



European perspectives on efforts to reduce antimicrobial usage in food animal production

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New EU Regulations



- a. A ban on the preventive use of antimicrobials
 - In groups of animals
 - Via medicated feed
- b. Restrictions on metaphylactic use of antimicrobials
- c. A reinforced ban on the use of antimicrobials to promote growth and increase yield



<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0006&from=EN>

7.1.2019

EN

Official Journal of the European Union

L 4/43

REGULATION (EU) 2019/6 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 11 December 2018
on veterinary medicinal products and repealing Directive 2001/82/EC
(Text with EEA relevance)

New EU Regulations



- d. The possibility to reserve certain antimicrobials for humans only
- e. The obligation for Member States to collect data on the sale and use of antimicrobials
- f. For imported animals and products from outside the EU, a ban on antimicrobials for growth promotion and restrictions on antimicrobials reserved for human use





Talk outline

- Informed by a large body of work
 - The work of the EU agencies
 - Scientific research
 - Building on earlier policies
- Actions by individual EU member states





a. The work of EU agencies

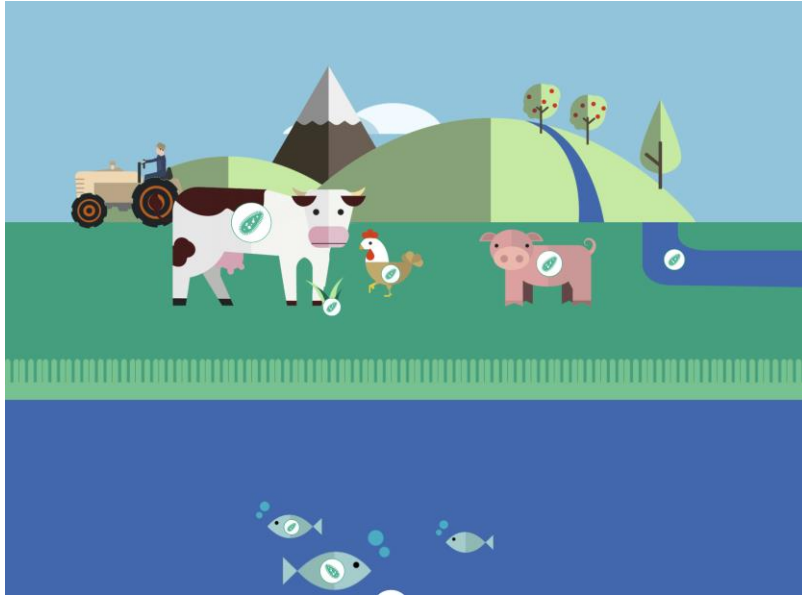


Quantifying usage



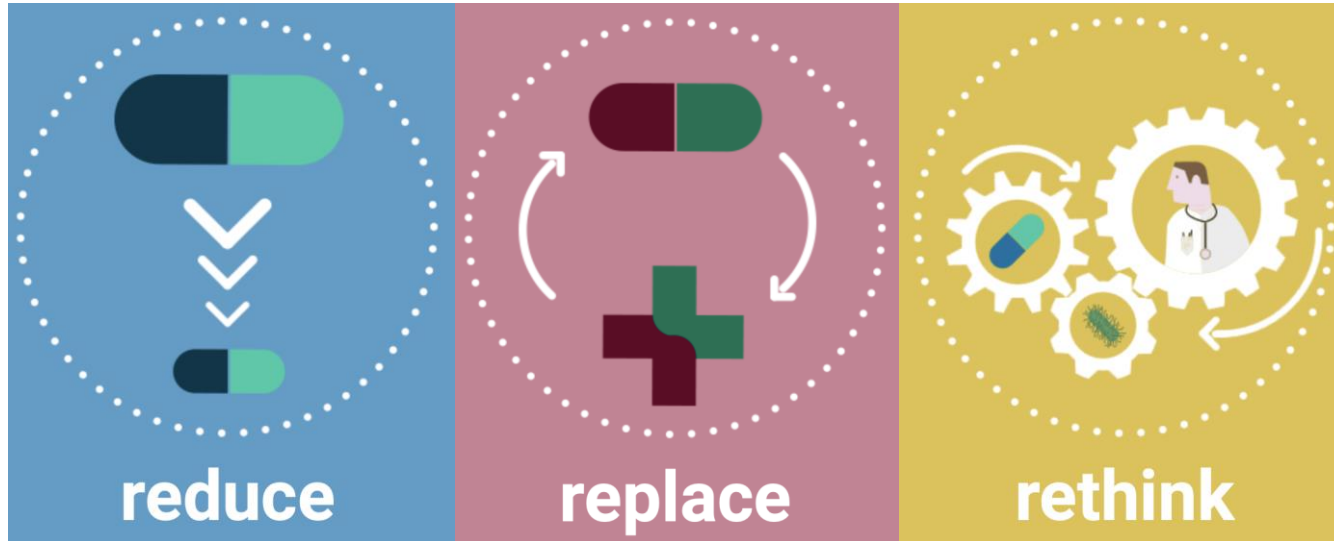
https://www.ema.europa.eu/en/documents/report/sales-veterinary-antimicrobial-agents-30-european-countries-2016-trends-2010-2016-eighth-esvac_en.pdf

Reducing the need to use



https://www.efsa.europa.eu/en/interactive_pages/Antimicrobial_Resistance

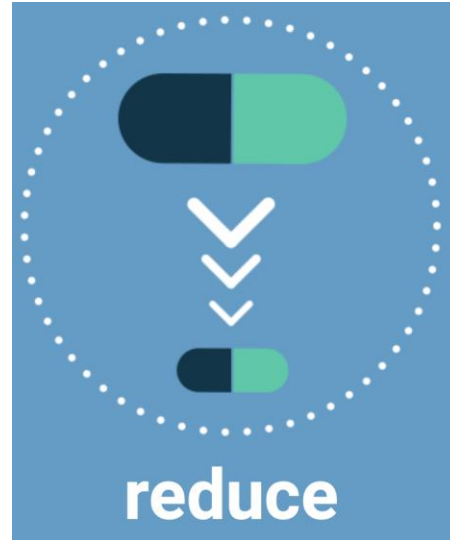
Reducing the need to use



Reducing the need to use

Reduce the use of antimicrobials

- Setting targets
- Increasing veterinary responsibility
- Using antimicrobials only when needed



Reducing the need to use

Replace antimicrobials with alternative treatments



- Consider alternatives
- Research new alternatives
- Develop a legal framework



Reducing the need to use

Rethink the livestock production system



- Improve disease prevention and control
- Consider alternative farming systems
- Offer education



Quantifying resistance



SCIENTIF

APPROVED: 31
doi: 10.2903/j.

The
resista

Zoonoses: antimicrobial resistance shows no signs of slowing down

Press release

26 Feb 2019



Data released today by the European Centre for Disease Prevention and Control (ECDC) and European Food Safety Authority (EFSA) reveal that antimicrobials used to treat diseases that can be transmitted between animals and humans, such as campylobacteriosis and salmonellosis, are becoming less effective.



<https://ecdc.europa.eu/en/publications-data/european-union-summary-report-antimicrobial-resistance-zoonotic-and-indicator-5>

<https://ecdc.europa.eu/en/news-events/zoonoses-antimicrobial-resistance-shows-no-signs-slowing-down>

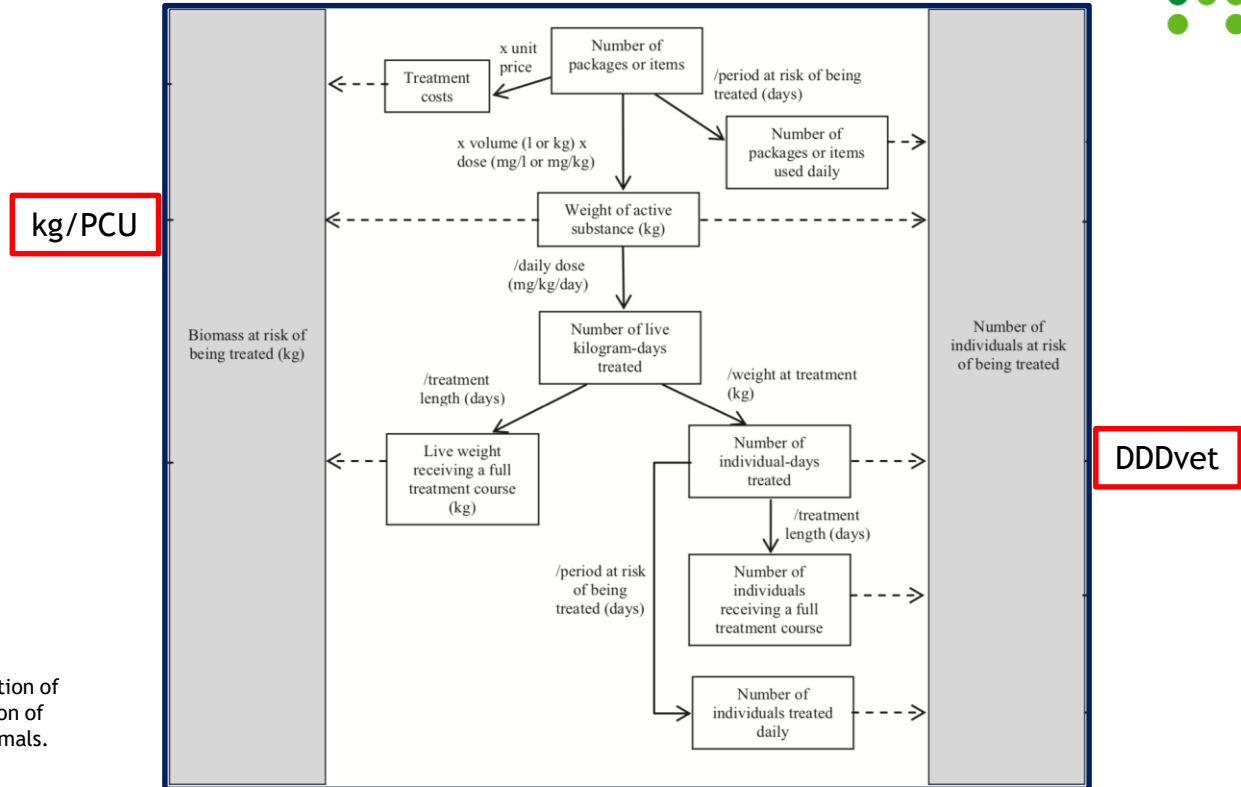
b. Scientific work



Measuring antimicrobial usage



Population at risk Antimicrobial usage Population at risk



Collineau et al. Guidance on the selection of appropriate indicators for quantification of antimicrobial usage in humans and animals. Zoonoses Public Hlth. 2017;64:165-84.

AACTING consortium



<p>PHAROS AUSTRIA</p> <p>Beef Calf Chick Dairy Goat Pig Sheep Turkey</p>	<p>Sanitel-Med BELGIUM</p> <p>Calf Chick Pig</p>	<p>AB Register BELGIUM</p> <p>Chick Pig Turkey</p>
<p>CIPARS CANADA</p> <p>Chick Pig Turkey</p>	<p>BIGAME BELGIUM</p> <p>Beef Dairy</p>	<p>SGS-BVK veal calves BELGIUM</p> <p>Calf</p>
<p>SIKAVA FINLAND</p> <p>Pig</p>	<p>DLN cattle CZECHIA</p> <p>Dairy</p>	<p>VetStat DENMARK</p> <p>Beef Calf Chick Dairy Fish Goat Other Pig Sheep Turkey</p>
	<p>Animal Health ETT (poultry) FINLAND</p>	

The AACTING-network (www.aacting.org) presents:

GUIDELINES FOR COLLECTION, ANALYSIS AND REPORTING OF FARM-LEVEL ANTIMICROBIAL USE, IN THE SCOPE OF ANTIMICROBIAL STEWARDSHIP

VERSION 1.2_2019-07-02

AACTING
Herd level antimicrobial consumption in animals
Collect | Analyze | Benchmark | Communicate



New tools to evaluate farm biosecurity

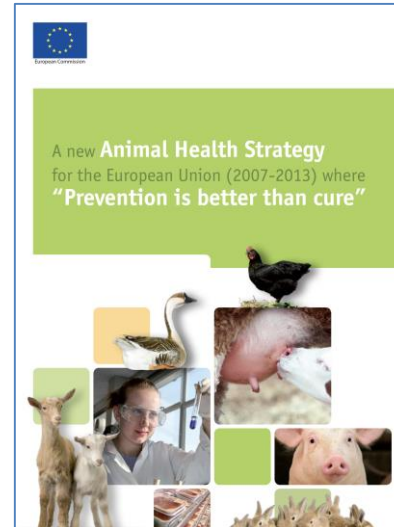
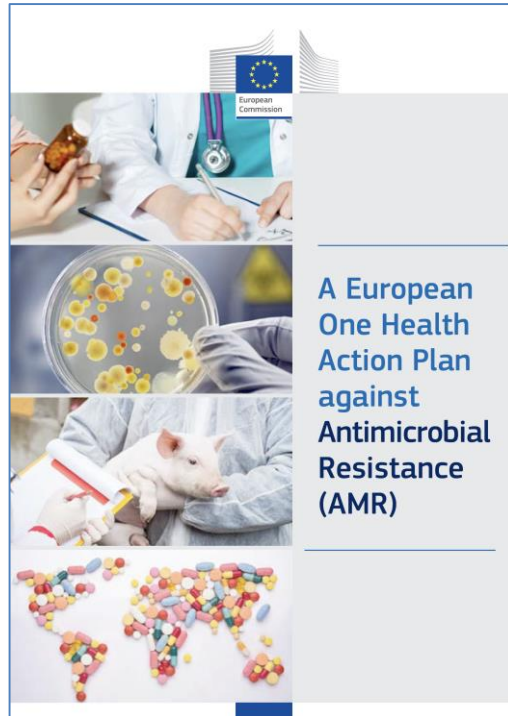


<https://www.biocheck.ugent.be>

c. Earlier policy initiatives



European One Health Action Plan



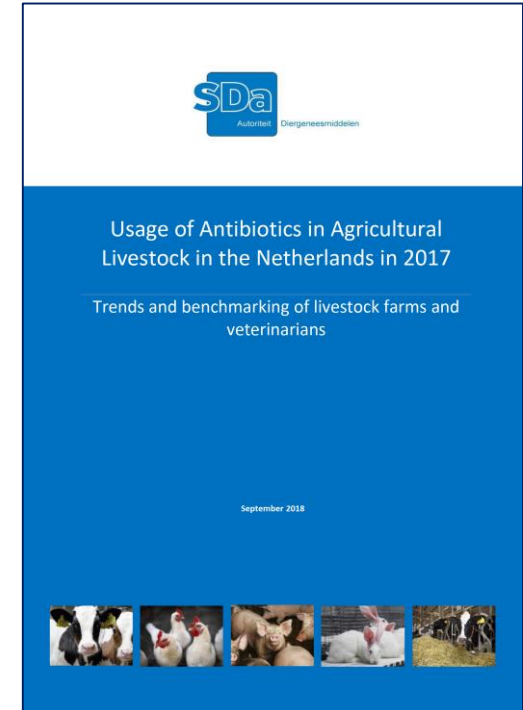
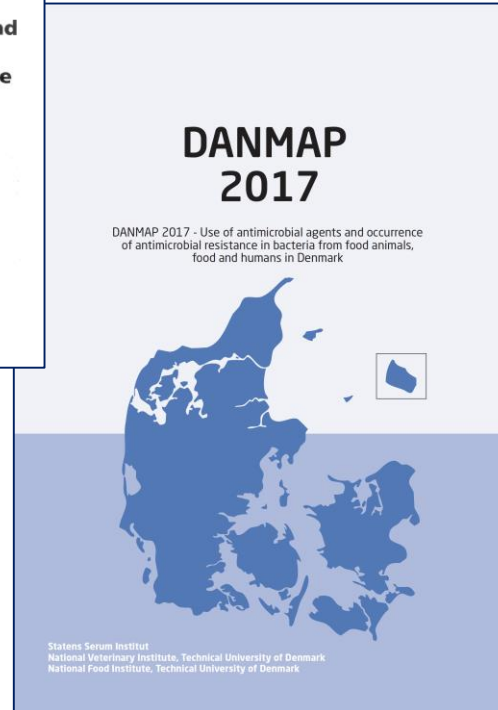
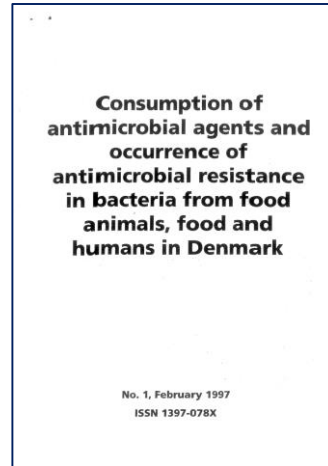
https://ec.europa.eu/health/amr/sites/amr/files/amr_action_plan_2017_en.pdf
https://ec.europa.eu/food/sites/food/files/animals/docs/ah_policy_strategy_2007-13_en.pdf



d. Actions by individual member states



Monitoring usage



<https://www.danmap.org>
<https://www.autoriteitdiergeneesmiddelen.nl/en>

Monitoring usage

National trends



Figure 4.1 Prescribed antimicrobial agents

Figure 4.2 Live biomass (m)

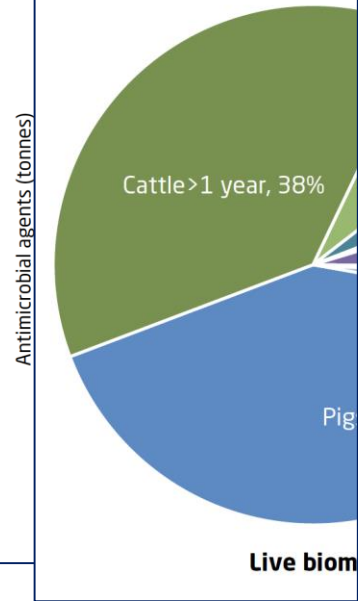
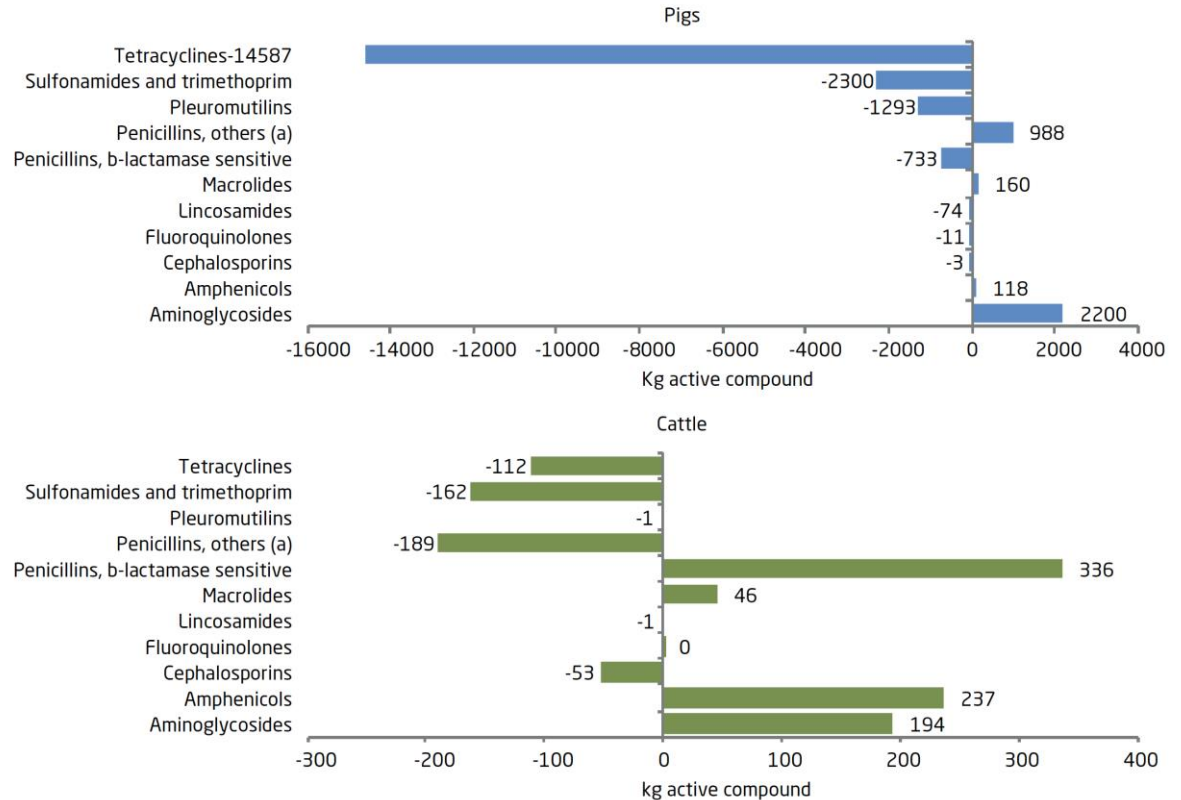


Figure 4.3 Change in antimicrobial use (kg active compound) in pigs, cattle

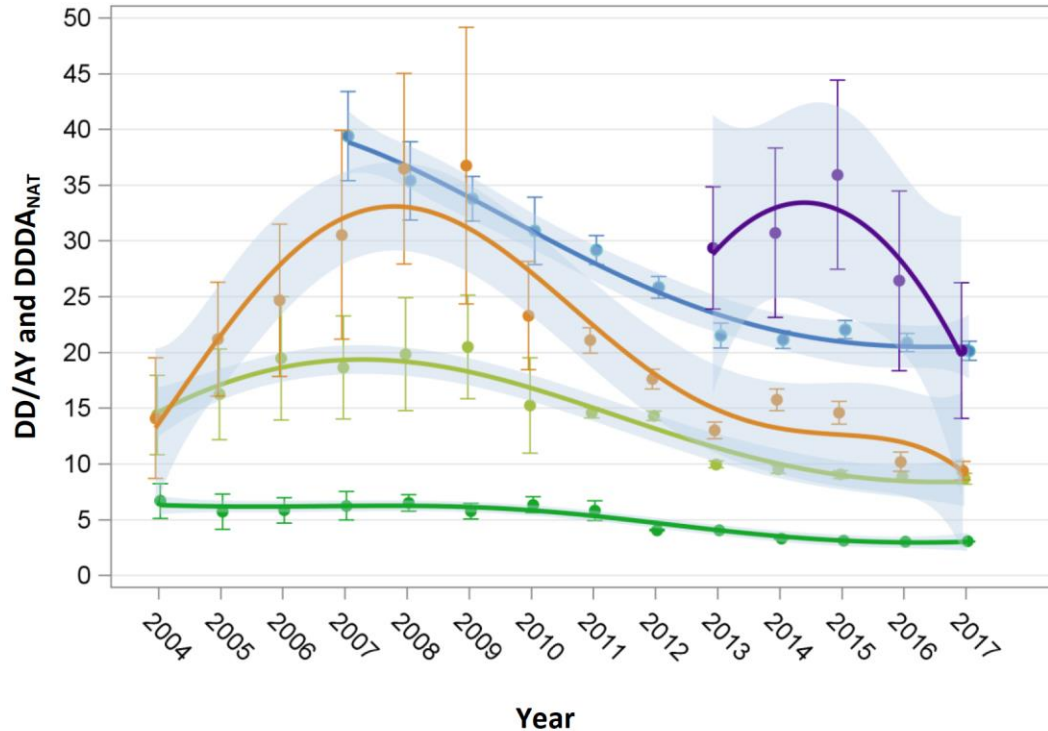
2013 - 2017, Denmark
DANMAP 2017



Monitoring usage

National trends

<https://www.autoriteitdiergeneesmiddelen.nl/en>



Purple: turkey farming sector
Light blue: veal calf sector
Orange: broiler farm sector
Light green: pig farming sector
Dark green: dairy sector



Monitoring usage

Benchmarking



Table 6. 2017 annual defined daily doses animal (DDDA_F) for the broiler, turkey, pig, veal and cattle farming sectors and their respective production categories or types of farms. Provided parameters are the mean, median (Med.), 75th percentile (P75) and 90th percentile (P90)

Livestock sector	Production category/type of farm	N	Mean	Med.	P75	P90
Broiler farming sector*	All broiler farms combined	852	10.3	4.4	14.4	27.1
	Broiler farms with conventional breeds	487	13.9	9.3	19.5	33.3
	Broiler farms with alternative breeds	493	4.1	0.0	5.0	12.6
Turkey farming sector		45	18.7	10.4	25.5	59.8
Pig farming sector**	Sows/suckling piglets	1,853	3.7	2.2	4.7	8.2
	Weaner pigs	2,037	21.7	10.6	25.5	52.9
	Fattening pigs	4,580	3.8	1.7	5.4	9.8
Veal farming sector	White veal farms	838	23	22.2	27	33.1
	Rosé veal starter farms	238	83	83.1	102	113.3
	Rosé veal fattening farms	580	3.0	1.6	4.1	7.8
	Rosé veal combination farms	212	12.8	12.6	17.3	22.6
Cattle farming sector	Dairy cattle farms	17,121	2.1	2.1	2.9	3.8
	Rearing farms	520	1	0	0	1.6
	Suckler cow farms	9,351	0.5	0	0.6	1.7
	Beef farms	2,919	1.3	0	0.3	2.3

n	Med.	P75	P90
	2.2	4.7	8.2
	10.6	25.5	52.9
	1.7	5.4	9.8

2017 ann

Livestock s

Pig farming



Monitoring usage

Benchmarking

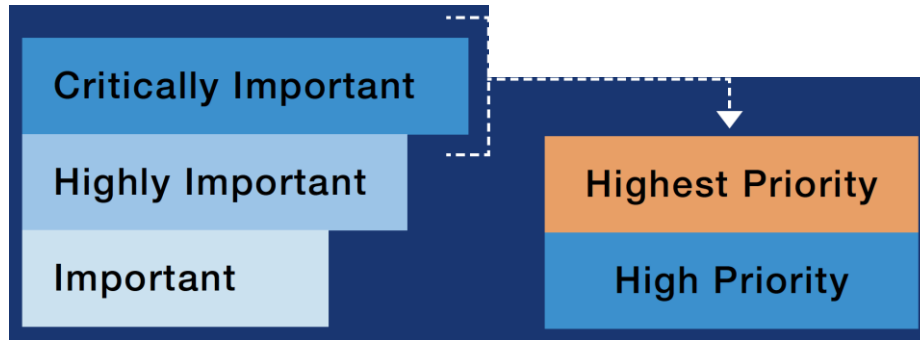


Table 10. Distribution of livestock farms over the various benchmark zones in 2017

Livestock sector	Type of farm/production category	Target zone		Signaling zone		Action zone	
		N	%	N	%	N	%
Poultry farming sector	Broiler farms	646	76	138	16	68	8
	Turkey farms	29	64	7	16	9	20
Pig farming sector	Sows/suckling piglets	1,717	93	119	6	17	1
	Weaner pigs	1,397	69	332	16	308	15
	Fattening pigs	4,141	90	130	3	309	7
Veal farming sector	White veal farms	459	55	346	41	33	4
	Rosé veal starter farms	58	24	145	61	35	15
	Rosé veal fattening farms	244	42	248	43	88	15
	Rosé veal combination farms	97	46	91	43	24	11
Cattle farming sector	Dairy cattle farms	17,027	99	78	0	16	0
	Rearing farms	474	91	40	8	6	1
	Suckler cow farms	8,572	92	761	8	18	0
	Beef farms	2,599	89	172	6	148	5



Restrictions on antimicrobial usage



Critically Important Antimicrobials for Human Medicine

6th Revision 2018

Ranking of medically important antimicrobials for risk management of antimicrobial resistance due to non-human use

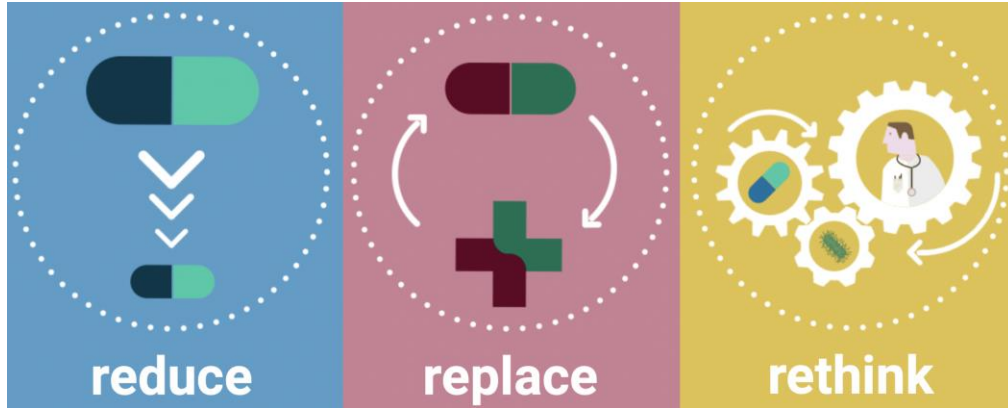


 World Health Organization

<https://www.who.int/foodsafety/publications/antimicrobials-sixth/en/>



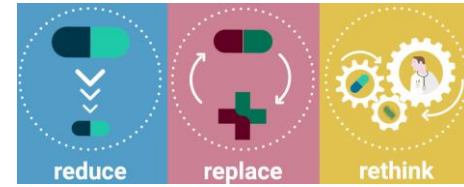
Additional measures



Farm-level practices
At a broader scale

Additional measures

Farm-level practices



Alternatives to antimicrobials

- biosecurity improvements
- increased vaccination
- the use of zinc/metals
- improvement in feed quality
- use of regular diagnostic testing
- a clear action plan

Perceptions of ...

- Effectiveness
- Feasibility
- Return on investment



Postma et al. Alternatives to the use of antimicrobial agents in pig production: A multi-country expert-ranking of perceived effectiveness, feasibility and return on investment. *Prev Vet Med.* 2015;118:457-66.

Additional measures

Farm-level practices



Berry *et al.* *Irish Veterinary Journal* 2011, **64**:5
<http://www.irishvetjournal.org/content/64/1/5>



REVIEW

Open Access

Genetics of animal health and disease in cattle

Donagh P Berry^{1*}, Mairead L Bermingham², Margaret Good³ and Simon J More⁴



Berry *et al.* Genetics of animal health and disease in cattle. *Ir Vet J.* 2011;64:5.

Additional measures

Farm-level practices



Zoonoses and Public Health

ORIGINAL ARTICLE

Reducing Antimicrobial Usage in Pig Production without Jeopardizing Production Parameters

M. Postma¹, W. Vanderhaeghen^{1,*}, S. Sarrazin¹, D. Maes² and J. Dewulf¹

Preventive Veterinary Medicine 129 (2016) 74–87



ELSEVIER

Contents lists available at ScienceDirect

Preventive Veterinary Medicine

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



Farm-economic analysis of reducing antimicrobial use whilst adopting improved management strategies on farrow-to-finish pig farms



Cristina Rojo-Gimeno^{a,b,*,1}, Merel Postma^{b,1}, Jeroen Dewulf^b, Henk Hogeveen^c, Ludwig Lauwers^{a,d}, Erwin Wauters^{a,e}

Postma et al. Reducing Antimicrobial Usage in Pig Production without Jeopardizing Production Parameters. Zoonoses Public Hlth. 2017;64:63-74.

Rojo-Gimeno et al. Farm-economic analysis of reducing antimicrobial use whilst adopting improved management strategies on farrow-to-finish pig farms. Prev Vet Med. 2016;129:74-87.



Additional measures


Farm-level practices




Animal Health Ireland
AnimalHealthIreland.ie

CalfCare leaflet series
ANIMAL HEALTH IRELAND
Contributing to a profitable and sustainable farming and agri-food sector through improved animal health

Colostrum Management For Irish Farmers, Advisors, Vets





CALF HEALTH PROGRAMME 
Animal Health Ireland, 4-5 The Archways, Carrick-on-Shannon, Co. Leitrim, N41 WN27

Animal Health Ireland
AnimalHealthIreland.ie

CalfCare leaflet series
ANIMAL HEALTH IRELAND
Contributing to a profitable and sustainable farming and agri-food sector through improved animal health

Management of the Scouring Calf For Irish Farmers, Advisors, Vets





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Animal Health Ireland
AnimalHealthIreland.ie

CalfCare leaflet series
ANIMAL HEALTH IRELAND
Contributing to a profitable and sustainable farming and agri-food sector through improved animal health

Technical notes on calf milk replacers (CMR) for rearing dairy replacement heifer calves



CALF HEALTH PROGRAMME 
Animal Health Ireland, 4-5 The Archways, Carrick-on-Shannon, Co. Leitrim, N41 WN27

http://animalhealthireland.ie/?page_id=387



Additional measures

At a broader scale



Jacobus Eussen (1745), Wikipedia Commons

Jubilee with a royal touch

7-29-2019:

In 1919, Frisian cattle farmers joined forces to combat animal disease in the Netherlands in an organised manner; a farmers' initiative that resulted in the establishment of the Animal Health Department. Such a special jubilee calls for a celebration. And not just any old celebration, as King Willem-Alexander honoured GD Animal Health with a visit. A day later, Deventer town mayor Ron König awarded GD Animal Health the designation Royal, on behalf of his Majesty.



<https://www.gdanimalhealth.com>

Additional measures

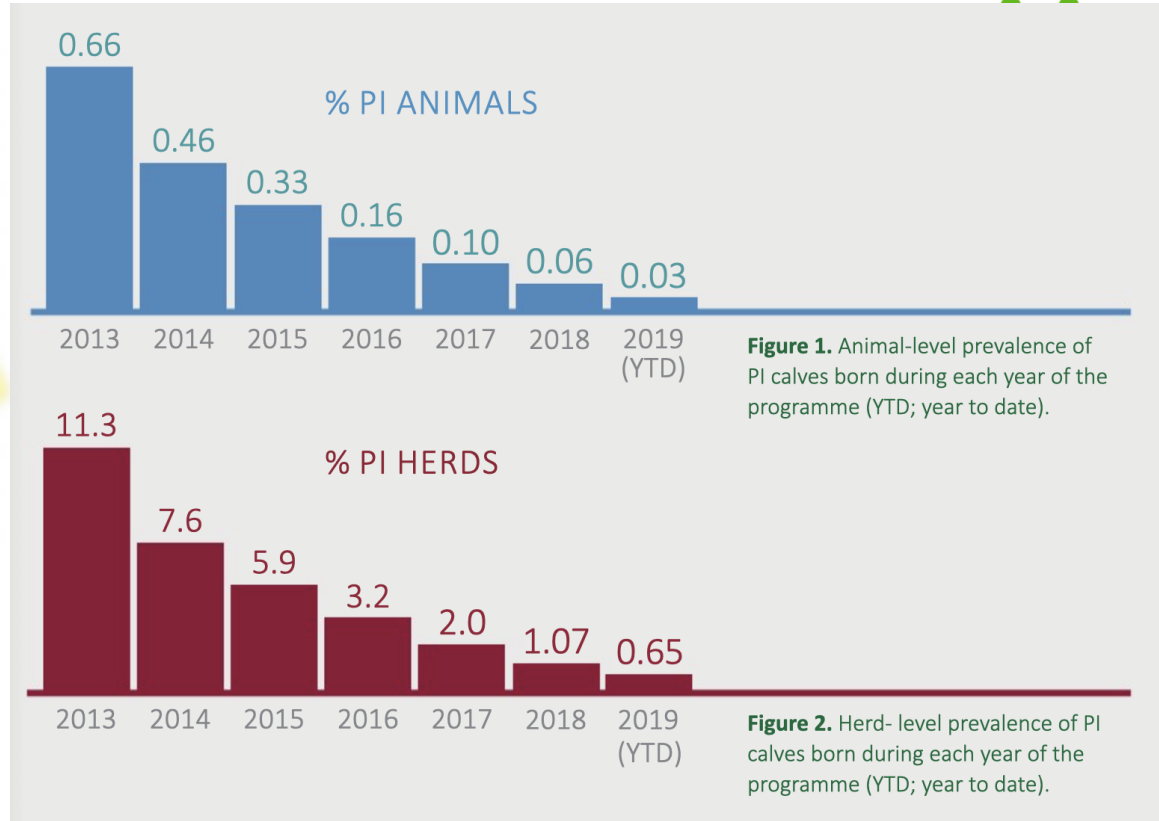
At a broader scale



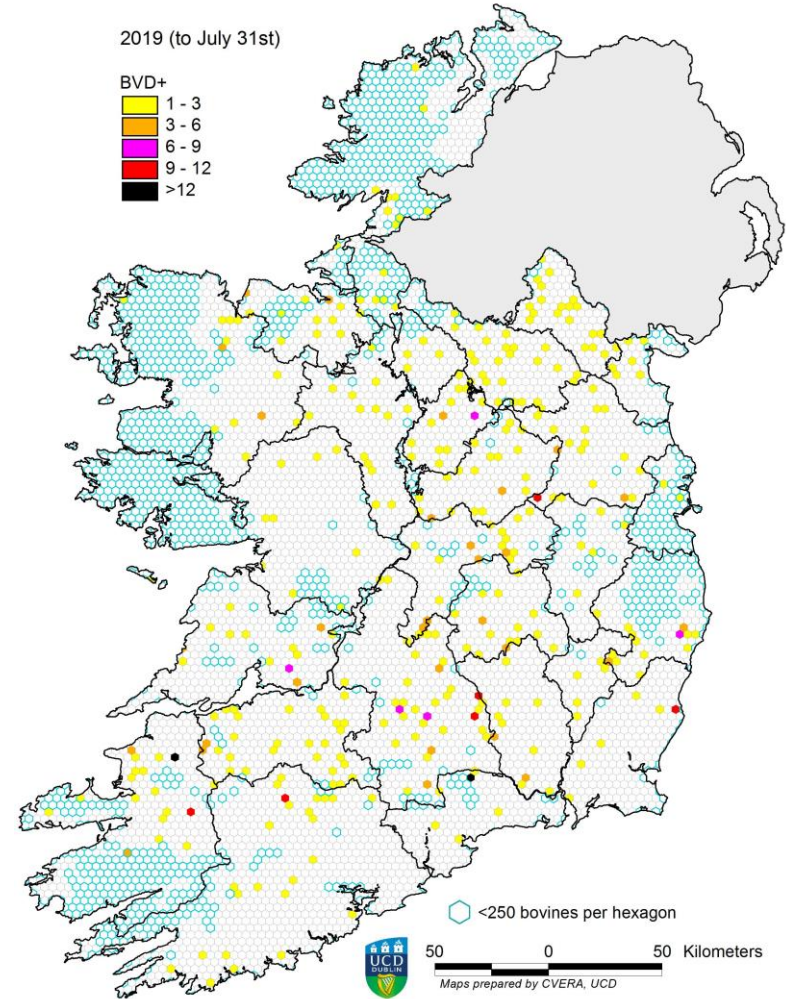
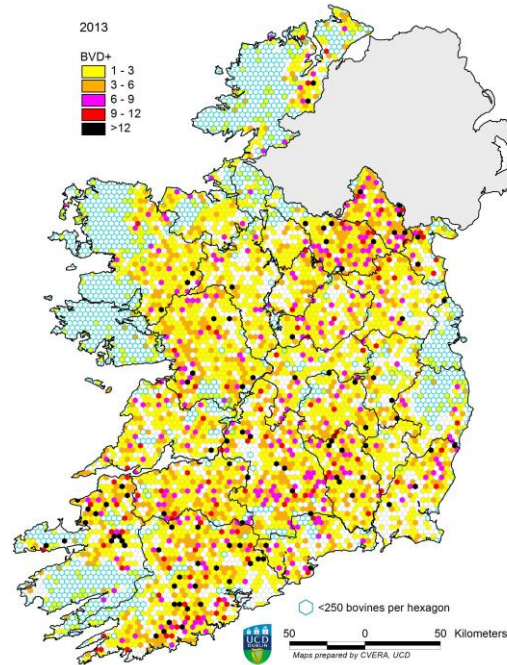
<http://animalhealthireland.ie>



AHI
(Animal Health Ireland)



Additional measures At a broader scale




Additional measures *At a broader scale*



<https://www.bordbia.ie>


Choose
**Ham
& Bacon**
you can trust



Your food is our passion

Bord Bia
Irish Food Board

[bordbia.ie](https://www.bordbia.ie)





Additional measures

At a broader scale



MARCH 2018

Responsible Use of Antibiotics on Red Tractor Dairy Farms



**Red Tractor
Assurance**

GUIDANCE FOR FARMERS

This document aims to highlight areas of the Red Tractor dairy standards that encourage responsible antibiotic use on farm.



https://assurance.redtractor.org.uk/contentfiles/Farmers-6912.pdf?_=636585117784901746

Additional measures

At a broader scale

Private animal health and welfare standards in quality assurance programmes: a proposed framework for critical evaluation

S. J. More, A. Hanlon, J. Marchewka, L. Boyle

- Response to societal concerns
- Increased market access, market share & profit margins
- Potential for real & sustained improvements to animal health and welfare

- Credibility of private standards
 - *Good enough, better, best*
- A discriminatory barrier to trade
- Lack of consumer input
- Farmer compliance costs

e. Conclusions



