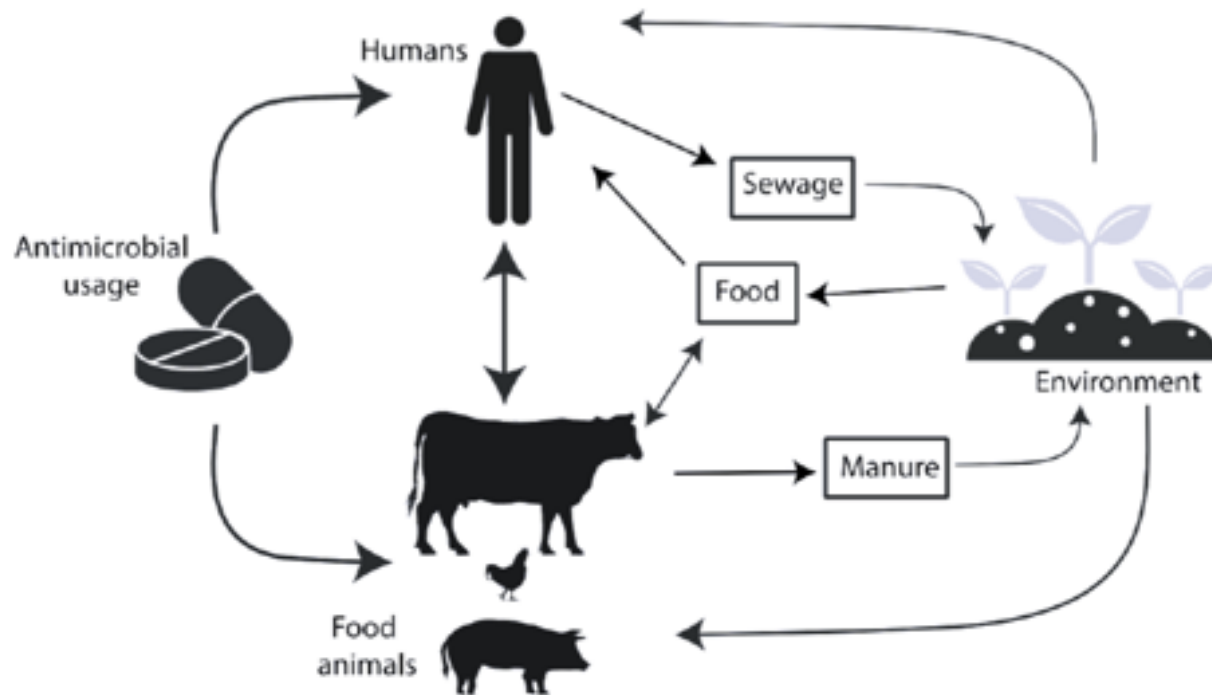
Animal
health,

Human
health,

Environmental
health:

are part of a deeply interconnected system.

What affects one will ultimately affect the others.



Schematic and simplified description of main transmission pathways of AMR between animals, the environment, and the human population

Source: Master thesis Thilo Noelke: Modified from Cella, E., et al., *Joining Forces against Antibiotic Resistance: The One Health Solution*. *Pathogens*, 2023. **12**(9).

Animal Health in the Home

Did you know animal health benefits your day to day life?

Health  for Animals
global animal medicines association
www.healthforanimals.org

Peru produces 6,000 tonnes of Alpaca fibre/yr from fleeces of more than 3.5 million animals.¹ They are hardy animals living in harsh climates but still need vaccinations and worming to ensure their health.

From 218 mln tonnes in 2000, global meat production is projected to increase to 276 mln tonnes by 2030.² Innovations in animal health help towards greater animal welfare, increased food security and food safety. Happy and healthy animals are also naturally more productive.

By 2016, Brazil will become the second largest pet care market in the world, overtaking Japan. The largest market is the United States.³

\$256 bln is the estimated annual global value of bees' pollination work which produces honey and is used in cleaning products.⁴ Innovations in animal health technologies help protect bee populations.

We welcome pets in our homes thanks to vaccines and anti-parasitics that protect them against ticks, fleas, worms and other less fatal diseases such as Feline Leukaemia virus (FeLV), the leading viral killer of cats, with 80-90% of infected cats dying within 3-6 years.⁵

Water buffalos have been domesticated for over 5,000 years.⁶ Good husbandry, vaccination and veterinary care, have ensured their health. One buffalo produces many useful products, including milk and meat, their hide is used as leather, and their faeces as bio-fuel in remote areas.⁷

70,000 people are killed each year worldwide due to rabies, 20,000 in India alone. Vaccinating 70% of the dog population has shown to protect people from rabies.⁸

The animal health sector provides value to society by protecting the health and welfare of animals. We also play a role in protecting public health by bringing safer, more secure and sustainable food supplies, and by preventing the transmission of zoonotic diseases (i.e. transmissible between animals and people)

Wool-bearing animals are especially susceptible to anthrax, a deadly and contagious disease caused by the bacterium *Bacillus anthracis*. Livestock anthrax vaccines are used worldwide to protect both animal and human health.⁹

Since 2000, WHO have reported a 25% reduction in malaria-related deaths globally thanks to bed nets.¹⁰ These protect against disease-carrying mosquitoes and bed nets also transmit dengue and Rift Valley fever to people and animals.

Global aquaculture production has increased by over 1000% these last 3 decades.¹¹ Veterinary intervention and responsible aquaculture support coastal communities to provide a sustainable protein source.

After introducing a vaccination programme for hares, laboratory-confirmed cases of disease from foodborne bacteria in the UK decreased by over 90% between 1993 and 2010.¹²

Hendra virus is deadly to horses and life-threatening to humans. There is now a vaccination to protect horses in Australia where the disease is found.¹³

Ticks are on every continent except Antarctica.¹⁴ One disease they transmit is Lyme disease, to both people and animals. Vigilance and parasite protection products help to keep us and animals safe from vector-borne diseases.

¹ <http://www.farmersfortheearth.org/impact/animals/healthcare-markets> (Accessed 25/03/16)
² <http://www.ahis.org.uk/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)
³ <http://www.bbc.com/news/health-35555555> (Accessed 25/03/16)
⁴ <http://thebees.org.uk/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)

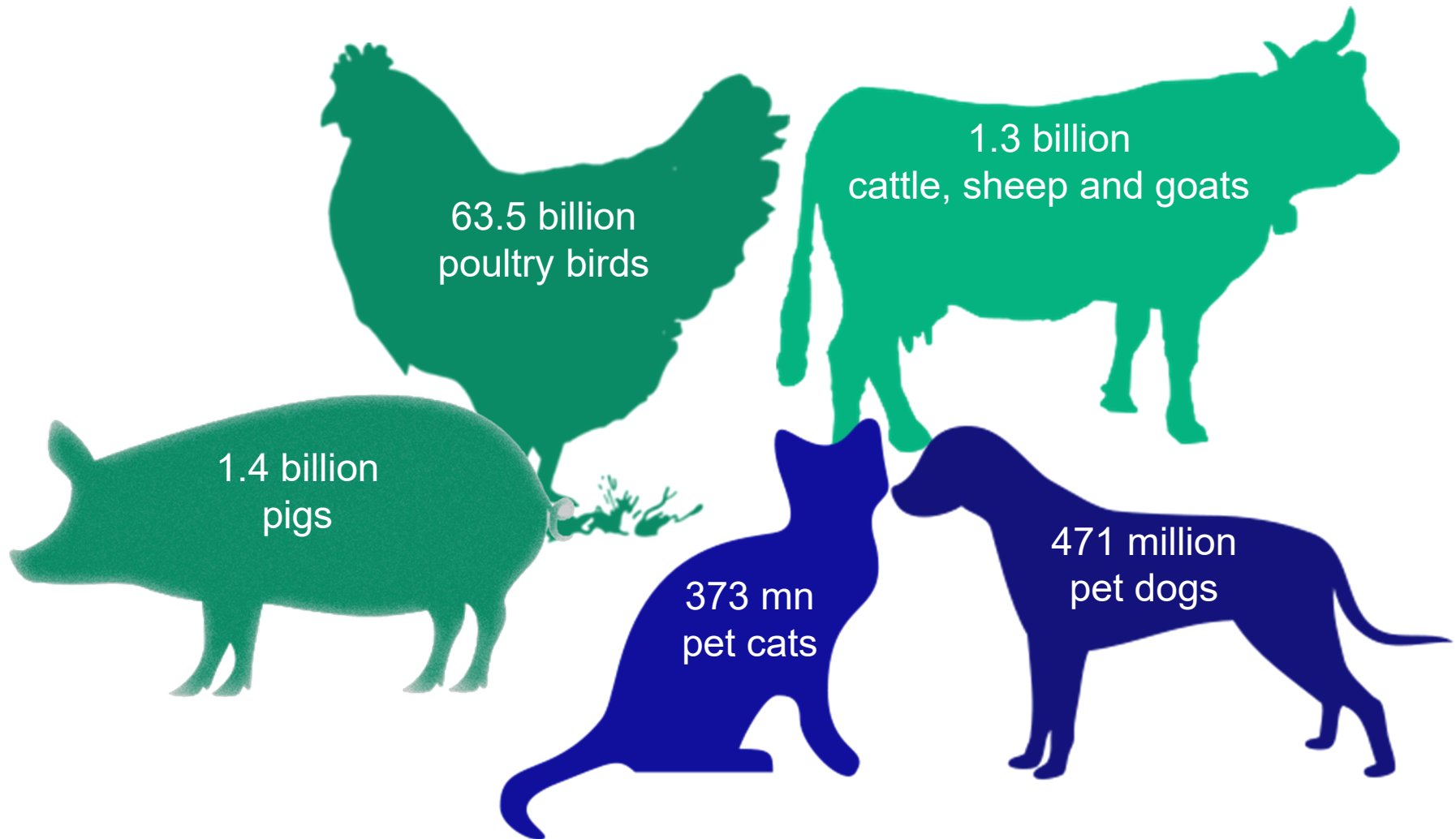
⁵ <http://www.healthforanimals.org/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)
⁶ <http://www.healthforanimals.org/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)
⁷ <http://www.healthforanimals.org/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)
⁸ <http://www.healthforanimals.org/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)
⁹ <http://www.healthforanimals.org/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)
¹⁰ <http://www.healthforanimals.org/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)
¹¹ <http://www.healthforanimals.org/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)
¹² <http://www.healthforanimals.org/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)
¹³ <http://www.healthforanimals.org/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)
¹⁴ <http://www.healthforanimals.org/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)

¹⁵ <http://www.healthforanimals.org/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)
¹⁶ <http://www.healthforanimals.org/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)
¹⁷ <http://www.healthforanimals.org/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)
¹⁸ <http://www.healthforanimals.org/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)
¹⁹ <http://www.healthforanimals.org/animal-health-for-the-world/veterinary-growth/> (Accessed 25/03/16)

Product Portfolio



Patient Population



Personal Views and Opinions

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Agenda

- ☐ Introduction to One Health & VMPs
- ☐ Trends in Animal Health & Consequences
 - ☐ Status of Pets
 - ☐ Vector-Borne Diseases
 - ☐ Environment / Sustainability
 - ☐ Pandemics
- ☐ New Vet Regulation 2019/6

Status of Pets

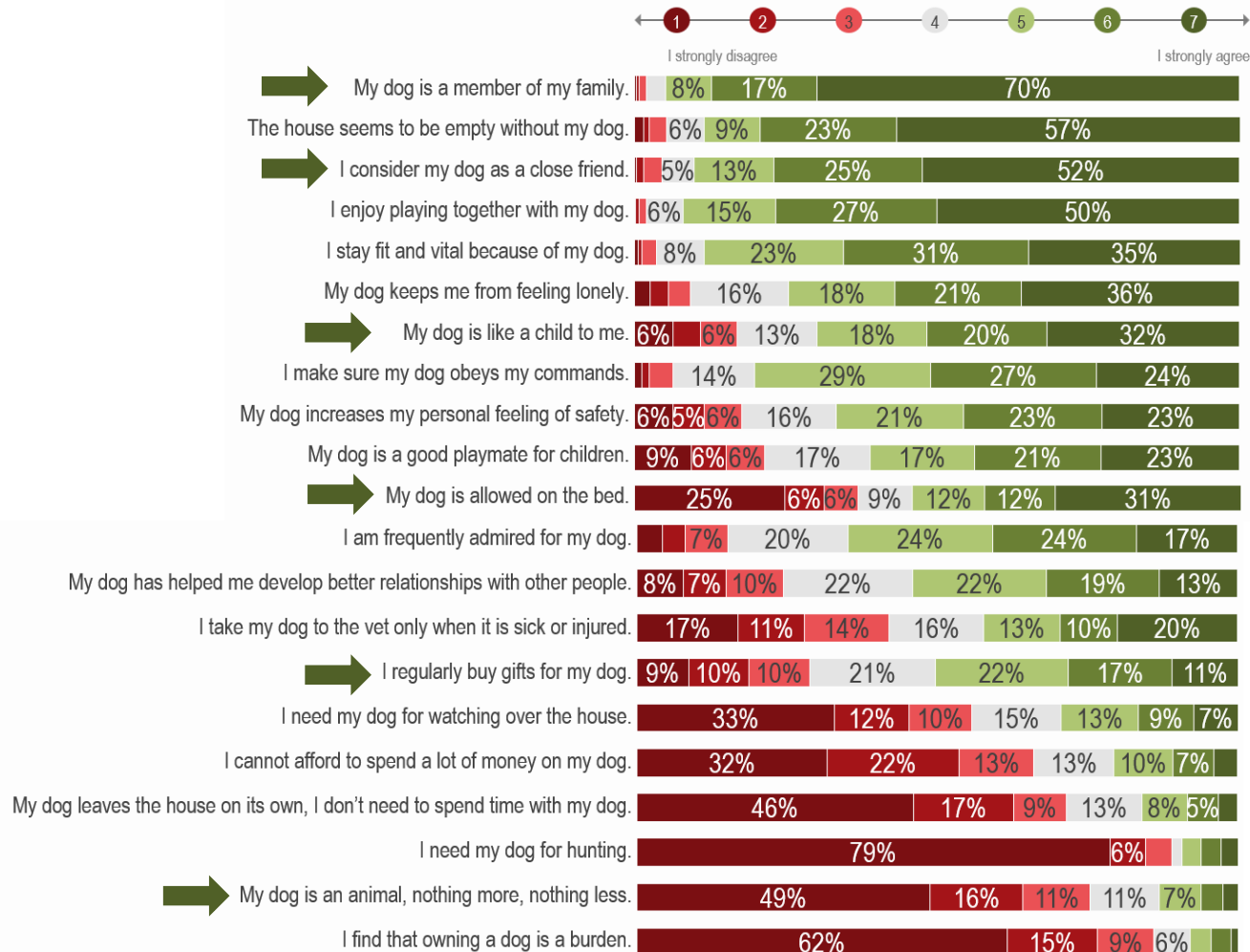


1970's



2020's

Relationship to Dog



Consequences are, e.g.:

- Social, psychological & health aspects
- Aging pet population
- New indication areas / medical needs
- Disease transmission


What health benefits do pets provide to people?

Pet ownership provides a range of therapeutic, physiological, psychological, and psychosocial benefits to owners.³⁰ These include:

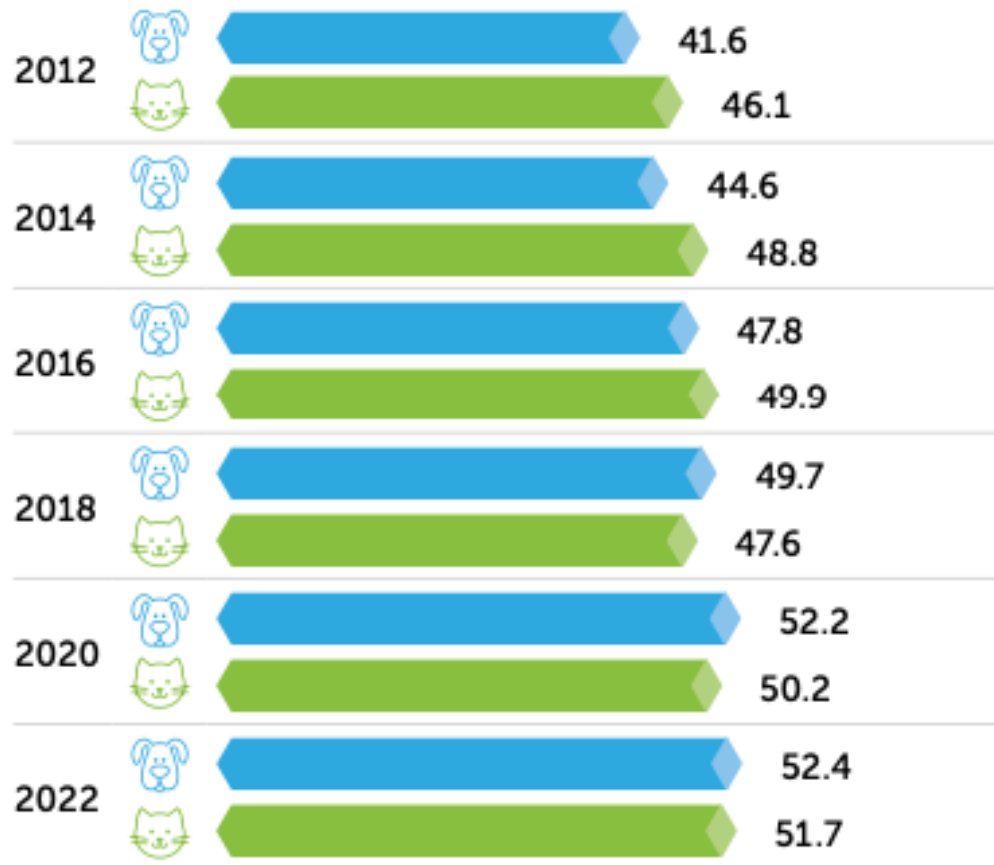
- Decreased blood pressure.
- Reduced risk of heart attacks.
- Increased physical activity.
- Increased sensory stimulation, emotional support.
- A stronger sense of physical and psychological well-being.



Pet ownership has also been strongly linked with a reduction in healthcare costs in the U.S., contributing to fewer visits to doctors and improved general health.³¹

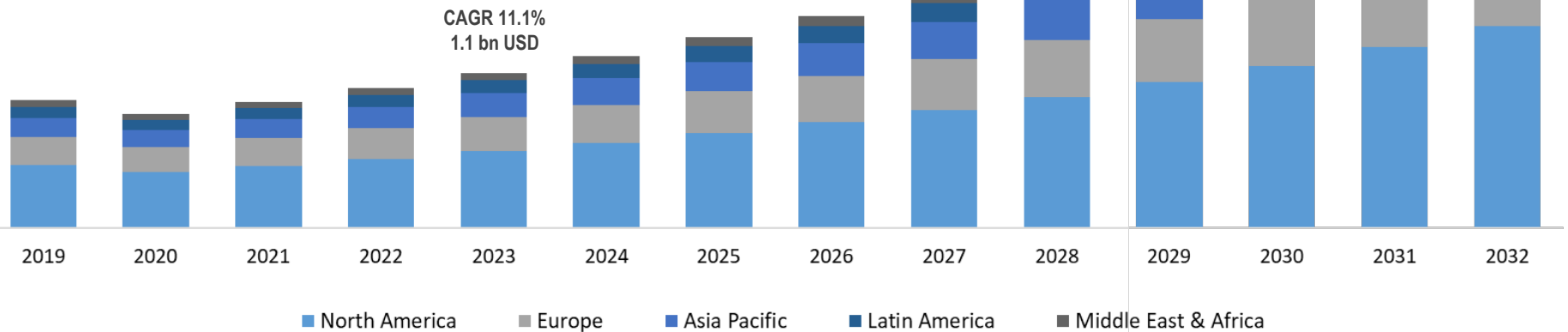
Studies have also shown that these benefits remain even when adjusted for demographic, socioeconomic factors, education, medication use, etc.,³² showing that the link between pet ownership and better health is persistent and strong. Healthy pets contribute to our health. That is the 'One Health' power of these pets. 

**Share of dog/cat-owning households with senior pets
aged 7+ (% , period 2012-2022)**



Source: Packaged Facts, Pet Food in the US (August 2022); MRI-Simmons

Canine Atopic Dermatitis Market Size, By Region, 2019 - 2032
(USD Million)



Source: Polaris Market Research Analysis

Vector-Borne Diseases (VBD)

The VBD Challenge:

Protecting the Globe Against Vector-Borne Disease (VBD)

>50%

- More than half the world's population is at risk from VBDs such as Malaria, Dengue Fever, Lyme Disease, Leishmaniasis, etc., carried by mosquitos, ticks, flies, and other vectors.

1bn

- Every year, more than 1 billion people are infected and more than 1 million die from VBDs.

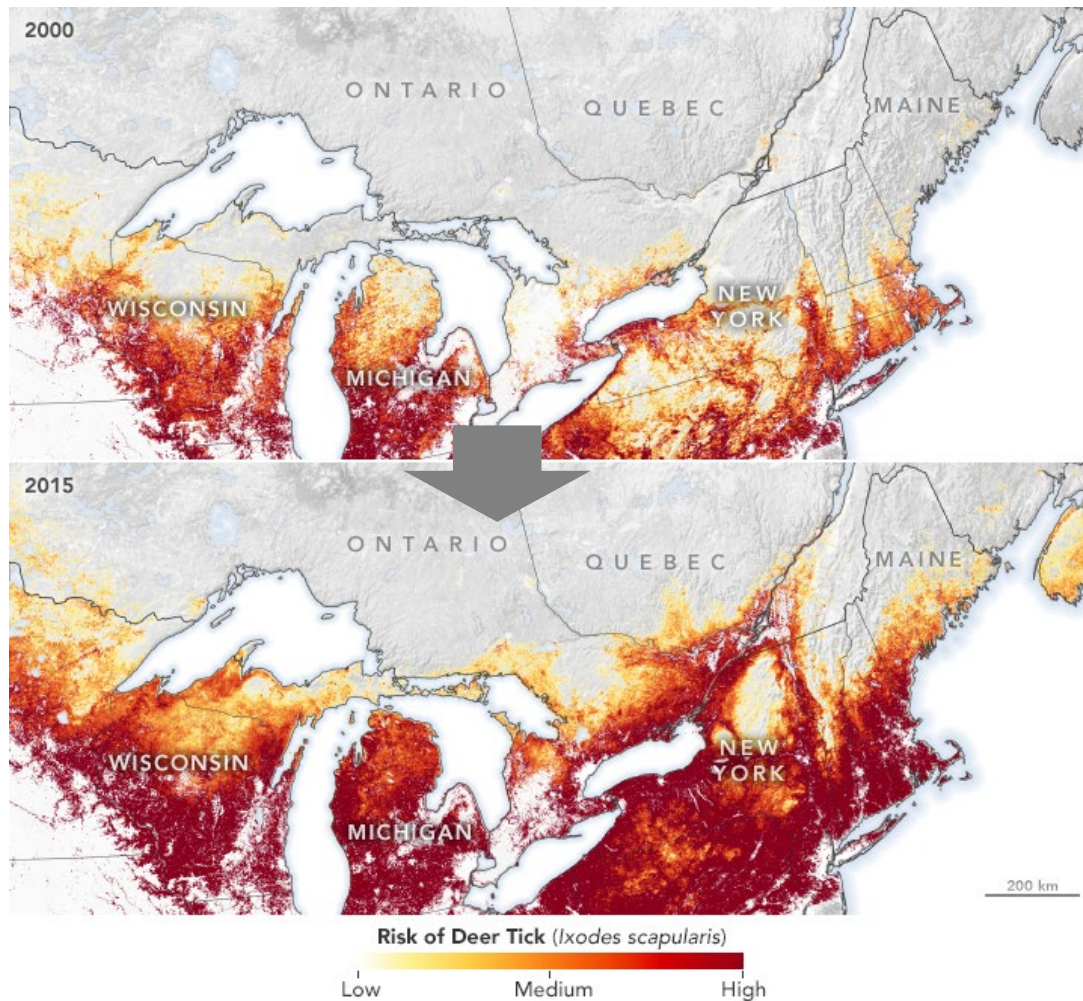
17%

- VBDs account for >17% of the world's infectious disease burden.

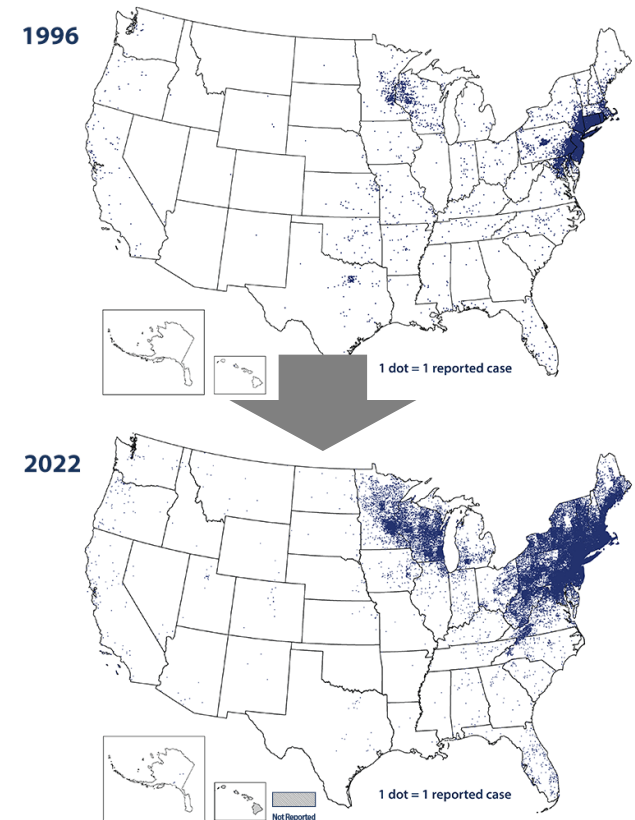
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- According to the World Health Organization, “..these diseases are entirely preventable.”

Spread of Deer Tick / Lyme Disease in North America



Change in Incidence and Distribution of Reported Cases of Lyme Disease in the United States, 1996 and 2022



Source: CDC (U.S. Centers for Disease Control and Prevention). (2024). *Lyme disease case map*. Retrieved July 31, 2024, from www.cdc.gov/lyme/data-research/facts-stats/lyme-disease-case-map.html

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

Public and Health Authorities are well aware



Lyme disease on the rise in Canada, but doctors still confused about diagnosis

Ontario mom spent 3 months seeking diagnosis for daughter's array of symptoms

By Lauren Pelley, CBC News | Posted: Aug 27, 2017 5:00 AM ET | Last Updated: Aug 27, 2017 2:16 PM ET

PROTECT YOURSELF AGAINST
Lyme Disease

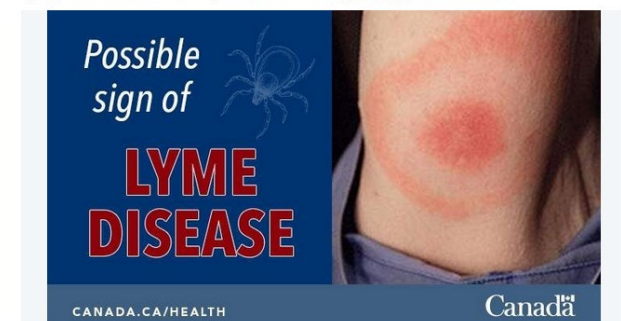
FIGHT THE BITE!

For more information about Lyme disease or submitting a tick for identification, call York Region Health Connection at 1-800-361-5653, TTY 1-866-252-9933 or visit www.york.ca

York Region

Public Health Agency of Canada | Agence de la santé publique du Canada
2mo

Lyme disease is a serious illness spread through the bite of an infected tick. Early localized Lyme disease usually presents as an acute illness characterized by: fever, arthralgias, myalgias, headache, and/or the presence of a single, localized skin lesion known as erythema migrans (EM). The lesion sometimes develops central clearing, but it can be more homogeneously erythematous. In dark-skinned patients, the rash may appear more as a bruise. Learn more about signs and symptoms to watch for in your patients: <http://ow.ly/IoFr30dzUY0>



16 Likes

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Spread of *Ixodes ricinus* / Lyme Disease in Europe

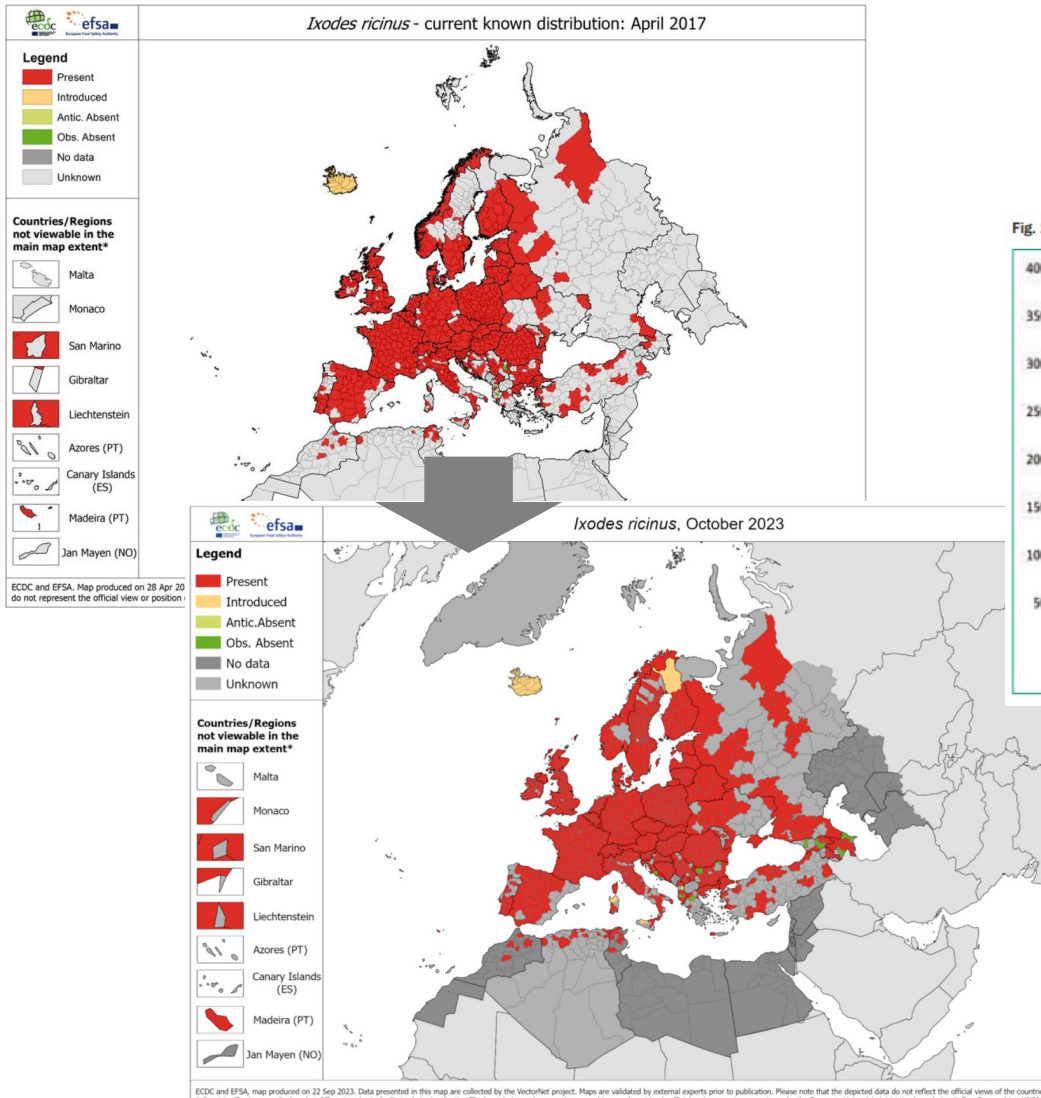
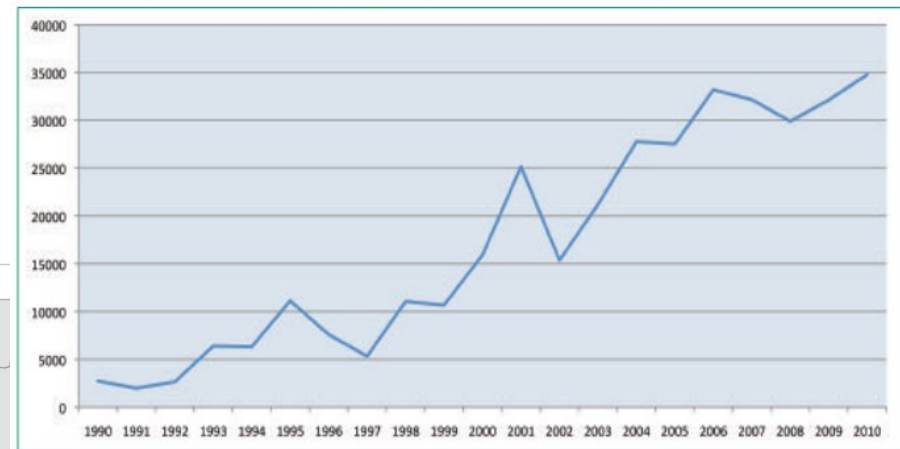


Fig. 1. Number of Lyme disease cases in Europe as reported to WHO Centralized Information System for Infectious Diseases (CISD).



<https://www.ecdc.europa.eu/sites/default/files/media/en/healthtopics/vectors/world-health-day-2014/Documents/factsheet-lyme-borreliosis.pdf>

https://www.ecdc.europa.eu/en/search?s=%22Ixodes%20ricinus%20-%20current%20known%20distribution%22&items_per_page=10&sort_bef_combine=date_DESC&f%5B0%5D=categories%3A1382&page=0

Consequences are, e.g.:

- Efficacious preventative antiparasiticoes are key for both, animal and human health
- Topicals (*“fight the bite”*)
- Orals
- Accessibility

Environment / Sustainability

The European Green Deal

Striving to be the first climate-neutral continent

What we are working on



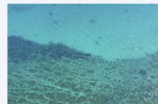
Climate

Becoming the first climate neutral continent by 2050



Energy

A clean and efficient energy transition



Environment and oceans

Protecting our biodiversity and ecosystems



Agriculture

A healthy food system for people and the planet



Transport

Providing efficient, safe and environmentally friendly transport



Industry

An industrial strategy for a competitive, green and digital Europe



Research and innovation

Its role in driving transformative change



Finance and regional development

Sustainable investments to deliver the European Green Deal



New European Bauhaus

A creative and interdisciplinary initiative that connects the European Green Deal to our living spaces and experiences

EU Water Framework Directive



@ EN

Energy, Climate change, Environment

Environment

Home > News > New substances added to the EU's surface water watchlist

NEWS ARTICLE | 3 March 2025 | Directorate-General for Environment | 1 min read

New substances added to the EU's surface water watchlist

It contains twelve pollutants, the impacts of which have been identified as having the possibility for widespread concern for the environment and human health.

- 6PPD-quinone (CAS no. 2754428-18-5) (new on the watchlist)
- 10 azole fungicides, including in particular bromuconazole (CAS no. 116255-48-2), climbazole (CAS no. 38083-17-9), difenoconazole (CAS no. 119446-68-3), mefenftrifluconazole (CAS no. 1417782-03-6), and triticonazole (CAS no. 131983-72-7) (all new on the watchlist)
- TFA precursor Fluoxetine (CAS no. 54910-89-3) (new on the watchlist)
- UV blocker Benzophenone-3 (CAS no. 131-57-7) (from previous watchlist)

22.12.2000

EN

Official Journal of the European Communities

L 327/1

I

(Acts whose publication is obligatory)

DIRECTIVE 2000/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 October 2000 establishing a framework for Community action in the field of water policy

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the Economic and Social Committee⁽¹⁾,

Having regard to the opinion of the Council of the Regions⁽²⁾,

Acting in accordance with the procedure laid down in Article 251 of the Treaty⁽³⁾, and in the light of the opinion of the Conciliation Committee on 11 October 2000,

Whereas:

- (1) Water is not a commercial product like other natural resources, a heritage which must be protected and treated as such.
- (2) The conclusions of the Community Ministerial Seminar in Frankfurt in 1998 need for Community legislation covering water quality. The Council in its resolution of 1998 asked the Commission to submit proposals for legislation on ecological quality in Community surface waters.

⁽¹⁾ OJ C 184, 17.6.1997, p. 20.
⁽²⁾ OJ C 16, 20.1.1998, p. 14 and
OJ C 108, 7.4.1998, p. 94.
⁽³⁾ OJ C 355, 21.11.1997, p. 83.
⁽⁴⁾ OJ C 180, 11.6.1998, p. 38.
⁽⁵⁾ Opinion of the European Parliament of 11 October 1999, C 150, 28.5.1999, p. 419, confirmed on 14 and Council Common Position of 22 October 2000, 30.11.1999, p. 31. Decision of the European Parliament of 7 September 2000 and Decision of the Council of 2000.
⁽⁶⁾ OJ C 209, 9.8.1988, p. 3.

OJ L 3.3.2025

EN

ANNEX

Watch list of substances for Union-wide monitoring as set out in Article 8b of Directive 2008/105/EC

Name of substance/group of substances	Chemical Abstracts Service (CAS) number	European Community (EC) number (*)	Indicative analytical method (*)	Maximum acceptable method quantification limit (mg/l)
Fipronil	120068-37-3	424-610-5	SPE-HPLC-MS/MS	0,77
Clindamycin	18323-44-9	242-209-1	SPE-LC-MS/MS	44
Ofloxacin	82419-36-1	680-263-1	SPE-UHPLC-MS/MS	26
Metformin and Guanyurea (*)	657-24-9 141-83-3	211-517-8 205-504-6	SPE-LC-MS/MS	156 000 100 000
Sunscreens agents (*) Butyl methoxydibenzoylmethane Octocrylene Benzophenone-3 Octisalate (2-ethylhexyl salicylate)	70356-09-1 6197-30-4 131-57-7 118-60-5	274-581-6 228-250-8 205-031-5 204-263-4	SPE-LC-ESI-MS/MS	3 000 266 670 168
N-1,3-Dimethylbutyl-N'-phenyl-p-phenylenediamine (6PPD) and 6PPD-quinone (*)	793-24-8 2754428-18-5	212-344-0 893-269-6	SPE-LC-MS/MS	370
Abamectin (*) Avermectin B1a and Avermectin B1b	71751-41-2 65195-53-3 65195-56-4	265-610-3 265-611-9	SPE-LC-MS/MS	1
Azole compounds (*) Bromuconazole Climbazole Cyazofamid Difenoconazole Eproconazole Itraconazole Keticonazole Mefenitruconazole Propiconazole Triticonazole	116255-48-2 38083-17-9 120116-88-3 119446-68-3 133855-98-8 84625-61-6 65277-42-1 1417782-03-6 60207-90-1 131983-72-7	408-060-3 253-775-4 601-671-8 601-613-1 406-850-2 617-596-9 265-667-4 822-682-6 262-104-4 603-543-7	SPE-LC-MS/MS	15 110 130 360 180 8 90 1 600 1 000 1 000
Etoazole	153233-91-1	604-891-2	SPE-GC-MS/MS	0,4

Anthe et al. *Environ Sci Eur* (2020) 32:147
https://doi.org/10.1186/s12302-020-00424-4

Environmental Sciences Europe

RESEARCH

Open Access

Development of an aquatic exposure assessment model for Imidacloprid in sewage treatment plant discharges arising from use of veterinary medicinal products

Mechthild Anthe¹, Beatrice Valles-Ebeling^{2*}, Jan Achtenhagen¹, Martina Arenz-Leufen¹, Jackie Atkinson², Michael Starp³ and Christian Corsing²

Abstract

Background: Imidacloprid is an active ingredient included in plant protection, biocidal and veterinary medicinal products (VMPs). VMPs containing Imidacloprid are formulated as spot-on products or collars and designed to protect pets, predominantly dogs and cats, from parasite infestation. Monitoring data collected under the Water Framework Directive between 2016 and 2018 showed detectable and varying levels of Imidacloprid in the UK surface water bodies. The aim of the work was to investigate the potential contribution of VMPs by developing a model for predicting the emissions from sewage treatment plants from the use of dog and cat spot-on and collar VMPs. Due to the absence of appropriate exposure models for VMPs, the model was built based on the principles of environmental exposure assessment for biocidal products.

Results: Three emission paths were considered to be the most likely routes for repeated emissions to waterways from the use of spot-on and collar VMPs, i.e., transfer to pet bedding followed by washing, washing/bathing of dogs, and walking dogs in the rain. The developed model was used to calculate the Imidacloprid concentrations in surface water after discharge from wastewater treatment plants. Realistic worst-case input parameters were deduced from sales and survey data and experimental studies. Modelled total concentrations in surface water for each pathway ranged from 0.84 to 4.8 ng/L. The calculated concentrations did not exceed the ecological thresholds for the most sensitive aquatic invertebrate organisms and were found to be much lower than the UK monitoring data for river water. For example, the calculated concentration from the bathing/washing of dogs was < 3% of the highest levels of Imidacloprid measured in surface waters.

Conclusion: In conclusion, a model has been successfully built and applied. The modelled data indicate that these VMPs make only a very small contribution to the levels of Imidacloprid observed in the UK water monitoring programme. Further, calculated concentrations do not exceed ecotoxicological threshold values indicating acceptable chronic safety to aquatic organisms.

Keywords: Imidacloprid, Veterinary medicinal product, Surface water, Scenarios, Exposure assessment, United Kingdom

Background

Imidacloprid (IUPAC name: (E)-1-(6-chloro-3-pyridinylmethyl)-N-nitroimidazolidin-2-ylideneamine; CAS No. 138261-41-3) is an insecticidal active substance (a.s.) belonging to the group of neonicotinoids [1, 2].

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Science of the Total Environment 917 (2024) 170175

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Science of the Total Environment

journal homepage: www.elsevier.com/locate/scitotenv



Down-the-drain pathways for fipronil and imidacloprid applied as spot-on parasiticides to dogs: Estimating aquatic pollution

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^d Chipping Norton Veterinary Hospital, Banbury Road, Chipping Norton, Oxfordshire OX7 5SY, United Kingdom

^e The Georgina Mace Centre for the Living Planet, Department of Life Sciences, Imperial College London, Silwood Park Campus, Buckhurst Road, Ascot, Berkshire SL5 7PY, United Kingdom

HIGHLIGHTS

- Wastewater a major entry pathway for fipronil and imidacloprid to UK surface water
- Bathing, bed and handwash emissions from spot-on treated dogs were quantified.
- These pathways account for an estimated 20–40 % of measured wastewater pollution.
- Pet parasiticides are a major source of down-the-drain emissions.
- A systematic review of regulatory and prescribing practices is recommended.

GRAPHICAL ABSTRACT



ARTICLE INFO

Editor: Henner Holler

Keywords:
Parasiticides
Wastewater
Veterinary
Pollution
Emissions

ABSTRACT

Fipronil and imidacloprid have been widely detected in UK surface waters in recent years, often at concentrations that ecotoxicological studies have shown can harm aquatic life. Down-the-drain (DTD) passage of pet flea and tick treatments are being implicated as an important source, with many of the UK's 22 million cats and dogs receiving routine, year-round preventative doses containing these parasiticides. The UK Water Industry's 3rd Chemical Investigation Programme (UKWIR CIP3) has confirmed wastewater as a major entry pathway for these chemicals into surface waters, but the routes by which they enter the wastewater system remain unclear. We addressed this knowledge gap by conducting the first quantification of DTD emissions from 98 dogs treated with spot-on ectoparasiticides containing fipronil or imidacloprid, through bathing, bed washing and washing of owners' hands. Both chemicals were detected in 100 % of washoff samples, with bathing accounting for the largest emissions per event (up to 16.8 % of applied imidacloprid and 24.5 % of applied fipronil). Modelled to

Abbreviations: DTD, down-the-drain; CIP3, Chemical Investigation Program 3; PEF, population emission fraction; RQ, risk quotient; LOD, limit of detection; VMP, veterinary medicinal product.

* Corresponding author.

E-mail address: rp442@sussex.ac.uk (R. Perkins).

<https://doi.org/10.1016/j.scitotenv.2024.170175>

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27th DGRA Annual Congress

Trends in Animal Health



20 November 2023
EMA/CVMP/ERA/31905/2021
Committee for Veterinary Medicinal Products (CVMP)

Reflection paper on the environmental risk assessment of ectoparasiticide veterinary medicinal products used in cats and dogs

Draft agreed by ERAWP	23 September 2022
Adopted by CVMP for release for consultation	8 December 2022
Start of public consultation	16 December 2022
End of consultation (deadline for comments)	31 March 2023
Draft agreed by ERAWP	30 June 2023
Adopted by CVMP	9 November 2023

Keywords	Ectoparasiticides, endectocides, veterinary medicinal products (VMPs), environmental risk assessment (ERA), companion animals, cats, dogs
----------	---



The European Agency for the Evaluation of Medicinal Products
Veterinary Medicines and Information Technology Unit

CVMP/VICH/592/98-FINAL
London, 30 June 2000

VICH Topic GL6 (Ecotoxicity Phase I)

Step 7

GUIDELINE ON ENVIRONMENTAL IMPACT ASSESSMENT (EIAS) FOR VETERINARY MEDICINAL PRODUCTS - PHASE I

TRANSMISSION TO CVMP	December 1998
TRANSMISSION TO INTERESTED PARTIES	December 1998
COMMENTS REQUESTED BEFORE	31 May 1999
FINAL APPROVAL BY CVMP	July 2000
DATE FOR COMING INTO OPERATION BY	20 July 2000

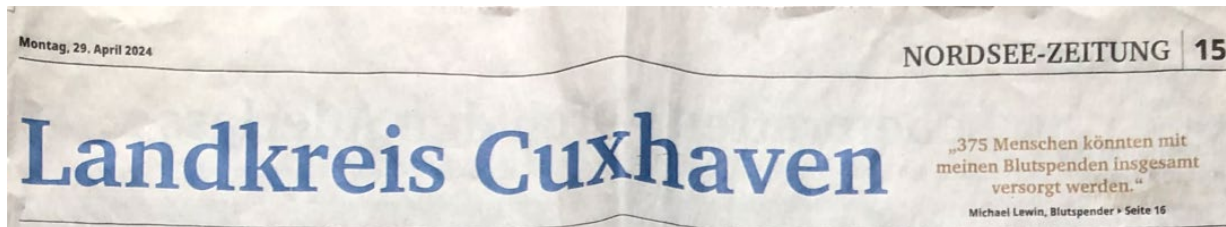
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Question 3: Will the VMP be used only in non-food animals?⁷

Generally, non-food animals are not intensively reared. Also, products used in these animals are usually individual treatments. Approval of VMPs for use in non-food animals is likely to be associated with fewer environmental concerns than approval of VMPs in food-producing animals simply because there is less total amount of product used. The definition of non-food animals varies among the three regions.

Consequences are, e.g.:

- Responsible use of pet ectoparasiticides: choosing the “right” product for your pet persona
- Opportunity for efficacious and environmentally friendly topicals



Das Ziel: Die Netto-Null-Kuh

In Gnarrenburg arbeiten Milchkontor und Bauern daran, wie die Milchwirtschaft klimaneutral werden kann

VON INGA HANSEN

Gnarrenburg. Kühe sind in Ver-
ruf geraten. Weil sie durch ih-
re Verdauung ordentliche
Mengen an Methan freisetzen.
Das Deutsche Milchkontor
(DMK) und einige Milchbauern
wollen gegensteuern. Und die
Treibhausgas-Bilanz der Wie-
derkäufer sogar gen Null drü-
cken.

Sven Kück könnte es leichter
haben. Der Milchbauer aus
Gnarrenburg hat derzeit an vie-
len Fronten zu kämpfen. Da
muss man gar nicht die Strei-
chung des Agrardiesels denken.
Der grüne Bundeslandwirt-
schaftsminister treibt die Tier-
wohl-Debatte voran, der Milch-
preis hat sein Hoch zu Beginn
des Ukraine-Kriegs lange wie-
der verlassen, die Moorschutz-
pläne des Bundes bedrohen in
Regionen wie dem Elbe-Weser-
Dreieck Existenzen.



**Wir wollen Teil der
Lösung sein, nicht
immer nur das
Problem.“**

Sven Kück

Sie liegt damit deutlich hinter
den großen Emittenten Energie-
sektor, Verkehr, Gebäude und
Industrien - aber vor dem Flug-
verkehr. Der Knackpunkt dabei:
Die Kühe sind schuld. Es sind
nicht Dieselverbrauch oder
Düngereinsatz, die der Land-
wirtschaft die Klimabilanz ver-
hageln. Es sind die Tiere. Und
die können die Landwirte ja
nicht abschaffen, wenn sie da-
mit ihren Lebensunterhalt ver-
dienen. Kühe sind Wiederkäuer,
sie produzieren mit ihrer Ver-
dauung jede Menge Methan. Das
Treibhausgas, das noch schädli-
cher ist als CO₂, entweicht jedes
Mal in die Luft, wenn die Kühe
rülpsen oder pupsen. Und das
tun sie laut Recherchen der ARD
mindestens alle drei Minuten.
Die Kuh-Rülpsen machen den
Löwenanteil der Emissionen in
der Landwirtschaft aus. Wie
man das ändern soll, ohne die
Kühe gleich mit abzuschaffen,
bleibt die große Frage.

**Bis 2050 sollen Emissionen
gegen Null gehen**

Henry Hashagen ist da optimis-
tisch. Sein Arbeitgeber, die Mol-
kerei das Deutsche Milchkontor,
hat sich das Ziel gesetzt, die eigen-
en Treibhausgas-Emissionen -
und dazu zählen auch die der
Milchlieferanten - bis 2030 um 20
Prozent zu senken. Bis 2050 sol-
len sie sogar gegen Null gehen.
„Das ist ein sportliches Ziel“, gibt
Hashagen zu. Aber machbar,
glaubt er. Nicht, in dem man ver-
sucht, den Kühe das Rülpsen ab-
zugewöhnen. „Kühe bleiben Kü-
he. Die werden immer Emissio-



**Nachhaltigkeit schreiben Sven und Wolfgang Kück groß. Jetzt wollen die beiden Milchbauern aus Gnarren-
burg den CO₂-Fußabdruck ihres Betriebs weiter verringern.** Foto: Deutsches Milchkontor

Press Release

February 24, 2022


DSM receives landmark EU market approval for its methane-reducing feed additive Bovaer®

Royal DSM, a global purpose-led science-based company, announces that European Union (EU) member states approved the marketing of the methane-reducing feed additive for dairy cows, Bovaer®, in the EU. After inclusion in the EU registry, expected in the coming weeks, it is the first time a feed additive authorised in the EU for environmental benefits can be marketed. This marks a significant milestone for DSM, paving the way for Bovaer® to revolutionize the dairy market.



28 May 2024

Elanco Announces FDA Has Completed Review of Bovaer®, First-in-Class Methane-Reducing Feed Ingredient, for U.S. Dairy Industry

Share 

- Food and Drug Administration confirms Bovaer meets safety and efficacy requirements
- Elanco expects product launch and added carbon credit value to producers beginning in the third quarter
- Elanco announces agreement with dsm-firmenich to expand distribution of Bovaer across North America, adding both the Canada and Mexico markets



Using **1 tablespoon of Bovaer®** per lactating dairy cow per day can help dairy farmers make progress on their sustainability goals. ⁱ



Bovaer suppresses an enzyme that forms methane, resulting in **lower methane emissions**.



Feeding 1 million cows **Bovaer** reduces emissions equivalent to **removing more than 285,000 cars** from the road for a year. ⁱⁱ



Feeding Bovaer provides a scalable and credible way for dairy farmers to benefit from voluntary incentive-based markets.

ⁱ Kebreab, E., Bannink, A., Pressman, E. M., Walker, N., Karagiannis, A., van Gastelen, S., & Dijkstra, J. (2023). A meta-analysis of effects of 3-nitrooxypropanol on methane production, yield, and intensity in dairy cattle. *Journal of Dairy Science*, 106(2), 927–936. <https://doi.org/10.3168/jds.2022-22211>
ⁱⁱ Greenhouse Gas Equivalencies Calculator | US EPA



Pandemics

Key Facts



- ☐ ...
- ☐ Some 60% of emerging infectious diseases that are reported globally come from animals, both wild and domestic. Over 30 new human pathogens have been detected in the last 3 decades, 75% of which have originated in animals.
- ☐ Human activities and stressed ecosystems have created new opportunities for diseases to emerge and spread.
- ☐ These stressors include animal trade, agriculture, livestock farming, urbanization, extractive industries, climate change, habitat fragmentation and encroachment into wild areas.

Haustier-Boom in der Pandemie

Tierärzte am Limit

Stand: 08.01.2022 15:10 Uhr

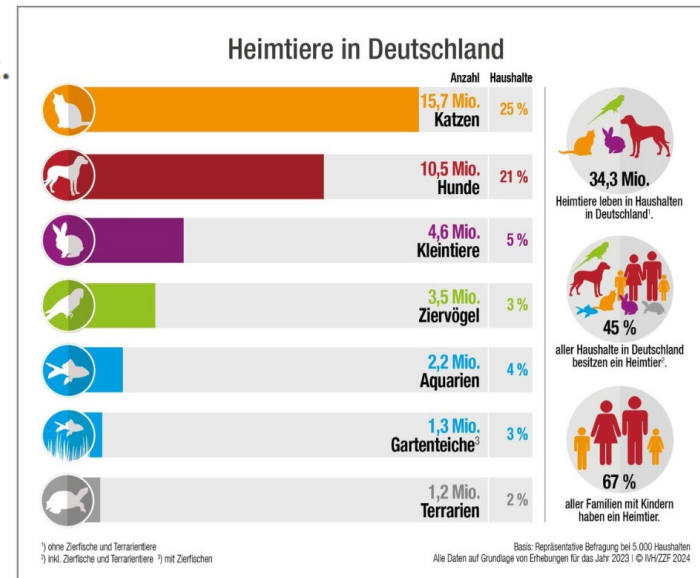
Die Corona-Krise sorgt für einen Haustier-Boom. Eine Million Haustiere zogen im Jahr 2020 in ein neues Zuhause - ein Trend, der auch 2021 anhielt. Das heißt für Tierärzte eine massive Überlastung.

Von Mandana Bareh Foroush, hr

In Zeiten von Lockdowns und Social Distancing fühlen sich viele Menschen einsam und legen sich ein Haustier zu. Mittlerweile lebt in fast jedem zweiten Haushalt ein Tier. "Der positive Effekt von Heimtieren auf den Menschen ist wissenschaftlich erwiesen", sagt Psychologie-Professorin Andrea Beetz von der Internationalen Hochschule (IU) mit Hauptsitz in Erfurt. Sie erforscht seit 20 Jahren die Beziehung von Mensch und Tier.

Besonders in Krisenzeiten wie der Pandemie berichten Tierhalter von psychischer Stabilität und einem geringeren Gefühl von Einsamkeit. Schon kurzes Streicheln erzeugt Oxytocin. Das Hormon reduziert Stress, Angst und Aggression und fördert Wohlbefinden und Vertrauen. Für die einen heißt das weniger Stress, für die anderen mehr.

Quelle: Haustier-Boom in der Pandemie: Tierärzte am Limit | tagesschau.de



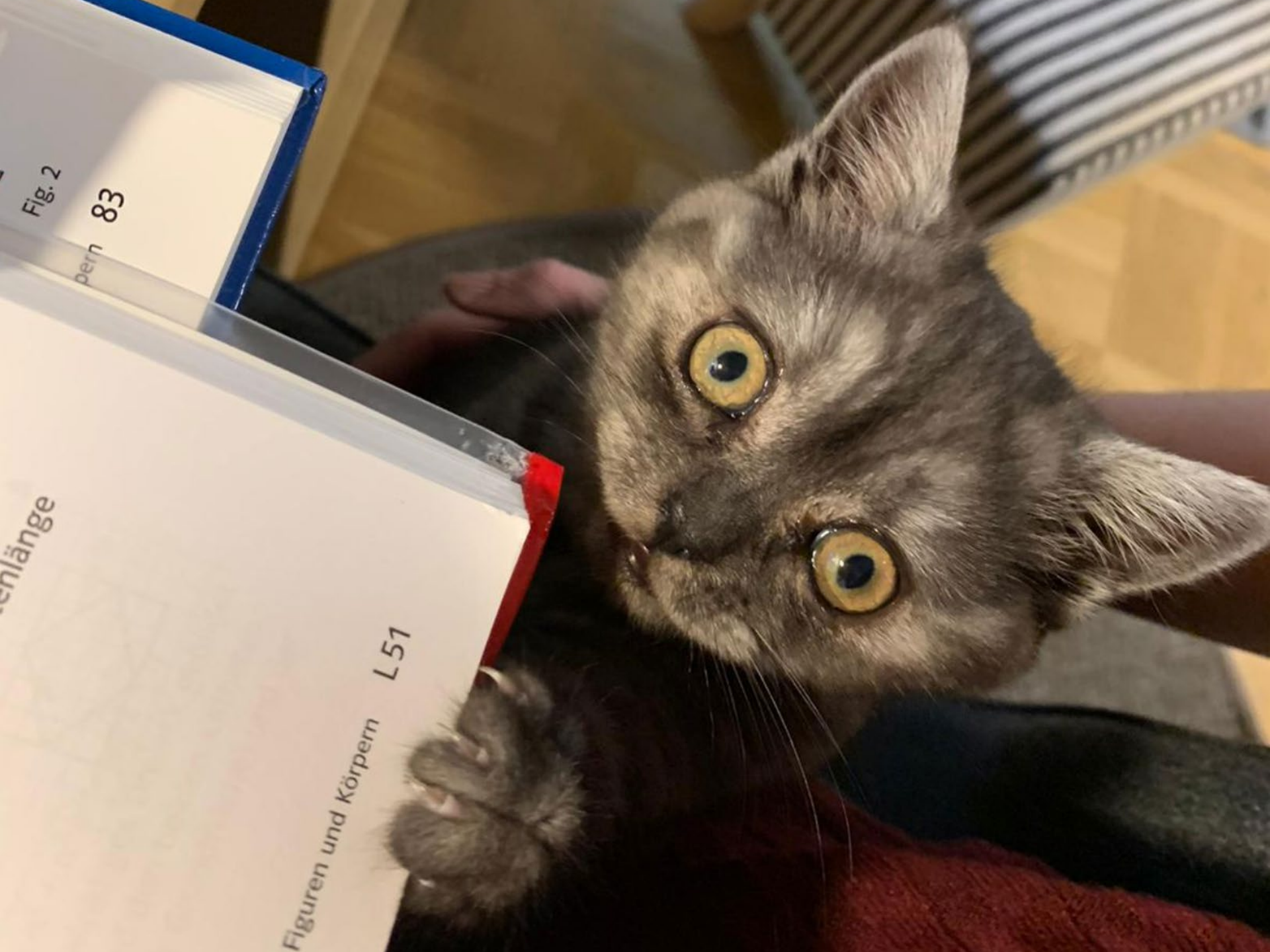


Fig. 2

pern 83

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Figuren und Körpern L 51

L 51

27th DGRA Annual Congress

Trends in Animal Health

https://edition.cnn.com/2025/02/10/business/egg-prices-trump-biden-solutions/index.html

CNN Business Markets Tech Media Calculators Videos

High egg prices weren't Biden's fault. They're not Trump's either, but they're his problem now

By Vanessa Yurkevich, CNN
6 minute read · Published 6:49 AM EST, Mon February 10, 2025

https://www.theguardian.com/us-news/2025/mar/14/trump-egg-prices-denmark-greenland

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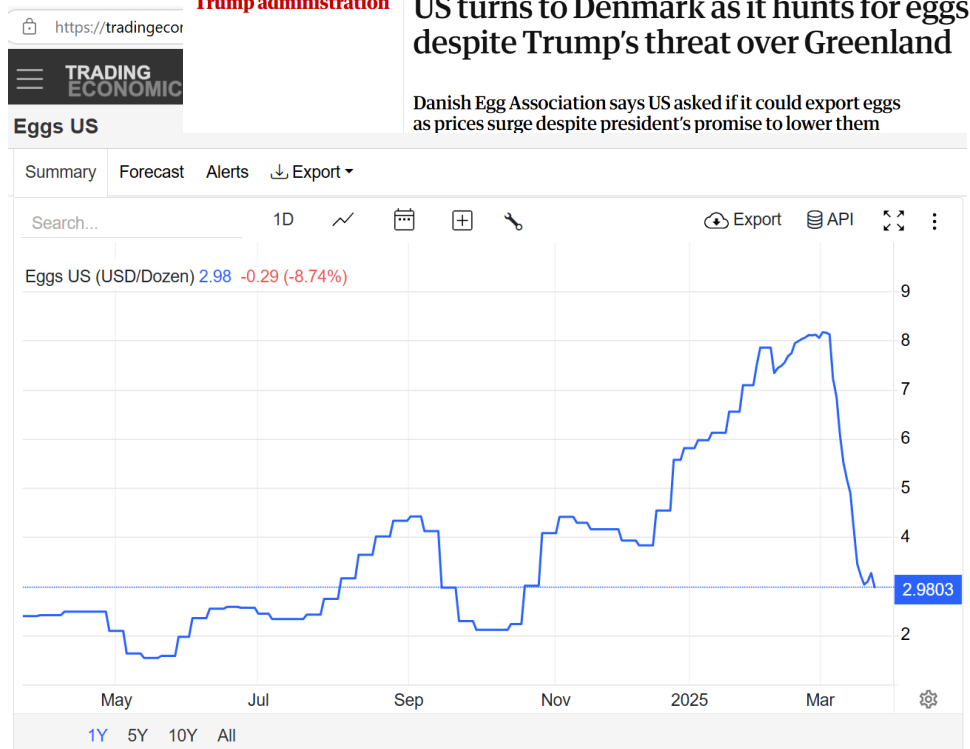
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Trump administration US turns to Denmark as it hunts for eggs despite Trump's threat over Greenland

Danish Egg Association says US asked if it could export eggs as prices surge despite president's promise to lower them




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Article | Published: 27 September 2021

African swine fever outbreaks in China led to gross domestic product and economic losses

[Shibing You](#) , [Tingyi Liu](#), [Miao Zhang](#), [Xue Zhao](#), [Yizhe Dong](#) , [Bi Wu](#), [Yanzhen Wang](#), [Juan Li](#), [Xinjie Wei](#)
& [Baofeng Shi](#) 

Nature Food **2**, 802–808 (2021) | [Cite this article](#)

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Abstract

African swine fever (ASF) is a fatal and highly infectious haemorrhagic disease that has spread to all provinces in China—the world's largest producer and consumer of pork. Here we use an input–output model, partial equilibrium theory and a substitution indicator approach for handling missing data to develop a systematic valuation framework for assessing economic

losses caused by ASF outbreaks in China between August 2018 and July 2019. We show that the total economic loss accounts for 0.78% of China's gross domestic product in 2019, with impacts experienced in almost all economic sectors through links to the pork industry and a

substantial decrease in consumer surplus. Scenario analyses demonstrate that the worst cases of pig production reduction and price increase would trigger 1.4% and 2.07% declines in gross domestic product, respectively. These findings demonstrate an urgent need for rapid ASF containment and prevention measures to avoid future outbreaks and economic declines.

The New Vet Regulation 2019/6

Major Changes of the Veterinary Legislation (EU)

- ❑ Directive 65/65/EEC: **Requirement of MA for VMPs**
- ❑ Regulation (EEC) 2377/90: **Establishment of MRLs**
- ❑ Directive 2001/82/EC: **Community code on VMPs**
- ❑ Directive 2004/28/EC: amending Directive 2001/82/EC
(MRP, data protection, generics, PhV)
- ❑ Regulation (EC) 726/2004: **Establishment of CP and EMA**
- ❑ Regulation (EC) 1234/2008: **Variation Regulation**
- ❑ Regulation (EC) 470/2009: repealing Regulation (EEC) No 2377/90 and amending
Directive 2001/82/EC and Regulation (EC) No 726/2004
(Update on MRL procedures)
- ❑ Regulation (EU) 2019/6:

Applicable as
of 28 Jan 2022

New Veterinary Regulation (NVR), decoupling from human
(repealing and replacing Directive 2001/82/EC)
> Regulation (EC) 1234/2008 and Regulation (EC) 726/2004
are for human medicinal products only in the future



Key Elements of the NVR for One Health

- ❑ The [Centralised Procedure is open to all types of veterinary medicinal products](#), including for generics of nationally authorised veterinary medicinal products! The [mandatory scope is expanded](#) to include all new active substances.
- ❑ Provisions for [data protection are extended \(up to 18 years\)](#): +1y for major species and + 4y for minor species). ► Still limited impact on innovation expected, in particular since the global marketing authorisation concept is maintained.
- ❑ With the aim of combatting antimicrobial resistance new [rules to restrict use of certain antimicrobials \(i.e.: antibiotics, antivirals, antiprotozoals\)](#) are introduced, concerning authorization, label claims, off-label use, advertising, prescription, documentation, trade reciprocity, ...
 - Del Reg EU 2021/578, Imp Reg EU 2022/209, Del Reg 2021/1760, Imp Reg EU 2022/1255
- ❑ [Antiparasitics](#): increased focus on resistance

Key Elements of the NVR for One Health

- ❑ Environment:
 - ❑ Feasibility study on active substance-based review system (monographs) and potential alternatives for ERA of VMPs
 - ❑ Reference to Water Framework Directive and Industrial Emissions Directive
- ❑ Relaxation of the “Cascade” rules, which is a legislative provision that allows a veterinary surgeon to prescribe unauthorised medicines that would not otherwise be permitted, where more flexibility is introduced. The previous standard withdrawal period for food-animal species concerned is replaced by multiplier system taking account of available information.
 - ▶ easier to use VMPs and HMPs ‘off label’
 - ▶ but stricter / not possible for antibiotics
- ❑ Establishment of database for manufacturing and wholesale distribution
- ❑ BUT: pre-COVID legislation – newest learnings not considered (e.g., urgency/rolling review in pandemic situation (ASF), supply chain challenges, ...)

Conclusion

VMPs are a crucial part of the One Health concept.



Source: IFAH

Despite all differences: ONE HEALTH

A black and white photograph of a cat drinking from a faucet. The cat's head is tilted up, and its mouth is open, drinking from the water flowing from the faucet. The background is a plain, light-colored wall.

Thank You!

Coffee Break !

Master's degree programme for continuing education

Drug Regulatory Affairs

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Concept & Key Benefits

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Alumni Survey 2024, Q16



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MDRA Flyer 2025

https://www.dgra.de/media/uploads/2293-MDRA_Flyer_2025_02_digital.pdf

Uni Bonn – Department of Drug Regulatory Affairs

https://www.pharma.uni-bonn.de/drug-regulatory-affairs/en/mdra?set_language=en

DGRA Website (QR-Code)

<https://www.dgra.de/english/home>

