STAR-IDAZ DATABASE ON INFECTIOUS DISEASES IN FARMED ANIMALS

Analysis of research output in partner countries (2006-2010)

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PRESENTATION

OBJECTIVE OF PRESENT DOCUMENT

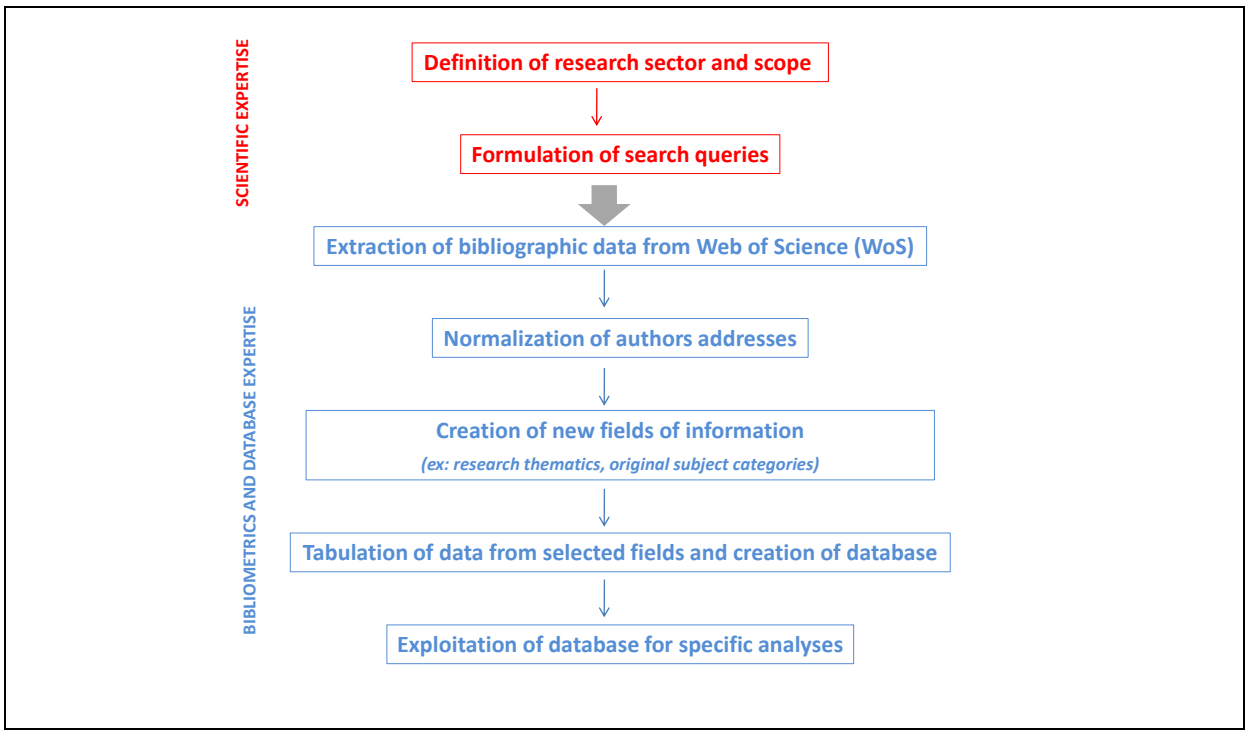
Analysis of research output in specific research fields at the level of both countries and research institutions, with focus on co-publication networks

DESIGN & CONTENT OF DATABASE

- Extraction from the Web of Science (WoS) of records of research papers in English from the WoS referenced from 2006 to June 2010 (about 4.5 years) – Total number of papers collected with different ISI reference number: 28,752.

- As for previous EMIDA database, research scope defined by a set of ~200 queries based on descriptors of diseases & pathogenic agents and of animals

- Use of Bibexcel software to format records, standardize data and exploit information of specific records fields.



COUNTRIES SURVEYED

- 23 countries of the European Community (EC)

Austria (AT); Belgium (BE); Bulgaria (BG); Czech Republic (CZ); Denmark (DK); Estonia (EE); Finland (FI); France (FR); Germany (DE); Greece (GR); Hungary (HU); Ireland (IE); Italy (IT); Lithuania (LT); Netherlands (NL); Poland (PL); Portugal (PT); Romania (RO); Slovakia (SK); Slovenia (SI); Spain (ES); Sweden (SE); UK (GB)

- 16 additional STAR-IDAZ partner countries:

Europe: Russia (RU); Norway (NO); Switzerland (CH)

Middle East: Israël (IL); Turkey (TR)

Africa: Kenya (KE); South Africa (ZA)

North America: Canada (CA); Mexico (MX); USA (US)

South America: Argentina (AR); Brazil (BR)

Asia: China (CN); India (IN)

Oceania: Australia (AU); New Zealand (NZ)

DATA FIELDS INCLUDED IN STAR-IDAZ DATABASE:

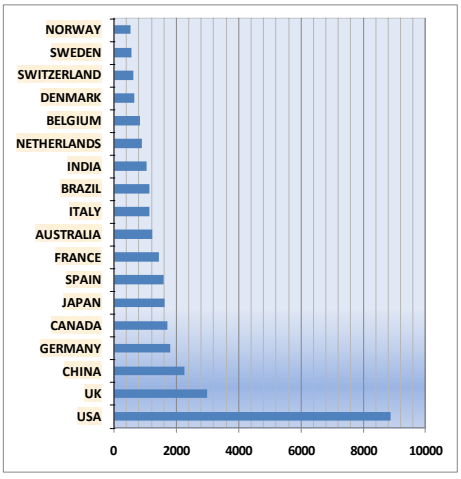
For each publication, data were tabulated according to the following fields:

ISI REFERENCE NUMBER	Unique number allocated by the WoS to each paper
ANIMAL CATEGORY	New field indicating the category of farmed animal(s) referred to in the paper the paper refers to: (1) ruminants; (2) pigs; (3) poultry; (4) horses; (5) fish; (6) rabbits, (7) bees
PATHOGEN CATEGORY	New field created for this study indicating the category (ies) of pathogenic organisms referred to in the paper: (1) bacteria; (2) viruses; (3) prions; (4) helminths; (5) protozoa; (6) ectoparasites
DISEASE OR PATHOGEN	New field defined by the specific keywords used in search queries to define diseases in specified animal species (see annex... for the complete list)
TITLE	Original title of the publication
ABSTRACT	Original abstract of the publication
WOS KEYWORDS	Keywords allocated to the paper by WoS specialists
AUTHORS ADDRESSES	Addresses normalized so as to attribute, as far as possible, one name for the same research institution. For the major institutions Annex.. provides the different names used by authors together with the proposed normalized name.
CORRESPONDING AUTHOR ADDRESS	Addresses normalized as above

GLOBAL RESEARCH OUTPUT IN STAR-IDAZ PARTNER COUNTRIES

Country correspondent & co-authorship was analyzed in the 28,571 publications recorded. Countries are ranged in four groups according to gross national product (GNP) in 2005, at the start of period surveyed. The ratio: nb of publications/GNP is proposed as a normalized measure of the national productivity in the research sector of STAR-IDAZ. This involvement generally increases in the smaller countries surveyed, highlighted in yellow (Kenya, New Zealand, Slovakia, Estonia, Czech Republic, Lithuania, Bulgaria). Comparatively, some of the richest countries, in particular USA, Germany, France and Italy, display a low productivity ratio.

COUNTRIES	CODE	Nb Public.	Share public.	GNP 2005 ($ 10^{-6})	Nb Public/GNP
USA	US	8866	30.8%	12970	0.684
JAPAN	JP	1611	5.6%	4988	0.323
GERMANY	DE	1807	6.3%	2852	0.634
UK	GB	2983	10.4%	2264	1.318
CHINA	CN	2253	7.8%	2264	0.995
FRANCE	FR	1429	5.0%	2178	0.656
ITALY	IT	1149	4.0%	1725	0.666
SPAIN	ES	1605	5.6%	1100	1.459
CANADA	CA	1704	5.9%	1052	1.620
INDIA	IN	1040	3.6%	793	1.311
MEXICO	MX	415	1.4%	753	0.551
AUSTRALIA	AU	1241	4.3%	654	1.898
BRAZIL	BR	1130	3.9%	644	1.755
RUSSIA	RU	179	0.6%	639	0.280
NETHERLANDS	NL	893	3.1%	598	1.493
SWITZERLAND	CH	624	2.2%	409	1.526
BELGIUM	BE	837	2.9%	374	**2.238**
SWEDEN	SE	565	2.0%	371	1.523
TURKEY	TR	483	1.7%	342	1.412
AUSTRIA	AT	302	1.1%	304	0.993
NORWAY	NO	543	1.9%	275	1.975
POLAND	PL	419	1.5%	271	1.546
DENMARK	DK	635	2.2%	257	**2.471**
SOUTH AFRICA	ZA	410	1.4%	224	1.830
GREECE	GR	232	0.8%	218	1.064
FINLAND	FI	279	1.0%	196	1.423
ARGENTINA	AR	405	1.4%	173	**2.341**
PORTUGAL	PT	256	0.9%	171	1.497
IRELAND	IE	322	1.1%	167	1.928
ISRAEL	IL	207	0.7%	129	1.605
CZECH REPUBLIC	CZ	359	1.2%	109	**3.294**
NEW ZEALAND	NZ	460	1.6%	107	**4.299**
HUNGARY	HU	200	0.7%	101	**1.980**
ROMANIA	RO	31	0.1%	83	0.373
SLOVAKIA	SK	153	0.5%	43	**3.558**
SLOVENIA	SI	86	0.3%	35	**2.457**
BULGARIA	BG	66	0.2%	27	**2.444**
LITHUANIA	LT	71	0.2%	24	**2.958**
KENYA	KE	147	0.5%	18	**8.167**
ESTONIA	EE	42	0.1%	12	**3.500**



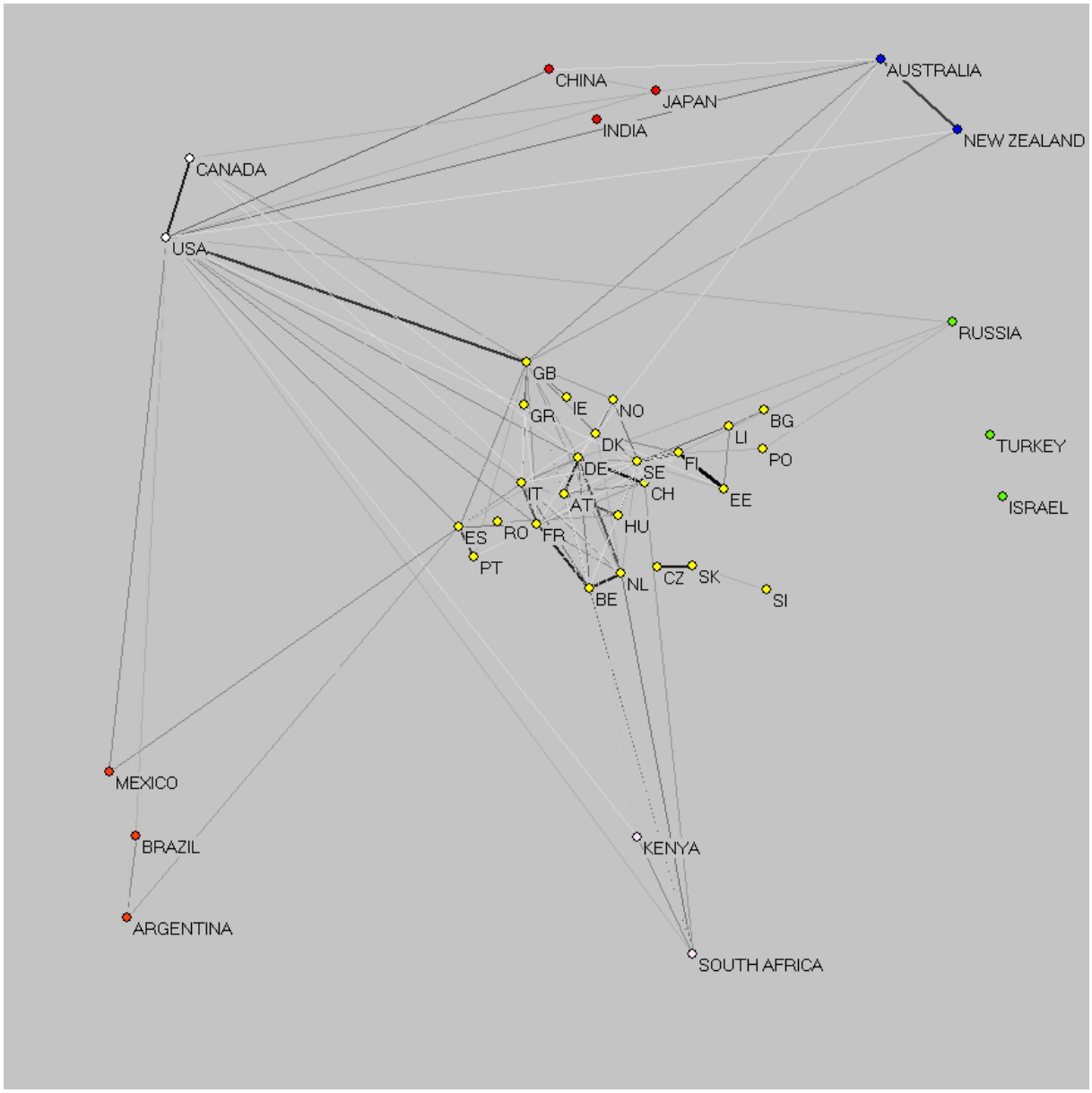
Countries associated to at least 2% of the publications (as correspondent authors or co-authors) are shown in the bar diagram. USA production in this sector is about thrice that of UK, itself about twice that of EC countries of comparable size such as Germany, France and Italy.

CO-PUBLICATION NETWORKS BETWEEN STAR-IDAZ COUNTRIES (1)

Overall representation

Pajek software for social network analysis. Affinity between any pair of countries A & B measured by the Salton index SI = [nb pub A & B/(nb pub A * nb pub B) $^{-1/2}$], an index normalized according to size of vertices. Fruchterman Reingold spring-embedded algorithm. Size of country vertices proportional to number of papers. Thickness of edges proportional to affinity strength. SI threshold = 0.025.

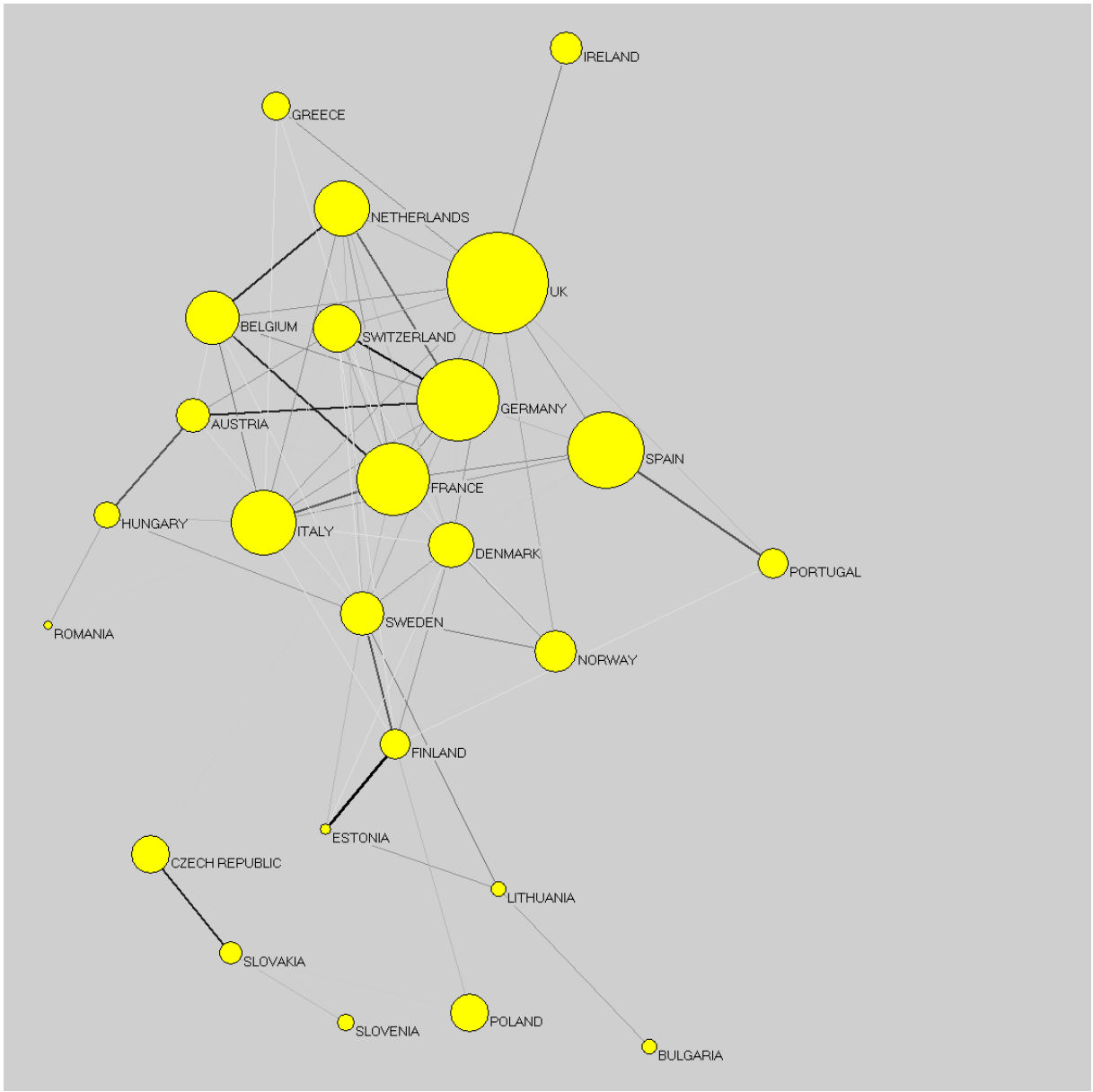
Inside Europe (inner part) as well as between Europe and outside, co-publication is more active between countries sharing borders or languages. Turkey and India appear significantly isolated.



CO-PUBLICATION NETWORKS BETWEEN STAR-IDAZ COUNTRIES (2)

Inside Europe

With an affinity threshold SI = 0.025, a majority of EC countries form a interconnected cluster, with Ireland, Hungary, Greece, Norway, Portugal, Bulgaria and Poland being more poorly connected. At this level of affinity the Czech Republic, Slovakia and Slovenia form a small separated cluster.



COUNTRY DISTRIBUTION OF ANIMAL CATEGORIES

Overall share = nb. public. in animal category / total nb. public; Country Mean = mean of country percentages

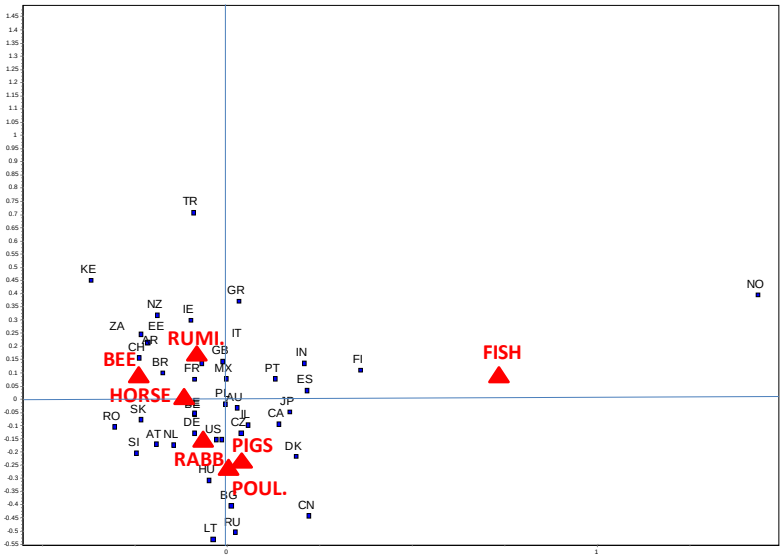
Although their ranking is identical, these two measures are different as the first one integrates the respective weight of countries. As shown in the table below, the profile of animal categories varies with country, thus defining a certain level of country specialization. For each animal category, the five countries with the highest percentage are highlighted. As an illustration, in the Fish category a number of countries are well above the overall share and the country mean: Norway (41%), Finland (15.2%), India (12.5%), Spain (11.2%), China (10.4%). To improve legibility of country specialization, factorial correspondence analysis was run using UCINET software (next illustrations).

	BEE	FISH	HORSE	PIGS	POUL.	RABB.	RUMI.
Overall share	*1.8%*	*3.9%*	*6.0%*	*9.7%*	*18.5%*	*30.6%*	*42.9%*
Country Mean	*1.7%*	*2.7%*	*4.3%*	*6.6%*	*13.4%*	*21.1%*	*33.4%*
Argentina	5.4%	3.5%	5.0%	9.2%	16.8%	3.0%	42.3%
Australia	1.6%	6.9%	3.8%	11.0%	23.6%	3.3%	31.9%
Austria	2.4%	1.6%	5.6%	14.8%	23.3%	4.9%	28.0%
Belgium	0.9%	3.9%	3.8%	17.8%	20.2%	2.9%	34.9%
Brazil	1.4%	3.1%	5.3%	10.5%	19.8%	3.3%	40.1%
Bulgaria	0.0%	5.2%	4.1%	4.1%	44.3%	4.1%	20.6%
Canada	1.4%	9.2%	4.6%	16.6%	21.3%	2.0%	27.7%
China	1.1%	10.4%	3.1%	23.8%	33.1%	5.0%	17.3%
Czech Republic	1.1%	6.4%	3.0%	15.1%	21.5%	5.8%	28.3%
Denmark	1.1%	9.4%	2.3%	25.7%	20.4%	1.1%	25.5%
Estonia	0.0%	1.9%	0.0%	13.2%	18.9%	1.9%	54.7%
Finland	2.1%	15.2%	3.5%	12.0%	18.2%	0.8%	31.3%
France	1.3%	4.4%	4.0%	10.3%	18.0%	3.3%	34.7%
Germany	2.2%	3.6%	4.3%	19.2%	17.5%	2.9%	27.6%
Greece	1.9%	8.2%	2.8%	9.8%	9.2%	2.5%	44.0%
Hungary	2.8%	4.5%	5.5%	19.0%	29.0%	1.7%	22.8%
India	0.4%	12.5%	2.7%	7.5%	23.0%	4.0%	40.0%
Ireland	2.0%	5.9%	7.2%	11.5%	11.7%	1.1%	44.1%
Israel	1.1%	7.4%	3.5%	10.2%	26.5%	4.9%	30.0%
Italy	1.2%	5.2%	5.4%	12.7%	15.2%	2.3%	37.4%
Japan	0.5%	10.4%	4.6%	15.1%	22.6%	2.9%	31.5%
Lithuania	0.0%	3.2%	3.2%	18.1%	43.6%	0.0%	20.2%
Mexico	1.6%	6.6%	3.2%	15.5%	16.3%	3.4%	37.7%
Netherlands	0.4%	2.1%	3.5%	17.3%	26.3%	1.9%	32.8%
New Zealand	1.6%	3.4%	1.1%	8.0%	15.9%	2.7%	51.3%
Norway	0.3%	41.1%	1.8%	5.0%	11.3%	0.3%	24.4%
Poland	2.0%	6.5%	4.5%	13.9%	22.6%	1.6%	33.8%
Portugal	0.5%	8.5%	4.9%	13.1%	12.6%	4.6%	29.9%
Romania	2.2%	0.0%	13.0%	15.2%	21.7%	0.0%	28.3%
Russia	1.0%	3.9%	1.6%	5.9%	35.4%	3.6%	13.4%
Slovakia	1.0%	0.5%	3.1%	17.3%	25.5%	4.1%	41.3%
Slovenia	7.6%	1.0%	3.8%	25.7%	26.7%	0.0%	32.4%
South Africa	3.7%	2.9%	6.8%	6.8%	14.4%	2.5%	37.9%
Spain	1.2%	11.2%	3.3%	17.9%	14.4%	3.5%	31.6%
Sweden	2.6%	4.4%	5.4%	14.6%	20.4%	2.1%	30.2%
Switzerland	3.7%	2.3%	6.5%	14.3%	13.5%	1.6%	39.1%
Turkey	3.0%	8.2%	6.8%	2.5%	3.1%	2.7%	58.4%
UK	0.9%	6.2%	4.3%	9.4%	17.3%	2.1%	36.3%
USA	1.6%	5.4%	5.0%	12.2%	28.2%	2.9%	28.7%
	BEE	FISH	HORSE	PIGS	POUL.	RABB.	RUMI.

COUNTRY SPECIALIZATION FOR ANIMAL CATEGORIES USING FACTORIAL CORRESPONDANCE ANALYSIS

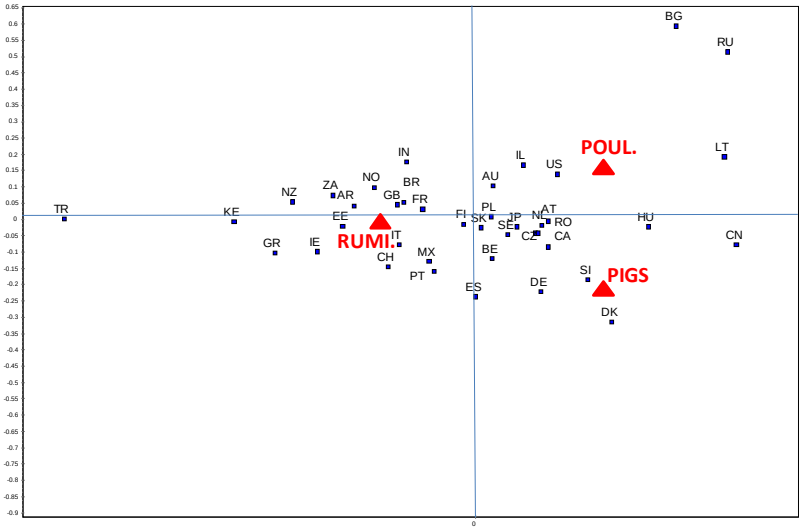
Global

Distance between variables measured by khi-square from a 7 (animals) X 40 (countries) contingency table. Factor 1 (horizontal) accounts for 30.1% of total inertia; factor 2 (vertical) for 28.3%. “FISH” is tightly linked to such countries as Norway (41% of publications), Finland (15.2%), India (12.5%), Spain (11.2%), China (10.4%).



Three major animal groups (Ruminants, Pigs, Poultry)

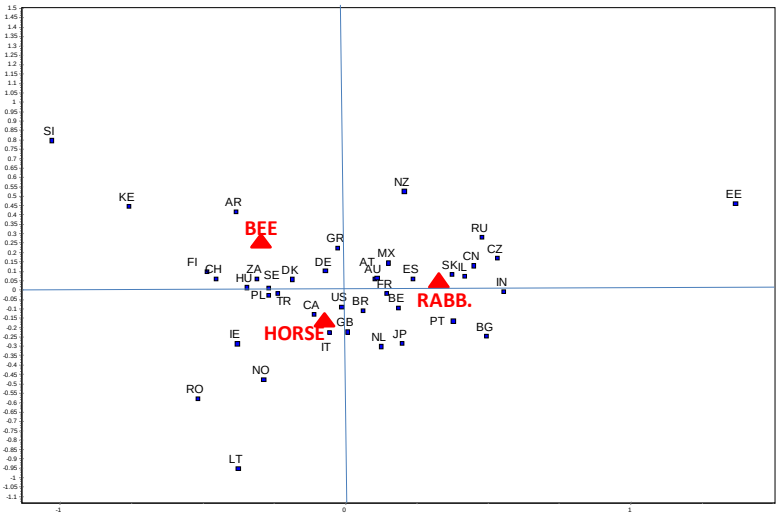
3 (animals) X 40 (countries) contingency table; factor 1 = 62.7%; factor 2 = 37.3%. Strong association of “RUMINANTS” with Turkey (58.4%), Estonia (54.7%), New Zealand (51.3%), Ireland (44.1%), Greece (44.0%, Argentina (42.3%); of “PIGS” with Denmark (25.7%), Slovenia (25.7%), China (23.8%), Germany (19.2%), Hungary (19.0%; of “POULTRY” (Birds) with Bulgaria (44.3%), Lithuania (43.6%), Russia (35.4%), China (33.1%), Hungary (29%).



COUNTRY SPECIALIZATION FOR ANIMAL CATEGORIES
USING FACTORIAL CORRESPONDANCE ANALYSIS *(contin.)*

Three minor animal groups only (Bees, Horses, Rabbits)

3 (animals) X 40 (countries) contingency table; factor 1 = 59.4%; factor 2 = 40.6%. Strong association of “BEE” with Slovenia (7.6%), Argentina (5.4%), Kenya, South Africa (3.7%), Switzerland (3.7%), Turkey (3.0%; of “HORSE” (Equids) with Romania (13.0%), Ireland (7.2%), Turkey (6.8%), South Africa (6.8%), Switzerland (6.5%); of “RABBITS” with Czech Republic (5.8%), China (5.0%), Austria (4.9%), Israel (4.9%), Portugal (4.6%).



COUNTRY DISTRIBUTION OF PATHOGEN CATEGORIES

Overall share = nb. public. in animal category / total nb. public; Country Mean = mean of country percentages

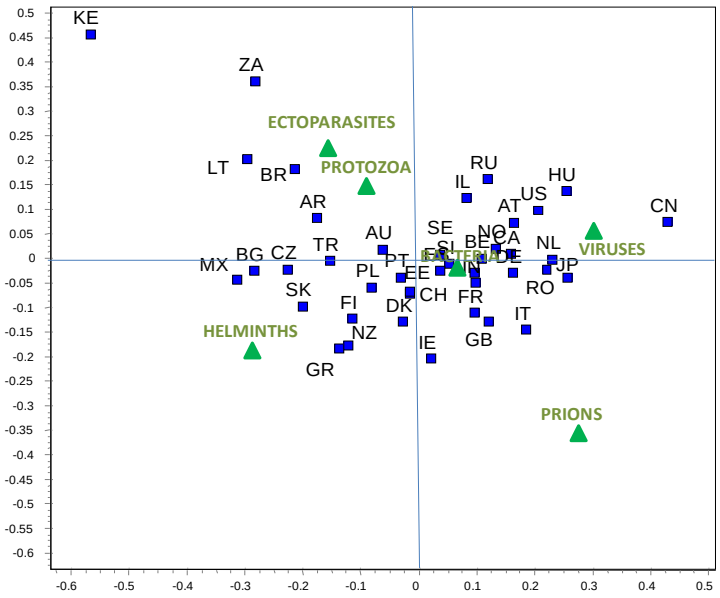
As shown below, the profile of pathogen categories varies with country, thus defining a certain level of country specialization. For each pathogen category, the five countries with the highest percentage are highlighted. As an illustration, in the "Ectoparasites" category a number of countries are well above the overall share and the country mean: South Africa (30.5%), Kenya (29.3%), Brazil (16.6%), Argentina (15.6%), Russia (15.1%). To improve legibility of country specialization, factorial correspondence analysis was run using UCINET software (next illustrations).

	BACTERIA	ECTOPARASITES	HELMINTHS	PRIONS	PROTOZOA	VIRUSES
Overall share	*63.6%*	*9.1%*	*8.0%*	*3.9%*	*10.4%*	*48.0%*
Country mean	*63.1%*	*10.4%*	*11.0%*	*3.2%*	*12.9%*	*42.8%*
Argentina	62.0%	15.6%	13.3%	0.2%	11.6%	35.1%
Australia	55.4%	12.1%	16.4%	1.8%	11.6%	47.9%
Austria	69.5%	9.6%	5.0%	3.0%	11.6%	51.3%
Belgium	67.5%	8.5%	8.6%	3.5%	11.5%	48.5%
Brazil	62.5%	16.6%	10.0%	0.7%	18.8%	32.1%
Bulgaria	51.5%	6.1%	21.2%	1.5%	24.2%	36.4%
Canada	65.9%	9.3%	6.6%	3.5%	8.3%	48.0%
China	52.8%	3.1%	5.1%	2.1%	6.9%	70.0%
Czech Republic	67.4%	12.0%	14.8%	1.1%	13.6%	28.4%
Denmark	71.7%	7.4%	15.3%	1.4%	6.9%	39.7%
Estonia	57.1%	2.4%	14.3%	4.8%	21.4%	45.2%
Finland	73.5%	8.6%	16.8%	0.4%	7.5%	35.1%
France	56.3%	11.1%	10.1%	9.4%	11.1%	46.7%
Germany	66.6%	8.0%	6.0%	5.6%	11.1%	47.1%
Greece	72.8%	8.6%	15.5%	3.9%	10.3%	29.3%
Hungary	68.0%	10.0%	2.0%	3.0%	11.5%	58.5%
India	67.8%	4.9%	10.9%	0.5%	7.7%	45.0%
Ireland	76.4%	4.0%	9.3%	5.0%	10.2%	30.1%
Israel	60.4%	12.1%	6.8%	2.4%	12.6%	48.3%
Italy	62.7%	7.5%	9.2%	7.7%	7.3%	49.2%
Japan	64.0%	5.6%	4.7%	6.3%	10.7%	52.3%
Kenya	41.5%	29.3%	18.4%	0.0%	43.5%	34.7%
Lithuania	60.6%	7.0%	11.3%	1.4%	39.4%	31.0%
Mexico	61.4%	13.3%	20.7%	0.2%	13.3%	30.6%
Netherlands	66.5%	8.1%	4.7%	4.3%	7.6%	50.3%
New Zealand	65.9%	6.5%	18.7%	2.6%	10.7%	36.3%
Norway	71.8%	10.7%	6.6%	3.9%	10.1%	49.5%
Poland	65.9%	14.8%	10.3%	5.5%	9.5%	32.0%
Portugal	64.5%	6.6%	12.9%	2.0%	13.7%	40.6%
Romania	45.2%	6.5%	12.9%	3.2%	6.5%	61.3%
Russia	37.4%	15.1%	9.5%	3.4%	8.4%	55.3%
Slovakia	70.6%	13.7%	17.0%	2.0%	8.5%	30.7%
Slovenia	81.4%	10.5%	4.7%	2.3%	8.1%	33.7%
South Africa	52.2%	30.5%	11.7%	0.2%	17.8%	41.0%
Spain	68.6%	10.3%	9.0%	5.4%	13.8%	43.1%
Sweden	68.1%	6.9%	8.8%	1.9%	13.5%	41.4%
Switzerland	62.2%	13.5%	11.7%	6.9%	11.2%	41.3%
Turkey	68.7%	10.1%	12.0%	1.7%	15.3%	30.6%
UK	60.4%	9.7%	11.0%	8.3%	9.2%	49.1%
USA	61.0%	10.5%	4.8%	3.4%	10.1%	54.8%

COUNTRY SPECIALIZATION FOR PATHOGEN CATEGORIES

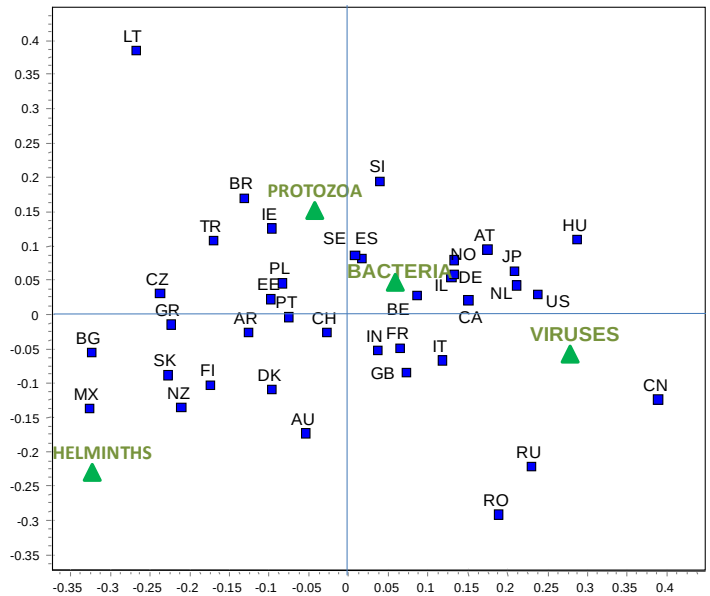
All 6 categories of pathogens (bacteria, viruses, prions, helminths, protozoa, ectoparasites)

6 (pathogens) X 40 (countries) contingency table; factor 1 = 32.9%; factor 2 = 20.9%. Strong association of "ECTOPARASITES" with South Africa (30.5%) and Kenya (29.3%); of "PRIONS" with France (9.4%), UK (8.3%), and Italy (7.7; of "VIRUSES" with China (70.0%), Hungary (58.5%), Russia (55.3%), China (33.1%). Prions and ectoparasites are exogenous, as well as Kenya (KE) and South Africa (ZA), accounting for most of the variability. In the next analysis below, these categories were removed to better demonstrate association implying other categories.



Four pathogen categories (bacteria, viruses, helminths, protozoa)

4 (pathogens) X 40 (countries) contingency table; factor 1 = 51.3%; factor 2 = 27.4%. Strong association of "HELMINTHS" with Bulgaria (21.2%), Mexico (20.7%), New Zealand (18.7%), Slovakia (17.0%); of "PROTOZOA" with Lithuania (39.4%), Brazil (18.8).



OVERALL DISTRIBUTION OF JCR SUBJECT CATEGORIES (SC)

Subject Category" (SC): academic disciplines or broad subject areas" to which belongs the journal where the paper has been published. This classification of journals is made by the Journal Citation report (JCR) and appears in the Web of Science (WoS) publications records. A majority of journals belong to several categories.

The major Subject Categories in the set of 28,571 publications collected in the field under study are: Veterinary Sciences (33.2%), Microbiology (17.7%), Immunology (11.9%), Biotechnology & Applied Microbiology (11.8%), Virology (10.2%), Parasitology (9.9%)

SC abrev	SC full name	Nb Public.	Percent
ADA	Agriculture, Dairy & Animal Science	2010	7.0%
BAM	Biotechnology & Applied Microbiology	3394	11.8%
BIL	Biology	429	1.5%
BIP	Biophysics	344	1.2%
BMB	Biochemistry & Molecular Biology	1957	6.8%
BRM	Biochemical Research Methods	831	2.9%
CBI	Cell Biology	501	1.7%
ECO	Ecology	733	2.5%
ENT	Entomology	727	2.5%
ESC	Environmental Sciences	626	2.2%
FIS	Fisheries	1593	5.5%
FST	Food Science & Technology	2395	8.3%
GHR	Genetics & Heredity	905	3.1%
IDI	Infectious Diseases	2031	7.1%
IMM	Immunology	3427	11.9%
MFW	Marine & Freshwater Biology	1262	4.4%
MIC	Microbiology	5083	17.7%
MRE	Medicine, Research & Experimental	910	3.2%
MUS	Multidisciplinary Sciences	361	1.3%
PAR	Parasitology	2835	9.9%
PAT	Pathology	344	1.2%
PEO	Public, Environmental & Occupational Health	819	2.8%
PHA	Pharmacology & Pharmacy	760	2.6%
TOX	Toxicology	380	1.3%
TRO	Tropical Medicine	361	1.3%
VET	Veterinary Sciences	9555	33.2%
VIR	Virology	2938	10.2%
ZOO	Zoology	845	2.9%

DISTRIBUTION OF SUBJECT CATEGORIES (HORIZONTAL) ACCORDING TO COUNTRIES (VERTICAL, COUNTRY CODE: FULL NAME PAGE 2).

For each SC (full name of abbreviations in table of page 12) the five highest country percentages are highlighted in red and the five lowest in blue, to point out the major specialities of each country, and, on the contrary, minor or neglected specialities. A global representation using scatterplot of factorial correspondence analysis is shown in the next figure.

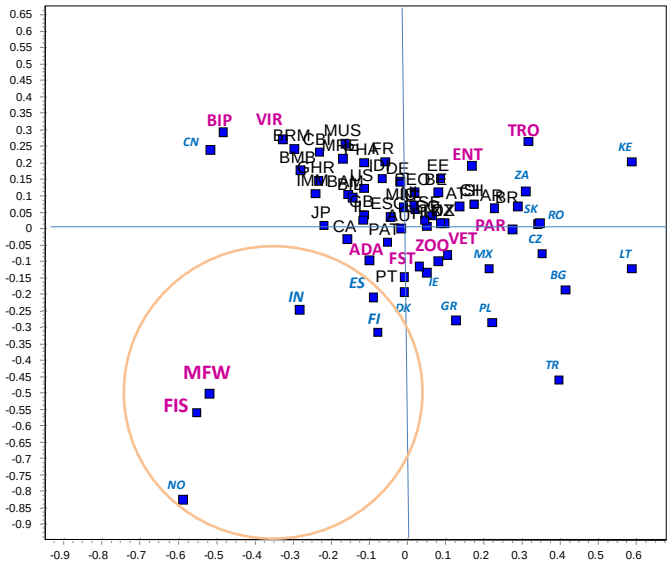
	VET	MIC	IMM	BAM	VIR	PAR	FST	IDI	ADA	BMB	FIS	MFW	MRE	GHR	ZOO	BRM	PEO	PHA	ECO	ENT	ESC	CBI	BIL	TOX	MUS	TRO	BIP	PAT
US	26.3%	13.5%	12.5%	10.1%	11.9%	6.0%	7.2%	8.0%	6.9%	5.3%	3.5%	2.1%	3.3%	3.0%	2.2%	1.8%	3.2%	1.9%	2.9%	3.5%	2.0%	1.5%	1.2%	0.6%	1.7%	1.3%	0.8%	1.2%
GB	31.9%	16.2%	12.9%	11.5%	11.9%	11.3%	3.7%	9.0%	4.5%	5.2%	5.3%	4.5%	3.5%	3.7%	2.2%	2.3%	3.0%	1.7%	3.2%	1.8%	1.6%	1.4%	2.1%	0.4%	1.9%	1.5%	0.9%	1.8%
CN	17.5%	12.1%	16.2%	12.2%	20.0%	5.8%	2.5%	5.4%	5.3%	10.4%	5.9%	5.4%	4.6%	5.1%	1.5%	6.4%	1.7%	3.4%	0.6%	1.2%	1.2%	2.5%	1.9%	0.7%	1.6%	0.9%	2.8%	0.3%
DE	29.0%	17.8%	9.5%	11.0%	11.3%	10.6%	6.9%	7.0%	6.4%	5.9%	1.5%	1.7%	3.2%	2.6%	1.9%	3.1%	1.9%	3.3%	1.3%	1.9%	1.4%	2.4%	0.3%	2.9%	0.9%	0.3%	0.7%	0.9%
CA	31.1%	15.6%	13.8%	11.0%	8.6%	4.9%	7.3%	7.5%	7.9%	6.6%	5.2%	4.4%	2.7%	3.6%	2.8%	2.5%	2.5%	1.5%	2.6%	2.2%	2.6%	1.5%	1.2%	1.9%	0.8%	0.7%	0.6%	0.4%
JP	31.5%	13.7%	11.5%	9.1%	13.0%	6.5%	4.3%	6.1%	4.1%	7.9%	6.7%	3.9%	3.0%	2.4%	2.5%	1.7%	2.5%	2.5%	0.5%	1.1%	1.0%	2.0%	1.0%	0.7%	0.8%	1.6%	1.7%	1.3%
ES	35.1%	16.8%	11.9%	11.3%	8.0%	11.2%	8.9%	4.3%	5.8%	4.0%	6.3%	5.4%	2.8%	2.2%	3.4%	2.4%	2.0%	1.7%	3.7%	1.7%	1.6%	1.2%	1.1%	0.7%	0.4%	0.7%	0.6%	1.9%
FR	27.7%	17.0%	10.6%	12.1%	12.5%	11.5%	4.8%	9.1%	5.7%	7.6%	1.7%	2.2%	3.6%	3.3%	2.4%	2.9%	3.6%	3.8%	2.5%	2.2%	0.8%	1.6%	1.9%	1.7%	0.8%	1.8%	1.7%	0.8%
AU	31.3%	16.0%	10.2%	10.8%	8.7%	14.8%	3.5%	5.8%	2.7%	5.8%	4.7%	4.7%	2.9%	3.0%	4.3%	4.0%	2.5%	1.7%	3.7%	2.8%	2.0%	2.8%	0.8%	0.5%	0.4%	1.2%	0.2%	0.7%
IT	33.2%	16.5%	9.7%	10.2%	10.5%	10.1%	11.8%	7.4%	6.3%	4.6%	1.8%	2.1%	3.8%	1.7%	1.7%	2.6%	2.8%	3.4%	1.4%	1.8%	1.7%	2.0%	0.4%	1.4%	0.6%	0.3%	0.8%	2.4%
BR	31.9%	16.9%	5.9%	6.5%	4.3%	19.7%	4.2%	2.9%	6.5%	6.4%	1.5%	1.1%	2.5%	3.7%	3.8%	1.9%	1.2%	2.1%	1.0%	4.0%	1.0%	0.5%	2.8%	2.3%	1.8%	4.8%	0.9%	0.4%
IN	28.8%	9.4%	11.4%	9.6%	7.2%	6.2%	4.4%	3.4%	13.1%	4.7%	9.7%	6.2%	3.4%	2.2%	2.3%	2.3%	1.2%	1.3%	0.2%	1.7%	1.3%	1.0%	3.0%	1.4%	1.7%	0.7%	1.0%	0.5%
NL	35.3%	19.3%	15.5%	8.3%	6.0%	6.3%	8.5%	10.8%	8.3%	3.4%	1.6%	1.8%	7.4%	1.8%	0.9%	1.7%	5.2%	2.5%	2.0%	1.1%	0.9%	0.8%	1.0%	1.3%	1.0%	0.4%	0.3%	1.1%
BE	38.2%	23.2%	12.7%	10.6%	11.1%	12.7%	8.4%	7.4%	5.3%	3.3%	1.8%	1.6%	4.7%	1.4%	1.8%	2.9%	2.5%	4.4%	1.1%	1.7%	0.7%	1.9%	0.7%	0.8%	0.6%	2.3%	0.4%	0.4%
DK	36.2%	22.7%	11.0%	8.3%	5.2%	9.8%	12.3%	9.3%	10.7%	3.3%	7.2%	4.9%	1.4%	2.5%	2.5%	1.9%	3.3%	3.5%	1.4%	1.3%	0.9%	1.1%	0.6%	0.8%	0.5%	1.3%	0.3%	2.5%
CH	38.3%	17.8%	10.7%	5.8%	8.0%	12.5%	5.3%	7.4%	4.8%	4.0%	1.3%	1.0%	2.2%	2.1%	3.2%	1.8%	1.9%	2.4%	3.0%	5.1%	0.6%	1.4%	1.8%	0.3%	1.1%	0.8%	0.5%	1.1%
SE	37.0%	13.8%	9.4%	8.0%	9.9%	10.3%	7.3%	6.4%	8.1%	4.6%	1.6%	1.8%	1.8%	2.1%	3.2%	4.8%	3.0%	1.2%	4.6%	2.3%	1.2%	0.9%	2.1%	0.2%	0.7%	0.5%	0.5%	0.5%
NO	35.0%	12.5%	14.5%	8.1%	7.0%	7.0%	10.7%	5.2%	9.2%	5.3%	29.1%	21.2%	0.9%	3.7%	3.5%	1.3%	1.5%	1.7%	2.8%	0.6%	1.3%	0.7%	1.1%	0.9%	0.4%	0.2%	0.6%	1.3%
TR	60.9%	5.4%	0.8%	4.6%	2.5%	9.3%	7.5%	2.5%	3.7%	1.4%	4.3%	2.9%	1.0%	0.2%	1.9%	0.0%	1.7%	0.8%	0.6%	1.2%	1.0%	0.2%	0.2%	1.0%	0.2%	0.4%	0.0%	1.0%
NZ	35.7%	19.6%	9.8%	12.8%	5.9%	8.0%	6.7%	8.0%	6.3%	2.8%	1.5%	1.7%	1.1%	1.5%	2.6%	2.0%	3.7%	1.5%	5.2%	1.3%	1.5%	1.7%	1.3%	1.1%	1.1%	0.2%	0.2%	0.7%
PL	47.7%	5.7%	5.0%	2.4%	3.6%	11.0%	2.6%	2.6%	8.8%	4.3%	3.1%	3.3%	0.5%	1.2%	4.1%	1.7%	2.4%	0.2%	1.4%	2.1%	3.6%	1.0%	1.2%	0.5%	0.0%	0.0%	1.0%	0.2%
MX	35.9%	10.1%	11.3%	7.2%	2.4%	20.0%	5.1%	7.2%	7.2%	3.4%	4.3%	3.4%	3.6%	1.4%	3.1%	1.7%	3.9%	1.7%	0.7%	2.9%	0.5%	0.5%	0.2%	1.2%	0.5%	2.7%	0.5%	0.2%
ZA	44.4%	11.2%	7.1%	10.0%	7.3%	14.1%	4.6%	7.3%	2.9%	2.7%	0.2%	1.7%	2.7%	2.9%	2.7%	2.0%	2.4%	1.0%	5.6%	9.5%	2.0%	0.7%	1.0%	0.0%	1.0%	2.2%	0.5%	0.7%
AR	35.6%	18.8%	10.9%	6.9%	7.4%	19.8%	7.4%	5.2%	3.7%	3.7%	1.7%	1.7%	3.2%	2.2%	4.4%	3.5%	2.7%	2.7%	0.7%	4.4%	1.0%	1.5%	2.0%	1.0%	0.2%	3.0%	0.5%	0.2%
CZ	38.2%	16.4%	5.3%	7.5%	3.1%	18.1%	7.0%	3.9%	5.3%	2.5%	1.9%	0.8%	1.4%	2.2%	4.5%	1.4%	2.5%	1.7%	1.4%	3.1%	1.1%	1.1%	0.3%	2.2%	0.8%	1.4%	0.8%	0.3%
IE	34.2%	18.9%	10.9%	14.0%	2.5%	8.7%	17.1%	9.0%	8.1%	2.2%	3.4%	4.3%	3.1%	5.3%	1.9%	0.9%	4.0%	1.9%	0.6%	2.8%	0.6%	0.9%	0.3%	0.9%	0.0%	0.0%	0.3%	0.6%
AT	37.1%	11.3%	9.3%	7.9%	7.0%	9.9%	6.3%	7.3%	7.6%	4.6%	0.3%	0.3%	2.6%	0.7%	1.3%	4.0%	2.6%	2.6%	1.0%	1.3%	1.7%	1.0%	0.3%	1.7%	0.3%	0.3%	0.0%	2.0%
FI	23.3%	21.1%	8.2%	11.5%	2.9%	9.7%	16.1%	5.4%	10.8%	3.6%	8.6%	6.8%	2.2%	3.2%	4.3%	1.1%	1.8%	0.7%	6.1%	1.4%	1.4%	0.4%	1.4%	2.5%	0.4%	0.0%	0.7%	0.0%
PT	29.7%	20.3%	9.4%	10.5%	5.9%	14.5%	8.2%	4.3%	9.4%	4.3%	5.1%	5.9%	3.5%	2.0%	2.3%	0.4%	2.3%	3.1%	2.7%	0.4%	3.1%	1.6%	2.0%	2.0%	0.8%	0.4%	0.8%	1.2%
GR	33.2%	13.8%	2.2%	6.9%	1.7%	9.9%	16.8%	6.0%	17.7%	5.2%	4.3%	2.6%	0.9%	1.7%	1.7%	2.2%	3.4%	2.6%	0.4%	1.3%	0.4%	0.0%	0.0%	1.7%	0.0%	0.0%	0.9%	3.0%
IL	29.0%	12.6%	12.1%	5.8%	10.6%	7.2%	4.8%	6.8%	6.3%	4.3%	3.9%	3.4%	5.3%	3.9%	3.4%	1.4%	3.9%	0.5%	3.9%	1.4%	1.0%	1.0%	0.5%	0.5%	1.0%	0.5%	1.4%	0.5%
HU	47.5%	20.0%	8.5%	7.0%	15.5%	6.0%	4.5%	6.5%	1.5%	2.0%	3.0%	1.5%	1.5%	2.0%	2.0%	1.5%	1.0%	1.5%	3.5%	0.0%	0.5%	0.0%	2.5%	1.5%	0.5%	0.5%	0.5%	0.5%
SK	35.3%	15.0%	2.0%	9.2%	6.5%	17.6%	7.2%	2.6%	5.2%	2.6%	0.0%	0.0%	0.7%	1.3%	6.5%	3.3%	7.8%	1.3%	1.3%	2.0%	7.2%	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%
KE	41.5%	4.8%	12.2%	4.1%	2.0%	34.0%	1.4%	14.3%	2.0%	2.7%	0.7%	0.7%	2.0%	6.8%	0.7%	0.0%	4.8%	1.4%	3.4%	7.5%	2.0%	0.0%	2.7%	0.7%	3.4%	17.0%	0.0%	0.0%
SI	36.0%	22.1%	4.7%	8.1%	8.1%	5.8%	10.5%	3.5%	5.8%	2.3%	0.0%	0.0%	0.0%	2.3%	3.5%	3.5%	0.0%	1.2%	0.0%	5.8%	3.5%	2.3%	1.2%	2.3%	1.2%	0.0%	1.2%	0.0%
LT	35.2%	2.8%	4.2%	4.2%	1.4%	32.4%	2.8%	0.0%	1.4%	4.2%	2.8%	0.0%	1.4%	1.4%	2.8%	0.0%	1.4%	1.4%	11.3%	1.4%	1.4%	0.0%	0.0%	1.4%	0.0%	2.8%	2.8%	0.0%
BG	33.3%	9.1%	1.5%	4.5%	0.0%	18.2%	3.0%	3.0%	1.5%	4.5%	3.0%	1.5%	0.0%	0.0%	10.6%	0.0%	1.5%	1.5%	1.5%	1.5%	0.0%	0.0%	0.0%	0.0%	9.1%	0.0%	0.0%	0.0%
EE	21.4%	9.5%	4.8%	9.5%	14.3%	16.7%	16.7%	4.8%	4.8%	7.1%	0.0%	0.0%	2.4%	7.1%	2.4%	0.0%	0.0%	2.4%	7.1%	0.0%	0.0%	2.4%	2.4%	4.8%	2.4%	0.0%	0.0%	2.4%
RO	25.8%	3.2%	0.0%	6.5%	0.0%	16.1%	9.7%	6.5%	3.2%	6.5%	0.0%	0.0%	0.0%	0.0%	3.2%	0.0%	6.5%	6.5%	3.2%	0.0%	0.0%	0.0%	6.5%	3.2%	0.0%	0.0%	3.2%	0.0%

COUNTRY SPECIALIZATION FOR JCR SUBJECT CATEGORIES

Factorial correspondence analysis (FCA) was performed to explore the association between countries on the one side and Subject Categories (SCs), on the other side. The category Veterinary Sciences was discarded, as largely overlapping a number of others, and, as such, being poorly specific for the research sector. A country by country analysis can be best done using the detailed table of SCs distribution of page 13.

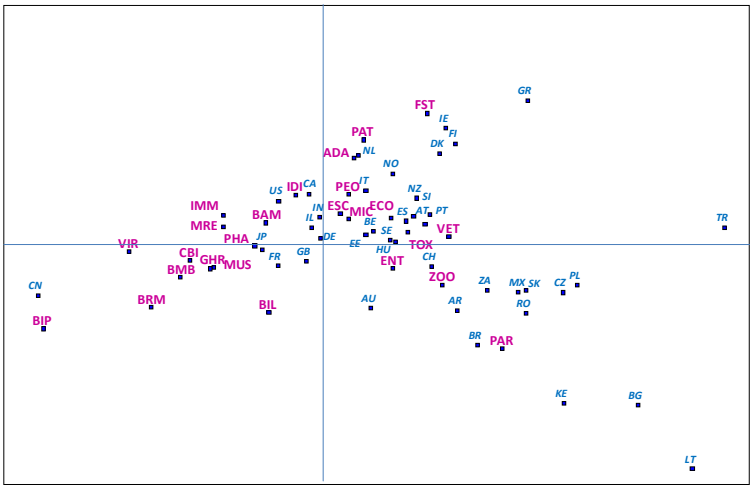
Scatterplot showing the 24 most frequent subject categories and the 40 selected countries

Factor 1 (horizontal): 13.4 % of total inertia; Factor 2 (vertical): 11.8% of total inertia.
SCs MFW (Marine and Freshwater Biology) and FIS (Fisheries) account for most of the variability and were strongly associated with Norway (NO), India (IN) and Finland (FI). To better explore the association of countries with other categories, a new FCA was run excluding these two SCs (next scatterplot).



Scatterplot excluding FIS and MFW

Factor 1 (horizontal) 11.7%; Factor 2 (vertical): 10.1%
The strongest associations concern China (CN) with SCs BIP Virology (VIR), Biophysics (BIP), and BRM Biochemical Research Methods (BRM); Ireland (IE), Denmark (DK), Finland (FI) and Greece (GR) with Food and Science Technology (FST); the triad Parasitology (PAR), Entomology (ENT) and Zoology (ZOO) with such countries as Brazil (BR), Argentina (AR), Mexico (MX), Kenya (KE), South Africa (ZA), Bulgaria (BG), Lithuania (LT) and Romania (RO); Pathology (PAT) and Agriculture, Dairy & Animal Science (ADA) with Netherlands.



GLOBAL RANKING OF MAJOR RUMINANT DISEASES

12,626 PUBLICATIONS

BACTERIAL DISEASES		
MASTITIS	MAST	16.1%
TUBERCULOSIS	TUBE	8.1%
SALMONELLOSIS	SALM	7.9%
PATHOGENIC E COLI	COLI	7.1%
PARATUBERCULOSIS	PARA	6.5%
BRUCELLOSIS	BRUC	3.5%
MYCOPLASMOSES	MYCP	2.6%
PASTEURELLOSES	PAST	2.4%
LISTERIOSIS	LIST	2.1%
CAMPYLOBACTERIOSIS	CAMP	1.7%
CLOSTRIDIAL DISEASES	CLOS	1.4%
ANAPLASMOSIS	ANAP	1.3%
CHLAMYDIOSIS	CHLA	0.8%
CORYNEBACTERIUM INFECTIONS	CORY	0.7%
LEPTOSPIROSIS	LEPT	0.5%
Q FEVER	QFEV	0.5%
HISTOPHILOSIS	HIST	0.5%
FOOTROT	FOOT	0.4%
KERATOCONJUNCTIVITIS	KERA	0.3%
BARTONELLOSIS	BART	0.3%
PRION & VIRAL DISEASES		
PRION DISEASES	PRIO	13.5%
BOVINE VIRAL DIARRHOEA	BVDV	5.7%
INFECTIOUS BOVINE RHINOTRACHEITIS	IBR	3.3%
FOOT-AND-MOUTH-DISEASE	FMDV	2.9%
BLUE-TONGUE	BLUE	2.5%
ROTAVIROSES	ROTA	2.3%
BOVINE LEUKAEMIA	LEUK	2.3%
RABIES	RABI	1.6%
CORONAVIROSIS	CORO	1.2%
RINDERPEST & PESTE-DES-PETITS-RUMINANTS	RIND	1.0%
BOVINE RESPIRATORY SYNCITIAL VIRUS	BRSV	0.9%
RIFT VALLEY FEVER	RIFT	0.6%
CAPRINE ARTHRITIS ENCEPHALITIS VIRUS	CAEV	0.6%
PARASITIC DISEASES		
INTESTINAL NEMATODOSES	NEMA	7.7%
ARTHROPOD PARASITES & VECTORS	ECTO	6.2%
NEOSPOROSIS & TOXOPLASMOSIS	NEOS	4.7%
BABESIOSIS & THEILERIOSIS	PIRO	4.2%
CRYPTOSPORIDIOSIS	CRYP	4.0%
TRYPANOSOMIASES	TRYP	2.9%
CESTODOSES	CEST	2.1%
TREMATODOSES	TREM	2.0%
COCCIDIOSIS	COCC	1.6%
SCHISTOSOMIASIS	SCHI	1.2%
LUNGWORMS	LUNG	0.6%
MONEZIASIS	MONI	0.2%
TOXOCARIASIS	TOXC	0.2%

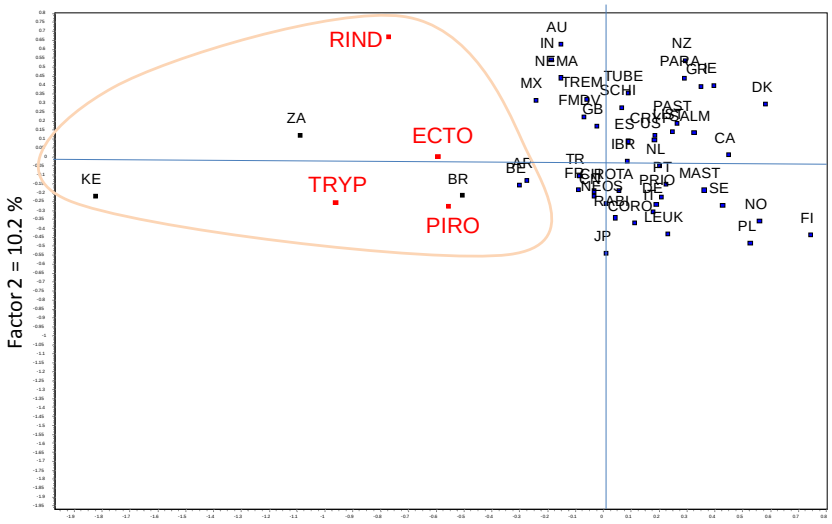
DISTRIBUTION OF DISEASES IN RUMINANTS (horizontal) ACCORDING TO COUNTRIES (vertical)

Disease abbreviations as in table of page 15. For each disease, countries with the five highest percentages are highlighted in red to better identify country "specialities".

	Code 2L	*Total line*	ANAP	BLUE	BRSV	BRUC	BVDV	CAMP	COCC	CORO	CRYP	ECTO	FMDV	IBR	LEUK	LIST	MAST	MYCP	NEMA	NEOS	PARA	PAST	PIRO	PRIO	RABI	RIND	ROTA	SALM	SCHI	TREM	TRYP	TUBE
ARGENTINA	**AR**	*198*	1.5%	0	0.0%	5.6%	7.6%	0.0%	0.0%	0.0%	1.0%	8.1%	6.6%	2.0%	5.1%	1.5%	12.1%	1.5%	4.5%	6.6%	2.0%	0.0%	5.6%	0.0%	1.0%	0.0%	3.5%	2.0%	0.0%	3.0%	4.0%	6.1%
AUSTRALIA	**AU**	*459*	0.4%	1%	0.0%	0.4%	3.1%	2.0%	0.4%	0.7%	6.5%	7.6%	4.1%	0.9%	0.4%	0.7%	2.6%	0.7%	20.9%	3.3%	10.2%	0.9%	2.4%	4.4%	0.0%	0.0%	1.3%	6.3%	2.0%	3.1%	2.0%	6.3%
BELGIUM	**BE**	*330*	0.6%	6%	0.9%	1.8%	3.6%	0.6%	1.2%	0.6%	3.9%	7.3%	2.7%	2.7%	3.6%	0.0%	13.0%	0.9%	7.0%	2.1%	3.3%	2.4%	7.6%	8.8%	1.8%	0.0%	4.2%	1.5%	1.2%	2.1%	8.5%	7.0%
BRAZIL	**BR**	*508*	2.0%	0%	0.8%	2.4%	1.8%	0.4%	1.6%	2.4%	1.0%	15.9%	1.4%	4.7%	1.0%	1.4%	9.3%	1.4%	7.7%	10.6%	1.6%	0.0%	4.5%	1.6%	2.8%	0.0%	2.8%	3.0%	0.6%	0.4%	5.7%	3.5%
CANADA	**CA**	*525*	1.1%	1%	1.7%	3.8%	6.5%	2.9%	0.6%	1.1%	4.6%	1.3%	1.7%	4.6%	3.6%	2.3%	18.7%	2.3%	3.6%	3.2%	7.0%	3.8%	0.6%	10.9%	1.7%	0.0%	1.1%	9.5%	1.0%	1.1%	0.8%	8.4%
CHINA	**CN**	*338*	0.0%	1%	0.0%	1.5%	4.7%	0.6%	1.8%	0.6%	4.7%	3.6%	7.1%	1.5%	3.3%	0.0%	11.2%	2.1%	3.3%	4.1%	0.0%	0.0%	7.7%	13.6%	3.6%	0.9%	2.1%	4.7%	6.5%	0.9%	1.8%	3.6%
DENMARK	**DK**	*189*	0.0%	0%	0.0%	2.6%	3.2%	1.6%	2.1%	0.0%	2.1%	0.0%	6.3%	0.0%	1.1%	1.1%	27.5%	0.5%	3.2%	1.6%	13.8%	5.8%	0.0%	4.8%	0.0%	0.0%	0.0%	8.5%	3.2%	3.2%	0.0%	5.8%
FINLAND	**FI**	*87*	0.0%	0%	2.3%	0.0%	5.7%	3.4%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	0.0%	2.3%	46.0%	2.3%	2.3%	0.0%	0.0%	3.4%	0.0%	0.0%	0.0%	0.0%	11.5%	6.9%	0.0%	0.0%	0.0%	0.0%
FRANCE	**FR**	*631*	0.0%	4%	1.9%	2.7%	4.1%	0.0%	1.1%	0.5%	1.9%	4.4%	1.0%	1.1%	2.2%	1.4%	8.9%	3.0%	7.6%	3.6%	1.9%	1.4%	4.1%	21.2%	1.4%	2.1%	1.6%	3.5%	0.3%	1.3%	4.0%	3.2%
GERMANY	**DE**	*617*	0.3%	5%	0.5%	1.0%	6.6%	1.5%	4.7%	0.6%	2.4%	1.8%	1.6%	2.3%	1.6%	1.1%	14.3%	1.1%	4.2%	5.5%	3.1%	1.9%	4.1%	15.7%	1.8%	0.0%	1.3%	5.2%	0.6%	0.5%	2.4%	3.6%
GREECE	**GR**	*116*	0.0%	0%	0.0%	5.2%	0.0%	0.0%	0.0%	0.0%	3.4%	4.3%	0.0%	0.0%	0.0%	6.9%	22.4%	2.6%	17.2%	0.0%	8.6%	7.8%	0.0%	6.9%	0.0%	0.0%	0.0%	3.4%	0.0%	1.7%	0.0%	2.6%
INDIA	**IN**	*423*	0.0%	3%	0.0%	6.9%	3.3%	0.5%	0.7%	0.0%	1.7%	3.1%	3.5%	3.5%	0.7%	1.9%	10.4%	0.9%	8.3%	1.2%	8.5%	4.5%	2.8%	1.2%	0.7%	8.5%	6.1%	4.0%	2.1%	2.8%	2.6%	6.4%
IRELAND	**IE**	*170*	0.0%	0%	0.0%	2.9%	0.0%	1.8%	0.0%	0.0%	4.1%	0.0%	2.4%	1.2%	0.0%	4.1%	20.0%	0.6%	3.5%	1.2%	8.2%	0.0%	0.0%	9.4%	0.0%	0.0%	2.4%	8.2%	1.8%	4.1%	1.8%	27.1%
ITALY	**IT**	*500*	1.0%	4%	0.8%	4.2%	5.2%	0.6%	0.4%	2.0%	2.6%	3.8%	2.0%	2.4%	1.2%	1.6%	13.8%	3.8%	2.6%	3.4%	2.4%	0.4%	2.8%	17.8%	0.6%	0.0%	4.2%	4.2%	0.0%	1.6%	2.0%	3.8%
JAPAN	**JP**	*531*	1.3%	1%	0.0%	1.9%	5.1%	0.9%	0.9%	2.4%	4.5%	5.1%	0.9%	0.6%	4.3%	0.4%	11.5%	0.8%	0.9%	4.0%	2.1%	0.9%	7.2%	18.6%	1.7%	0.0%	5.6%	4.5%	0.4%	0.8%	3.4%	1.3%
KENYA	**KE**	*97*	0.0%	0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.1%	25.8%	3.1%	0.0%	0.0%	0.0%	3.1%	5.2%	7.2%	0.0%	0.0%	2.1%	21.6%	0.0%	0.0%	6.2%	0.0%	0.0%	0.0%	0.0%	32.0%	3.1%
MEXICO	**MX**	*181*	1.7%	0%	0.0%	12.2%	1.7%	0.0%	2.8%	0.0%	2.8%	11.6%	0.0%	1.7%	0.0%	1.7%	9.9%	2.8%	10.5%	4.4%	1.7%	4.4%	7.2%	0.0%	0.0%	0.0%	1.7%	4.4%	1.7%	7.7%	0.0%	8.8%
NETHERLANDS	**NL**	*328*	1.2%	6%	1.8%	1.5%	5.2%	0.9%	1.2%	1.5%	1.2%	4.9%	4.9%	3.4%	0.9%	1.5%	18.6%	1.2%	4.3%	3.7%	7.3%	0.0%	3.7%	11.6%	3.0%	0.0%	1.2%	6.7%	0.6%	0.6%	1.2%	7.9%
NEW_ZEALAND	**NZ**	*270*	0.0%	0%	0.0%	1.5%	1.1%	4.8%	0.0%	0.0%	5.9%	1.1%	1.1%	1.5%	0.7%	0.0%	17.8%	2.2%	19.6%	3.0%	10.0%	1.1%	0.0%	4.4%	0.7%	0.0%	1.9%	5.6%	0.0%	0.0%	0.0%	16.3%
NORWAY	**NO**	*149*	5.4%	0%	1.3%	5.4%	0.0%	0.0%	2.7%	1.3%	5.4%	0.0%	0.0%	4.0%	0.0%	0.0%	38.3%	0.0%	0.0%	2.7%	3.4%	1.3%	1.3%	14.1%	0.0%	0.0%	0.0%	1.3%	0.0%	0.0%	2.0%	8.1%
POLAND	**PL**	*160*	2.5%	4%	0.0%	0.0%	2.5%	2.5%	1.3%	0.0%	1.9%	0.0%	2.5%	2.5%	11.3%	1.3%	28.8%	0.6%	2.5%	6.9%	3.1%	5.6%	1.9%	14.4%	1.9%	0.0%	1.3%	3.8%	0.0%	2.5%	0.0%	0.0%
PORTUGAL	**PT**	*98*	2.0%	2%	0.0%	5.1%	0.0%	0.0%	0.0%	0.0%	4.1%	2.0%	0.0%	0.0%	2.0%	4.1%	20.4%	2.0%	3.1%	8.2%	3.1%	2.0%	9.2%	5.1%	0.0%	0.0%	0.0%	6.1%	0.0%	0.0%	0.0%	9.2%
SOUTH_AFRICA	**ZA**	*210*	4.8%	5%	0.0%	2.9%	0.0%	0.0%	0.0%	0.0%	1.0%	22.9%	2.9%	1.4%	0.0%	0.0%	5.7%	1.4%	10.0%	0.0%	2.4%	1.0%	14.3%	0.0%	0.0%	1.0%	1.0%	0.0%	0.0%	1.0%	9.5%	11.9%
SPAIN	**ES**	*598*	1.5%	2%	0.0%	4.3%	4.0%	1.2%	0.7%	0.5%	4.2%	6.5%	1.2%	0.7%	1.2%	3.7%	7.2%	3.2%	5.4%	9.2%	6.0%	1.0%	3.0%	14.2%	0.0%	0.0%	1.0%	5.4%	1.8%	3.3%	0.8%	9.2%
SWEDEN	**SE**	*204*	2.9%	0%	2.0%	0.0%	9.3%	0.0%	2.9%	2.9%	2.9%	0.0%	0.0%	1.0%	2.0%	0.0%	31.9%	2.0%	9.8%	7.8%	2.0%	1.0%	0.0%	5.4%	0.0%	0.0%	4.4%	1.0%	1.0%	0.0%	1.0%	3.9%
SWITZERLAND	**CH**	*283*	1.8%	4%	0.0%	1.4%	8.5%	1.8%	0.7%	0.0%	1.1%	3.5%	0.7%	2.5%	0.7%	0.7%	10.2%	6.4%	8.1%	9.5%	1.1%	1.8%	4.6%	14.5%	1.4%	0.0%	1.1%	3.9%	0.0%	2.1%	2.8%	4.9%
TURKEY	**TR**	*313*	1.3%	3%	1.3%	7.0%	7.3%	1.3%	2.9%	1.3%	1.6%	4.8%	1.6%	7.0%	1.0%	3.5%	16.6%	2.2%	4.2%	3.5%	1.6%	2.6%	9.9%	2.6%	0.0%	2.2%	1.3%	3.2%	0.0%	3.2%	0.0%	1.3%
UK	**UK**	*1392*	0.4%	4%	0.8%	1.6%	2.5%	1.1%	0.8%	0.9%	2.4%	3.7%	6.2%	2.4%	1.1%	1.1%	7.2%	2.9%	8.5%	2.4%	3.2%	1.3%	2.9%	17.7%	0.7%	0.9%	0.9%	3.2%	1.2%	1.9%	3.2%	14.0%
USA	**US**	*2853*	1.6%	1%	0.7%	2.7%	5.5%	1.6%	0.9%	1.1%	3.6%	6.4%	2.0%	3.4%	1.9%	2.0%	9.9%	3.8%	3.8%	2.6%	8.1%	2.3%	2.7%	10.4%	1.4%	0.3%	2.3%	10.5%	0.9%	0.6%	1.2%	7.4%

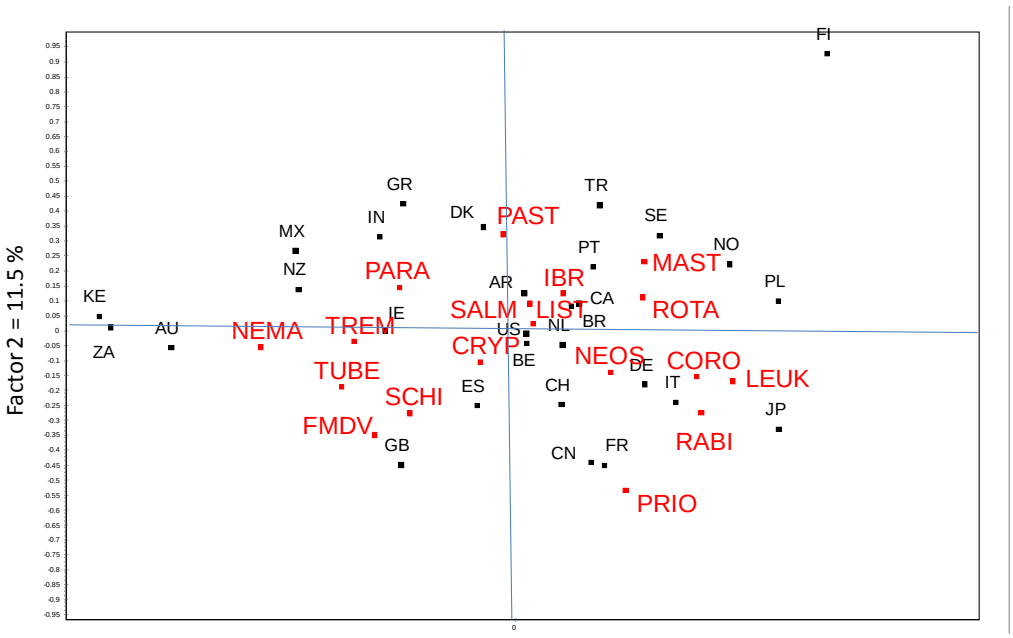
LINKAGE BETWEEN RUMINANT DISEASES AND COUNTRIES (disease abbreviations in table of page 15)
The conclusions are drawn from both the factorial correspondence analysis scatterplots below (which only gives an oversimplified representation of factor proximity in two dimensions) and the detailed table of distribution of the previous page.

First run of analysis (22.6% of total inertia) Strongest associations: Rinderpest (RIND), Trypanosomiases (TRYP), Ectoparasitoses (ECTO), and Piroplasmoses (PIRO) with such countries as Kenya (KE) , South Africa (ZA) and Brazil (BR). These diseases were omitted in the second run below.



Factor 1 = 12.4%

Second run of analysis (24.8% of total inertia) Strongest associations: Nematodoses (NEMA) with Australia (AU), New Zealand (NZ), Kenya (KE), South Africa (ZA), and Mexico (MX); Mastitis (MAST) with Norway (NO), Finland (FI), Sweden (SE), Poland (PO); Paratuberculosis with Ireland (IE), Denmark (DK), India (IN), Greece (GR); Prion Diseases (PRIO) with France (FR), China (CN), Switzerland (CH) and UK (GB); FMD with UK (GB).



Factor 1 = 13.3 %

GLOBAL RANKING OF MAJOR POULTRY DISEASES

9132 publications

BACTERIAL DISEASES		
SALMONELLOSIS	SALM	13.9%
CAMPYLOBACTERIOSIS	CAMP	9.3%
STREPTOCOCCUS & ENTEROCOCCUS INFECTIONS	STRE	3.3%
LISTERIOSIS	LIST	3.2%
MYCOTOXINS	MYCT	2.7%
STAPHYLOCOCCUS INFECTIONS	STAP	2.4%
MYCOSES	MYCS	1.9%
MYCOPLASMOSES	MYCP	1.8%
CLOSTRIDIUM INFECTIONS	CLOS	1.5%
FOWL CHOLERA	CHOL	1.3%
PATHOGENIC E COLI	COLI	1.3%
TUBERCULOSIS	TUBE	1.2%
SPIROCHETOSIS	SPIR	0.9%
BOTULISM	BOTU	0.4%
HAEMOPHILUS & ORNITHOBACTERIUM INFECTIONS	HAEM	0.3%
VIRAL DISEASES		
INFLUENZA	INFL	21.3%
MAREK DISEASE & OTHER HERPESVIROSES	HERP	4.3%
WEST NILE	WEST	3.6%
NEWCASTLE DISEASE	NEWC	3.5%
INFECTIOUS BRONCHITIS	INBR	2.7%
AVIAN LEUKOSIS	LEUK	2.6%
AVIAN ADENOVIROSES	ADEN	2.2%
FOWLPOX	POXV	2.1%
INFECTIOUS BURSITIS	INBU	2.0%
AVIAN ENCEPHALOMYELITIS & OTHER PICORNAVIROSES	PICO	1.2%
CHICKEN INFECTIOUS ANAEMIA	ANEM	1.0%
TURKEY RHINOTRACHEITIS	PNEU	0.9%
VIRAL ARTHRITIS & AVIAN ORTHOREOVIROSES	ARTH	0.9%
RETICULOENDOTHELIOSIS	RETI	0.5%
PARASITIC DISEASES		
INSECT VECTORS & PARASITES	INSE	5.3%
COCCIDIOSIS	COCC	4.2%
NEMATODOSES	NEMA	3.8%
PLASMODIUM INFECTION	PLAS	3.7%
LICE INFESTATION	LICE	3.1%
CESTODOSES	CEST	1.0%

DISTRIBUTION OF DISEASES IN POULTRY (horizontal) ACCORDING TO COUNTRIES (vertical)

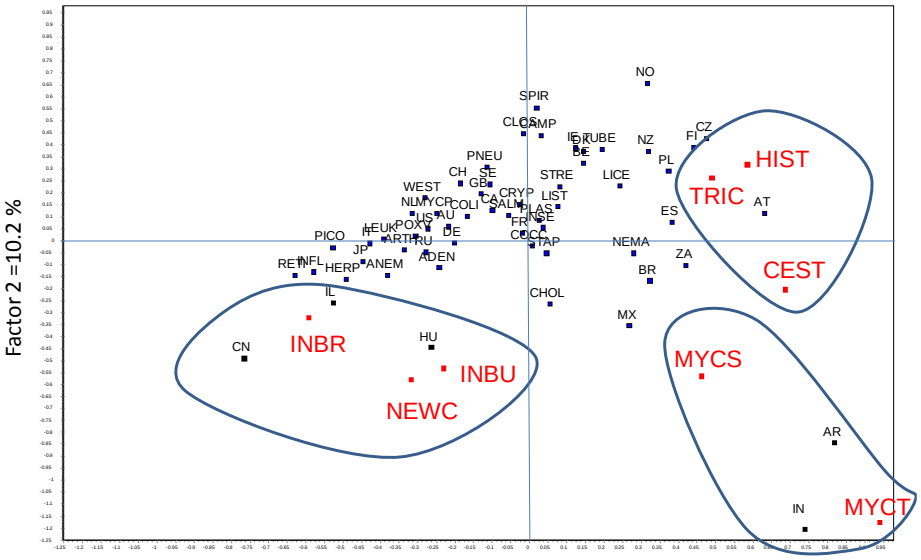
Disease abbreviations as in table of page 18. For each disease, countries with the five highest percentages are highlighted in red to better identify country "specialities".

	Code 2L	*Total line*	ADEN	CAMP	CHOL	CLOS	COCC	COLI	HERP	INBR	INBU	INFL	INSE	LEUK	LICE	LIST	MYCP	MYCS	MYCT	NEMA	NEWC	PLAS	POXV	SALM	STAP	STRE	WEST
ARGENTINA	**AR**	*83*	1.2%	2.4%	1.2%	0.0%	1.2%	0.0%	2.4%	4.8%	2.4%	9.6%	16.9%	2.4%	12.0%	1.2%	0.0%	19.3%	19.3%	13.3%	6.0%	2.4%	2.4%	8.4%	0.0%	0.0%	1.2%
AUSTRALIA	**AU**	*349*	0.9%	8.6%	3.2%	2.6%	4.0%	1.1%	7.2%	4.3%	0.9%	20.9%	9.7%	1.4%	4.3%	1.1%	4.3%	0.9%	0.3%	5.4%	3.7%	1.7%	6.3%	10.3%	0.9%	1.4%	2.0%
AUSTRIA	**AT**	*90*	5.6%	12.2%	1.1%	2.2%	10.0%	1.1%	0.0%	0.0%	0.0%	13.3%	1.1%	3.3%	3.3%	5.6%	3.3%	5.6%	10.0%	6.7%	1.1%	1.1%	3.3%	11.1%	4.4%	3.3%	6.7%
BELGIUM	**BE**	*198*	2.0%	22.7%	0.5%	5.6%	4.0%	3.0%	2.0%	0.5%	2.0%	13.1%	1.0%	0.5%	3.0%	4.0%	0.0%	3.5%	2.5%	1.0%	3.5%	0.5%	1.5%	23.7%	3.5%	7.1%	1.0%
BRAZIL	**BR**	*282*	0.0%	6.7%	0.4%	0.4%	11.0%	1.8%	3.5%	5.3%	2.8%	1.8%	11.3%	2.5%	6.4%	2.5%	3.5%	6.7%	7.1%	6.4%	4.3%	4.3%	2.8%	20.9%	3.9%	3.5%	0.0%
CANADA	**CA**	*453*	5.1%	14.6%	1.8%	6.6%	2.9%	2.0%	8.6%	3.5%	2.0%	18.3%	5.1%	1.5%	3.3%	2.9%	0.0%	0.7%	3.1%	4.6%	1.8%	2.0%	1.8%	17.4%	2.6%	3.1%	3.8%
CHINA	**CN**	*836*	1.8%	1.1%	1.3%	0.7%	4.4%	0.5%	8.3%	7.3%	5.3%	48.1%	0.5%	2.6%	0.2%	1.4%	0.7%	1.8%	1.3%	1.6%	9.3%	1.1%	2.0%	6.8%	1.9%	1.3%	0.1%
CZECH REPUBLIC	**CZ**	*100*	2.0%	9.0%	3.0%	2.0%	4.0%	0.0%	0.0%	0.0%	0.0%	7.0%	6.0%	5.0%	16.0%	2.0%	0.0%	0.0%	4.0%	4.0%	0.0%	4.0%	1.0%	12.0%	1.0%	1.0%	4.0%
DENMARK	**DK**	*165*	0.0%	27.9%	7.3%	7.3%	5.5%	1.2%	2.4%	0.6%	4.2%	11.5%	5.5%	0.6%	2.4%	3.6%	0.0%	0.0%	0.6%	5.5%	1.8%	1.2%	0.6%	20.6%	2.4%	9.7%	0.0%
FINLAND	**FI**	*58*	0.0%	31.0%	0.0%	1.7%	12.1%	0.0%	0.0%	0.0%	0.0%	5.2%	6.9%	1.7%	0.0%	15.5%	0.0%	0.0%	6.9%	6.9%	0.0%	1.7%	0.0%	19.0%	1.7%	6.9%	1.7%
FRANCE	**FR**	*336*	2.7%	7.7%	1.2%	0.6%	3.9%	2.7%	3.3%	0.6%	3.0%	21.7%	4.5%	2.7%	6.3%	3.9%	1.8%	3.0%	3.0%	2.4%	3.6%	7.1%	2.4%	15.8%	1.8%	3.0%	5.1%
GERMANY	**DE**	*408*	2.5%	11.5%	1.2%	0.5%	4.7%	1.7%	3.7%	1.5%	1.2%	31.9%	2.7%	2.5%	2.2%	2.5%	2.7%	2.5%	2.5%	3.9%	3.9%	2.2%	3.4%	13.0%	1.7%	1.7%	1.2%
HUNGARY	**HU**	*78*	9.0%	2.6%	7.7%	0.0%	2.6%	1.3%	3.8%	2.6%	1.3%	19.2%	1.3%	2.6%	3.8%	0.0%	3.8%	0.0%	5.1%	0.0%	16.7%	5.1%	2.6%	9.0%	0.0%	3.8%	5.1%
INDIA	**IN**	*272*	2.2%	1.8%	4.4%	0.0%	3.3%	0.7%	2.9%	1.1%	7.4%	9.2%	2.2%	0.7%	1.5%	2.9%	0.4%	8.1%	26.8%	5.9%	9.9%	4.0%	0.7%	14.0%	4.8%	2.6%	0.4%
IRELAND	**IE**	*51*	0.0%	21.6%	0.0%	2.0%	7.8%	0.0%	0.0%	0.0%	0.0%	15.7%	0.0%	2.0%	0.0%	9.8%	0.0%	3.9%	0.0%	2.0%	0.0%	0.0%	2.0%	37.3%	9.8%	3.9%	0.0%
ISRAEL	**IL**	*70*	2.9%	0.0%	2.9%	0.0%	1.4%	0.0%	10.0%	4.3%	4.3%	34.3%	4.3%	7.1%	1.4%	1.4%	2.9%	0.0%	2.9%	8.6%	1.4%	5.7%	4.3%	2.9%	1.4%	1.4%	5.7%
ITALY	**IT**	*230*	0.9%	9.1%	0.0%	1.3%	1.7%	0.0%	2.2%	3.5%	0.9%	42.6%	1.3%	1.7%	1.7%	3.0%	0.9%	3.0%	1.3%	4.3%	0.4%	0.9%	4.3%	12.2%	2.2%	3.5%	3.5%
JAPAN	**JP**	*426*	3.8%	4.2%	0.9%	0.5%	1.2%	1.4%	4.7%	2.3%	1.6%	40.6%	4.0%	4.0%	1.9%	1.6%	0.9%	1.2%	0.7%	3.3%	4.2%	3.5%	0.5%	15.5%	3.3%	5.2%	2.1%
MEXICO	**MX**	*85*	2.4%	4.7%	3.5%	2.4%	8.2%	2.4%	4.7%	1.2%	3.5%	12.9%	9.4%	0.0%	0.0%	3.5%	1.2%	1.2%	10.6%	10.6%	5.9%	5.9%	0.0%	17.6%	2.4%	1.2%	3.5%
NETHERLANDS	**NL**	*298*	2.3%	18.5%	0.3%	1.3%	4.7%	3.4%	3.0%	4.7%	2.7%	33.9%	1.7%	2.0%	1.7%	1.3%	2.3%	0.3%	1.0%	1.7%	4.4%	1.0%	1.0%	16.8%	1.7%	3.0%	1.3%
NEW ZEALAND	**NZ**	*93*	1.1%	31.2%	2.2%	2.2%	3.2%	0.0%	1.1%	1.1%	2.2%	11.8%	2.2%	1.1%	4.3%	2.2%	0.0%	5.4%	0.0%	12.9%	0.0%	7.5%	2.2%	15.1%	1.1%	5.4%	0.0%
NORWAY	**NO**	*70*	0.0%	25.7%	1.4%	5.7%	7.1%	0.0%	1.4%	0.0%	0.0%	11.4%	1.4%	0.0%	8.6%	4.3%	0.0%	0.0%	1.4%	5.7%	0.0%	5.7%	0.0%	7.1%	5.7%	12.9%	0.0%
POLAND	**PL**	*111*	4.5%	13.5%	0.9%	2.7%	4.5%	1.8%	1.8%	0.0%	0.9%	7.2%	4.5%	0.0%	20.7%	0.9%	1.8%	4.5%	1.8%	9.0%	3.6%	0.9%	0.0%	15.3%	4.5%	6.3%	3.6%
RUSSIA	**RU**	*103*	5.8%	5.8%	1.9%	0.0%	3.9%	0.0%	1.9%	3.9%	1.0%	41.7%	3.9%	2.9%	12.6%	4.9%	1.0%	1.9%	1.0%	3.9%	1.9%	6.8%	0.0%	3.9%	3.9%	1.9%	2.9%
SOUTH AFRICA	**ZA**	*77*	0.0%	5.2%	2.6%	0.0%	1.3%	0.0%	1.3%	0.0%	0.0%	16.9%	19.5%	0.0%	11.7%	2.6%	1.3%	2.6%	3.9%	14.3%	6.5%	7.8%	0.0%	9.1%	3.9%	2.6%	0.0%
SPAIN	**ES**	*280*	1.4%	9.6%	0.4%	1.1%	5.0%	0.7%	0.4%	0.7%	2.1%	6.1%	6.1%	1.4%	2.5%	12.5%	1.8%	3.6%	5.7%	7.5%	2.5%	8.6%	1.1%	19.3%	4.3%	10.7%	3.9%
SWEDEN	**SE**	*146*	0.0%	12.3%	3.4%	1.4%	5.5%	0.7%	0.7%	0.7%	0.7%	27.4%	4.1%	2.1%	5.5%	1.4%	0.7%	0.7%	0.0%	2.7%	4.1%	19.9%	0.7%	10.3%	2.1%	5.5%	1.4%
SWITZERLAND	**CH**	*111*	1.8%	10.8%	0.9%	0.9%	4.5%	0.9%	5.4%	0.0%	0.0%	31.5%	10.8%	1.8%	4.5%	2.7%	2.7%	0.9%	0.0%	5.4%	0.9%	0.0%	1.8%	5.4%	1.8%	1.8%	0.9%
UK	**GB**	*694*	1.2%	18.7%	0.4%	1.4%	3.5%	0.3%	6.8%	2.7%	1.9%	22.0%	2.6%	2.3%	4.8%	2.3%	1.7%	1.7%	1.0%	4.3%	1.9%	5.9%	2.9%	18.3%	2.4%	1.9%	1.3%
USA	**US**	*3109*	3.1%	9.1%	1.0%	1.5%	3.7%	1.5%	5.5%	2.6%	2.0%	26.3%	6.9%	4.5%	2.9%	4.0%	2.7%	1.5%	1.5%	2.2%	3.4%	3.9%	2.3%	16.7%	2.1%	3.0%	7.7%

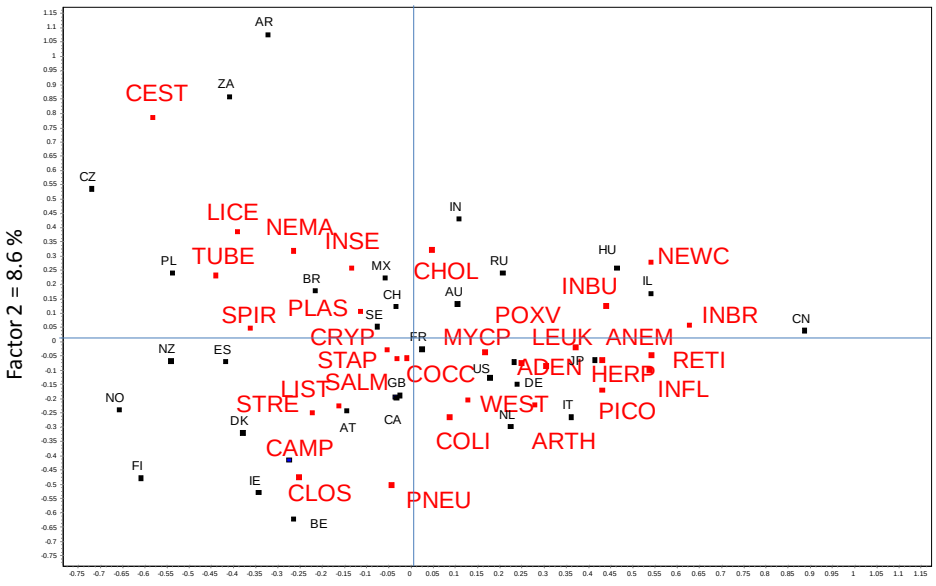
LINKAGE BETWEEN POULTRY DISEASES AND COUNTRIES (disease abbreviations in table of page 18)

The conclusions are drawn from both the factorial correspondence analysis scatterplots below (which only gives an overly simplified representation of factor proximity in two dimensions) and the detailed table of distribution of the previous page.

First run of analysis (21,3% of total inertia). Some diseases were clear outliers in the scatterplot, accounting for most of the variability observed: Infectious Bronchitis (INBR) - strongly associated with China (CN), Newcastle Disease - with Hungary (HU), Infectious Bursitis (INBU), Mycotoxins intoxications (MYCT) and Mycoses (MYCS)– with Argentina and India, Cestodoses (CEST), Histomoniasis (HIST) and Trichinosis (TRIC). These diseases were omitted in the second run below.



Second run of analysis (21.4% of total inertia) Strongest associations: Campylobacter (CAMP) with New Zealand (NZ), Finland (FI) and Denmark (DK); Influenza with China (CN), Italy & Japan (JP); Salmonellosis with Denmark (DK), Belgium (BE), Brazil (BR); Lice with Poland (PL) and Czech Republic (CZ); Herpes Viroses with Israël (IL), Czech Republic (CZ), China (CN). Insects and Parasite Vectors (INSE) with South Africa (ZA) and Argentina (AR).



GLOBAL RANKING OF MAJOR PIG DISEASES

4838 publications

BACTERIAL DISEASES		
SALMONELLOSIS	SALM	15.1%
STREPTOCOCCUS & ENTEROCOCCUS INFECTIONS	STRE	10.4%
STAPHYLOCOCCUS INFECTIONS	STAP	6.6%
MYCOTOXICOSES	MYCT	5.7%
TUBERCULOSIS	TUBE	5.3%
COLIBACILLOSIS	COLI	4.6%
CAMPYLOBACTERIOSIS	CAMP	4.5%
MYCOPLASMOSES	MYCP	4.5%
CLOSTRIDIUM INFECTIONS	CLOS	4.2%
ATROPHIC RHINITIS	ATRH	2.9%
YERSINIOSIS	YERS	2.7%
PROLIFERATIVE ENTERITIS (LAWSONIA)	LAWS	1.7%
SWINE DYSENTERY (BRACHYSPIRA)	SWDY	1.7%
BRUCELLOSIS	BRUC	1.4%
MASTITIS AGALACTIA	MAAG	1.0%
VIRAL DISEASES		
INFLUENZA	INFL	15.2%
CLASSICAL SWINE FEVER	CSFV	9.6%
POST WEANING MULTISYSTEMIC WASTING SYNDROME (CIRCOVIRUSES)	PMWS	9.4%
AUJESZKY DISEASE	AUJE	8.5%
PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME (ARTERIVIRUSES)	PRRS	8.1%
ROTAVIROSES	ROTA	6.2%
FOOT AND MOUTH DISEASE	FMDV	5.5%
HEPATITIS E	HEPA	4.6%
CORONAVIROSES	CORO	3.4%
AFRICAN SWINE FEVER	ASFV	3.3%
INFECTIOUS INFERTILITY (PARVOVIRUSES)	ININ	3.1%
JAPANESE ENCEPHALITIS	JAEN	1.1%
PARASITIC DISEASES		
NEMATODOSES	NEMA	5.6%
CESTODOSES	CEST	5.5%
ARTHROPOD PARSITES & VECTORS	ECTO	4.8%
TRICHINOSIS	TRIC	2.3%
TOXOPLASMOSIS	TOXO	2.0%
CRYPTOSPORIDIOSIS	CRYP	1.0%
COCCIDIOSIS	COCC	0.9%

DISTRIBUTION OF DISEASES IN PIGS(horizontal) ACCORDING TO COUNTRIES (vertical)

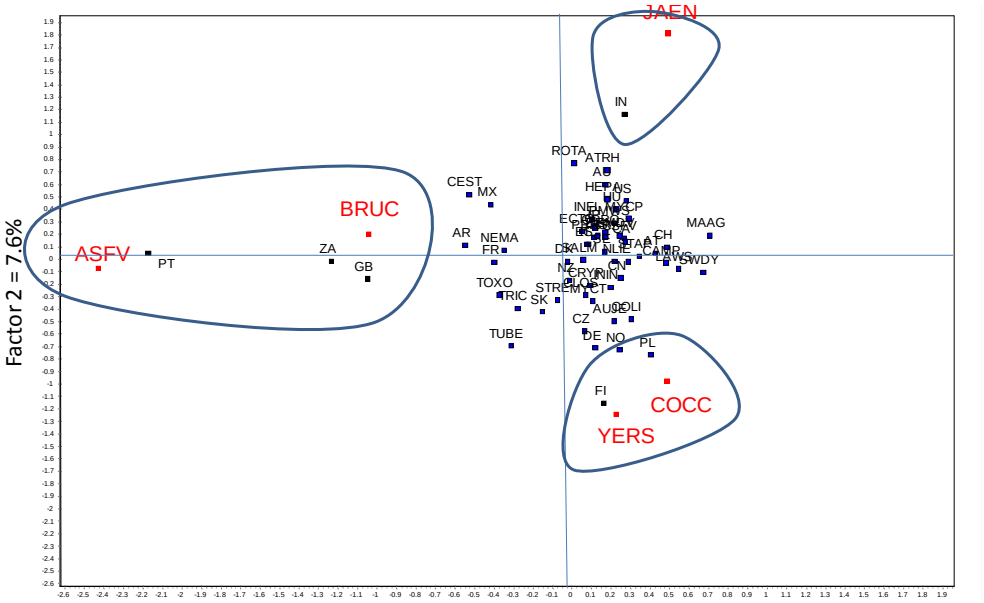
Disease abbreviations as in table of page 21. For each disease, countries with the five highest percentages are highlighted in red to better identify country "specialities".

	Code	*Total*	ASFV	AUJE	CAMP	COLI	CORO	CSFV	ECTO	FMDV	HEPA	INFL	ININ	MYCP	MYCT	NEMA	PMWS	PRRS	ROTA	SALM	STAP	STRE	TUBE
ARGENTINA	AR	*49*	6.1%	8.2%	0.0%	0.0%	4.1%	2.0%	10.2%	4.1%	2.0%	2.0%	2.0%	0.0%	10.2%	6.1%	2.0%	0.0%	10.2%	4.1%	4.1%	0.0%	2.0%
AUSTRALIA	AU	*196*	0.5%	1.5%	4.1%	1.5%	2.0%	4.1%	4.6%	4.6%	1.0%	11.2%	0.0%	5.1%	2.0%	3.1%	6.1%	0.0%	4.1%	4.1%	2.0%	1.0%	1.5%
AUSTRIA	AT	*78*	0.0%	2.6%	1.3%	1.3%	5.1%	6.4%	3.8%	1.3%	2.6%	3.8%	1.3%	6.4%	2.6%	1.3%	6.4%	2.6%	1.3%	6.4%	3.8%	5.1%	2.6%
BELGIUM	BE	*242*	0.4%	6.2%	2.9%	6.2%	2.1%	6.6%	3.3%	2.1%	0.0%	6.6%	1.2%	3.7%	2.9%	2.9%	5.4%	7.0%	2.1%	12.4%	5.4%	1.2%	1.2%
BRAZIL	BR	*188*	0.0%	4.8%	2.1%	4.3%	1.1%	1.6%	6.9%	0.5%	1.6%	4.3%	2.1%	10.1%	3.2%	1.6%	8.0%	1.6%	5.9%	10.6%	2.7%	3.7%	1.6%
CANADA	CA	*453*	0.9%	2.2%	3.5%	4.0%	1.5%	2.9%	2.6%	1.3%	1.1%	11.5%	2.6%	2.6%	4.4%	2.9%	6.0%	3.3%	0.7%	13.7%	4.2%	11.5%	1.1%
CHINA	CN	*768*	0.1%	7.4%	0.1%	1.8%	4.4%	9.6%	0.8%	4.7%	4.8%	11.2%	3.1%	0.8%	1.4%	2.6%	6.6%	10.5%	1.8%	4.4%	3.0%	8.6%	1.0%
CZECH REPUBLIC	CZ	*99*	1.0%	6.1%	1.0%	5.1%	1.0%	5.1%	1.0%	0.0%	1.0%	4.0%	1.0%	1.0%	3.0%	3.0%	6.1%	2.0%	2.0%	10.1%	3.0%	3.0%	18.2%
DENMARK	DK	*254*	0.4%	1.6%	5.1%	0.4%	0.0%	3.1%	4.7%	3.1%	0.8%	2.8%	0.4%	2.0%	2.0%	9.1%	5.1%	0.8%	1.6%	16.1%	5.1%	6.3%	1.2%
FINLAND	FI	*84*	0.0%	16.7%	1.2%	4.8%	0.0%	2.4%	1.2%	0.0%	0.0%	1.2%	2.4%	0.0%	3.6%	0.0%	1.2%	0.0%	0.0%	11.9%	1.2%	9.5%	14.3%
FRANCE	FR	*249*	2.8%	5.6%	2.4%	1.6%	1.6%	6.0%	4.4%	2.4%	4.0%	5.6%	2.4%	2.4%	8.0%	5.2%	6.0%	2.4%	1.2%	6.8%	1.2%	5.6%	2.8%
GERMANY	DE	*624*	0.8%	7.4%	1.9%	4.3%	1.3%	8.2%	2.6%	1.0%	1.4%	5.4%	1.4%	3.8%	7.7%	1.8%	3.2%	2.1%	0.3%	8.3%	5.9%	9.8%	3.2%
HUNGARY	HU	*70*	1.4%	5.7%	1.4%	4.3%	5.7%	1.4%	5.7%	1.4%	2.9%	8.6%	1.4%	0.0%	7.1%	1.4%	12.9%	4.3%	15.7%	1.4%	1.4%	1.4%	0.0%
INDIA	IN	*103*	0.0%	1.9%	0.0%	1.9%	1.0%	12.6%	1.9%	5.8%	8.7%	5.8%	1.0%	0.0%	1.9%	2.9%	2.9%	0.0%	18.4%	2.9%	1.9%	0.0%	1.9%
IRELAND	IE	*53*	0.0%	3.8%	7.5%	3.8%	0.0%	1.9%	0.0%	3.8%	0.0%	7.5%	0.0%	0.0%	0.0%	1.9%	3.8%	0.0%	5.7%	45.3%	5.7%	1.9%	1.9%
ITALY	IT	*243*	0.8%	3.3%	1.6%	0.8%	4.5%	3.7%	1.6%	2.5%	1.6%	11.1%	2.9%	1.2%	7.8%	6.6%	3.3%	3.7%	6.6%	6.6%	2.5%	7.4%	1.6%
JAPAN	JP	*331*	0.6%	4.2%	1.8%	1.2%	2.4%	4.5%	0.9%	1.2%	11.8%	10.0%	1.2%	1.5%	0.6%	3.6%	3.3%	2.4%	10.6%	7.9%	3.0%	6.3%	1.8%
MEXICO	MX	*116*	0.0%	2.6%	0.0%	2.6%	0.0%	3.4%	2.6%	0.0%	0.0%	7.8%	0.0%	3.4%	0.9%	6.0%	2.6%	6.9%	2.6%	6.9%	0.0%	2.6%	3.4%
NETHERLANDS	NL	*236*	0.0%	4.7%	4.7%	1.7%	2.5%	10.6%	0.8%	7.2%	4.2%	9.7%	0.8%	0.4%	5.1%	3.8%	0.4%	2.5%	0.0%	9.7%	11.9%	7.2%	2.1%
NEW ZEALAND	NZ	*50*	0.0%	2.0%	10.0%	4.0%	0.0%	2.0%	2.0%	6.0%	2.0%	6.0%	0.0%	0.0%	2.0%	10.0%	10.0%	4.0%	0.0%	14.0%	2.0%	6.0%	12.0%
NORWAY	NO	*45*	0.0%	11.1%	17.8%	2.2%	0.0%	4.4%	2.2%	2.2%	0.0%	0.0%	4.4%	0.0%	2.2%	2.2%	8.9%	0.0%	0.0%	4.4%	0.0%	6.7%	11.1%
POLAND	PL	*110*	0.0%	10.9%	1.8%	4.5%	0.0%	2.7%	2.7%	5.5%	0.0%	5.5%	0.0%	0.9%	9.1%	3.6%	0.9%	3.6%	0.9%	5.5%	2.7%	3.6%	1.8%
PORTUGAL	PT	*53*	28.3%	0.0%	0.0%	0.0%	0.0%	3.8%	0.0%	0.0%	0.0%	3.8%	0.0%	0.0%	1.9%	3.8%	0.0%	0.0%	5.7%	11.3%	0.0%	11.3%	7.5%
SLOVAKIA	SK	*44*	0.0%	6.8%	0.0%	2.3%	2.3%	2.3%	4.5%	2.3%	0.0%	4.5%	0.0%	0.0%	2.3%	6.8%	2.3%	0.0%	2.3%	2.3%	2.3%	18.2%	6.8%
SOUTH AFRICA	ZA	*45*	15.6%	4.4%	0.0%	2.2%	0.0%	0.0%	4.4%	4.4%	2.2%	4.4%	2.2%	0.0%	0.0%	8.9%	6.7%	0.0%	6.7%	2.2%	0.0%	6.7%	11.1%
SPAIN	ES	*464*	9.1%	6.3%	0.6%	1.9%	1.9%	3.2%	2.4%	2.8%	3.9%	1.7%	2.2%	3.0%	1.9%	2.6%	11.4%	5.0%	1.1%	6.5%	3.9%	7.8%	7.5%
SWEDEN	SE	*149*	1.3%	2.7%	1.3%	3.4%	0.0%	8.7%	2.0%	4.0%	4.0%	6.0%	4.7%	1.3%	4.0%	0.0%	7.4%	0.7%	3.4%	9.4%	6.0%	4.7%	2.0%
SWITZERLAND	CH	*183*	0.5%	6.0%	4.9%	4.4%	1.1%	10.9%	2.2%	2.2%	0.0%	4.4%	2.2%	8.7%	2.7%	2.7%	3.8%	1.1%	1.6%	4.9%	4.4%	2.7%	2.2%
UK	GB	*492*	5.3%	5.7%	4.3%	0.4%	1.8%	5.5%	2.8%	9.8%	3.9%	7.3%	2.0%	1.8%	1.4%	3.5%	5.7%	2.0%	1.6%	8.1%	1.6%	5.5%	3.5%
USA	US	*1652*	1.3%	3.2%	3.0%	3.0%	2.2%	4.1%	3.1%	2.5%	1.5%	14.6%	1.9%	3.0%	1.6%	1.9%	5.9%	9.1%	4.2%	10.0%	4.4%	4.5%	2.1%

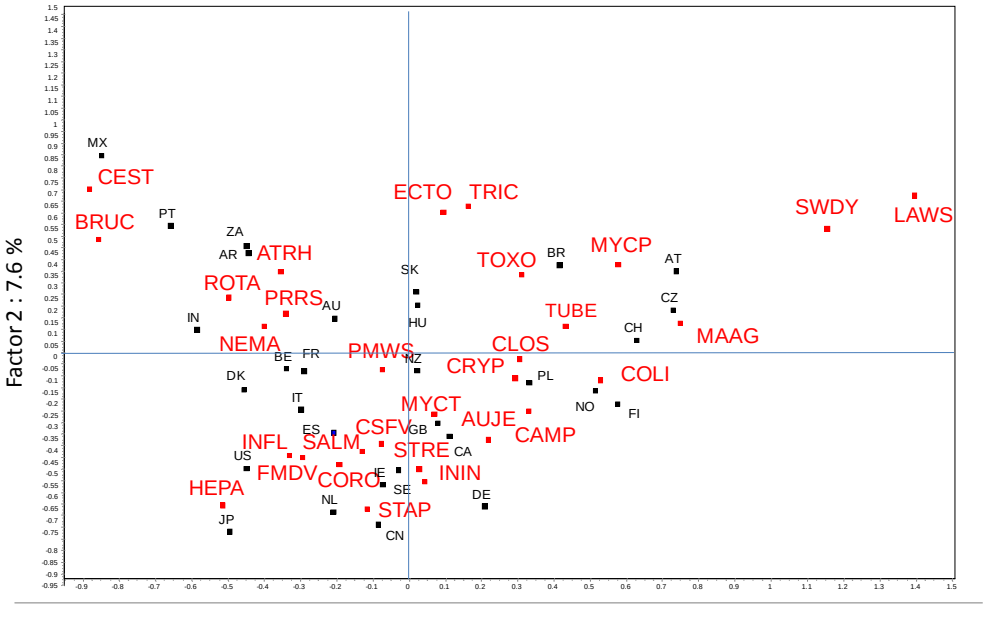
LINKAGE BETWEEN PIG DISEASES AND COUNTRIES (disease abbreviations in table of page 21)

The conclusions are drawn from both the factorial correspondence analysis scatterplots below (which only gives an overly simplified representation of factor proximity in two dimensions) and the detailed table of distribution of the previous page.

First run of analysis (15.9% of total inertia). Strong association between Japanese Encephalitis (JAEN) and India (IN); African Swine Fever (ASFV) with Portugal (PT); Yersiniosis (YERS) and Coccidiosis (COCC) with Finland. These diseases were omitted in the second run below.



First run of analysis (15.4% of total inertia). Classical Swine Fever with Netherlands (NL), India (IN) & Switzerland (CH); Aujeszky Disease (AUJE) with Finland (FI, Norway (NO) and Poland (PL); Influenza (INFL) with USA (US), China (CN), Canada (CN) & Italy (IT); Post Weaning Multisystemic Wasting Syndrome (PWMS) with Hungary (HU), Spain (ES), New Zealand (NZ); Porcine Reproductive and Respiratory Syndrome with USA (US) and China (CN); Salmonellosis (SALM) with Ireland (IE), Denmark (DK) and New Zealand (NZ); Streptococcoses (STRE) with Portugal (PT), Slovakia (SK), Canada (CN).



GLOBAL RANKING OF MAJOR HORSE DISEASES

1669 publications

BACTERIAL DISEASES		
STAPHYLOCOCCUS INFECTIONS	STAP	6.8%
STRANGLES	STRA	3.8%
RHODOCOCCUS INFECTIONS	RHOD	3.7%
SALMONELLOSIS	SALM	3.7%
ASPERGILLOSIS	ASPE	3.4%
CORYNEBACTERIUM INFECTIONS	CORY	1.6%
CLOSTRIDIUM INFECTIONS	CLOS	1.5%
TETANUS	TETA	1.0%
ACTINOBACILLUS INFECTION	ACTI	1.0%
GLANDERS	GLAN	0.8%
BRUCELLOSIS	BRUC	0.8%
BORRELIOSIS	BORR	0.7%
BOTULISM	BOTU	0.7%
KLEBSIELLA INFECTIONS	KLEB	0.4%
EHRLICHIOSIS	EHRL	0.3%
CONTAGIOUS EQUINE METRITIS	CEME	0.2%
EPIZOOTIC LYMPHANGITIS	EPLY	0.1%
VIRAL DISEASES		
VESICULAR STOMATITIS	VEST	10.3%
VIRAL RHINOPNEUMONITIS	VIRH	8.3%
WEST NILE	WENI	6.5%
AFRICAN HORSE SICKNESS	AHSI	3.4%
EQUINE INFLUENZA	EQIN	2.8%
EQUINE INFECTIOUS ANEMIA	EQIA	2.2%
RABIES	RABI	1.7%
EQUINE ENCEPHALITIS	EQEN	0.8%
EQUINE ARTERITIS	EQAR	0.5%
PARASITIC DISEASES		
ARTHROPOD PARASITES & VECTORS	ECTO	11.7%
PIROPLASMOSES	PIRO	3.5%
TRYPANOSOMIASES	TRYP	2.7%
SARCOCYSTOSIS	SARC	2.5%
EQUINE PROTOZOAL MYELOENCEPHALITIS	EPMY	2.4%
ANAPLASMOSIS	ANAP	1.7%
CRYPTOSPORIDIOSIS	CRYP	1.2%
MICROFILARIOSIS	MICR	0.3%

DISTRIBUTION OF DISEASES IN HORSES(horizontal) ACCORDING TO COUNTRIES (vertical)

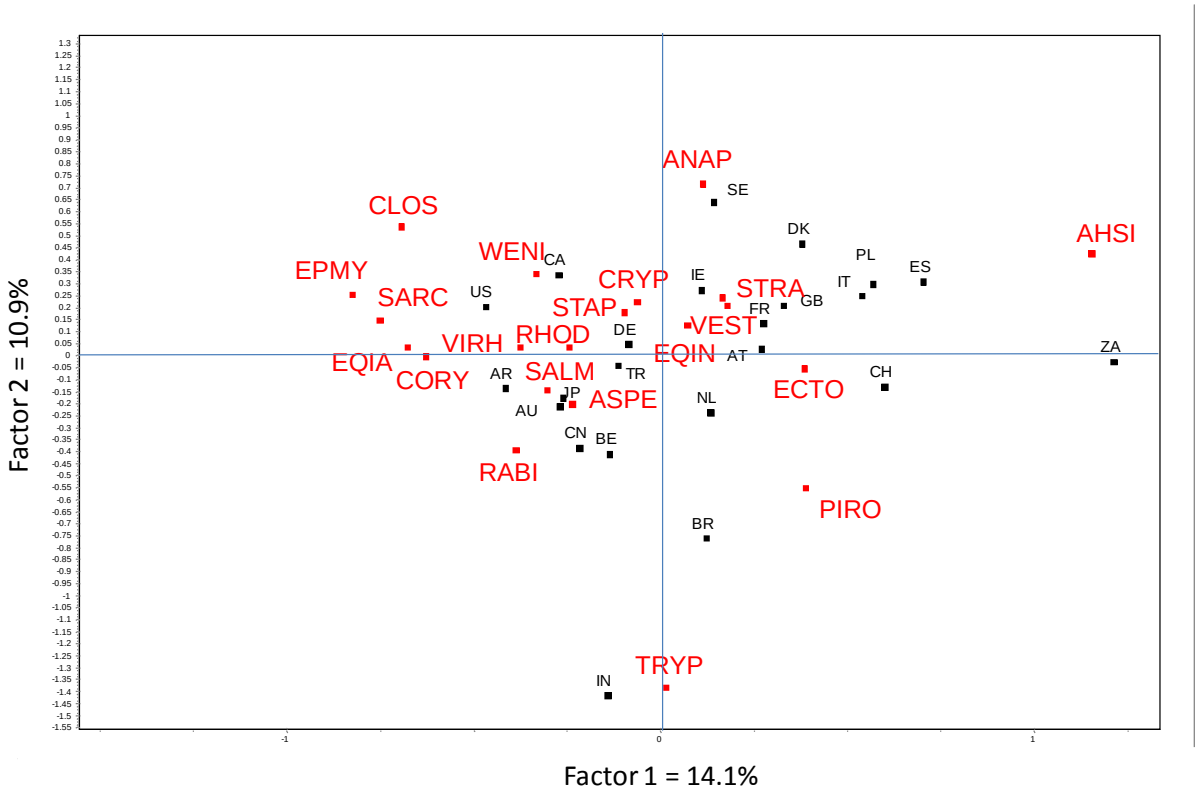
Disease abbreviations as in table of page 24. For each disease, countries with the five highest percentages are highlighted in red to better identify country "specialities".

	Code	*Total line*	AHSI	ANAP	ASPE	CLOS	CORY	CRYP	ECTO	EPMY	EQIA	EQIN	PIRO	RABI	RHOD	SALM	SARC	STAP	STRA	TRYP	VEST	VIRH	WENI
ARGENTINA	AR	*27*	0.0%	0.0%	11.1%	0.0%	0.0%	0.0%	7.4%	0.0%	14.8%	0.0%	3.7%	0.0%	7.4%	3.7%	0.0%	3.7%	0.0%	0.0%	11.1%	18.5%	0.0%
AUSTRIA	AT	*24*	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	8.3%	0.0%	0.0%	4.2%	0.0%	12.5%	4.2%	0.0%	12.5%	0.0%	8.3%
AUSTRALIA	AU	*65*	0.0%	0.0%	0.0%	1.5%	3.1%	1.5%	7.7%	0.0%	0.0%	9.2%	1.5%	1.5%	10.8%	4.6%	0.0%	4.6%	4.6%	7.7%	6.2%	21.5%	9.2%
BELGIUM	BE	*42*	2.4%	0.0%	2.4%	0.0%	0.0%	0.0%	7.1%	0.0%	0.0%	2.4%	0.0%	2.4%	0.0%	4.8%	0.0%	9.5%	7.1%	9.5%	7.1%	28.6%	0.0%
BRAZIL	BR	*81*	0.0%	0.0%	3.7%	0.0%	1.2%	1.2%	25.9%	2.5%	2.5%	0.0%	9.9%	3.7%	4.9%	2.5%	4.9%	3.7%	3.7%	12.3%	11.1%	1.2%	0.0%
CANADA	CA	*105*	1.0%	1.0%	0.0%	2.9%	1.9%	0.0%	1.9%	1.9%	1.0%	3.8%	1.9%	1.9%	1.9%	2.9%	2.9%	20.0%	1.9%	0.0%	15.2%	8.6%	6.7%
SWITZERLAND	CH	*58*	3.4%	1.7%	3.4%	0.0%	0.0%	0.0%	27.6%	0.0%	0.0%	3.4%	5.2%	1.7%	0.0%	0.0%	0.0%	6.9%	1.7%	1.7%	10.3%	0.0%	1.7%
CHINA	CN	*87*	0.0%	0.0%	3.4%	0.0%	1.1%	0.0%	5.7%	0.0%	5.7%	0.0%	4.6%	2.3%	1.1%	5.7%	0.0%	5.7%	0.0%	1.1%	4.6%	2.3%	1.1%
GERMANY	DE	*114*	1.8%	0.0%	0.9%	0.0%	1.8%	0.9%	11.4%	0.9%	2.6%	1.8%	3.5%	0.9%	3.5%	4.4%	0.0%	11.4%	1.8%	0.0%	9.6%	15.8%	2.6%
DENMARK	DK	*20*	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	0.0%	15.0%	5.0%	0.0%	20.0%	0.0%	0.0%
SPAIN	ES	*74*	17.6%	4.1%	1.4%	0.0%	0.0%	0.0%	16.2%	0.0%	1.4%	0.0%	5.4%	1.4%	4.1%	4.1%	0.0%	6.8%	1.4%	0.0%	10.8%	2.7%	6.8%
France	FR	*84*	10.7%	1.2%	2.4%	0.0%	0.0%	1.2%	21.4%	0.0%	0.0%	8.3%	1.2%	1.2%	8.3%	1.2%	0.0%	2.4%	1.2%	3.6%	9.5%	11.9%	17.9%
UK	GB	*188*	7.4%	1.1%	3.2%	0.5%	0.0%	1.6%	16.0%	1.1%	0.5%	6.9%	0.5%	0.0%	1.6%	2.1%	0.5%	7.4%	10.1%	1.6%	12.2%	9.6%	2.1%
IRELAND	IE	*32*	6.3%	0.0%	0.0%	3.1%	0.0%	3.1%	6.3%	0.0%	6.3%	9.4%	3.1%	0.0%	12.5%	3.1%	0.0%	15.6%	9.4%	0.0%	6.3%	0.0%	0.0%
INDIA	IN	*35*	0.0%	0.0%	11.4%	0.0%	0.0%	0.0%	2.9%	2.9%	0.0%	0.0%	11.4%	2.9%	0.0%	8.6%	2.9%	2.9%	2.9%	20.0%	5.7%	5.7%	0.0%
ITALY	IT	*88*	9.1%	3.4%	2.3%	0.0%	1.1%	0.0%	18.2%	0.0%	0.0%	4.5%	6.8%	0.0%	3.4%	1.1%	0.0%	3.4%	5.7%	0.0%	27.3%	4.5%	5.7%
JAPAN	JP	*97*	0.0%	0.0%	3.1%	1.0%	4.1%	1.0%	2.1%	0.0%	0.0%	9.3%	11.3%	3.1%	10.3%	4.1%	0.0%	3.1%	5.2%	1.0%	3.1%	16.5%	6.2%
NETHERLANDS	NL	*43*	0.0%	0.0%	7.0%	0.0%	2.3%	0.0%	20.9%	0.0%	0.0%	7.0%	7.0%	0.0%	0.0%	7.0%	0.0%	11.6%	0.0%	2.3%	7.0%	2.3%	7.0%
POLAND	PL	*25*	16.0%	4.0%	0.0%	0.0%	0.0%	8.0%	8.0%	0.0%	0.0%	4.0%	0.0%	0.0%	4.0%	8.0%	0.0%	0.0%	0.0%	4.0%	28.0%	4.0%	4.0%
SWEDEN	SE	*42*	4.8%	11.9%	9.5%	4.8%	0.0%	0.0%	7.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	2.4%	16.7%	0.0%	11.9%	4.8%	4.8%
TURKEY	TR	*43*	4.7%	0.0%	0.0%	2.3%	2.3%	0.0%	9.3%	2.3%	4.7%	0.0%	11.6%	2.3%	4.7%	2.3%	7.0%	0.0%	0.0%	0.0%	14.0%	11.6%	4.7%
USA	US	*600*	0.8%	2.3%	4.2%	2.7%	2.3%	1.5%	8.3%	5.8%	3.5%	2.2%	1.3%	1.7%	4.7%	4.3%	5.3%	4.8%	2.5%	1.0%	7.5%	10.8%	11.0%
SOUTH AFRICA	ZA	*43*	30.2%	2.3%	0.0%	0.0%	0.0%	2.3%	30.2%	0.0%	0.0%	2.3%	20.9%	0.0%	2.3%	0.0%	0.0%	0.0%	2.3%	2.3%	4.7%	0.0%	7.0%

LINKAGE BETWEEN HORSE DISEASES AND COUNTRIES (disease abbreviations in table of page 24)

The conclusions are drawn from both the factorial correspondence analysis scatterplots below (which only gives an overly simplified representation of factor proximity in two dimensions) and the detailed table of distribution of the previous page.

The strongest associations concern Anaplasmosis (ANAP) with Sweden, African Horse Sickness (AHSI with South Africa (ZA), Sapin (ES) and Poland (PL); Trypanosomiases (TRYP) with India (IN); Vesicular Stomatis (VEST) with Italy (IT) and Poland (PL), Strangles with Sweden (SE) and UK (GB); Viral Rhinopneumonitis (VIRH) with Belgium (BE) and Australia (AU); West Nile (WENI) with France (Fr) and USA (US).



GLOBAL RANKING OF MAJOR FISH DISEASES OR DISEASE COMPLEXES

2626 publications

BACTERIAL DISEASES		
VIBRIO (LISTONELLA)	VIBR	23.3%
AEROMONAS	AERO	15.8%
BACILLUS	BACI	5.8%
EDWARDSIELLA	EDWA	5.8%
PSEUDOMONAS	PSEU	4.8%
FLAVOBACTERIUM	FLAV	4.7%
STREPTOCOCCUS	STRE	3.7%
YERSINIA	YERS	2.7%
SACCHAROMYCES	SACC	2.5%
LACTOCOCCUS	LACT	2.2%
PHOTOBACTERIUM	PHOT	2.1%
RENIBACTERIUM	RENI	1.8%
ACINETOBACTER	ACIN	0.7%
MYCOBACTERIUM MARINUM	MYCO	0.5%
VIRAL DISEASES		
ORTHOMYXOVIRUSES	ORTH	11.3%
RHABDOVIRUSES	RHAB	7.5%
BIRNAVIRUSES	BIRN	4.6%
POXVIRUSES	POXV	2.6%
HERPESVIRUSES	HERP	1.5%
ALPHAVIRUSES	ALPH	1.4%
PARASITIC DISEASES		
ARTHROPOD PARASITES & VECTORS	ARTH	8.0%
HELMINTHS	HELM	7.4%
CILIATES	CILI	6.2%
MYXOSPORA	MYXO	5.8%
FLAGELLATES	FLAG	4.3%
APICOMPLEXA	APIC	2.6%
MYCOSES	MYCO	1.8%
MICROSPORIDA	MICR	1.6%
ANISAKIASIS	ANIS	1.0%

DISTRIBUTION OF DISEASES IN FISH (horizontal) ACCORDING TO COUNTRIES (vertical)

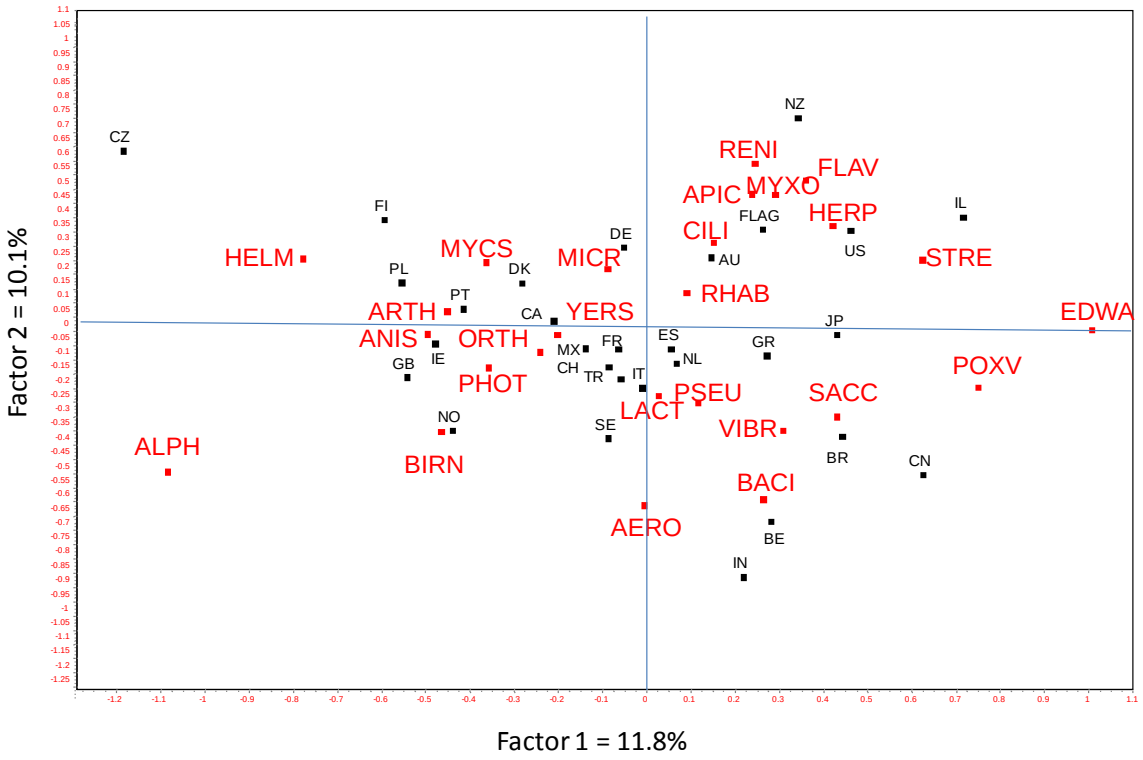
Disease abbreviations as in table of page 26. For each disease, countries with the five highest percentages are highlighted in red to better identify country "specialities".

	code	total line	AERO	ALPH	ANIS	APIC	ARTH	BACI	BIRN	CILI	EDWA	FLAG	FLAV	HELM	HERP	LACT	MICR	MYCS	MYXO	ORTH	PHOT	POXV	PSEU	RENI	RHAB	SACC	STRE	VIBR	YERS
AUSTRALIA	AU	118	4.2%	0.0%	0.0%	3.4%	16.9%	2.5%	0.8%	17.8%	0.8%	9.3%	1.7%	5.9%	0.8%	0.8%	0.8%	0.8%	6.8%	9.3%	0.8%	6.8%	4.2%	1.7%	5.9%	2.5%	5.9%	18.6%	0.0%
BELGIUM	BE	44	20.5%	0.0%	2.3%	0.0%	4.5%	18.2%	0.0%	4.5%	4.5%	2.3%	0.0%	6.8%	0.0%	2.3%	2.3%	0.0%	0.0%	4.5%	0.0%	0.0%	6.8%	0.0%	0.0%	9.1%	2.3%	54.5%	6.8%
BRAZIL	BR	47	25.5%	0.0%	0.0%	6.4%	8.5%	10.6%	0.0%	2.1%	8.5%	4.3%	2.1%	4.3%	0.0%	0.0%	0.0%	0.0%	2.1%	4.3%	0.0%	4.3%	4.3%	0.0%	0.0%	4.3%	10.6%	23.4%	0.0%
CANADA	CA	209	19.1%	0.0%	0.0%	1.9%	25.8%	1.0%	1.0%	7.2%	0.5%	5.3%	3.3%	4.8%	0.5%	0.0%	6.2%	0.5%	5.3%	10.0%	0.0%	0.0%	4.8%	1.0%	6.2%	1.0%	1.0%	12.9%	2.4%
CHINA	CN	293	17.1%	0.0%	0.3%	0.0%	1.0%	9.9%	0.3%	3.4%	13.0%	2.7%	2.0%	0.7%	1.7%	0.3%	0.7%	0.3%	0.3%	8.9%	0.0%	8.9%	5.5%	0.0%	8.9%	2.7%	3.1%	45.1%	0.7%
CZECH REPUBLIC	CZ	34	2.9%	0.0%	0.0%	2.9%	5.9%	0.0%	2.9%	5.9%	0.0%	0.0%	2.9%	61.8%	0.0%	2.9%	0.0%	14.7%	2.9%	11.8%	0.0%	0.0%	0.0%	0.0%	5.9%	0.0%	0.0%	0.0%	0.0%
DENMARK	DK	82	8.5%	0.0%	3.7%	0.0%	9.8%	2.4%	1.2%	13.4%	0.0%	1.2%	4.9%	19.5%	1.2%	0.0%	0.0%	0.0%	3.7%	24.4%	4.9%	3.7%	7.3%	1.2%	31.7%	0.0%	0.0%	14.6%	9.8%
FINLAND	FI	57	7.0%	0.0%	0.0%	1.8%	14.0%	5.3%	0.0%	0.0%	0.0%	1.8%	19.3%	50.9%	0.0%	5.3%	0.0%	1.8%	0.0%	14.0%	1.8%	3.5%	1.8%	3.5%	8.8%	0.0%	1.8%	10.5%	5.3%
FRANCE	FR	93	8.6%	3.2%	0.0%	2.2%	1.1%	6.5%	5.4%	2.2%	0.0%	10.8%	6.5%	14.0%	2.2%	6.5%	2.2%	2.2%	1.1%	3.2%	2.2%	0.0%	3.2%	0.0%	7.5%	3.2%	3.2%	23.7%	1.1%
GERMANY	DE	96	8.3%	1.0%	2.1%	2.1%	6.3%	3.1%	2.1%	10.4%	0.0%	10.4%	1.0%	10.4%	3.1%	0.0%	2.1%	3.1%	17.7%	11.5%	1.0%	2.1%	6.3%	1.0%	8.3%	2.1%	0.0%	12.5%	3.1%
GREECE	GR	26	11.5%	0.0%	0.0%	3.8%	7.7%	3.8%	0.0%	0.0%	3.8%	7.7%	0.0%	3.8%	0.0%	3.8%	0.0%	0.0%	30.8%	15.4%	0.0%	0.0%	23.1%	0.0%	0.0%	7.7%	0.0%	38.5%	3.8%
INDIA	IN	164	50.6%	0.6%	0.0%	0.0%	1.8%	12.8%	5.5%	3.0%	7.3%	0.6%	1.2%	1.8%	0.6%	3.7%	0.0%	1.2%	1.2%	6.7%	1.2%	1.2%	6.7%	0.0%	2.4%	6.1%	1.8%	26.8%	1.8%
IRELAND	IE	26	11.5%	19.2%	3.8%	11.5%	0.0%	0.0%	3.8%	11.5%	0.0%	15.4%	0.0%	3.8%	0.0%	0.0%	7.7%	0.0%	0.0%	7.7%	3.8%	0.0%	3.8%	0.0%	0.0%	0.0%	0.0%	11.5%	0.0%
ISRAEL	IL	21	9.5%	0.0%	0.0%	9.5%	0.0%	0.0%	0.0%	19.0%	0.0%	0.0%	0.0%	0.0%	9.5%	0.0%	0.0%	0.0%	9.5%	4.8%	0.0%	9.5%	0.0%	0.0%	0.0%	0.0%	19.0%	14.3%	0.0%
ITALY	IT	86	12.8%	0.0%	2.3%	4.7%	2.3%	7.0%	0.0%	2.3%	0.0%	3.5%	0.0%	12.8%	1.2%	1.2%	0.0%	1.2%	5.8%	12.8%	5.8%	1.2%	8.1%	2.3%	3.5%	2.3%	2.3%	31.4%	0.0%
JAPAN	JP	219	6.8%	0.0%	0.0%	0.5%	1.8%	5.9%	6.4%	2.7%	10.5%	5.5%	5.9%	3.7%	1.8%	5.9%	1.8%	0.0%	5.0%	5.0%	4.1%	7.8%	4.1%	1.4%	11.9%	1.4%	5.5%	14.6%	0.5%
MEXICO	MX	37	8.1%	0.0%	0.0%	5.4%	13.5%	18.9%	8.1%	2.7%	0.0%	10.8%	2.7%	16.2%	2.7%	0.0%	2.7%	0.0%	0.0%	2.7%	0.0%	0.0%	5.4%	0.0%	0.0%	5.4%	5.4%	16.2%	0.0%
NETHERLANDS	NL	25	16.0%	0.0%	0.0%	4.0%	24.0%	0.0%	0.0%	16.0%	0.0%	4.0%	4.0%	0.0%	4.0%	0.0%	0.0%	0.0%	0.0%	12.0%	4.0%	8.0%	8.0%	0.0%	0.0%	0.0%	0.0%	28.0%	0.0%
NEW ZEALAND	NZ	21	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	19.0%	0.0%	42.9%	0.0%	0.0%	4.8%	0.0%	0.0%	0.0%	0.0%	14.3%	0.0%	0.0%	0.0%	4.8%	4.8%	0.0%	0.0%	9.5%	0.0%
NORWAY	NO	290	17.9%	6.9%	1.0%	0.3%	13.8%	2.8%	11.7%	3.1%	0.3%	2.8%	1.7%	9.7%	0.0%	1.0%	0.7%	0.7%	2.1%	24.8%	4.1%	0.7%	3.1%	0.0%	6.6%	0.7%	0.7%	26.2%	2.8%
POLAND	PL	36	27.8%	0.0%	8.3%	5.6%	13.9%	0.0%	0.0%	8.3%	0.0%	0.0%	0.0%	30.6%	11.1%	0.0%	2.8%	8.3%	0.0%	8.3%	0.0%	0.0%	5.6%	0.0%	8.3%	0.0%	2.8%	2.8%	0.0%
PORTUGAL	PT	33	0.0%	0.0%	3.0%	6.1%	12.1%	9.1%	0.0%	3.0%	0.0%	6.1%	3.0%	15.2%	0.0%	3.0%	0.0%	0.0%	3.0%	12.1%	21.2%	0.0%	3.0%	0.0%	0.0%	3.0%	0.0%	12.1%	0.0%
SPAIN	ES	252	10.7%	0.0%	2.8%	5.2%	2.8%	7.1%	6.7%	8.3%	1.6%	3.6%	1.6%	5.2%	1.6%	5.2%	0.4%	4.8%	7.1%	10.3%	3.2%	2.0%	4.8%	0.8%	13.9%	2.8%	2.4%	23.0%	3.2%
SWEDEN	SE	34	29.4%	0.0%	0.0%	2.9%	0.0%	8.8%	11.8%	2.9%	0.0%	11.8%	0.0%	5.9%	0.0%	0.0%	0.0%	11.8%	0.0%	8.8%	2.9%	0.0%	5.9%	2.9%	2.9%	2.9%	2.9%	20.6%	2.9%
SWITZERLAND	CH	20	25.0%	0.0%	0.0%	0.0%	5.0%	5.0%	0.0%	5.0%	5.0%	0.0%	5.0%	25.0%	0.0%	0.0%	0.0%	0.0%	15.0%	5.0%	0.0%	0.0%	15.0%	0.0%	5.0%	5.0%	0.0%	10.0%	5.0%
TURKEY	TR	54	22.2%	0.0%	1.9%	0.0%	14.8%	3.7%	1.9%	11.1%	1.9%	0.0%	7.4%	5.6%	0.0%	9.3%	0.0%	1.9%	1.9%	7.4%	1.9%	0.0%	11.1%	5.6%	3.7%	1.9%	1.9%	24.1%	14.8%
UK	GB	274	16.4%	5.8%	2.6%	1.1%	13.5%	4.7%	12.8%	2.6%	0.0%	1.1%	0.7%	13.5%	0.7%	1.5%	2.6%	2.9%	4.0%	15.7%	2.6%	0.4%	2.9%	3.3%	7.7%	1.1%	1.8%	10.6%	3.3%
USA	US	639	5.8%	0.2%	0.5%	5.0%	4.5%	1.9%	1.7%	6.7%	11.7%	5.8%	9.5%	2.7%	2.3%	0.3%	1.9%	1.9%	9.9%	8.5%	0.6%	1.4%	2.3%	4.2%	8.3%	2.8%	6.1%	17.5%	2.2%

LINKAGE BETWEEN FISH DISEASES AND COUNTRIES (disease abbreviations in table of page 27)

The conclusions are drawn from both the factorial correspondence analysis scatterplots below (which only gives an overly simplified representation of factor proximity in two dimensions) and the detailed table of distribution of the previous page.

The strongest associations concern Helminths (HElM) with Czech Republic (CZ) and Finland (FI); Vibrio with Belgium (BE) and China (CN); Aeromonas (AERO) with India (IN); Orthomyxoviruses (ORTH) with Norway (NO) and Denmark (DK); Rhabdoviruses (RHAB) with Denmark (DK); Birnaviruses (BIRN) with UK (GB), Sweden (SE) and Norway (NO); Arthropod and Parasite Vectors (ARTH) with Netherlands (NL) and Canada (CN).



MOST PRODUCTIVE RESEARCH INSTITUTIONS IN THE FIELD OF STAR-IDAZ : (1) EUROPEAN COMMUNITY + NORWAY AND SWITZERLAND

AT- AUSTRIA (302)	
Univ Vet Med Vienna	57%
Univ Vienna	20%
BE- BELGIUM (837)	
Univ Ghent	54%
Catholic Univ Louvain	17%
Vet & Agrochem Res Ctr	15%
Inst Trop Med Anim	13%
Univ Liege	13%
CH- SWITZERLAND (624)	
Univ Bern	33%
Univ Zurich	30%
CZ- CZECH REPUBLIC (359)	
Acad Sci Czech Rep	51%
Univ Vet & Pharma Sci Brno	28%
Vet Res Inst Brno	25%
Charles Univ	16%
Univ S Bohemia	15%
DE- GERMANY (1807)	
FLI	16%
Univ Vet Med Hannover	12%
Free Univ Berlin	8%
Univ Munich	8%
Univ Giessen	6%
Univ Leipzig	5%
Max Planck Inst	4%
Tech Univ Munich	4%
Robert Koch Inst	4%
BFR Fed Inst Risk Assessment	4%
Univ Dusseldorf	3%
Univ Gottingen	3%
DK- DENMARK (635)	
Univ Copenhagen	36%
Tech Univ Denmark	21%
Royal Vet & Agr Univ	18%
Univ Aarhus	15%
Danish Food & Vet Res	14%

ES- SPAIN (1605)	
CSIC	25%
Univ Autonoma Barcelona	14%
Univ Complutense Madrid	13%
Univ Santiago	9%
Univ Zaragoza	8%
INIA	7%
Univ Murcia	6%
Univ Leon	6%
Univ Barcelona	4%
Univ Valencia	4%
Univ Cordoba	3%
Univ Autonoma Madrid	3%
FI- FINLAND (279)	
Univ Helsinki	47%
Univ Jyvaskyla	19%
EVIRA	18%
FR- FRANCE (1429)	
INRA	32%
AFSSA	19%
Univ Paris	9%
CNRS	9%
Pasteur Inst	8%
CIRAD	6%
Univ Lyon	6%
Ec Natl Vet Toulouse	5%
Univ Montpellier	5%
INSERM	4%
Ec Natl Vet Lyon	4%

GB- UK (2983)	
VLA	14%
Univ London	14%
IAH	11%
Univ Edimburgh	9%
Moredun Res Inst	6%
Univ Liverpool	6%
Univ Oxford	5%
Univ Glasgow	5%
Univ Cambridge	5%
Univ Bristol	4%
Univ Nottingham	4%
Scottish Agr Coll	3%
Hlth Protect Agcy	3%
Queens Univ Belfas	3%
Univ Aberdeen	3%
Univ Sterling	2%
Univ Warwick	2%
Fisheries Res Serv	2%
Roslin Inst	2%
Univ Sheffield	2%
Agri Food & Biosci I	2%
Cent Sci Lab York	2%

IE- IRELAND (322)	
Univ Coll Dublin	66%
TEAGASC	20%
Cent Vet Res Labs	18%
Natl Univ Ireland	16%
IT- ITALY (1149)	
Univ Milan	12%
Ist Sup Sanita	10%
Univ Bari	9%
Univ Bologna	8%
Ist Zooprof Sperim Lombardia E	7%
Univ Naples Federico II	7%
Univ Rome	7%
Univ Torino	5%
CNR	5%
Ist Zooprof Sperim Venezie	5%
NL- NETHERLANDS (893)	
Univ Utrecht	36%
Univ Wageningen	30%
Cent Vet Inst	15%
Natl Inst Publ Hlth & Envir	10%
GD Anim Hlth Serv Deventer	9%
Erasmus Univ	7%
Univ Leiden	6%
NO- NORWAY (543)	
Norwegian Coll Vet Med	34%
Natl Vet Inst	27%
Univ Tromso	18%
Univ Oslo	13%
Univ Bergen	12%
Norwegian Univ life Sci	11%
Inst Marine Res	10%
SE- SWEDEN (565)	
Swedish Univ Agr Sci	89%
Univ Uppsala	15%
Lund Univ	13%
Karolinska Inst	12%

MOST PRODUCTIVE RESEARCH INSTITUTIONS IN THE FIELD OF STAR-IDAZ : (2) OTHER STAR-IDAZ PARTNER COUNTRIES

AR - ARGENTINA (405)	
Consejo Nacl Invest Cient & Tecn	28%
INTA	28%
Univ Buenos Aires	17%
Univ Nacl La Plata	14%
AU- AUSTRALIA (1241)	
CSIRO	16%
Univ Queensland	16%
Univ Melbourne	15%
Univ Sydney	11%
Murdoch Univ	9%
Monash Univ	5%
Australian Natl Univ	4%
Univ Tasmania	4%
Univ New England	4%
Univ New S Wales	4%
BR- BRAZIL (1130)	
Univ Sao Paulo	35%
Univ Fed Rio Grande	10%
Univ Fed Minas Gerais	9%
EMBRAPA	8%
Univ Fed Rio de Janeiro	8%
Univ Estadual Paulista	7%
Fundacao Oswaldo Cruz	7%
Univ Estadual Londrina	6%
Univ Fed Rural Rio de Janeiro	5%
CA- CANADA (1704)	
Univ Guelph	24%
Univ Saskatchewan	12%
Univ Montreal	8%
Agr & Agri Food Canada	7%
Canadian Food Inspect Agcy	6%
Univ British Columbia	6%
Publ Hlth Agcy Canada	6%
Univ Alberta	6%
Univ Manitoba	6%
McGill Univ	6%
Univ Prince Edward Isl	5%
Univ Calgary	4%
Natl Res Council Canada	4%
Univ Toronto	3%

CN- CHINA (2253)	
Chinese Acad Sci	14%
China Agr Univ	10%
Chinese Acad Agr Sci	9%
Huazhong Agr Univ	6%
Univ Hong Kong	6%
Zhejiang Univ	6%
Nanjing Agr Univ	5%
S China Agr Univ	4%
Ocean Univ China	4%
Sun Yat Sen Univ	3%
Acad Mil Med Sci	3%
Sichuan Agr Univ	3%
NE Agr Univ	2%
Jilin Univ	2%
IL- ISRAEL (207)	
Hebrew Univ Jerusalem	32%
Kimron Vet Inst	32%
IN- INDIA (1040)	
Indian Vet Res Inst	21%
JP- JAPAN (1611)	
Hokkaido Univ	12%
Natl IAH	10%
Univ Tokyo	10%
Obihiro Univ Agr & Vet Med	8%
Natl Inst Infect Dis	5%
Gifu Univ	5%
Nihon Univ	4%
Hiroshima Univ	4%
Osaka Univ	4%
Tokyo Univ Marine Sci & Technol	4%
Kitasato Univ	4%
Tottori Univ	3%
MX- MEXICO (415)	
Univ Nacl Autonoma Mexico	43%
INIFAP	15%
NZ- NEW ZEALAND (460)	
Massey Univ	30%
AgRes	19%
Univ Otago	18%
RU- RUSSIA (179)	
Russian Acad Sci	78%

US- USA (8866)	
USDA	19%
Univ Texas	7%
Univ Iowa	5%
Univ Calif Davis	5%
Univ Georgia	5%
Cornell Univ	4%
Univ Minnesota	4%
Univ Wisconsin	3%
CDC	3%
Washington State Univ	3%
Univ Michigan	3%
Univ N Carolina	3%
Univ Penn	3%
Univ Colorado	3%
Univ Florida	3%
Univ Ohio	3%
Univ Maryland	2%
Univ Oklahoma	2%
Univ Virginia	2%
Univ Auburn	2%
Univ Kansas	2%
Univ Illinois	2%
Univ Arkansas	2%
NIAID	2%
Univ Nebraska	2%
US Geol Survey	1%
Univ Oregon	1%
Purdue Univ	1%
Univ Missouri	1%
Harvard Univ	1%
Univ Kentucky	1%
Univ Tennessee	1%
Univ Louisiana	1%
Johns Hopkins Univ	1%
Univ Arizona	1%
Univ Washington	1%
US FDA	1%
Univ Connecticut	1%
Univ Mississipi	1%
Univ New York state	1%
St Jude Childrens Hosp	1%

US- USA *cont.* (8866)	
Univ Utah	1%
Univ Pittsburgh	1%
Univ Idaho	1%
Univ Calif San Diego	1%
Univ Massachusetts	1%
Univ N Dakota	1%
Univ S Dakota	1%
Univ Calif Berkeley	1%
Univ Alabama	1%
Univ Montana	1%
Clemson Univ	1%
Stanford Univ	1%
Emory Univ	1%
NCI	1%
Tufts Univ	1%
Yale Univ	1%
Univ New Mexico	1%
Univ Delaware	1%
NIH	1%
Univ Wyoming	1%
ZA- SOUTH AFRICA (410)	
Univ Pretoria	47%
ARC Onderstepoort Vet Inst	26%

SPECIALIZATION OF RESEARCH INSTITUTIONS : (1) ACCORDING TO SUJECT CATEGORIES

The STAR-IDAZ bibliometric database provides, for each institution, the percentage of publications in all the major subject categories (horizontal in alphabetical order). Full name of Subject Categories appear in the table of page 12. One should keep in mind that most journals belong to several Subject Categories.

An illustration is proposed below with all the major research institutions in UK (at least 50 publications in STAR-IDAZ database for the period of reference : 2006 to mid-July 2010). The three highest percentages in each category are highlighted in red with the exception of the category "Veterinary Sciences" (VET) where the three lowest percentages are shown. Such an analysis can be applied to any STAR-IDAZ partner country using data from the bibliometric database.

	total line	ADA	BAM	BMB	BRM	ECO	ENT	FIS	FST	GHR	IDI	IMM	MFW	MIC	MRE	PAR	PEO	PHA	VET	VIR	ZOO
VLA (GB)	*419*	1.0%	13.1%	1.2%	2.1%	0.2%	0.0%	0.2%	2.4%	0.5%	17.2%	16.0%	0.2%	23.4%	1.9%	1.7%	4.8%	2.9%	45.6%	10.3%	0.0%
Univ London (GB)	*411*	0.5%	7.3%	5.6%	3.2%	2.9%	0.2%	0.0%	0.5%	2.9%	11.4%	14.6%	0.2%	20.7%	5.8%	9.0%	3.4%	3.9%	24.8%	11.7%	1.5%
IAH (GB)	*338*	2.1%	16.0%	3.6%	4.1%	0.6%	2.1%	0.3%	1.8%	2.7%	8.0%	26.9%	0.0%	14.2%	8.9%	4.1%	0.9%	0.0%	34.0%	27.5%	1.2%
Univ Edimburgh (GB)	*255*	8.6%	7.1%	7.5%	2.7%	2.7%	0.8%	1.2%	1.6%	6.3%	7.8%	16.5%	1.2%	12.2%	2.4%	17.3%	1.2%	0.0%	29.0%	7.8%	1.2%
Moredun Res Inst (GB)	*170*	3.5%	8.8%	1.2%	2.4%	0.0%	0.6%	0.0%	1.2%	1.2%	5.9%	20.0%	0.0%	16.5%	2.4%	34.1%	0.0%	0.6%	42.9%	10.6%	0.0%
Univ Liverpool (GB)	*166*	5.4%	8.4%	4.8%	0.6%	1.2%	1.2%	0.6%	3.0%	4.8%	12.0%	10.2%	1.2%	16.9%	1.2%	18.7%	6.6%	3.6%	34.3%	5.4%	1.2%
Univ Oxford (GB)	*150*	0.7%	12.7%	12.7%	4.0%	12.0%	0.7%	0.0%	2.0%	5.3%	11.3%	14.0%	0.0%	20.0%	5.3%	4.0%	2.0%	1.3%	8.0%	14.7%	2.7%
Univ Glasgow (GB)	*146*	4.1%	4.1%	7.5%	0.0%	2.1%	0.0%	2.7%	2.1%	6.2%	8.9%	6.8%	2.1%	13.7%	2.1%	19.9%	0.7%	0.7%	30.1%	15.8%	2.1%
Univ Cambridge (GB)	*138*	3.6%	10.1%	13.0%	3.6%	5.8%	0.0%	0.0%	2.2%	10.9%	6.5%	21.0%	0.0%	9.4%	7.2%	2.2%	0.7%	0.7%	20.3%	13.0%	2.9%
Univ Bristol (GB)	*125*	6.4%	16.8%	5.6%	0.0%	0.8%	4.0%	0.8%	16.0%	1.6%	8.0%	7.2%	0.8%	22.4%	0.8%	16.0%	3.2%	2.4%	32.8%	0.8%	3.2%
Univ Nottingham (GB)	*109*	8.3%	9.2%	3.7%	0.9%	2.8%	0.9%	1.8%	8.3%	4.6%	7.3%	12.8%	0.0%	22.9%	3.7%	11.9%	2.8%	0.0%	21.1%	3.7%	1.8%
Scottish Agr Coll (GB)	*100*	29.0%	6.0%	0.0%	1.0%	5.0%	1.0%	0.0%	6.0%	4.0%	5.0%	6.0%	0.0%	11.0%	2.0%	12.0%	3.0%	0.0%	38.0%	1.0%	3.0%
Hlth Protect Agcy (GB)	*98*	0.0%	19.4%	2.0%	3.1%	1.0%	0.0%	0.0%	9.2%	0.0%	21.4%	10.2%	0.0%	33.7%	5.1%	0.0%	14.3%	8.2%	5.1%	15.3%	0.0%
Queens Univ Belfast (GB)	*93*	3.2%	17.2%	2.2%	1.1%	1.1%	3.2%	10.8%	10.8%	1.1%	3.2%	6.5%	4.3%	16.1%	0.0%	17.2%	3.2%	2.2%	31.2%	9.7%	3.2%
Univ Aberdeen (GB)	*85*	1.2%	9.4%	10.6%	1.2%	9.4%	2.4%	25.9%	1.2%	2.4%	4.7%	29.4%	22.4%	18.8%	2.4%	8.2%	1.2%	0.0%	27.1%	2.4%	7.1%
Univ Sterling (GB)	*69*	2.9%	0.0%	1.4%	0.0%	2.9%	2.9%	46.4%	0.0%	2.9%	0.0%	5.8%	40.6%	7.2%	0.0%	20.3%	0.0%	0.0%	42.0%	0.0%	1.4%
Univ Warwick (GB)	*64*	3.1%	12.5%	6.3%	0.0%	6.3%	1.6%	0.0%	4.7%	0.0%	1.6%	1.6%	0.0%	12.5%	1.6%	3.1%	0.0%	3.1%	46.9%	15.6%	0.0%
Fisheries Res Serv (GB)	*63*	0.0%	3.2%	0.0%	1.6%	3.2%	0.0%	73.0%	0.0%	0.0%	0.0%	15.9%	60.3%	3.2%	0.0%	9.5%	0.0%	0.0%	61.9%	3.2%	3.2%
Roslin Inst (GB)	*59*	27.1%	13.6%	6.8%	1.7%	1.7%	0.0%	6.8%	3.4%	20.3%	0.0%	10.2%	6.8%	3.4%	3.4%	11.9%	0.0%	0.0%	22.0%	10.2%	0.0%
Univ Sheffield (GB)	*51*	0.0%	5.9%	29.4%	2.0%	25.5%	7.8%	0.0%	0.0%	5.9%	5.9%	5.9%	0.0%	15.7%	0.0%	7.8%	0.0%	0.0%	0.0%	2.0%	3.9%
Agri Food & Biosci Inst (GB)	*50*	4.0%	26.0%	0.0%	2.0%	0.0%	0.0%	4.0%	16.0%	0.0%	8.0%	6.0%	4.0%	20.0%	0.0%	12.0%	4.0%	0.0%	44.0%	8.0%	0.0%
Cent Sci Lab York (GB)	*50*	6.0%	4.0%	2.0%	2.0%	20.0%	6.0%	0.0%	8.0%	2.0%	2.0%	0.0%	0.0%	6.0%	0.0%	14.0%	0.0%	0.0%	38.0%	0.0%	20.0%

SPECIALIZATION OF RESEARCH INSTITUTIONS : (2) ACCORDING TO ANIMAL CATEGORIES

The STAR-IDAZ bibliometric database provides, for each institution, the percentage of publications in 6 major animal categories (horizontal in alphabetical order). A paper can be associated with several animal categories

An illustration is proposed below with all the major research institutions in UK (at least 50 publications in STAR-IDAZ database for the period of reference : 2006 to mid-July 2010). The five highest percentages in each category are highlighted in red. Such an analysis can be applied to any STAR-IDAZ partner country using data from the bibliometric database.

	Total line	BEE	FISH	HORSE	PIGS	POULTRY	RABBITS	RUMINANTS
VLA (GB)	*419*	0.0%	0.5%	1.4%	13.4%	22.2%	1.9%	73.5%
Univ London (GB)	*411*	0.2%	0.7%	6.8%	14.4%	17.5%	3.2%	51.8%
IAH (GB)	*338*	0.3%	0.3%	6.8%	18.9%	29.3%	0.6%	55.3%
Univ Edimburgh (GB)	*255*	0.4%	2.0%	6.7%	11.0%	9.8%	2.0%	74.5%
Moredun Res Inst (GB)	*170*	0.0%	0.0%	2.9%	4.1%	4.7%	5.9%	94.1%
Univ Liverpool (GB)	*166*	0.0%	2.4%	7.8%	9.6%	24.1%	4.8%	63.9%
Univ Oxford (GB)	*150*	0.0%	0.0%	4.7%	8.0%	40.7%	2.7%	36.0%
Univ Glasgow (GB)	*146*	0.0%	5.5%	15.8%	8.9%	9.6%	3.4%	65.8%
Univ Cambridge (GB)	*138*	0.0%	0.7%	10.1%	12.3%	23.9%	5.1%	37.0%
Univ Bristol (GB)	*125*	0.8%	0.8%	8.8%	10.4%	28.8%	0.8%	56.0%
Univ Nottingham (GB)	*109*	0.9%	1.8%	2.8%	8.3%	30.3%	2.8%	41.3%
Scottish Agr Coll (GB)	*100*	0.0%	1.0%	0.0%	8.0%	13.0%	6.0%	79.0%
Hlth Protect Agcy (GB)	*98*	0.0%	3.1%	1.0%	22.4%	45.9%	4.1%	26.5%
Queens Univ Belfast (GB)	*93*	9.7%	11.8%	2.2%	23.7%	16.1%	0.0%	41.9%
Univ Aberdeen (GB)	*85*	0.0%	41.2%	8.2%	5.9%	23.5%	2.4%	30.6%
Univ Sterling (GB)	*69*	1.4%	71.0%	1.4%	0.0%	7.2%	1.4%	4.3%
Univ Warwick (GB)	*64*	1.6%	0.0%	0.0%	9.4%	17.2%	0.0%	68.8%
Fisheries Res Serv (GB)	*63*	0.0%	90.5%	0.0%	0.0%	0.0%	1.6%	0.0%
Roslin Inst (GB)	*59*	0.0%	10.2%	0.0%	11.9%	6.8%	0.0%	69.5%
Univ Sheffield (GB)	*51*	13.7%	2.0%	7.8%	0.0%	31.4%	0.0%	25.5%
Agri Food & Biosci Inst (GB)	*50*	0.0%	6.0%	0.0%	26.0%	28.0%	0.0%	46.0%
Cent Sci Lab York (GB)	*50*	10.0%	0.0%	0.0%	18.0%	10.0%	2.0%	68.0%

SPECIALIZATION OF RESEARCH INSTITUTIONS : (3) ACCORDING TO TYPE OF PATHOGENIC ORGANISMS

The STAR-IDAZ bibliometric database provides, for each institution, the percentage of publications in 6 major types of pathogenic organisms (horizontal in alphabetical order). A paper can be associated with several types.

An illustration is proposed below with all the major research institutions in UK (at least 50 publications in STAR-IDAZ database for the period of reference : 2006 to mid-July 2010). The five highest percentages in each category are highlighted in red. Such an analysis can be applied to any STAR-IDAZ partner country using data from the bibliometric database.

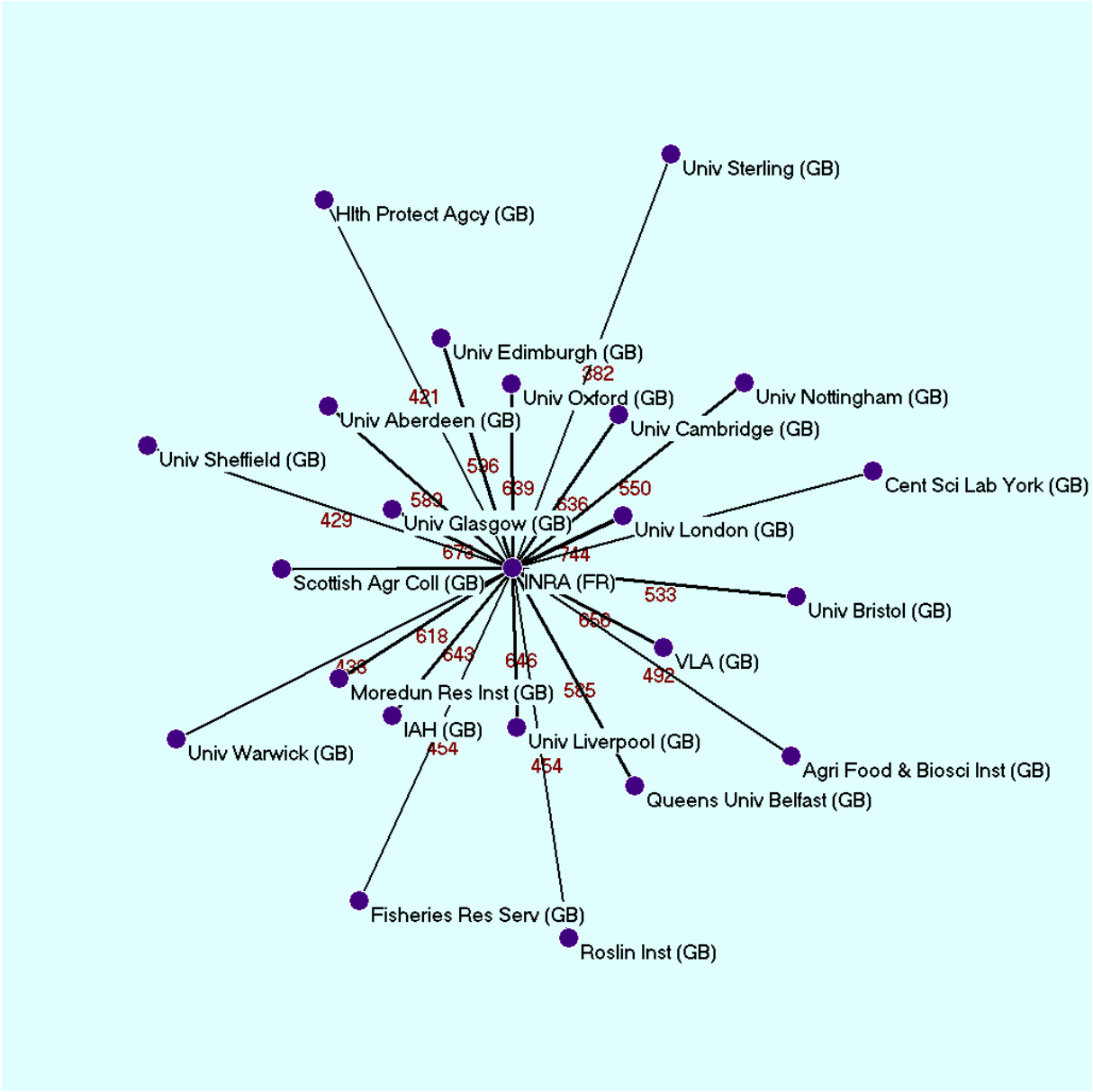
	Total line	BACTERIA	ECTOPARASITES	HELMINTHS	PRIONS	PROTOZOA	VIRUSES
VLA (GB)	*419*	76.6%	1.4%	0.7%	24.3%	1.9%	35.6%
Univ London (GB)	*411*	49.1%	3.6%	7.1%	8.8%	6.8%	42.1%
IAH (GB)	*338*	48.8%	10.1%	1.2%	8.6%	5.0%	66.9%
Univ Edimburgh (GB)	*255*	50.2%	8.2%	16.5%	17.6%	16.5%	41.6%
Moredun Res Inst (GB)	*170*	58.8%	7.6%	35.9%	8.8%	8.2%	40.0%
Univ Liverpool (GB)	*166*	65.7%	15.7%	13.9%	2.4%	18.7%	34.9%
Univ Oxford (GB)	*150*	44.7%	1.3%	2.0%	2.7%	16.7%	46.0%
Univ Glasgow (GB)	*146*	52.1%	7.5%	17.8%	0.7%	13.0%	42.5%
Univ Cambridge (GB)	*138*	39.9%	7.2%	2.9%	9.4%	3.6%	56.5%
Univ Bristol (GB)	*125*	62.4%	23.2%	9.6%	0.8%	4.8%	33.6%
Univ Nottingham (GB)	*109*	64.2%	5.5%	11.9%	5.5%	3.7%	32.1%
Scottish Agr Coll (GB)	*100*	57.0%	8.0%	18.0%	14.0%	3.0%	35.0%
Hlth Protect Agcy (GB)	*98*	58.2%	0.0%	0.0%	5.1%	1.0%	46.9%
Queens Univ Belfast (GB)	*93*	57.0%	6.5%	19.4%	0.0%	6.5%	51.6%
Univ Aberdeen (GB)	*85*	55.3%	17.6%	17.6%	2.4%	7.1%	40.0%
Univ Sterling (GB)	*69*	56.5%	11.6%	10.1%	0.0%	14.5%	44.9%
Univ Warwick (GB)	*64*	46.9%	12.5%	6.3%	4.7%	4.7%	46.9%
Fisheries Res Serv (GB)	*63*	52.4%	17.5%	9.5%	0.0%	3.2%	66.7%
Roslin Inst (GB)	*59*	54.2%	3.4%	15.3%	33.9%	3.4%	40.7%
Univ Sheffield (GB)	*51*	52.9%	23.5%	5.9%	2.0%	11.8%	37.3%
Cent Sci Lab York (GB)	*50*	88.0%	16.0%	10.0%	0.0%	4.0%	34.0%
Agri Food & Biosci Inst (GB)	*50*	72.0%	4.0%	16.0%	0.0%	2.0%	50.0%

RESEARCH INSTITUTIONS : OVERALL PROXIMITY OF SUBJECT PROFILES

The overall proximity of between any two research institutions A & B can be measured by the Salton's measure of affinity or Salton Index SI= [nb shared subjects by /(nb subjects A * nb subjects B) $^{-1/2}$] (range: 0 to 1)

As an illustration, the level of proximity between INRA, France and the major selected research institutions in UK is presented below. SI *1000 is shown in red and the distance between INRA and any of its UK counterparts is inversely proportional to the SI. The most proximal institutions are the University of London (SI=0.744), the University of Glasgow (0.673), and the University of Liverpool (0.646). Obviously, these proximities scores are relevant only for the research sector concerned by STAR-IDAZ and should be re-evaluated if extended, for instance, to all agronomic sciences.

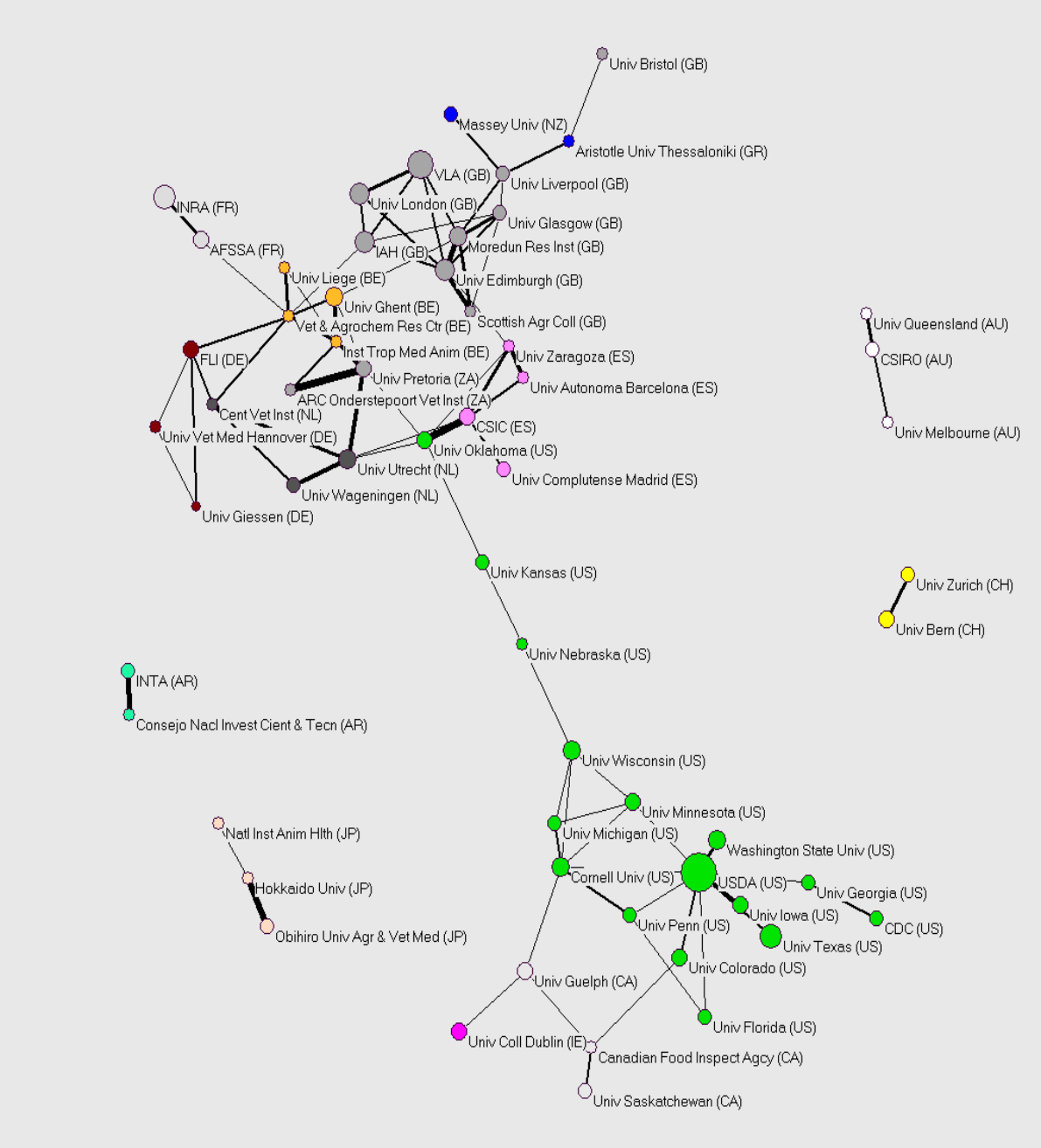
a



INSTITUTIONAL CO-PUBLICATION NETWORKS IN ANIMAL RESEARCH SECTORS (1)

RUMINANTS (12,626 PUBLICATIONS)

Sociogram generated by Pajek software, using the Fruchterman Reingold spring-embedded algorithm, representing the proximity between major institutions (or "vertices") with at least **60 publications** in this research sector during the period surveyed (2006-mid 2010). This procedure results in the selection of about 60% of the publications of the research sector. Strength of links defined by the Salton Index of affinity SI = [nb pub A & B/(nb pub A * nb pub B) $^{-1/2}$], an index normalized according to size of vertices.
To enhance legibility, only links with a strength of SI ≥ 0.05 are shown. Size of vertex proportional to number of publications. Each country is ascribed a colour.



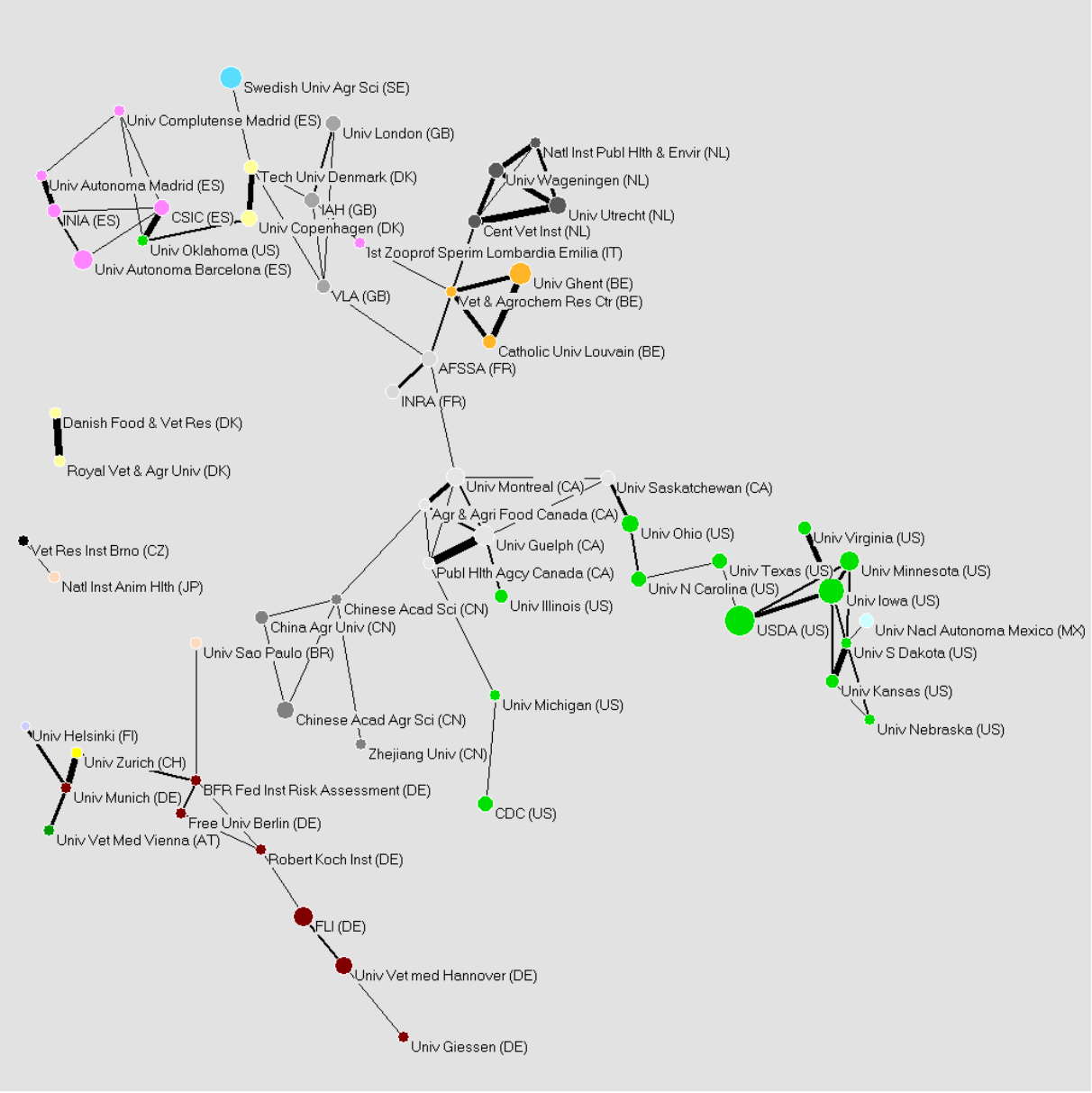
With a SI threshold of 0.05, five components are generated of which one only, the major one, is international. This major component is formed by a European cluster and a US cluster whose linkage is due to the strong

association of University of Oklahoma (US) with the CSIC (ES).

INSTITUTIONAL CO-PUBLICATION NETWORKS IN ANIMAL RESEARCH SECTORS (2)

PIGS (4838 publications)

Sociogram generated by Pajek software, using the Fruchterman Reingold spring-embedded algorithm, representing the proximity between major institutions (or "vertices") with at least **30 publications** in this research sector during the period surveyed (2006-mid 2010). This procedure results in the selection of about 60% of the publications of the research sector. Strength of links defined by the Salton Index of affinity SI = [nb pub A & B/(nb pub A * nb pub B) $^{-1/2}$], an index normalized according to size of vertices. To enhance legibility, only links with a strength of SI ≥ 0.05 are shown. Size of vertex proportional to number of publications. Each country is ascribed a colour.



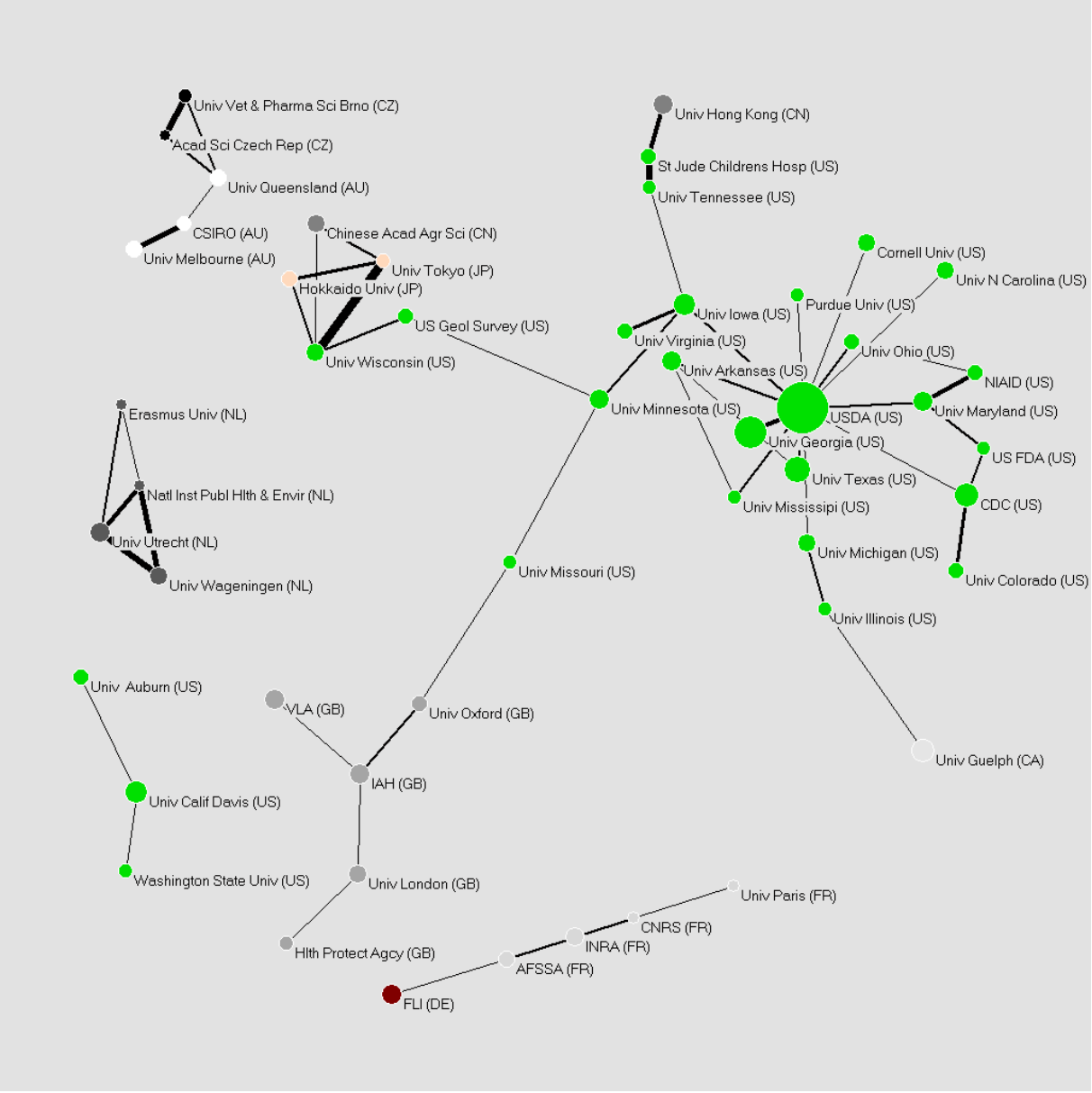
With a SI threshold of 0.05, five components are generated, four of which are international. The major one links a cluster of EU, North American and Chinese institutions. The two stronger links between continents is insured by Canadian institutions: University of Montreal for the link with Europe, Agri Food Canada for the link with China. Another significant component links Germany, Switzerland, Finland and Brazil, with the central

connecting role of the BFR Federal Institute of Risk Assessment.

INSTITUTIONAL CO-PUBLICATION NETWORKS IN ANIMAL RESEARCH SECTORS (3)

POULTRY (9132 publications)

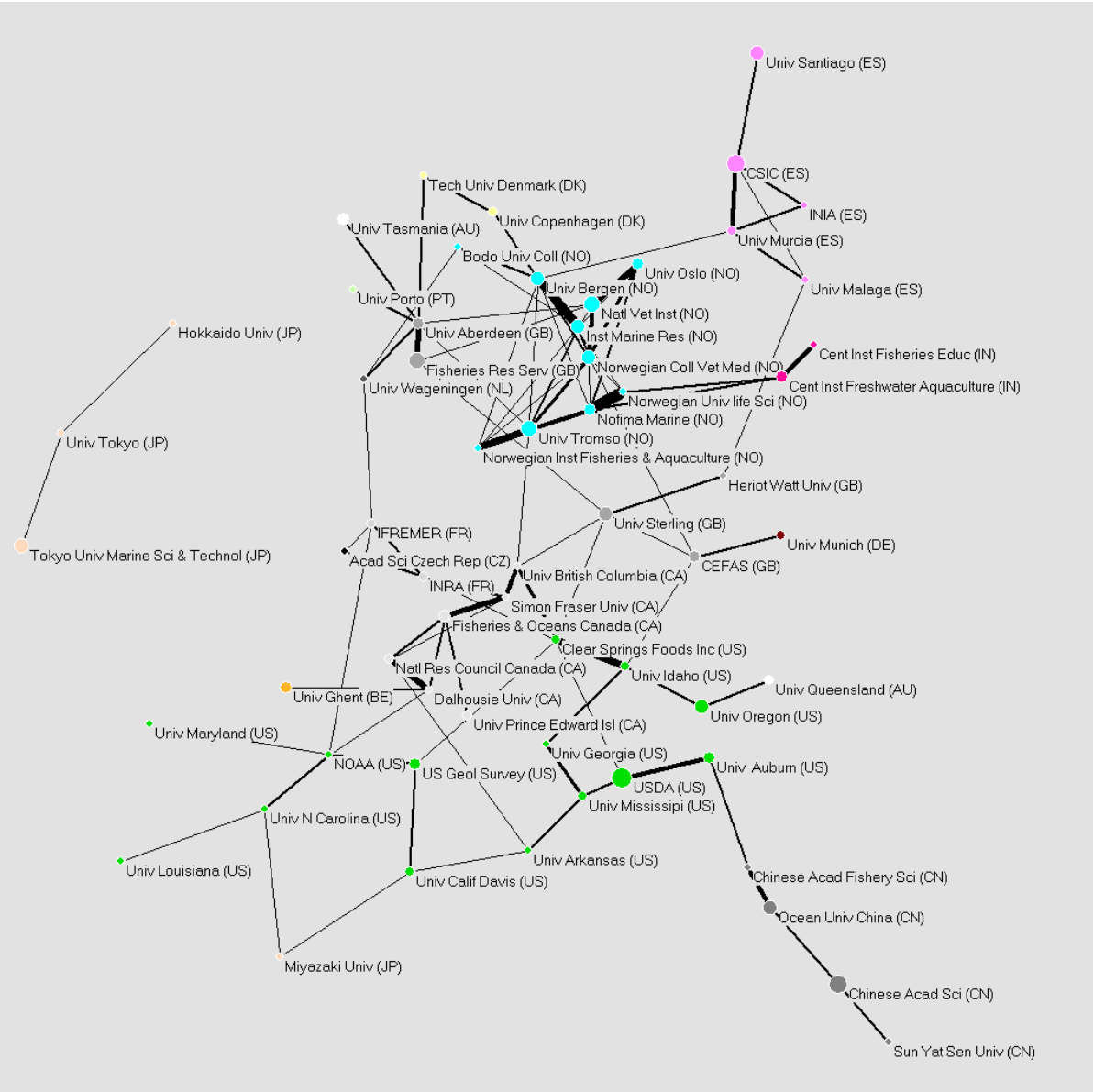
Sociogram generated by Pajek software, using the Fruchterman Reingold spring-embedded algorithm, representing the proximity between major institutions (or "vertices") with at least **40 publications** in this research sector during the period surveyed (2006-mid 2010). This procedure results in the selection of about 60% of the publications of the research sector. Strength of links defined by the Salton Index of affinity SI = [nb pub A & B/(nb pub A * nb pub B) $^{-1/2}$], an index normalized according to size of vertices. To enhance legibility, only links with a strength of SI ≥ 0.05 are shown. Size of vertex proportional to number of publications. Each country is ascribed a colour.



With a SI threshold of 0.05, five components are generated, of which three are international. In the major one, US institutions are linked to asian counterparts (China and Japan) through the University of Wisconsin, and to UK through the University of Missouri. Another component is formed by the association of Australia to the Czech Republic via the University of Queensland.

INSTITUTIONAL CO-PUBLICATION NETWORKS IN ANIMAL RESEARCH SECTORS (4)
FISH (2626 publications)

Sociogram generated by Pajek software, using the Fruchterman Reingold spring-embedded algorithm, representing the proximity between major institutions (or "vertices") with at least **30 publications** in this research sector during the period surveyed (2006-mid 2010). This procedure results in the selection of about 60% of the publications of the research sector. Strength of links defined by the Salton Index of affinity SI = [nb pub A & B/(nb pub A * nb pub B) $^{-1/2}$], an index normalized according to size of vertices. To enhance legibility, only links with a strength of SI ≥ 0.05 are shown. Size of vertex proportional to number of publications. Each country is ascribed a colour.

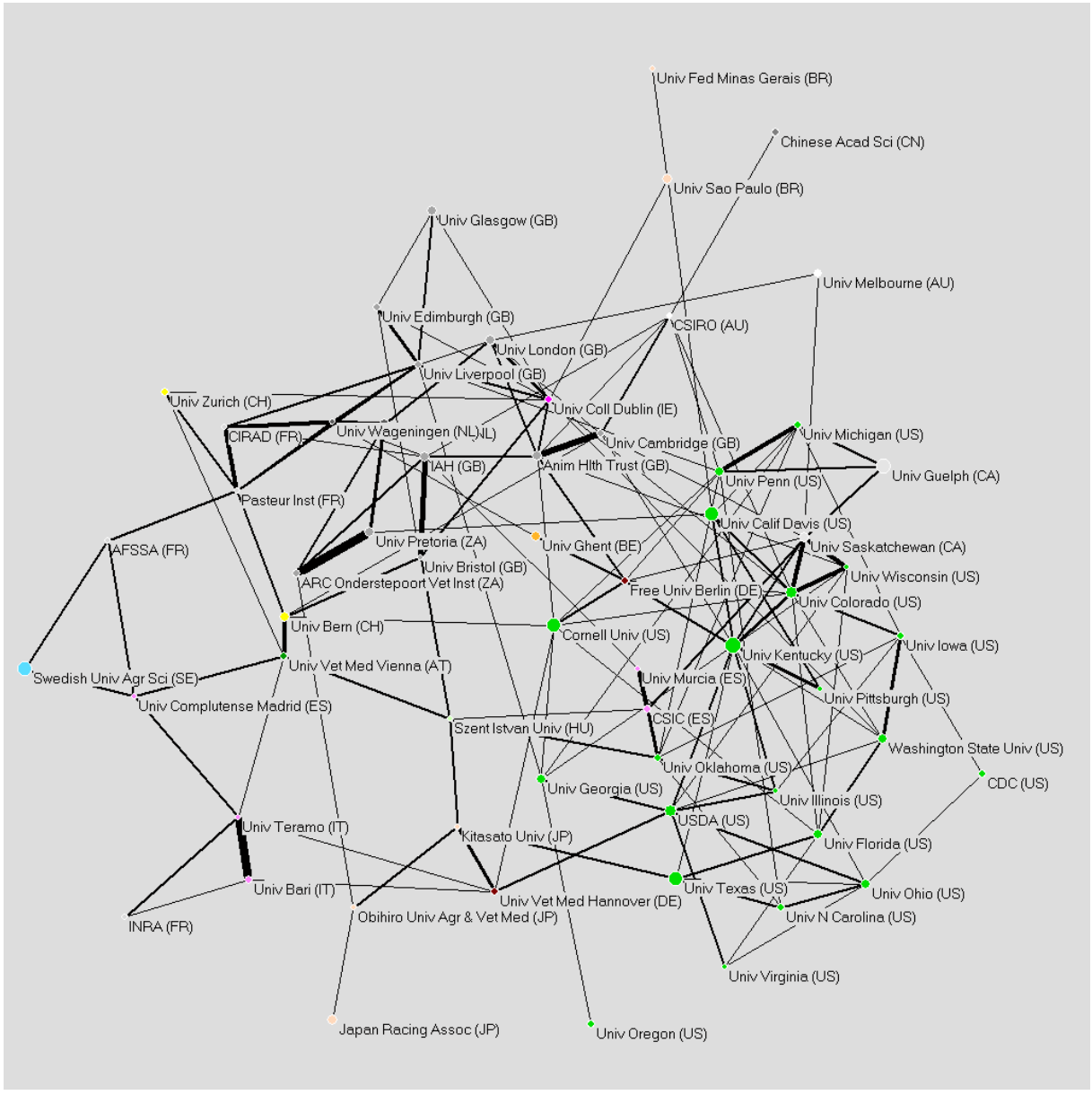


With a SI threshold of 0.050, two components are generated, the minor one being formed by Japanase institutions only. The main component is rather highly internationally connected even though the strongest links concern the prominent Nowegian cluster. The University of Aberdeen has a highly connecting role, both nationally and internationally.

INSTITUTIONAL CO-PUBLICATION NETWORKS IN ANIMAL RESEARCH SECTORS (5)

HORSES (1669 publications)

Sociogram generated by Pajek software, using the Fruchterman Reingold spring-embedded algorithm, representing the proximity between major institutions (or "vertices") with at least **15 publications** in this research sector during the period surveyed (2006-mid 2010). This procedure results in the selection of about 60% of the publications of the research sector. Strength of links defined by the Salton Index of affinity SI = [nb pub A & B/(nb pub A * nb pub B) $^{-1/2}$], an index normalized according to size of vertices.To enhance legibility, only links with a strength of SI ≥ 0.05 are shown. Size of vertex proportional to number of publications. Each country is ascribed a colour.

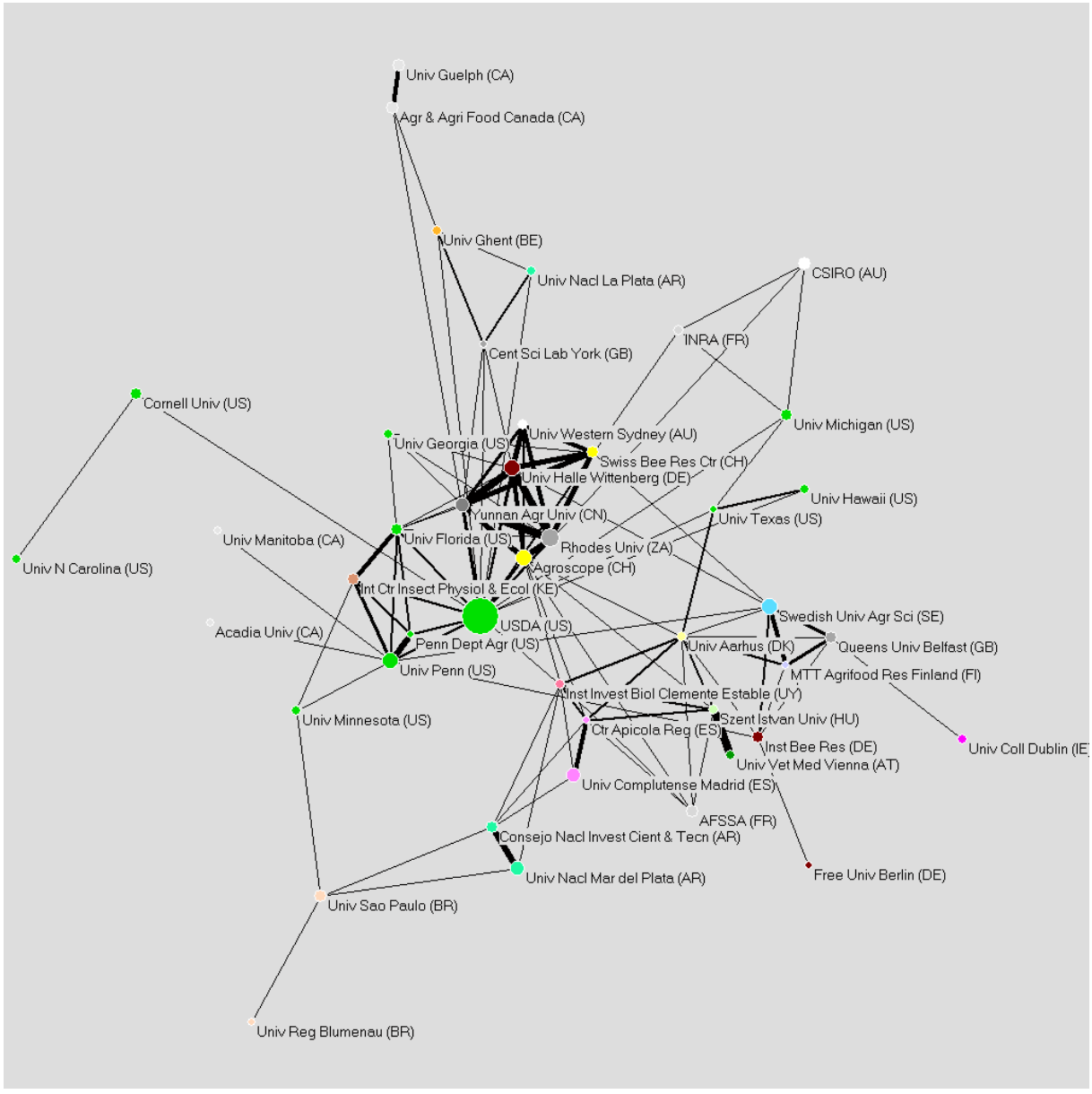


With a SI threshold of 0.050, a single component is generated, showing that this network is highly interconnected. Some institutions contribute more than others to the international collaboration such as Cornell University (US) linked to Germany, Switzerland, UK. Here again, a tight link between Spanich (CSIC, University of Murcia) and US institutions (University of Oklahoma, University of Kentucky) is observed.

INSTITUTIONAL CO-PUBLICATION NETWORKS IN ANIMAL RESEARCH SECTORS (6)

BEES

Sociogram generated by Pajek software, using the Fruchterman Reingold spring-embedded algorithm, representing the proximity between major institutions (or "vertices") with at least **5 publications** in this research sector during the period surveyed (2006-mid 2010). This procedure results in the selection of about 60% of the publications of the research sector. Strength of links defined by the Salton Index of affinity SI = [nb pub A & B/(nb pub A * nb pub B) $^{-1/2}$], an index normalized according to size of vertices.To enhance legibility, only links with a strength of SI ≥ 0.05 are shown. Size of vertex proportional to number of publications. Each country is ascribed a colour.

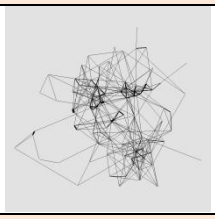
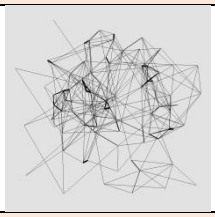
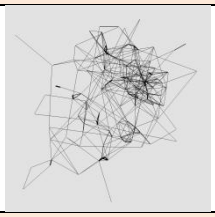
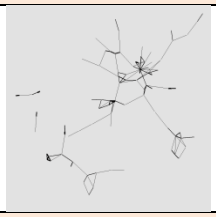
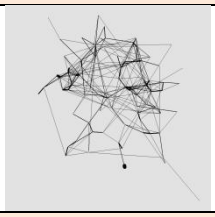
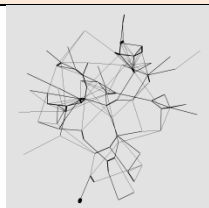
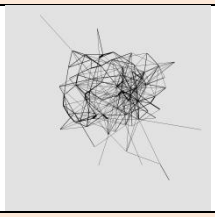
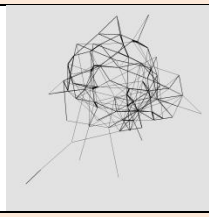
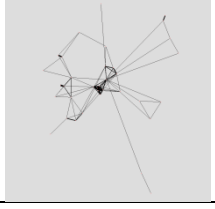
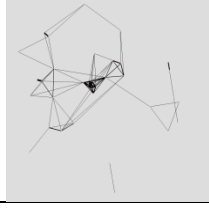


With a SI threshold of 0.050, a single component is generated, with two main international clusters: one (upper part) with institutions from US, Kenya, South Africa, Germany and Switzerland, the other with insitutions from Spain, Sweden, Hungary, Austria, Grance and Germany.

INSTITUTIONAL CO-PUBLICATION NETWORKS IN ANIMAL RESEARCH SECTORS (7)
COMPARISON OF COHESION & CENTRALITY PATTERNS

Co-publication networks of the different animal sectors were compared using basic measures of grouping using Pajek software: (1) Dimension (DI): number of vertices (institutions) at the threshold of affinity used (2) Components (CO) : number of separate interconnected groups (2) Degree of a vertex (DE): number of links to other vertices; (3) Mean degree: ∑degree / Nb vertices of the network.

Conclusions on next page

RUMINANTS			
	*Salton 0.025* DI=88 CO=1 DE=6.8		*Salton 0.025* DI=79 CO=7 DE=3.1
PIGS			
	*Salton 0.025* DI=83 CO=1 DE=6.5		*Salton 0.050* DI=79 CO=2 DE=3.1
POULTRY			
	*Salton 0.025* DI=107 CO=1 DE=6.4		*Salton 0.050* DI=90 CO=4 DE=2.7
FISH			
	*Salton 0.025* DI=84 CO=1 DE=6.1		*Salton 0.050* DI=82 CO=1 DE=3.8
HORSES			
	*Salton 0.025* DI=76 CO=1 DE=7.6		*Salton 0.050* DI=74 CO=1 DE=5.4
BEES			
	*Salton 0.025* DI=35 CO=1 DE=4.7		*Salton 0.050* DI=34 CO=3 DE=4.5

Continuation of page 42

Conclusions

Comparison of these various sociograms is legitimate as they include in all cases the institutions (vertices) making up for a cumulated percentage of 60% of the research output during the period surveyed.

With a low threshold of affinity strength (Salton Index or SI) of 0.025, all original vertices are interconnected, directly or indirectly, and form a single component. With a SI threshold of 0.050, only a part of the original vertices remain connected (with at least another vertex) and the network is generally divided in several components. Consistent with this observation, the mean number of links (or mean degree) is lower with a SI threshold of 0.050 than 0.025.

The comparison of these measures suggests that the Horses sector is the most cohesive, being the only one to form a single component with a SI threshold of 0.050 and a mean degree at this level of 5.4. If we use the criterium of mean degree for a threshold of 0.025, the hierarchy in cohesion is the following:

HORSES > RUMINANTS > PIGS > POULTRY > FISH > BEES

But if the threshold is raised to 0.050, the division into components is more important with Ruminants and Poultry, which means that the strength of the corresponding links is weaker. This leads to the following hierarchy:

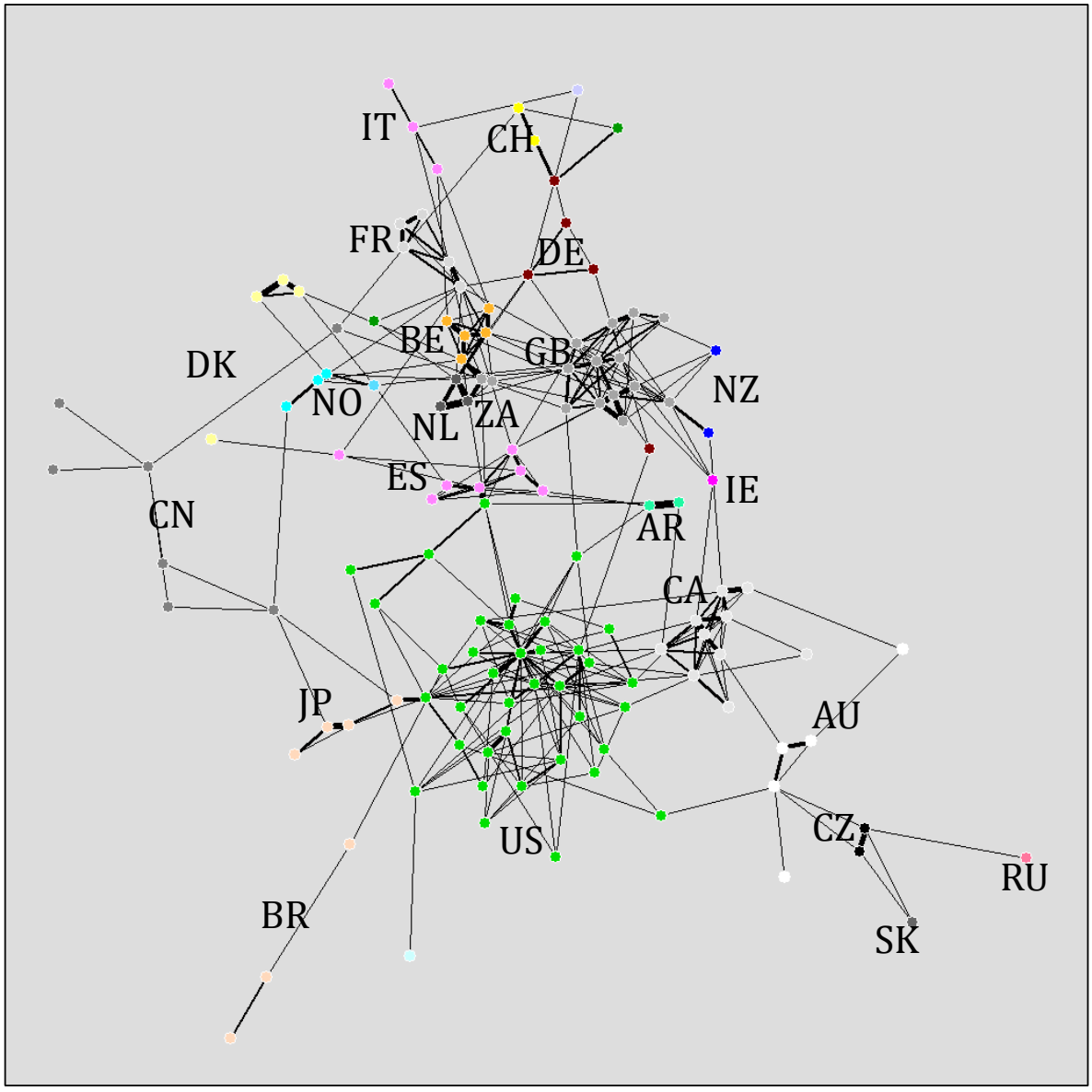
HORSES > BEES > FISH > RUMINANTS = PIGS > POULTRY

INSTITUTIONAL CO-PUBLICATION NETWORKS IN ANIMAL RESEARCH SECTORS (8)

GLOBAL REPRESENTATION: ALL LINKS

Sociogram representing co-publication links between the 132 most productive institutions making up for a cumulated 60% of the research output in the field of STAR-IDAZ (at least 96 publications from 2006 to mid-2010). National and international links above a Salton index threshold of 0.025 are represented. Pajek software, Fruchterman Reingold spring-embedded algorithm. Institutions from a given country are represented by vertices of the same colour and the country is indicated by its 2-letter code.

The proximity between institutions of a same country is well shown, along with the proximity between countries sharing a border or a tongue (as shown in the country sociograms in pages 4 and 5). In this sociogram it is also possible to pinpoint rare vertices that are closer to vertices of other countries, thus identifying institutions that strongly contribute to international and even intercontinental collaboration. To specifically identify these institutions, a second round of analysis was carried out, focused on international links (next page).

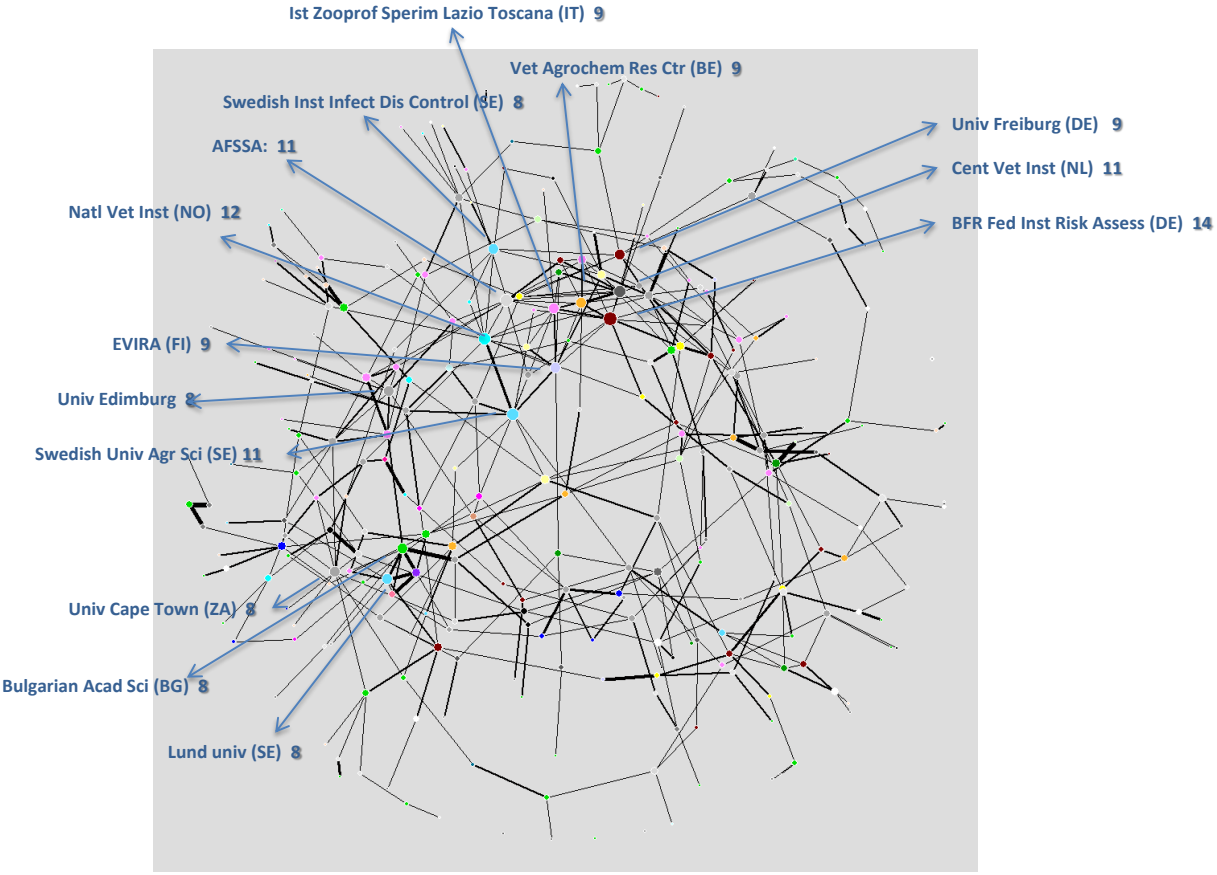


INSTITUTIONAL CO-PUBLICATION NETWORKS IN ANIMAL RESEARCH SECTORS (8)

GLOBAL REPRESENTATION : INTERNATIONAL LINKS ONLY

Sociogram representing international co-publication links between the 289 most productive institutions (at least 30 publications from 2006 to mid-2010). National and international links above a Salton index threshold of 0.025 are represented. Pajek software, Fruchterman Reingold spring-embedded algorithm. Institutions from a given country are represented by vertices of the same colour.

Institutions linked with at least 8 institutions of a different country are shown. It is recalled here that the strength of the link hence is normalized on the size of institutions with the Salton Index. These institutions are assumed to be key partners in international co-publication networks. A more complete list is provided in next page.



INSTITUTIONAL CO-PUBLICATION NETWORKS IN ANIMAL RESEARCH SECTORS (8)

GLOBAL REPRESENTATION : INTERNATIONAL LINKS ONLY

Continuation of page 45

Institutions linked with at least 6 different institutions of another country

Institutions	Number of international links
BFR Fed Inst Risk Assessment (DE)	14
Natl Vet Inst (NO)	12
Cent Vet Inst (NL)	11
Swedish Univ Agr Sci (SE)	11
AFSSA (FR)	11
Vet & Agrochem Res Ctr (BE)	9
EVIRA (FI)	9
Ist Zooprof Sperim Lazio Toscana (IT)	9
Univ Freiburg (DE)	9
Bulgarian Acad Sci (BG)	8
Lund Univ (SE)	8
Univ Edimburgh (GB)	8
Univ Cape Town (ZA)	8
Swedish Inst Infect Dis Control (SE)	8
Univ Wisconsin (US)	7
Techn Univ Denmark (DK)	7
Univ Zaragoza (ES)	7
CEFAS (GB)	7
Univ Aarhus (DK)	7
Max Planck Inst (DE)	7
Univ Aberdeen (GB)	7
Univ Vet Med Vienna (AT)	6
Univ Vilna (LT)	6
Univ Zurich (CH)	6
Clear Springs Foods Inc (US)	6
Univ Torino (IT)	6
Univ Cambridge (GB)	6
Univ E Anglia (GB)	6
Univ Antwerp (BE)	6
Univ Auckland (NZ)	6
Univ Calif Los Angeles (US)	6
Ist Zooprof Sperim Lombardia Emilia (IT)	6
Slovak Acad Sci (SK)	6

INSTITUTIONAL CO-PUBLICATION NETWORKS IN ANIMAL RESEARCH SECTORS (9)

STRONGEST INSTITUTIONAL COLLABORATIONS

To identify the strongest international institutional collaborations among the 289 most productive institutions (at least 30 publications from 2006 to mid-2010), the Salton index (SI) threshold was raised to 0.050. This procedure resulted in the fragmentation of connected vertices into the 34 components shown below, of which 24 include only two partners.

As shown by the SI value (in red on the edge), some intercontinental links are strong such as those connecting the University of Thessaly (GR) with the Scottish Agricultural College (UK), The Institute of Tropical Medicine (BE) and the University of Utrecht with with the University of Pretoria (ZA), The Bulgarian Academy of Science (BG) with the Natural History Museum of London, the CSIC (ES) with the University of Oklahoma (US), the University of Hong Kong (CN) with St Jude Childrens Hospital (US) which are all higher than 0.100.