



Deliverable: Map of the current existing control programs and intervention strategies to mitigate the risk of transmission of *Salmonella*, *Campylobacter*, Shiga toxin-producing *E. coli* (STEC), and antimicrobial resistance to human at the EU and national level.

Workpackage 5

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MAP OF THE CURRENT EXISTING CONTROL PROGRAMS AND INTERVENTION STRATEGIES TO MITIGATE THE RISK OF TRANSMISSION OF SALMONELLA, CAMPYLOBACTER, SHIGA TOXIN-PRODUCING E. COLI (STEC), AND ANTIMICROBIAL RESISTANCE TO HUMAN AT THE EU AND NATIONAL LEVEL

Introduction

The objective of this task is to map and describe the current programs and strategies for the control of zoonotic hazards (and related illnesses) under focus in the DISCOVER, in the various sectors and tracts of the animal-environment-food-human chain in the EU/EEA. This map will be used to provide evidence about possible areas, where intervention strategies may be either strengthen, improved or introduced/recommended based on the Source Attribution (SA) outcomes obtained by the other DISCOVER WPs and their critical discussion/revision. The aim is to strengthen the options for hazard control in the food production chain.

Approach to Control programmes mapping

In population medicine, the term ‘control’ and its derivatives (i.e. ‘control actions’, ‘control options’, ‘control measures’, mitigation strategies etc.) are frequently used to describe the ultimate goal of most research and scientific activities.

We basically used the following research question as the starting point to map the control programs in Europe:

What are the currently existing control programs and intervention strategies to mitigate the risk of Salmonella, Campylobacter, VTEC/STEC, and antimicrobial resistance (AMR) to human, in EU/EEA/EFTA?

The research question was intended to also cover control programs recently implemented in Europe and no longer active at the time of our search.

We used the conceptual framework outlined by Dir. 99/2002 (EC) and the Regulation (EC) 2160/2003 as references to extrapolate the background and components of control programs to be further focused on by our investigation.

Sectors targeted by the DISCOVER mapping (and main reference):

- **Food / Food-producing animals (Standard Reg. 2160/2003 (from Farm to Fork) as starting points for mapping:**
 - Pre-harvest (primary production)
 - Post-harvest (Food processing, distribution and transport, placement on the market)
- **Other animals:**
 - Companion-animals, wild-animals, zoo animals, laboratory animals
- **Environment:**
 - Water (surface, wells, recreational water, irrigation)
 - Sewage
 - Agriculture practices, soil use (e.g. manure, ammendants)...
 - Other



- **Human**
 - General population
 - Vulnerable and fragile populations: children, immunocompromised, elderlies, pregnant
 - Professionally exposed populations (e.g. slaughterhouses' employees etc.)

Geographical area of the mapping exercise:

The mapping exercise has been carried out making reference to either national and subnational (local) level in the countries belonging to the European Union (EU)/ European Economic Area (EEA) as of 1 January 2020. Multisectoral national perspective, including local (pilots) have been investigated.

Time frame for control program mapping

The study was aimed at mapping any control programs for *Salmonella*, *Campylobacter*, STEC, AMR that have been carried out since 2003, including concluded programs or programs still active.

Search strategy

1. Structured Scientific Literature Review

- **Journal databases** (articles published between January 1st, 2003, to December 31st, 2020)
 - PubMed
 - Scopus
 - Web of Science
- **Strategy for searching:** For each database, a search string specific for the zoonotic agents under study (*Salmonella*, *Campylobacter*, and STEC) and AMR was developed using Boolean keyword phrases and MeSH terms and in cooperation with the DiSCoVeR group. The search string contained a combination of the following elements: Keyword groups of one of the zoonotic agents AND synonyms for control programme AND country names for the defined geographical area. (See also annex).
- **Time of searching:** January 2021 - March 2021

2. Grey literature review focused on publications included regulations from international and national health organisations, international and national authorities, agencies,

- **Regulatory Acts and other guidance documents that don't have force of law:**
 - EU
- **Other International Regulations (e.g. guidance of farmers association etc.)**
 - EFSA country reporting (<https://www.efsa.europa.eu/en/biological-hazards-data/reports>),
 - EFSA opinions (various hazards)
 - ECDC documents
 - Codex Alimentarius
 - EEA (European Environmental Agency)
- **Websites**
 - OIE,
 - FAO,
 - WHO
 - National Competent Authorities website (where possible)
 - Review of titles in reference lists from papers accepted in full-text screening step.
 - Open Grey
- Google search-string based on terms "Zoonotic agent" control program "country"
- **Time of searching:** March 2021 - May 2021

3. Experts' on-line survey



Control programs, especially at national or local level, are frequently disseminated as documents addressing specific target actors and are not systematically published in white and grey literature. The experts survey was implemented in order to complement the mapping of control programs of scientific white and grey literature.

The aim of the survey was to gather information on existing control programs and intervention strategies in the various sectors, to mitigate the health impact of *Salmonella*, *Campylobacter*, STEC and AMR through the knowledge and opinion of experts. This activity was carried out by WP5 with the support of EFSA and the EURL for *Salmonella* (RIVM, Kirsten Moijman), EURL for *Campylobacter* (SVA, Hanna Skarin), EURL for *E.coli* (ISS, Stefano Morabito), EURL for AMR (DTU, Rene Hendriksen).

- **Experts enrollment**

Experts from the following networks and project were invited to participate in the survey:

- EFSA Scientific Network for Zoonoses and antimicrobial resistance Monitoring Data
- Network of the National reference laboratories European Reference Laboratories (EURLs) for *Salmonella*
- Network of the National reference laboratories European Reference Laboratories (EURLs) for *Campylobacter*
- Network of the National reference laboratories European Reference Laboratories (EURLs) for *E.coli*
- Network of the National reference laboratories European Reference Laboratories (EURLs) for antimicrobial resistance
- OHEJP Consortium DISCOVER partners: Multisectoral national perspective, including local (pilots)

Strategy for data collection: to get information on the control programmes in animals, food and environment and their components and to collect the expert opinion on how to improve control measures in specific area of interest (i.e. *Salmonella* in pig and pork products; *Campylobacter* in poultry and poultry products; STEC in ruminant meat and dairy products; control of ESBL), four different surveys addressing *Salmonella*, *Campylobacter*, STEC and AMR, were developed in *Lyme Survey*. Each survey was administered on-line to the experts, between 4/8/2021 and 15/10/2021.

Documents and references to literature and websites documenting the control programmes were also collected through the surveys.

Data analysis and summary of the results

The final mapping of control programs was described by country using tables and maps to summarise our findings. Country were anonymised for the description of results of the experts survey.

For white and grey literature search, all types of publications were considered. No language restriction was applied.

Only control programs with the following elements clearly described were considered for the final mapping:

- The zoonotic agent/hazard
- The objective
- The target population
- Actors responsible for implementation of control program
- Scientific evidence

The screening of title/abstract and the assessment of the full text of potentially eligible documents according to predefined inclusion and exclusion criteria was carried out by two independent reviewers.



Results

Scientific Literature and Grey Literature search

From the initial number of 8,661 articles, 2,391 articles were removed due to duplication. The analysis carried out by two independent reviewers based on titles and abstracts (6,270 journal articles) led to the exclusion of the vast majority of articles which were considered not relevant for our aims. Full text analysis was completed on 1,352 and 763 journal articles by reviewer 1 and 2, respectively leading to a final selection of 171 journal articles. The identified control programmes targeting Salmonella were 46, control programmes on Campylobacter were six, on STEC were two and for AMR were 29.

Control programmes reported in the grey literature targeting Salmonella Campylobacter, STEC and AMR were 192, eight, three and 42, respectively.

Figure 1 illustrates the distribution of control programmes and other control activities retrieved in the structured scientific literature (journal articles) and grey literature review.

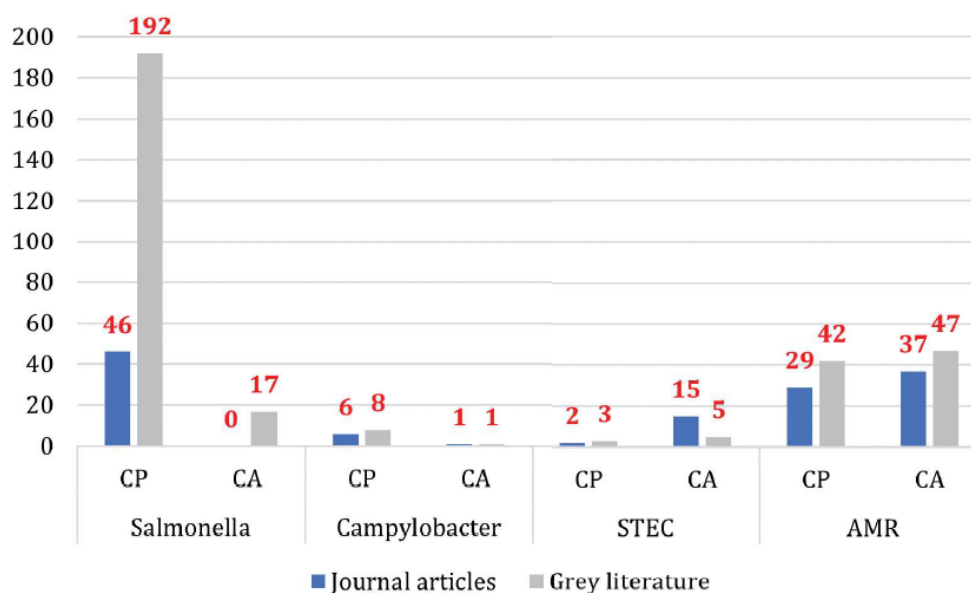


Figure 1. Reported control programmes (CP) and activities (CA) identified through the scientific Literature and Grey Literature search (Jan - March, 2021) by pathogen.



Map of control programs through structured scientific literature (journal articles)

Description of control programs and other control actions for the different pathogens in EU/EEA countries are summarised in tables 1 - 7.

Table 1. Control programmes and other control activities in the EU/EEA countries, identified through the scientific Literature (journal articles) search (Jan - March, 2021) by pathogen

	Salmonella	Campylobacter		STEC		AMR	
	CP	CP	CA	CP	CA	CP	CA
N countries with CP/CA identified	12	5	1	1	13	16	10
Total CP/CA identified	47	6	1	2	15	29	37

No information was available for Bulgaria, Cyprus, Czechia, Estonia, Hungary, Latvia, Liechtenstein, Lithuania, Luxembourg, Portugal, Romania.

Table 2. Control programmes for *Salmonella* in the EU/EEA countries in livestock population (primary production), identified through the scientific literature (journal articles) search by animal species, (Jan - March, 2021)

	Gallus gallus	Pigs	Cattle	Sheep	Guinea fowls	Geese	Turkey
N countries with CP/CA identified	9	9	3	2	1	2	5
Total CP/CA identified	19	9	3	2	1	2	8

Table 3. Control programmes for *Campylobacter* in the food production chain and other contexts/settings identified through the scientific literature (journal articles) search in the EU/EEA countries by step/setting, (Jan - March, 2021).

	Primary food production	Transport & distribution	Food processing	Sales to consumer	Animal care	Travel	Social welfare facilities
N countries with CP/CA identified	4	0	4	4	0	0	0
Total CP/CA identified	4	0	4	5	0	0	0

Table 4. Control programmes for STEC in the food production chain and other contexts/settings identified through the scientific literature (journal articles) search in the EU/EEA countries by step/setting, (Jan - March, 2021).

	Primary food production	Food processing	Transport & distribution	Sales to consumer	Animal care	Social welfare facilities
N countries with CP/CA identified	2	2	2	0	0	14
Total CP/CA identified	2	2	2	0	0	14

Table 5 Control programmes for Antimicrobial resistance in the food production chain and other contexts/settings, identified through the scientific literature (journal articles) search in the EU/EEA countries by step/setting, (Jan - March, 2021).



	Primary food production	Animal care	Food processing	Public Education		Social welfare facilities	
	CP	CP	CP	CP	CA	CP	CA
N countries with CP/CA identified	6	9	8	6	5	14	9
Total CP/CA identified	6	10	8	7	10	27	31

Table 6. Overview of the control programmes for Antimicrobial resistance in the different sectors, identified through the scientific literature (journal articles) search in the EU/EEA countries by step/setting, (Jan - March, 2021).

	Animal		Environment	Food		Human	
	CP	CA	CP	CP	CA	CP	CA
N countries with CP/CA identified	16	3	8	11	1	14	17
Total CP/CA identified	62	3	8	14	1	28	49

Map of control programs through the 'Grey' literature

The breakdown distribution by countries of control programs and other control actions for the different pathogens are reported in figure 8 - 12.

Table 7. Control programmes and other control activities in the EU/EEA countries, identified through the 'grey' scientific literature search by pathogen, (March - May, 2021)

	Salmonella		Campylobacter		STEC		AMR	
	CP	CA	CP	CA	CP	CA	CP	CA
N countries with CP/CA identified	31	5	5	2	3	1	28	6
Total CP/CA identified	192	17	5	2	3	5	42	47

Table 8. Control programmes for *Salmonella* in the EU/EEA countries in livestock population (primary production) and other animals, identified through the grey literature search by animal species and country, (March - May, 2021)

	Production animals					Other animals	
	Gallus gallus	Turkey	Pigs	Cattle	Other production animals	Pets	Wild animals
N countries with CP/CA identified	31	27	10	5	3	1	2
Total CP/CA identified	91	48	10	5	7	2	2

Table 9. Control programmes for *Campylobacter* in the food production chain and other contexts/settings identified through the grey literature search in the EU/EEA countries by step/setting, (March - May, 2021)



	Primary food production	Transport & distribution	Food processing	Sales to consumer	Animal care	Travel	Social welfare facilities
N countries with CP/CA identified	2	1	5	2	0	0	0
Total CP/CA identified	2	1	5	2	0	0	0

Table 10. Control programmes for STEC in the food production chain and other contexts/settings identified through the grey literature search in the EU/EEA countries by step/setting, (March - May, 2021)

	Primary food production	Transport & distribution	Food processing	Sales to consumer	Animal care	Travel	Social welfare facilities
N countries with CP/CA identified	2	1	3	1	0	0	0
Total CP/CA identified	2	1	3	1	0	0	0

Table 11. Overview of the control programmes for Antimicrobial resistance in the different sectors, through the grey literature search in the EU/EEA countries, (March - May, 2021)

	Animal		Environment	Food		Human	
	CP	CA	CP	CP	CA	CP	CA
N countries with CP/CA identified	31	6	14	17	6	27	4
Total CP/CA identified	209	31	15	54	18	33	25

Expert survey results

The number of questionnaires collected from the experts involved in the study was 32 for *Salmonella*, 22 for *Campylobacter*, 19 for STEC and 28 for AMR.

Table 1 summarises the number of countries with information on control programs provided by the experts, by pathogen and sectors as well as the number of countries with information available.

Table 12. Overview of the countries with information available and questionnaires providing information on control programmes by pathogen and sectors in EU/EEA countries, 2021.

	Salmonella			Campylobacter			STEC			AMR		
	Animal	Food	Environment	Animal	Food	Environment	Animal	Food	Environment	Animal	Food	Environment
Total countries with available questionnaire (N)	21	15	7	13	16	3	9	14	5	15	0	0
Total questionnaires (N)	27	19	8	17	18	3	11	17	5	19	0	0

- For *Salmonella*, information were provided by experts from the following countries: Austria, Belgium, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden, Switzerland, United
- For *Campylobacter*, , information were provided by experts from the following countries: Austria, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Lithuania, Netherlands, Norway, Portugal, Romania, Spain, Sweden, Switzerland, United Kingdom



- For STEC, information were provided by experts from the following countries: Czechia, Denmark, Estonia, Finland, France, Germany, Italy, Netherlands, Norway, Portugal, Romania, Slovakia, Spain, Sweden
- For AMR, information were provided by experts from the following countries: Austria, Belgium, Denmark, Estonia, Germany, Greece, Italy, Lithuania, Netherlands, Norway, Portugal, Romania, Spain, Sweden, Switzerland

Map of control programs through the expert survey

Salmonella

Table 13 Control programmes for *Salmonella* in livestock identified through an expert survey conducted among the EU/EEA countries, 2021.

Animal species/category		N countries with CP available
Poultry	Adult breeding hens (<i>Gallus gallus</i>)	20
	Adult laying hens (<i>Gallus gallus</i>)	18
	Broilers (<i>Gallus gallus</i>)	18
	Adult breeding turkeys	12
	Fattening turkeys	17
	Ducks	5
	Geese	5
	Others	3
Ruminants	Dairy cattle	6
	Beef cattle	6
	Calves	4
	Bull for A.I.	4
	Sheep (breeding flocks)	2
	Sheep (commercial flocks)	3
	Goats (breeding flocks)	2
	Goats (commercial flocks)	3
	Water buffalo	2
Pigs	Breeding pigs	5
	Piglets	3
	Fattening	7

Table 14 Control programmes for *Salmonella* in other animals identified through an expert survey conducted among the EU/EEA countries, 2021.



Animal species/category		N countries with CP available
Pets	Pets in household context	1
	Petting zoos	1
	Animals used for pet therapy or similar activities	1
	Pets in kennels or similar structures	0
	Pets in veterinary clinics	1
	Pets in fairs and/or festivals	1
	Pets in shops	1
Traditional Zoo		1
Wild animals in natural parks (other than zoo)		1
Free range wild animals		1
Wild animals in natural parks (other than zoo)		1
Rodents		0
Birds		0

Table 15 Control programmes for *Salmonella* in food, identified through an expert survey conducted among the EU/EEA countries, 2021.

Type of food	N countries with CP available
Poultry meat	11
Pig meat	11
Bovine meat	11
Milk, Cheese and dairy products	8
Eggs and egg products	9
Fish and fish products	8
Crustaceans, shellfish, molluscs and product thereof	8
Fruit and vegetables	7
Ready-to-eat food	8
Infant formula	7
Other	3

Table 16 Control programmes for *Salmonella* in environment, identified through an expert survey conducted among the EU/EEA countries, 2021.

Environmental setting	N countries with CP available
Agricultural environment	0
Environmental water	0
Soil	0
Other environment	0



Campylobacter

Table 17 Control programmes for *Campylobacter* in animals identified through an expert survey conducted among the EU/EEA countries, 2021.

Animal species/category		N countries with CP available
Poultry	Adult breeding hens (<i>Gallus gallus</i>)	0
	Adult laying hens (<i>Gallus gallus</i>)	0
	Broilers (<i>Gallus gallus</i>)	10
	Adult breeding turkeys	1
	Fattening turkeys	2
	Ducks	0
	Geese	0
	Others	0
Ruminants	Dairy cattle	0
	Beef cattle	1
	Calves	1
	Bull for A.I.	1
	Sheep (breeding flocks)	0
	Sheep (commercial flocks)	0
	Goats (breeding flocks)	0
	Goats (commercial flocks)	0
Pigs	Water buffalo	0
	Breeding pigs	0
	Piglets	0
	Fattening	2

Table 18 Control programmes for *Campylobacter* in food, identified through an expert survey conducted among the EU/EEA countries, 2021.

Type of food	N countries with CP available
Poultry meat	14
Pig meat	4
Bovine meat	4
Milk, Cheese and dairy products	4
Eggs and egg products	1
Fish and fish products	0
Crustaceans, shellfish, molluscs and product thereof	0
Fruit and vegetables	0
Ready-to-eat food	0
Infant formula	0

Table 19 Control programmes for *Campylobacter* in environment, identified through an expert survey conducted among the EU/EEA countries, 2021.



Environmental setting	N countries with CP available
Agricultural environment	0
Environmental water	1
Soil	0
Other environment	0

STEC

Table 20 Control programmes for STEC in animals, identified through an expert survey conducted among the EU/EEA countries, 2021.

Animal species/category		N countries with CP available
Production animals	Dairy cattle	3
	Beef cattle	7
	Calves	5
	Heifers	3
	Sheep	3
	Goats	1
	Others	1
Petting Zoo	Petting Zoo, ruminants	1
	Petting Zoo, Poultry	0
	Petting Zoo, Solipeds	0
	Petting Zoo, others	0
Wild animals	Free range wild animals	1
	Wild animals in Natural Parks	0
	Others	0

Table 21 Control programmes for STEC in food, identified through an expert survey conducted among the EU/EEA countries, 2021.

Type of food	N countries with CP available
Bovine meat	6
Ovine and goat meat	7
Pig Meat	8
Milk and dairy products	9
Fruit and vegetables	10
Sprouts	11
Ready to eat foods	12
Other foods	5

Table 22 Control programmes for STEC in environment, identified through an expert survey conducted among the EU/EEA countries, 2021.



Environmental setting	N countries with CP available
Agricultural environment	0
Environmental water	0
Soil	0
Other setting	1

Antimicrobial Resistance

Table 23 Actions implemented to prevent and control the transmission of resistant pathogens among animals or from animals to food in EU/EEWA countries, identified through an expert survey conducted among the EU/EEA countries, 2021.

Type of action	N countries with CA available
Biosecurity measures	6
Hygiene measures	7
Trade restrictions	3
Vaccination programs	5
Other actions	7

Table 24 Actions implemented to reduce the transmission of resistant pathogens among animals or from animals to food and the consumption of antibiotics in EU/EEWA countries, identified through an expert survey conducted among the EU/EEA countries, 2021.

Type of action	N countries with CA available
Restricted use of antimicrobials for prophylaxis	12
Restricted use of antimicrobials for metaphylaxis (group treatment)	11
Restricted use of certain critical antimicrobials	12
Other actions	9

Table 25 Stewardship programs/guidelines/document to control and promote the correct use of antimicrobials in animals implemented in EU/EEWA countries, identified through an expert survey conducted among the EU/EEA countries, 2021.

Animal species/category	N countries with CP available
Poultry	7
Ruminants	9
Pigs	9
Solipeds	4
Pets	6
Other	3



ANNEX 1

1. PUB MED

1.1. *Salmonella* string

("Salmonell*" [Title/Abstract]) **AND**

("Control program" [Title/Abstract] OR "control action" [Title/Abstract] OR "control option" [Title/Abstract] OR "control measure" [Title/Abstract] OR "control programme" [Title/Abstract] OR "control method" [Title/Abstract] OR "regulatory procedure" [Title/Abstract] OR "control monitoring" [Title/Abstract] OR "veterinary programme" [Title/Abstract] OR "surveillance" [Title/Abstract] OR "intervention" [Title/Abstract]) **AND** ("Europe" [Title/Abstract] OR "EU" [Title/Abstract] OR "European Economic Area" [Title/Abstract] OR "EEA" [Title/Abstract] OR "European Free Trade Association" [Title/Abstract] OR "EFTA" [Title/Abstract] OR "Austria" [Title/Abstract] OR "Belgium" [Title/Abstract] OR "Bulgaria" [Title/Abstract] OR "Croatia" [Title/Abstract] OR "Cyprus" [Title/Abstract] OR "Czech Republic" [Title/Abstract] OR "Denmark" [Title/Abstract] OR "Estonia" [Title/Abstract] OR "Finland" [Title/Abstract] OR "France" [Title/Abstract] OR "Germany" [Title/Abstract] OR "Greece" [Title/Abstract] OR "Hungary" [Title/Abstract] OR "Ireland" [Title/Abstract] OR "Italy" [Title/Abstract] OR "Latvia" [Title/Abstract] OR "Lithuania" [Title/Abstract] OR "Luxembourg" [Title/Abstract] OR "Malta" [Title/Abstract] OR "Netherlands" [Title/Abstract] OR "Poland" [Title/Abstract] OR "Portugal" [Title/Abstract] OR "Romania" [Title/Abstract] OR "Slovakia" [Title/Abstract] OR "Croatia" [Title/Abstract] OR "Slovenia" [Title/Abstract] OR "Spain" [Title/Abstract] OR "Sweden" [Title/Abstract] OR "Liechtenstein" [Title/Abstract] OR "Iceland" [Title/Abstract] OR "Norway" [Title/Abstract] OR "Switzerland" [Title/Abstract] OR "United Kingdom" [Title/Abstract]) **AND**

("2003"[Date - Publication] : "3000"[Date - Publication])

1.2. *Campylobacter* string

("Campylobac*" [Title/Abstract]) **AND**

("Control program" [Title/Abstract] OR "control action" [Title/Abstract] OR "control option" [Title/Abstract] OR "control measure" [Title/Abstract] OR "control programme" [Title/Abstract] OR "control method" [Title/Abstract] OR "regulatory procedure" [Title/Abstract] OR "control monitoring" [Title/Abstract] OR "veterinary programme" [Title/Abstract] OR "surveillance" [Title/Abstract] OR "intervention" [Title/Abstract]) **AND** ("Europe" [Title/Abstract] OR "EU" [Title/Abstract] OR "European Economic Area" [Title/Abstract] OR "EEA" [Title/Abstract] OR "European Free Trade Association" [Title/Abstract] OR "EFTA" [Title/Abstract] OR "Austria" [Title/Abstract] OR "Belgium" [Title/Abstract] OR "Bulgaria" [Title/Abstract] OR "Croatia" [Title/Abstract] OR "Cyprus" [Title/Abstract] OR "Czech Republic" [Title/Abstract] OR "Denmark" [Title/Abstract] OR "Estonia" [Title/Abstract] OR "Finland" [Title/Abstract] OR "France" [Title/Abstract] OR "Germany" [Title/Abstract] OR "Greece" [Title/Abstract] OR "Hungary" [Title/Abstract] OR "Ireland" [Title/Abstract] OR "Italy" [Title/Abstract] OR "Latvia" [Title/Abstract] OR "Lithuania" [Title/Abstract] OR "Luxembourg" [Title/Abstract] OR "Malta" [Title/Abstract] OR "Netherlands" [Title/Abstract] OR "Poland" [Title/Abstract] OR "Portugal" [Title/Abstract] OR "Romania" [Title/Abstract] OR "Slovakia" [Title/Abstract] OR "Croatia" [Title/Abstract] OR "Slovenia" [Title/Abstract] OR "Spain" [Title/Abstract] OR "Sweden" [Title/Abstract] OR "Liechtenstein" [Title/Abstract] OR "Iceland" [Title/Abstract] OR "Norway" [Title/Abstract] OR "Switzerland" [Title/Abstract] OR "United Kingdom" [Title/Abstract]) **AND**

("2003"[Date - Publication] : "3000"[Date - Publication])



1.3. VTEC/STEC string

("verotoxigenic escherichia coli" [Title/Abstract] OR "verotoxigenic strain" [Title/Abstract] OR "verotoxigenic strains" [Title/Abstract] OR "verotoxin producing escherichia coli" [Title/Abstract] OR "verotoxinogenic e coli" [Title/Abstract] OR "verocytotoxin producing escherichia coli" [Title/Abstract] OR "verocytotoxin producing e coli" [Title/Abstract] OR "shigatoxin producing e. coli" [Title/Abstract] OR "shigatoxin producing escherichia coli" [Title/Abstract] OR "VTEC" [Title/Abstract] OR "STEC" [Title/Abstract] OR "enterohemorrhagic e coli" [Title/Abstract] OR "enterohemorrhagic escherichia coli" [Title/Abstract] OR "enterohemorrhage escherichia coli" [Title/Abstract] OR "enterohemorrhagic escherichia coli" [Title/Abstract] OR "enterohemorrhagic shiga toxin producing" [Title/Abstract] OR "enterohaemorrhagic e coli" [Title/Abstract] OR "enterohaemorrhagic escherichia coli" [Title/Abstract] OR "enterohaemorrhagic o157" [Title/Abstract] OR "e coli o157" [Title/Abstract]) AND ("Control program" [Title/Abstract] OR "control action" [Title/Abstract] OR "control option" [Title/Abstract] OR "control measure" [Title/Abstract] OR "control programme" [Title/Abstract] OR "control method" [Title/Abstract] OR "regulatory procedure" [Title/Abstract] OR "control monitoring" [Title/Abstract] OR "veterinary programme" [Title/Abstract] OR "surveillance" [Title/Abstract] OR "intervention" [Title/Abstract]) AND ("Europe" [Title/Abstract] OR "EU" [Title/Abstract] OR "European Economic Area" [Title/Abstract] OR "EEA" [Title/Abstract] OR "European Free Trade Association" [Title/Abstract] OR "EFTA" [Title/Abstract] OR "Austria" [Title/Abstract] OR "Belgium" [Title/Abstract] OR "Bulgaria" [Title/Abstract] OR "Croatia" [Title/Abstract] OR "Cyprus" [Title/Abstract] OR "Czech Republic" [Title/Abstract] OR "Denmark" [Title/Abstract] OR "Estonia" [Title/Abstract] OR "Finland" [Title/Abstract] OR "France" [Title/Abstract] OR "Germany" [Title/Abstract] OR "Greece" [Title/Abstract] OR "Hungary" [Title/Abstract] OR "Ireland" [Title/Abstract] OR "Italy" [Title/Abstract] OR "Latvia" [Title/Abstract] OR "Lithuania" [Title/Abstract] OR "Luxembourg" [Title/Abstract] OR "Malta" [Title/Abstract] OR "Netherlands" [Title/Abstract] OR "Poland" [Title/Abstract] OR "Portugal" [Title/Abstract] OR "Romania" [Title/Abstract] OR "Slovakia" [Title/Abstract] OR "Croatia" [Title/Abstract] OR "Slovenia" [Title/Abstract] OR "Spain" [Title/Abstract] OR "Sweden" [Title/Abstract] OR "Liechtenstein" [Title/Abstract] OR "Iceland" [Title/Abstract] OR "Norway" [Title/Abstract] OR "Switzerland" [Title/Abstract] OR "United Kingdom" [Title/Abstract]) AND ("2003"[Date - Publication] : "3000"[Date - Publication])

1.4. AMR string

("antimicrobial resistan*" [Title/Abstract] OR "antibiotic resistan*" [Title/Abstract] OR "AMR" [Title/Abstract]) AND ("Control program" [Title/Abstract] OR "control action" [Title/Abstract] OR "control option" [Title/Abstract] OR "control measure" [Title/Abstract] OR "control programme" [Title/Abstract] OR "control method" [Title/Abstract] OR "regulatory procedure" [Title/Abstract] OR "control monitoring" [Title/Abstract] OR "veterinary programme" [Title/Abstract] OR "surveillance" [Title/Abstract] OR "intervention" [Title/Abstract]) AND ("Europe" [Title/Abstract] OR "EU" [Title/Abstract] OR "European Economic Area" [Title/Abstract] OR "EEA" [Title/Abstract] OR "European Free Trade Association" [Title/Abstract] OR "EFTA" [Title/Abstract] OR "Austria" [Title/Abstract] OR "Belgium" [Title/Abstract] OR "Bulgaria" [Title/Abstract] OR "Croatia" [Title/Abstract] OR "Cyprus" [Title/Abstract] OR "Czech Republic" [Title/Abstract] OR "Denmark" [Title/Abstract] OR "Estonia" [Title/Abstract] OR "Finland" [Title/Abstract] OR "France" [Title/Abstract] OR "Germany" [Title/Abstract] OR "Greece" [Title/Abstract] OR "Hungary" [Title/Abstract] OR "Ireland" [Title/Abstract] OR "Italy" [Title/Abstract] OR "Latvia" [Title/Abstract] OR "Lithuania" [Title/Abstract] OR "Luxembourg" [Title/Abstract] OR "Malta" [Title/Abstract] OR "Netherlands" [Title/Abstract] OR "Poland" [Title/Abstract] OR "Portugal" [Title/Abstract] OR "Romania" [Title/Abstract] OR "Slovakia" [Title/Abstract] OR "Croatia" [Title/Abstract] OR "Slovenia" [Title/Abstract])



OR "Spain" [Title/Abstract] OR "Sweden" [Title/Abstract] OR "Liechtenstein" [Title/Abstract] OR "Iceland" [Title/Abstract] OR "Norway" [Title/Abstract] OR "Switzerland" [Title/Abstract] OR "United Kingdom" [Title/Abstract]) AND
("2003"[Date - Publication] : "3000"[Date - Publication])
NOT ("Neisseria meningitis" [Title/Abstract] OR "Neisseria meningitidis" [Title/Abstract] OR "Neisseria" [Title/Abstract] OR "meningitis" [Title/Abstract] OR "Neisseria gonorrhoeae" [Title/Abstract] OR "gonorrhoeae" [Title/Abstract] OR "Gonococcal" [Title/Abstract] OR "gonorrhoea" [Title/Abstract] OR "vancomycin resistant enterococci" [Title/Abstract] OR "vancomycin" [Title/Abstract] OR "VRE" OR "avoparcin" [Title/Abstract] OR "AGP" [Title/Abstract])

2. SCOPUS

The query will remain the same except for the name of the zoonotic agent.

2.1. Salmonella string

TITLE-ABS-KEY ((Salmonell*)

AND ("Control-program" OR "control-action" OR "control-option" OR "control-measure" OR "control-programme" OR "control-method" OR "regulatory-procedure" OR "control-monitoring" OR "veterinary-programme" OR "surveillance" OR "intervention")) AND

(LIMIT-TO (AFFILCOUNTRY , "Germany") OR LIMIT-TO (AFFILCOUNTRY , "Spain") OR LIMIT-TO (AFFILCOUNTRY , "Italy") OR LIMIT-TO (AFFILCOUNTRY , "France") OR LIMIT-TO (AFFILCOUNTRY , "Netherlands") OR LIMIT-TO (AFFILCOUNTRY , "Denmark") OR LIMIT-TO (AFFILCOUNTRY , "Belgium") OR LIMIT-TO (AFFILCOUNTRY , "Sweden") OR LIMIT-TO (AFFILCOUNTRY , "Ireland") OR LIMIT-TO (AFFILCOUNTRY , "Portugal") OR LIMIT-TO (AFFILCOUNTRY , "Greece") OR LIMIT-TO (AFFILCOUNTRY , "Austria") OR LIMIT-TO (AFFILCOUNTRY , "Finland") OR LIMIT-TO (AFFILCOUNTRY , "Norway") OR LIMIT-TO (AFFILCOUNTRY , "Czech Republic") OR LIMIT-TO (AFFILCOUNTRY , "Hungary") OR LIMIT-TO (AFFILCOUNTRY , "Slovakia") OR LIMIT-TO (AFFILCOUNTRY , "Slovenia") OR LIMIT-TO (AFFILCOUNTRY , "Estonia") OR LIMIT-TO (AFFILCOUNTRY , "Malta") OR LIMIT-TO (AFFILCOUNTRY , "Iceland") OR LIMIT-TO (AFFILCOUNTRY , "Austria") OR LIMIT-TO (AFFILCOUNTRY , "Bulgaria") OR LIMIT-TO (AFFILCOUNTRY , "Croatia") OR LIMIT-TO (AFFILCOUNTRY , "Cyprus") OR LIMIT-TO (AFFILCOUNTRY , "Finland") OR LIMIT-TO (AFFILCOUNTRY , "Latvia") OR LIMIT-TO (AFFILCOUNTRY , "Lithuania") OR LIMIT-TO (AFFILCOUNTRY , "Luxembourg") OR LIMIT-TO (AFFILCOUNTRY , "Poland") OR LIMIT-TO (AFFILCOUNTRY , "Romania") OR LIMIT-TO (AFFILCOUNTRY , "Liechtenstein") OR LIMIT-TO (AFFILCOUNTRY , "Switzerland") OR LIMIT-TO (AFFILCOUNTRY , "United Kingdom")) AND
PUBYEAR AFT 2002

2.2. Campylobacter string

TITLE-ABS-KEY ((Campylobact*) AND

AND ("Control-program" OR "control-action" OR "control-option" OR "control-measure" OR "control-programme" OR "control-method" OR "regulatory-procedure" OR "control-monitoring" OR "veterinary-programme" OR "surveillance" OR "intervention")) AND

(LIMIT-TO (AFFILCOUNTRY , "Germany") OR LIMIT-TO (AFFILCOUNTRY , "Spain") OR LIMIT-TO (AFFILCOUNTRY , "Italy") OR LIMIT-TO (AFFILCOUNTRY , "France") OR LIMIT-TO (AFFILCOUNTRY , "Netherlands") OR LIMIT-TO (AFFILCOUNTRY , "Denmark") OR LIMIT-TO (AFFILCOUNTRY , "Belgium") OR LIMIT-TO (AFFILCOUNTRY , "Sweden") OR LIMIT-TO (



AFFILCOUNTRY , "Ireland") OR LIMIT-TO (AFFILCOUNTRY , "Portugal") OR LIMIT-TO (AFFILCOUNTRY , "Greece") OR LIMIT-TO (AFFILCOUNTRY , "Austria") OR LIMIT-TO (AFFILCOUNTRY , "Finland") OR LIMIT-TO (AFFILCOUNTRY , "Norway") OR LIMIT-TO (AFFILCOUNTRY , "Czech Republic") OR LIMIT-TO (AFFILCOUNTRY , "Hungary") OR LIMIT-TO (AFFILCOUNTRY , "Slovakia") OR LIMIT-TO (AFFILCOUNTRY , "Slovenia") OR LIMIT-TO (AFFILCOUNTRY , "Estonia") OR LIMIT-TO (AFFILCOUNTRY , "Malta") OR LIMIT-TO (AFFILCOUNTRY , "Iceland") OR LIMIT-TO (AFFILCOUNTRY , "Austria") OR LIMIT-TO (AFFILCOUNTRY , "Bulgaria") OR LIMIT-TO (AFFILCOUNTRY , "Croatia") OR LIMIT-TO (AFFILCOUNTRY , "Cyprus") OR LIMIT-TO (AFFILCOUNTRY , "Finland") OR LIMIT-TO (AFFILCOUNTRY , "Latvia") OR LIMIT-TO (AFFILCOUNTRY , "Lithuania") OR LIMIT-TO (AFFILCOUNTRY , "Luxembourg") OR LIMIT-TO (AFFILCOUNTRY , "Poland") OR LIMIT-TO (AFFILCOUNTRY , "Romania") OR LIMIT-TO (AFFILCOUNTRY , "Liechtenstein") OR LIMIT-TO (AFFILCOUNTRY , "Switzerland") OR LIMIT-TO (AFFILCOUNTRY , "United Kingdom")) AND PUBYEAR AFT 2002

2.3. VTEC/STEC string

TITLE-ABS-KEY (("verotoxigenic escherichia coli" OR "verotoxigenic strain" OR "verotoxigenic strains" OR "verotoxin producing escherichia coli" OR "verotoxinogenic e coli" OR "verocytotoxin producing escherichia coli" OR "verocytotoxin producing e coli" OR "shigatoxin producing e. coli" OR "shigatoxin producing escherichia coli" OR "VTEC" OR "STEC" OR "enterohemorrhagic e coli" OR "enterohemorrhagic escherichia coli" OR "enterohemorrhagic escherichia coli" OR "enterohemorrhagic shiga toxin producing" OR "enterohaemorrhagic e coli" OR "enterohaemorrhagic escherichia coli" OR "enterohaemorrhagic o157" OR "e coli o157") AND ("Control-program" OR "control-action" OR "control-option" OR "control-measure" OR "control-programme" OR "control-method" OR "regulatory-procedure" OR "control-monitoring" OR "veterinary-programme" OR "surveillance" OR "intervention")) AND (LIMIT-TO (AFFILCOUNTRY , "Germany") OR LIMIT-TO (AFFILCOUNTRY , "Spain") OR LIMIT-TO (AFFILCOUNTRY , "Italy") OR LIMIT-TO (AFFILCOUNTRY , "France") OR LIMIT-TO (AFFILCOUNTRY , "Netherlands") OR LIMIT-TO (AFFILCOUNTRY , "Denmark") OR LIMIT-TO (AFFILCOUNTRY , "Belgium") OR LIMIT-TO (AFFILCOUNTRY , "Sweden") OR LIMIT-TO (AFFILCOUNTRY , "Ireland") OR LIMIT-TO (AFFILCOUNTRY , "Portugal") OR LIMIT-TO (AFFILCOUNTRY , "Greece") OR LIMIT-TO (AFFILCOUNTRY , "Austria") OR LIMIT-TO (AFFILCOUNTRY , "Finland") OR LIMIT-TO (AFFILCOUNTRY , "Norway") OR LIMIT-TO (AFFILCOUNTRY , "Czech Republic") OR LIMIT-TO (AFFILCOUNTRY , "Hungary") OR LIMIT-TO (AFFILCOUNTRY , "Slovakia") OR LIMIT-TO (AFFILCOUNTRY , "Slovenia") OR LIMIT-TO (AFFILCOUNTRY , "Estonia") OR LIMIT-TO (AFFILCOUNTRY , "Malta") OR LIMIT-TO (AFFILCOUNTRY , "Iceland") OR LIMIT-TO (AFFILCOUNTRY , "Austria") OR LIMIT-TO (AFFILCOUNTRY , "Bulgaria") OR LIMIT-TO (AFFILCOUNTRY , "Croatia") OR LIMIT-TO (AFFILCOUNTRY , "Cyprus") OR LIMIT-TO (AFFILCOUNTRY , "Finland") OR LIMIT-TO (AFFILCOUNTRY , "Latvia") OR LIMIT-TO (AFFILCOUNTRY , "Lithuania") OR LIMIT-TO (AFFILCOUNTRY , "Luxembourg") OR LIMIT-TO (AFFILCOUNTRY , "Poland") OR LIMIT-TO (AFFILCOUNTRY , "Romania") OR LIMIT-TO (AFFILCOUNTRY , "Liechtenstein") OR LIMIT-TO (AFFILCOUNTRY , "Switzerland") OR LIMIT-TO (AFFILCOUNTRY , "United Kingdom")) AND PUBYEAR AFT 2002

2.4. AMR string

(TITLE-ABS ("antimicrobial resistance" OR "antibiotic resistance" OR "AMR") AND TITLE-ABS ("Control program" OR "control action" OR "control option" OR "control measure" OR "control programme" OR "control method" OR "regulatory procedure" OR "control monitoring" OR



"veterinary programme" OR "surveillance" OR "intervention") AND NOT ALL ("neisseria" OR "meningitis " OR "gonorrhoeae" OR "gonococcal" OR "vancomycin" OR "resistant enterococci" OR "vre" OR "avoparcin" OR "agp")) AND PUBYEAR > 2002 AND PUBYEAR < 2021 AND (LIMIT-TO (AFFILCOUNTRY , "Germany") OR LIMIT-TO (AFFILCOUNTRY , "Spain") OR LIMIT-TO (AFFILCOUNTRY , "Italy") OR LIMIT-TO (AFFILCOUNTRY , "France") OR LIMIT-TO (AFFILCOUNTRY , "Netherlands") OR LIMIT-TO (AFFILCOUNTRY , "Denmark") OR LIMIT-TO (AFFILCOUNTRY , "Belgium") OR LIMIT-TO (AFFILCOUNTRY , "Sweden") OR LIMIT-TO (AFFILCOUNTRY , "Ireland") OR LIMIT-TO (AFFILCOUNTRY , "Portugal") OR LIMIT-TO (AFFILCOUNTRY , "Greece") OR LIMIT-TO (AFFILCOUNTRY , "Austria") OR LIMIT-TO (AFFILCOUNTRY , "Finland") OR LIMIT-TO (AFFILCOUNTRY , "Norway") OR LIMIT-TO (AFFILCOUNTRY , "Czech Republic") OR LIMIT-TO (AFFILCOUNTRY , "Hungary") OR LIMIT-TO (AFFILCOUNTRY , "Slovakia") OR LIMIT-TO (AFFILCOUNTRY , "Slovenia") OR LIMIT-TO (AFFILCOUNTRY , "Estonia") OR LIMIT-TO (AFFILCOUNTRY , "Malta") OR LIMIT-TO (AFFILCOUNTRY , "Iceland") OR LIMIT-TO (AFFILCOUNTRY , "Bulgaria") OR LIMIT-TO (AFFILCOUNTRY , "Croatia") OR LIMIT-TO (AFFILCOUNTRY , "Cyprus") OR LIMIT-TO (AFFILCOUNTRY , "Latvia") OR LIMIT-TO (AFFILCOUNTRY , "Lithuania") OR LIMIT-TO (AFFILCOUNTRY , "Luxembourg") OR LIMIT-TO (AFFILCOUNTRY , "Poland") OR LIMIT-TO (AFFILCOUNTRY , "Romania") OR LIMIT-TO (AFFILCOUNTRY , "Liechtenstein") OR LIMIT-TO (AFFILCOUNTRY , "Switzerland") OR LIMIT-TO (AFFILCOUNTRY , "United Kingdom"))

3. WEB OF SCIENCE

The query will remain the same except for the name of the zoonotic agent.

3.1. Salmonella string

(TI = (salmonell*)) AND

(TS = ("Control-program") OR TS = ("control-action") OR TS = ("control-option") OR TS = (control-measure) OR TS = (control-programme) OR TS = (control-method) OR TS = (regulatory procedure) OR TS = (control monitoring) OR TS = (veterinary programme) OR TS = (surveillance) OR TS = (intervention)) AND

(TS = (Europe) OR TS = (EU) OR TS = (European Economic Area) OR TS = (EEA) OR TS = (European Free Trade Association) OR TS = (EFTA) OR CU = (Austria) OR CU = (Belgium) OR CU = (Bulgaria) OR CU = (Croatia) OR CU = (Cyprus) OR CU = (Czech Republic) OR CU = (Denmark) OR CU = (Finland) OR CU = (France) OR CU = (Germany) OR CU = (Greece) OR CU = (Hungary) OR CU = (Ireland) OR CU = (Italy) OR CU = (Latvia) OR CU = (Lithuania) OR CU = (Luxembourg) OR CU = (Malta) OR CU = (Netherlands) OR CU = (Poland) OR CU = (Portugal) OR CU = (Cyprus) OR CU = (Czech Republic) OR CU = (Denmark) OR CU = (Romania) OR CU = (Slovakia) OR CU = (Slovenia) OR CU = (Spain) OR CU = (Sweden) OR CU = (Liechtenstein) OR CU = (Iceland) OR CU = (Norway) OR CU = (Switzerland) OR CU = (United Kingdom))

Note: Timespan 2003 to 2020 will be added manually in Web of Science.

3.2. Campylobacter string

(TI = (campylobact*)) AND

(TS = ("Control-program") OR TS = ("control-action") OR TS = ("control-option") OR TS = (control-measure) OR TS = (control-programme) OR TS = (control-method) OR TS = (regulatory procedure) OR TS = (control monitoring) OR TS = (veterinary programme) OR TS = (surveillance) OR TS = (intervention)) AND



(TS = (Europe) OR TS = (EU) OR TS = (European Economic Area) OR TS = (EEA) OR TS = (European Free Trade Association) OR TS = (EFTA) OR CU = (Austria) OR CU = (Belgium) OR CU = (Bulgaria) OR CU = (Croatia) OR CU = (Cyprus) OR CU = (Czech Republic) OR CU = (Denmark) OR CU = (Finland) OR CU = (France) OR CU = (Germany) OR CU = (Greece) OR CU = (Hungary) OR CU = (Ireland) OR CU = (Italy) OR CU = (Latvia) OR CU = (Lithuania) OR CU = (Luxemburg) OR CU = (Malta) OR CU = (Netherlands) OR CU = (Poland) OR CU = (Portugal) OR CU = (Cyprus) OR CU = (Czech Republic) OR CU = (Denmark) OR CU = (Romania) OR CU = (Slovakia) OR CU = (Slovenia) OR CU = (Spain) OR CU = (Sweden) OR CU = (Liechtenstein) OR CU = (Iceland) OR CU = (Norway) OR CU = (Switzerland) OR CU = (United Kingdom))

3.3. VTEC/STEC string

(TI = (verotoxigenic escherichia coli) OR TI = (verotoxigenic strain) OR TI = (verotoxigenic strains) OR TI = (verotoxin producing escherichia coli) OR TI = (verotoxinogenic e coli) OR TI = (verocytotoxin producing escherichia coli) OR TI = (verocytotoxin producing e coli) OR TI = (shigatoxin producing e. coli) OR TI = (shigatoxin producing escherichia coli) OR TI = (STEC) OR TI = (enterohemorrhagic e coli) OR TI = (VTEC) OR TI = (enterohemorrhagic escherichia coli) OR TI = (enterohemorrhage escherichia coli) OR TI = (enterohemorrhagic escherichia coli) OR TI = (enterohemorrhagic shiga toxin producing) OR TI = (enterohaemorrhagic e coli) OR TI = (enterohaemorrhagic escherichia coli) OR TI = (enterohaemorrhagic o157) OR TI = (e coli o157)) AND

(TS = (Control-program) OR TS = (control-action) OR TS = (control-option) OR TS = (control-measure) OR TS = (control-programme) OR TS = (control-method) OR TS = (regulatory procedure) OR TS = (control monitoring) OR TS = (veterinary programme) OR TS = (surveillance) OR TS = (intervention)) AND

(TS = (Europe) OR TS = (EU) OR TS = (European Economic Area) OR TS = (EEA) OR TS = (European Free Trade Association) OR TS = (EFTA) OR CU = (Austria) OR CU = (Belgium) OR CU = (Bulgaria) OR CU = (Croatia) OR CU = (Cyprus) OR CU = (Czech Republic) OR CU = (Denmark) OR CU = (Finland) OR CU = (France) OR CU = (Germany) OR CU = (Greece) OR CU = (Hungary) OR CU = (Ireland) OR CU = (Italy) OR CU = (Latvia) OR CU = (Lithuania) OR CU = (Luxemburg) OR CU = (Malta) OR CU = (Netherlands) OR CU = (Poland) OR CU = (Portugal) OR CU = (Cyprus) OR CU = (Czech Republic) OR CU = (Denmark) OR CU = (Romania) OR CU = (Slovakia) OR CU = (Slovenia) OR CU = (Spain) OR CU = (Sweden) OR CU = (Liechtenstein) OR CU = (Iceland) OR CU = (Norway) OR CU = (Switzerland) OR CU = (United Kingdom))

3.4. AMR string

(TI=(antimicrobial resistan*) OR TI=(antibiotic resistan*) OR TI=(AMR))

AND

(TS = (Control-program) OR TS = (control-action) OR TS = (control-option) OR TS = (control-measure) OR TS = (control-programme) OR TS = (control-method) OR TS = (regulatory procedure) OR TS = (control monitoring) OR TS = (veterinary programme) OR TS = (surveillance) OR TS = (intervention)) AND

(TS = (Europe) OR TS = (EU) OR TS = (European Economic Area) OR TS = (EEA) OR TS = (European Free Trade Association) OR TS = (EFTA) OR CU = (Austria) OR CU = (Belgium) OR CU = (Bulgaria) OR CU = (Croatia) OR CU = (Cyprus) OR CU = (Czech Republic) OR CU = (Denmark) OR CU = (Finland) OR CU = (France) OR CU = (Germany) OR CU = (Greece) OR CU = (Hungary) OR CU = (Ireland) OR CU = (Italy) OR CU = (Latvia) OR CU = (Lithuania) OR CU = (Luxemburg) OR CU = (Malta) OR CU = (Netherlands) OR CU = (Poland) OR CU = (Portugal) OR CU = (Cyprus) OR CU = (Czech Republic) OR CU = (Denmark) OR CU = (Romania) OR CU = (Slovakia) OR CU = (Slovenia) OR CU = (Spain) OR CU = (Sweden) OR CU = (Liechtenstein) OR CU = (Iceland) OR CU = (Norway) OR CU = (Switzerland) OR CU = (United Kingdom))



NOT (AB=(Neisseria meningitis) OR AB=(Neisseria meningitidis) OR AB=(Neisseria) OR
AB=(meningitis) OR AB=(Neisseria gonorrhoeae) OR AB=(gonorrhoeae) OR AB=(Gonococcal) OR
AB=(gonorrhoea) OR AB=(vancomycin resistant enterococci) OR AB=(vancomycin) OR AB=(VRE) OR
AB=(avoparcin) OR AB=(AGP))