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RESAPATH

French surveillance network for antimicrobial resistance in pathogenic bacteria of animal origin

2013 Annual Report

November 2014 Scientific publication

Contents

INTRODUCTION

Monitoring of Antimicrobial Resistance in Pathogenic Bacteria in Animals in France in 2013: Summary Report of the RESAPATH network

The French surveillance network for antimicrobial resistance in pathogenic bacteria of animal origin (RESAPATH) was set up in 1982 under the name of RESABO (BO for bovines). In 2000, it was expanded to pigs and poultry and, in 2007, to other animal species such as small ruminants, companion animals or horses. RESAPATH is a long-term cooperative effort by 67 local routine laboratories throughout France coordinated by the Lyon and Ploufragan-Plouzané Laboratories at the French Agency for Food, Environmental and Occupational Health Safety (ANSES). As mentioned below, the information presented here is based on data from an ongoing surveillance system estimating the proportion of resistances to relevant antibiotics in diseased animals treated by veterinarians as part of their regular clinical services. RESAPATH is also a key component of the recent strategic action Plan (EcoAntibio) adopted by the French Ministry of Agriculture, Food and Forest to combat antimicrobial resistance in animals. The epidemiology of resistance is increasingly complex, and we strongly believe that providing annual data of resistance trends in animal pathogens contributes to a comprehensive overview of antimicrobial resistance in veterinary medicine. We especially thank all laboratories and staff who are contributing to these surveillance efforts, and to a better control of this major issue in animals.

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On behalf of the RESAPATH

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ORGANISATION AND KEY FIGURES

The objectives of the RESAPATH are the followings:

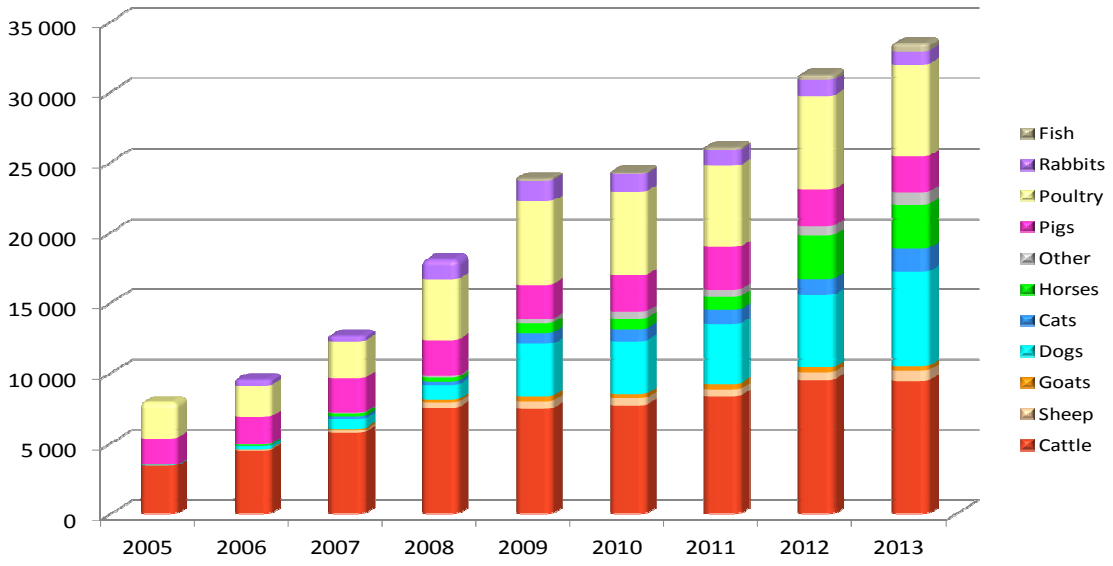
- To monitor antimicrobial resistance in pathogenic bacteria of animal origin in France,
- To collect resistant isolates of particular interest and to characterize their genetic background (including deciphering mechanisms of resistance),
- To provide a technical support to local laboratories,
- To contribute to updated comparative data between animals and humans in France.

Bacteria recovered from diseased animals and sampled by veterinarians for diagnostic purposes as part of their routine activity are tested for antimicrobial susceptibility by private or public local veterinary laboratories throughout France. Antibiograms are performed by disk diffusion according to the guidelines of the Antibiogram Committee of the French Society of Microbiology (CA-SFM 2013) and of the AFNOR NF U47-107 standard, and inhibition zone diameters are transmitted to ANSES. Isolates are then categorized as susceptible (S), intermediate (I) or resistant (R) according to the recommendations provided by the CA-SFM 2013. Should no established breakpoints be available, critical values provided by the manufacturer for the corresponding molecules are used.
In addition to data collection, RESAPATH also allows the collection of isolates harbouring resistance profiles of specific interest (such as resistance to broad-spectrum cephalosporins), which are then subjected to in-depth molecular studies. Laboratories participate to annual ring trials (External Quality Assurance System), which contribute to the quality control of the data gathered by RESAPATH. In addition, annual training sessions, technical support, on-site training and other actions are also provided.

RESAPATH is the unique veterinary member of the French National Observatory for Epidemiology of Bacterial Resistance to Antimicrobials (ONERBA), which encompasses 17 other surveillance networks throughout France, all in private or public human practices. RESAPATH is a passive or 'event-based' surveillance network. Member laboratories join the RESAPATH on a voluntary basis and data collected depend on the initial decision of veterinary practitioners. Hence, those data cannot be considered as perfectly representative of the global resistance of pathogenic bacteria but are a good indicator of their resistance rates in field conditions. In all, the significance of this monitoring relies on its ability to detect most resistant bacteria and to measure trends over time in antimicrobial resistance in diseased animals in France.

In 2013, 67 laboratories were members of RESAPATH and a total of 33,428 antibiograms were transmitted to ANSES, all animal species included. The evolution of the distribution of antibiograms per animal sector is presented in Figure 1.

Figure 1: *Annual number of antibiograms collected per animal sector*



RESISTANCE DATA

This chapter summarizes the key results on resistance trends to the different antimicrobial classes, especially to broad-spectrum cephalosporins and fluroquinolones that are considered as critically important classes of antibiotics both in human and veterinary medicine. Other important topics such as resistance trends to other antibiotics in food animals or resistance to methicillin in dogs are also included. Detailed information on resistances of the clinical isolates is available for each animal species and infection types in the Annex section.

Resistance to broad-spectrum cephalosporins

Isolates are routinely tested for susceptibility to ceftiofur and cefquinome for food animals and horses, and to ceftiofur and cefovecin for companion animals. Resistance is mainly observed for *Escherichia coli*, and to a lesser extent for *Klebsiella pneumoniae* and *Enterobacter* spp. In 2013, the highest rate of resistance to ceftiofur in clinical *E. coli* isolates was around 9.8% in broilers, cats and dogs. Resistance to ceftiofur in other animal species was 7.7% for calves, 7.0% for horses, 3.3% for pigs, 2% for sheep, 8% for goats, 2.1% for adult cattle, 1% for turkeys and rabbits.

***Figure 2**: Evolution of proportions of E. coli isolates non-susceptible (R+I) to ceftiofur in cattle, pigs, poultry, turkey, horses, cats and dogs (2006-2013)*

In broilers, a considerable increase in resistance to ceftiofur in *E. coli* was first observed in the past, reaching 21% in 2010. This proportion dropped down rapidly to 14% in 2012 and 9.8% in 2013 (Figure 2), most likely reflecting a decrease in the off-label use of cetiofur in hatcheries. Nevertheless, the resistance rate to ceftiofur in poultry remains one of the highest in animals in France, as mentioned above.

For the first time, a decreasing trend is observed in dogs (11.5% to 9.8%), horses (8.4% to 7.0%) and veal calves (8.1 % to 7.7%). On the contrary, resistance to cefovecin in cats (*E. coli*) has constantly increased since 2010 (9.6 % in 2013).

In dogs, the 9.8% rate is similar in the major types of infections. On the contrary, the 7.0% rate in horses includes a 12.0% and 13.5% rate in respiratory and skin infections, respectively, compared to 4.8% in infections of the reproductive tract. Notably, a large part of the horse population studied includes sport horses, where the use of antibiotics greatly differs compared to family horses. This may in turn result in higher levels of resistance than in the general population.

In cattle, as in other European countries, the main reservoir of resistance to broad-spectrum cephalosporins is calves, which questions on the contribution of calves fed waste milk from antimicrobial-treated cows at farm, as published at several occasions. Of note, even of minor importance, the resistance rate in adult cattle is still increasing over time.

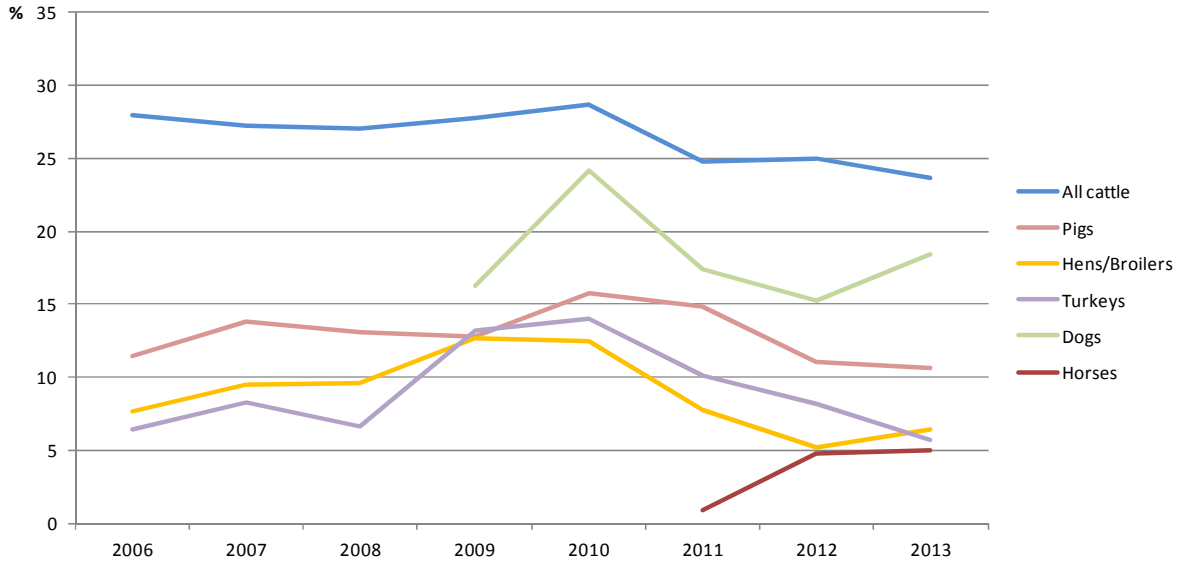
Extended-Spectrum Beta-Lactamases (ESBLs) are the main enzymes responsible for resistance to broad-spectrum cephalosporins in France (principally CTX-M-1, and to a lesser extent CTX-M-15). It should be noted that ESBLs also confer resistance to cefquinome, and that an additional decreased susceptibility to cefquinome is observed on ceftiofur susceptible *E. coli* isolates as well. This latter phenotype is most likely due to the dissemination of oxacillinase-type enzymes. Altogether, the use of cefquinome should be considered with similar attention than ceftiofur.

Resistance to fluoroquinolones

Isolates are routinely tested for susceptibility to enrofloxacin, marbofloxacin or danofloxacin. Other fluoroquinolones are also tested depending on the animal species, including the recently marketed pradofloxacin in companion animals. In Figure 3, resistance to enrofloxacin in *E. coli* was used as an indicator of resistance to fluoroquinolones.

A decrease in resistance to fluoroquinolones was observed in cattle and turkeys in 2013. However, this rate is rising up again in broilers, and even more importantly in dogs. Of note, resistance to fluoroquinolones is much higher than resistance to broad-spectrum cephalosporins in certain animal species (cattle, dogs, pigs), which is of particular concern. The smallest rate of resistance to fluroquinolones in 2013 was observed in horses (5%).

***Figure 3**: Evolution of proportions of E. coli isolates non-susceptible (R+I) to enrofloxacin in cattle, pigs, poultry, turkeys, horses and dogs (2006-2013)*



Resistance to other antibiotics

Trends over time were investigated in *E. coli*, the most frequent bacterial species among the RESAPATH data. The list of antimicrobials considered for this issue had to comprise all classes relevant in veterinary practice and included the most frequently tested molecules by the RESAPATH laboratories (excluding broad-spectrum cephalosporins and fluoroquinolones that were studied separately). Seven antibiotics (representing 5 classes) were chosen, namely gentamicin, spectinomycin or streptomycin, trimethoprim-sulfonamides in combination, tetracyclines, amoxicillin, amoxicillin and clavulanic acid in combination, and a quinolone (nalidixic or oxolonic acid). Trends were analysed over the period 2006-2013 in cattle, pigs and poultry.

Resistances in cattle are overall stable over the studied period, with few short amplitude decreases for spectinomycin or streptomycin, tetracyclines and the association of amoxicillin and clavulanic acid (Figure 4).
In pigs, the resistance to amoxicillin and clavulanic acid in combination was divided by two over the period, and resistances to tetracyclines and to the association trimethoprim-sulfonamide decreased as well but in smaller proportions (Figure 5). On the contrary, resistance to gentamicin was multiplied by three over the period.

Resistances in poultry show an overall more pronounced decrease. For hens and broilers (*Gallus gallus*), the trend is not linear and displays a visible decrease since 2009-2010 (Figure 6). For turkeys, the decrease started since 2006, except for aminosides which presented an overall small increase (which stopped in 2011 for spectinomycin or streptomycin) (Figure 7).

***Figure 4**: Evolution of proportions (%) of E. coli isolates non-susceptible (R+I) to 7 antimicrobials in cattle (2006-2013)*

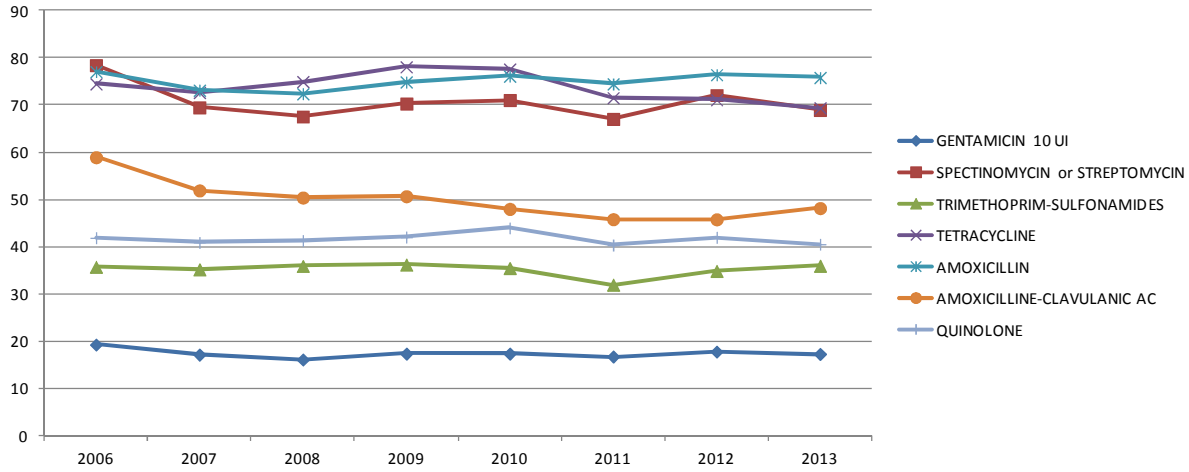


***Figure 5**: Evolution of proportions (%) of E. coli strains non-susceptible (R+I) to 7 antimicrobial in pigs (2006-2013)*

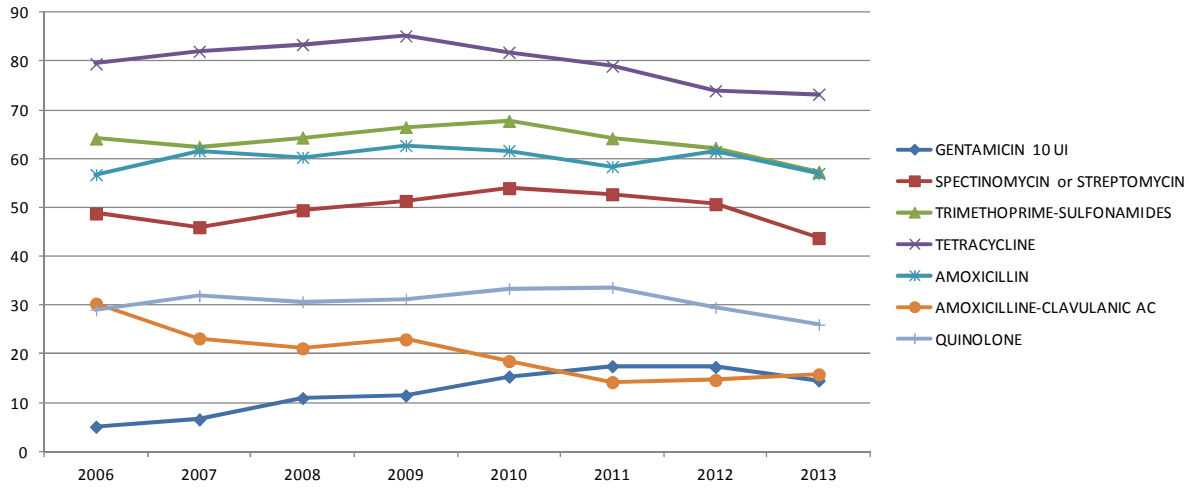


***Figure 6**: Evolution of proportions (%) of E. coli isolates non-susceptible (R+I) to 7 antimicrobials in hens and chicken (2006-2013)*

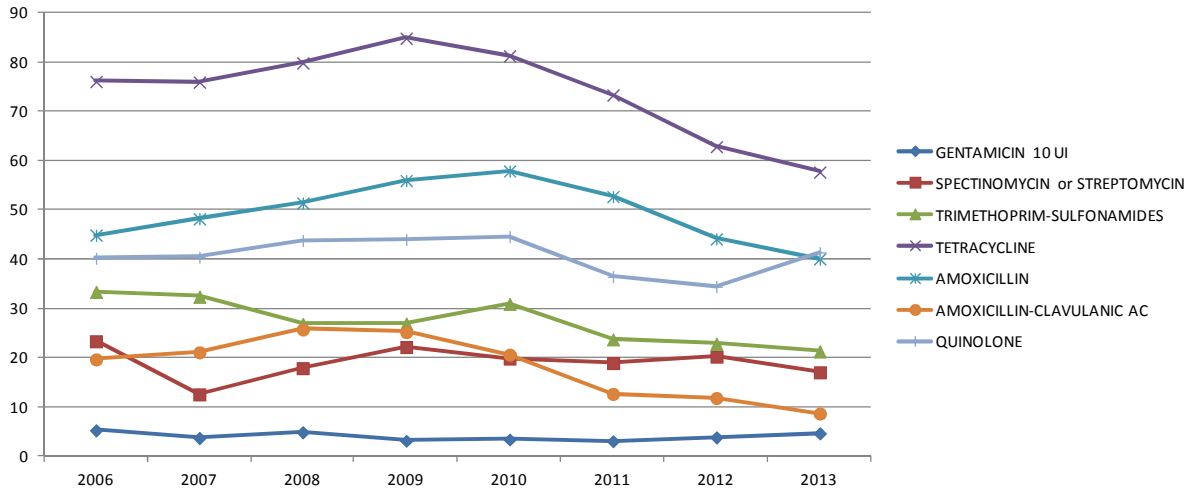
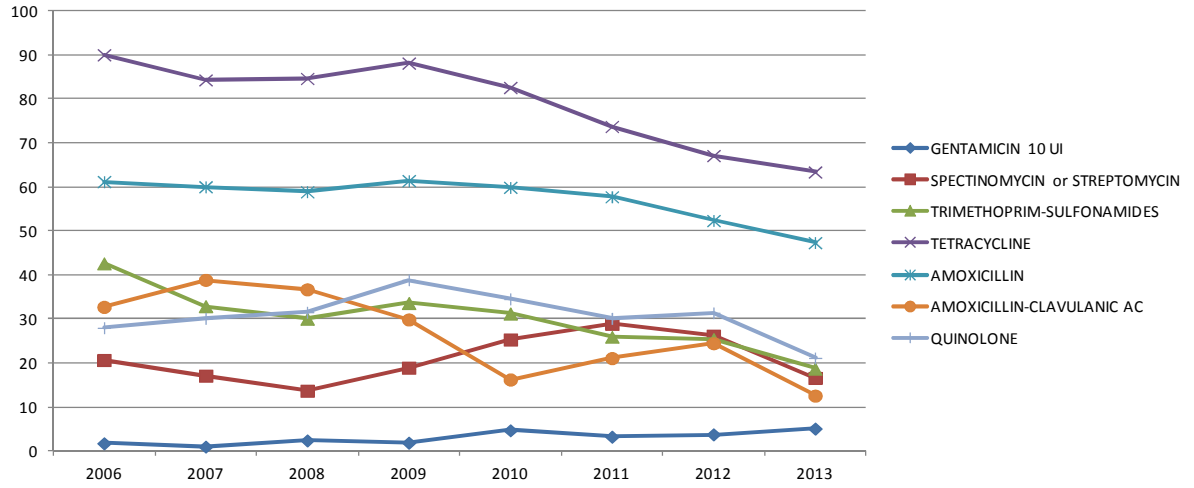


***Figure 7**: Evolution of proportions (%) of E. coli isolates non-susceptible (R+I) to 7 antimicrobials in turkeys (2006-2013)*

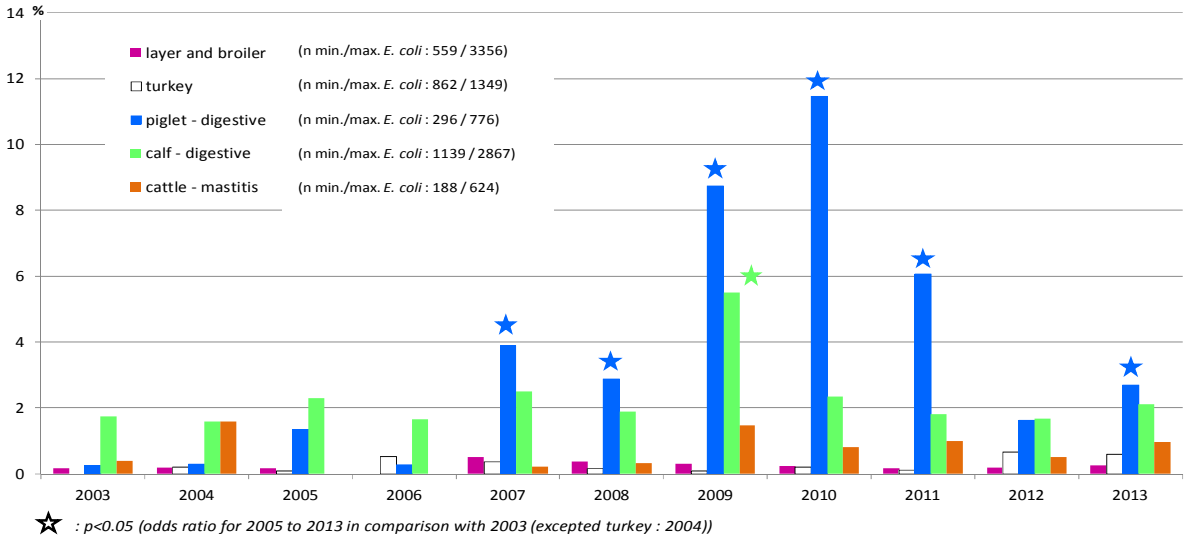


Resistance to colistin

In 2012, the veterinary group of the Antibiogram Committee of the French Society of Microbiology (CA-SFM) modified the upper cut-off for colistin (50 µg), from a diameter of 15 mm to 18 mm. This was driven by different publications as well as by the experience of the RESAPATH members who observed a lack of correlation between diameters ranging from 15 mm to 17 mm and the Minimal Inhibitory Concentrations (MICs) determined by E-tests. On the contrary, both methods were coherent above or below these diameters. Consequently, an MIC testing is now recommended on all isolates with a colistin diameter of 15-17mm, and those values (and categorisations) will replace the antibiogram results given to veterinarians.

Altogether, data from the RESAPATH probably underestimate the proportions of susceptible or resistant bacteria with cut-off values ≥ 18 mm and < 15 mm respectively. However, trends of these proportions over years are a first approach of colistin resistance. Figure 8 presents the proportions of colistin diameters under 15 mm for different animal species or ages. Odd ratios for 2005 to 2013 compared to 2003 (2004 for turkeys) show a significant difference in the proportion of colistin-resistant isolates in digestive samples from calves in 2009, and weaning pigs from 2007 to 2011 and in 2013.

***Figure 8**: Proportions of inhibition zone diameters under 15 mm for colistin (50 µg) for different animal species or ages from 2003 to 2013*



Staphylococcus pseudintermedius in French dogs

Formerly known as *Staphylococcus intermedius, S. pseudintermedius* is the main skin commensal of dogs, which are frequently healthy carriers. However, *S. pseudintermedius* can also cause numerous diseases, including otitis, pyoderma or post-operative infections. While dog undoubtedly remains the natural host of *S. pseudintermedius*, a certain number of human cases were recently reported, questioning the zoonotic potential of this bacteria.

Until 2006, *S. pseudintermedius* isolates were susceptible to the vast majority of the antibiotics available for veterinary use. Since then, methicillin-resistant isolates (MRSP) rapidly emerged and disseminated across the world. These isolates, which are also multi-resistant, are particularly difficult to treat using the veterinary therapeutic arsenal.

In France, between 2007 and 2009, repeated cases of post-operative infections due to MRSP were reported in a veterinary clinic. All isolates presented resistances to the majority of veterinary-licensed molecules – except tetracyclines and chloramphenicol for a few of them – and, despite antibiotic treatment, infections were difficult to eradicate. Molecular analyses showed that all isolates belonged to a same clone rarely described in Europe (MLST ST71-*spa* t06-SCC*mec* II-III). Following these nosocomial cases, hygiene procedure was improved and certain operative habits were modified. As a conclusion, no new case of infection due to this atypical MRSP was recorded since 2010.

In 2010, a proportion of 16.9% of MRSP was recovered through the RESAPATH. All isolates, which were epidemiologically unrelated, presented associated multi-resistance patterns potentially leading to therapeutic failures. Moreover, even methicillin-susceptible *S. pseudintermedius* (MSSP) presented numerous co-resistances. Molecular typing proved that the high prevalence of MRSP in France is mainly due to the presence of the European ST71 clone. Interestingly, a few atypical clones were also detected, which often presented less associated resistances than ST71.

These two French examples prove that the evolution of MRSP has to be monitored, since they are difficult to treat and can cause nosocomial infections. MSSP, which also present increasing resistances to non-beta-lactam antibiotics, should also be thoroughly studied. Unfortunately, *S. pseudintermedius* surveillance is uneasy since these bacteria are difficult to identify and since cefoxitin (which is the main marker of methicillin-resistance used in France) is not relevant to detect MRSP. Nevertheless, if we consider that the vast majority of coagulase-positive staphylococci isolated from dogs otitis and skin infections are *S. pseudintermedius*, a slow increase can be observed since 2010 towards the main molecules used in systemic treatment (beta-lactams, fluoroquinolones, lincomycine and tetracyclines). In a near future, the annual follow-up of trends in resistance, coupled to specific studies, will guarantee a satisfying surveillance of *S. pseudintermedius* through the RESAPATH.

mecC-positive *Staphylococcus aureus* in France

Methicillin-resistance in *Staphylococcus aureus* is conferred by the acquisition of the chromosomal cassette SCC*mec*, which carries the *mecA* gene coding for a membrane protein (PBP2A), whose affinity for beta-lactams is weak. Consequently, all isolates possessing this gene are resistant to all antibiotics from the beta-lactam family. In 2011, methicillin-resistant *S. aureus* (MRSA) from human and bovine origin were described, which presented a *mecA* variant (called *mecC*) that is not detected by the conventional *mecA*-specific PCR. Since these isolates were furthermore susceptible to all non-beta-lactam antibiotics, they could be wrongly considered as methicilin-susceptible *S. aureus* (MSSA) by the automated methods used in clinical laboratories.

The discovery of the *mecC* gene generated both scientific interest and concern throughout the world, and numerous studies were initiated first to determine the prevalence of this gene in animals and humans, and second to evaluate its pathogenicity. In France, already in 2011, retrospective studies performed allowed the identification of thirteen strains of human origin (diverse hospital collections), and one strain from a bovine mastitis (RESAPATH).

Since MRSA are very rare in bovine mastitis, all suspicious cases are sent to the Anses Laboratoy in Lyon for confirmation and, if needed, complementary studies. Thus, between 2011 and 2013, ten MRSA were collected. Five belonged to the livestock-associated clone ST398, while one belonged to a typically human clone, suggesting a human-to-animal transmission. Finally, the four remaining strains were *mecC*-positive MRSA and were genetically highly similar, even though they were collected over a four-years period of time and had no epidemiological link. Interestingly, these four strains, as well as the first ones cited above, all shared a same geographic origin around Nancy. A study is undergoing in this area in order to determine the persistance capacity of this clone and the potential causes of such a geographic clustering.

These results highlight once more the importance of the surveillance network RESAPATH, first because of its capacity to detect emerging phenotypes, and second because of the possibility to follow the presence of the major resistance phenotypes over time.

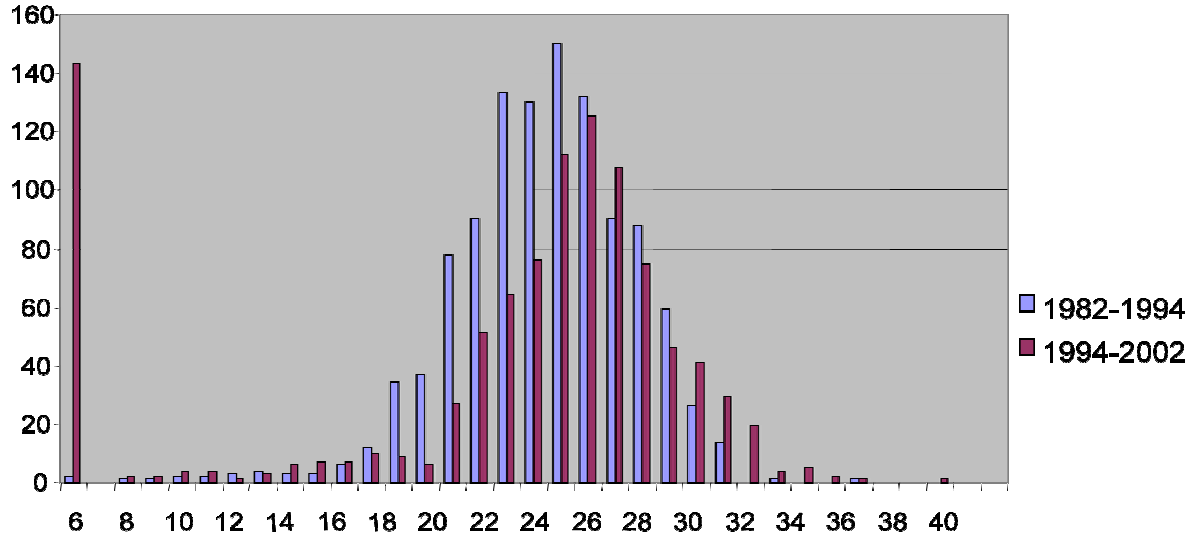
Resistance to phenicols in cattle *E. coli*

In cattle, phenicols are mainly used for infections of the respiratory tract, targeting pathogens such as those of the Pasteurellaceae group. Whereas chloramphenicol is no longer used since 1994 in cattle, florfenicol is a major therapeutic option for adult cattle in France. Accordingly, resistance to florfenicol in target pathogens is monitored by RESAPATH and, to date, only one cattle *Pasteurella trehalosi* isolate harboring the *floR* gene was detected in 2006. In conclusion, also in coherence with similar data in other countries, resistance to florfenicol in bacteria responsible for respiratory infections in cattle is highly rare.

Based on the retrospective collection of RESAPATH, resistance to florfenicol was studied over a 20 yr-period of time (1982-2002) in 2,878 *E. coli* isolates (digestive tract) from cattle. As shown in Figure 9, the diameters distribution from 1982 to 1994 (before florfenicol release on the market) highlights the absence of resistant isolates to florfenicol. On the contrary, from 1994 to 2002, a subpopulation (10%) of highly resistant isolates (6 mm diameter) has emerged, suggesting the negative impact of florfenicol treatments on the digestive flora. The presence of the *floR* gene was also confirmed in those isolates. Of note, since 2011, the resistance rate to florfenicol in cattle *E. coli* of digestive origin has increased to 25 %.

In all, even though florfenicol resistance remains limited in target pathogens and is not used to treat infections of the digestive tract in calves, the spread of resistance to this molecule is major among digestive *E. coli* isolates. These data highlight the major impact of the use of antibiotics on the digestive flora. Of note, whereas the *floR* gene may be chromosomally located (such as on Salmonella Genomic Island 1), this gene is also commonly found on plasmids together with other resistance genes, including ESBL genes. This may play an important role in the spread of florfenicol resistance (co-selection) in *E. coli*.

***Figure 9**: Distribution of inhibition diameters to florfenicol in 2,878 cattle E. coli from 1982 to 2004*



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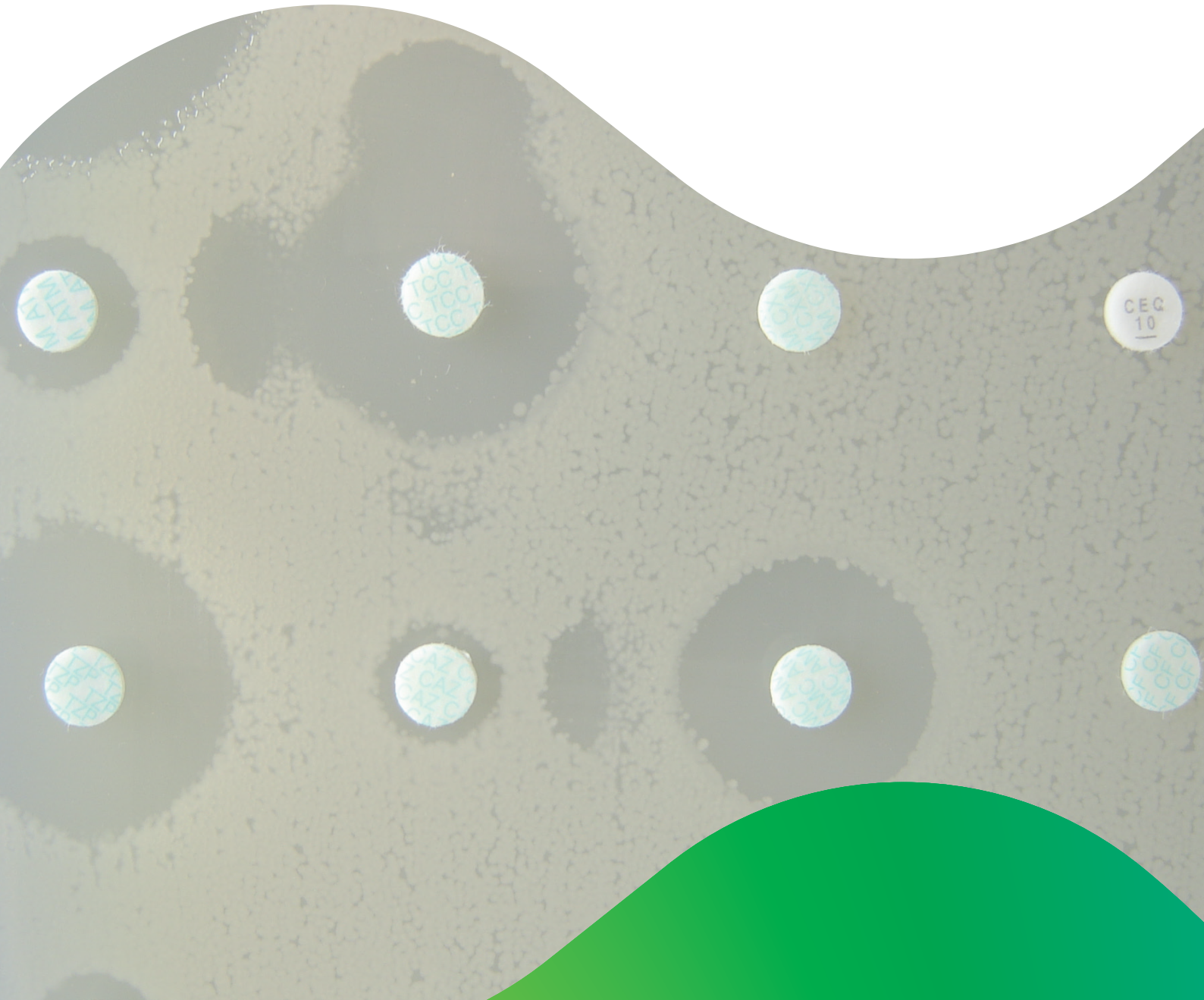
Annex 1

List of RESAPATH laboratories



Laboratories members

Laboratoire Départemental d'Analyses - BOURG EN BRESSE (01)
Eurofins Laboratoire Cœur de France - MOULINS (03)
Laboratoire Départemental Vétérinaire et Hygiène Alimentaire - GAP (05)
Laboratoire Vétérinaire Départemental - SOPHIA ANTIPOLIS (06)
Laboratoire Départemental d'Analyses - HAGNICOURT (08)
Laboratoire Départemental d'Analyses - TROYES (10)
Aveyron Labo - RODEZ (12)
Laboratoire Départemental d'Analyses - MARSEILLE (13)
LABEO Frank Duncombe - CAEN (14)
Laboratoire Départemental d'Analyses et de Recherches - AURILLAC (15)
Laboratoire Départemental d'Analyses de la Charente - ANGOULEME (16)
Laboratoire Départemental de la Côte d'Or- DIJON (21)
LABOCEA Ploufragan - PLOUFRAGAN (22)
Labofarm - LOUDEAC (22)
Laboratoire Départemental d'Analyse et de Recherche - COULOUNIEIX CHAMIERS (24)
Laboratoire Vétérinaire Départemental - BESANCON (25)
LBAA - BOURG DE PEAGE (26)
Alcyon - LANDERNEAU (29)
LABOCEA Quimper - QUIMPER (29)
Laboratoire Départemental d'Analyses - NIMES (30)
Laboratoire Départemental Vétérinaire et des Eaux - AUCH (32)
Biolab 33 - LE HAILLAN (33)
Laboratoire Départemental Vétérinaire - MONTPELLIER (34)
Laboratoire des Sources - LECOUSSE (35)
Institut en Santé Agro Environnement - JAVENE (35)
Bio-Chêne Vert - CHATEAUBOURG (35)
Deltavit - JANZE (35)
Biovilaine - REDON (35)
Laboratoire de Touraine - TOURS (37)
Laboratoire Vétérinaire Départemental - GRENOBLE (38)
Laboratoire Départemental d'Analyses - POLIGNY (39)
Laboratoire des Pyrénées et des Landes - MONT-DE-MARSAN (40)
Laboratoire Vétérinaire Départemental - MONTBRISON (42)
INOVALYS Nantes - NANTES (44)
Laboratoire Départemental d'Analyses - MENDE (48)
INOVALYS Angers - ANGERS (49)
Laboratoire HGRTS - SAINT LAURENT DE LA PLAINE (49)
LABEO Manche - SAINT LO (50)
Laboratoire Vétérinaire Départemental - LAVAL (53)
Laboratoire Vétérinaire et Alimentaire - MALZEVILLE (54)
Laboratoire Départemental d'Analyses - SAINT AVE (56)
Service du Laboratoire Départemental - NEVERS (58)
Laboratoire Départemental Public - VILLENEUVE D'ASCQ (59)
LABEO Orne - ALENCON (61)
Laboratoire Départemental d'Analyses - ARRAS (62)
Laboratoire Vétérinaire et Biologique - LEMPDES (63)
Laboratoire Départemental d'Analyses - STRASBOURG (67)
Laboratoire Vétérinaire Départemental – COLMAR (68)
Laboratoire Départemental Vétérinaire - MARCY L'ETOILE (69)

Laboratoire Départemental d'Analyses - MACON (71)
INOVALYS Le Mans - LE MANS (72)
Laboratoire Départemental d'Analyses Vétérinaires - CHAMBERY (73)
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Laboratoire Agro Vétérinaire Départemental - ROUEN (76)
Laboratoire d'Analyses Sèvres Atlantique - NIORT (79)
Laboratoire Vétérinaire Départemental - DURY (80)
Laboratoire Vétérinaire Départemental - MONTAUBAN (82)
Laboratoire Départemental d'Analyses - AVIGNON (84)
Labovet - LES HERBIERS (85)
Laboratoire de l'Environnement et de l'Alimentation de la Vendée - LA ROCHE SUR YON (85)
Laboratoire Vétérinaire Départemental - LIMOGES (87)
Laboratoire Vétérinaire Départemental - EPINAL (88)
Institut Départemental de l'Environnement et d'Analyses - AUXERRE (89)
Laboratoire de bactériologie - LCAAST – MAISONS-ALFORT (94)
VEBIO - ARCUEIL (94)

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Annex 2

Cattle

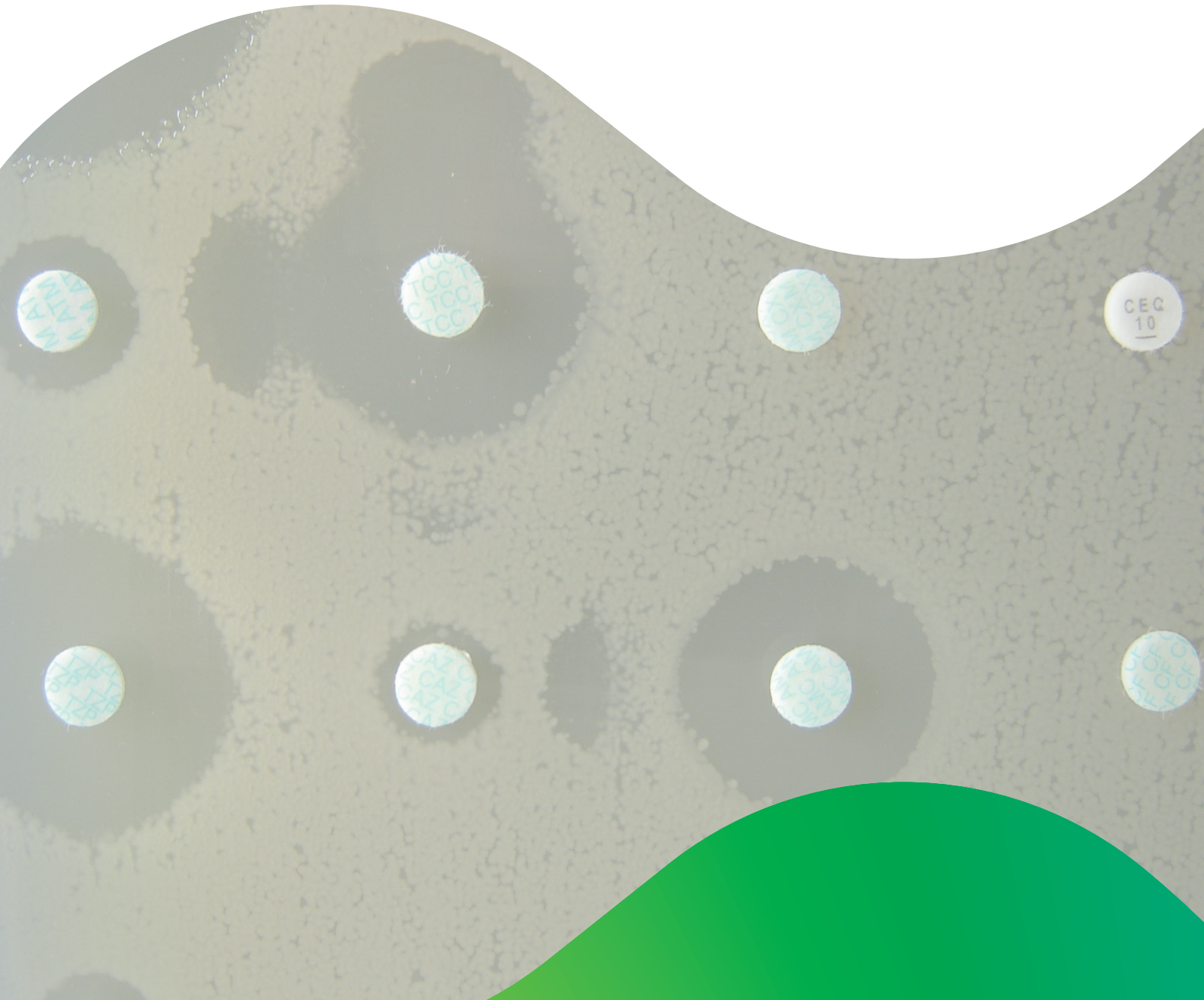
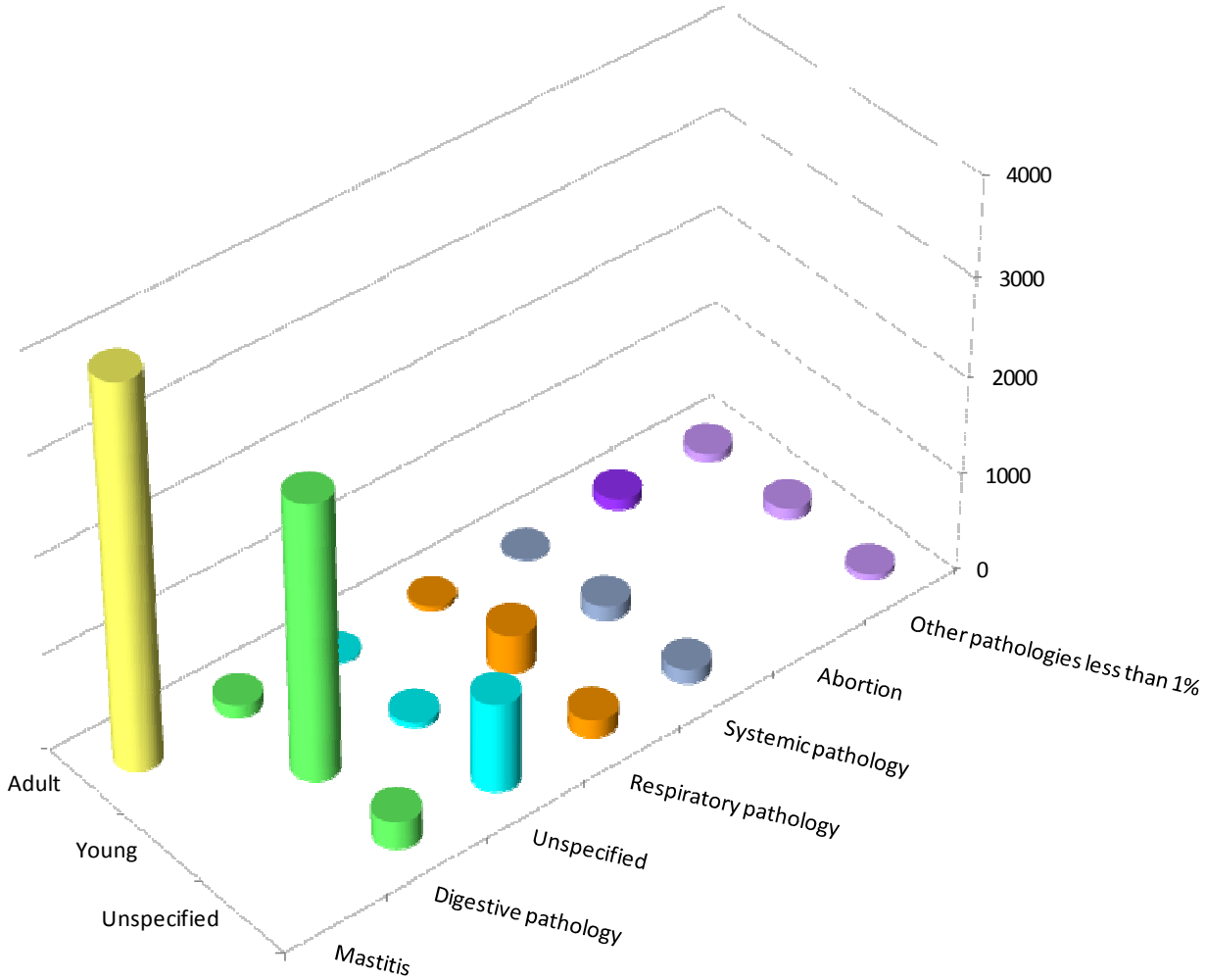


Figure 1 - Cattle 2013 – Number of antibiograms by age group and pathology

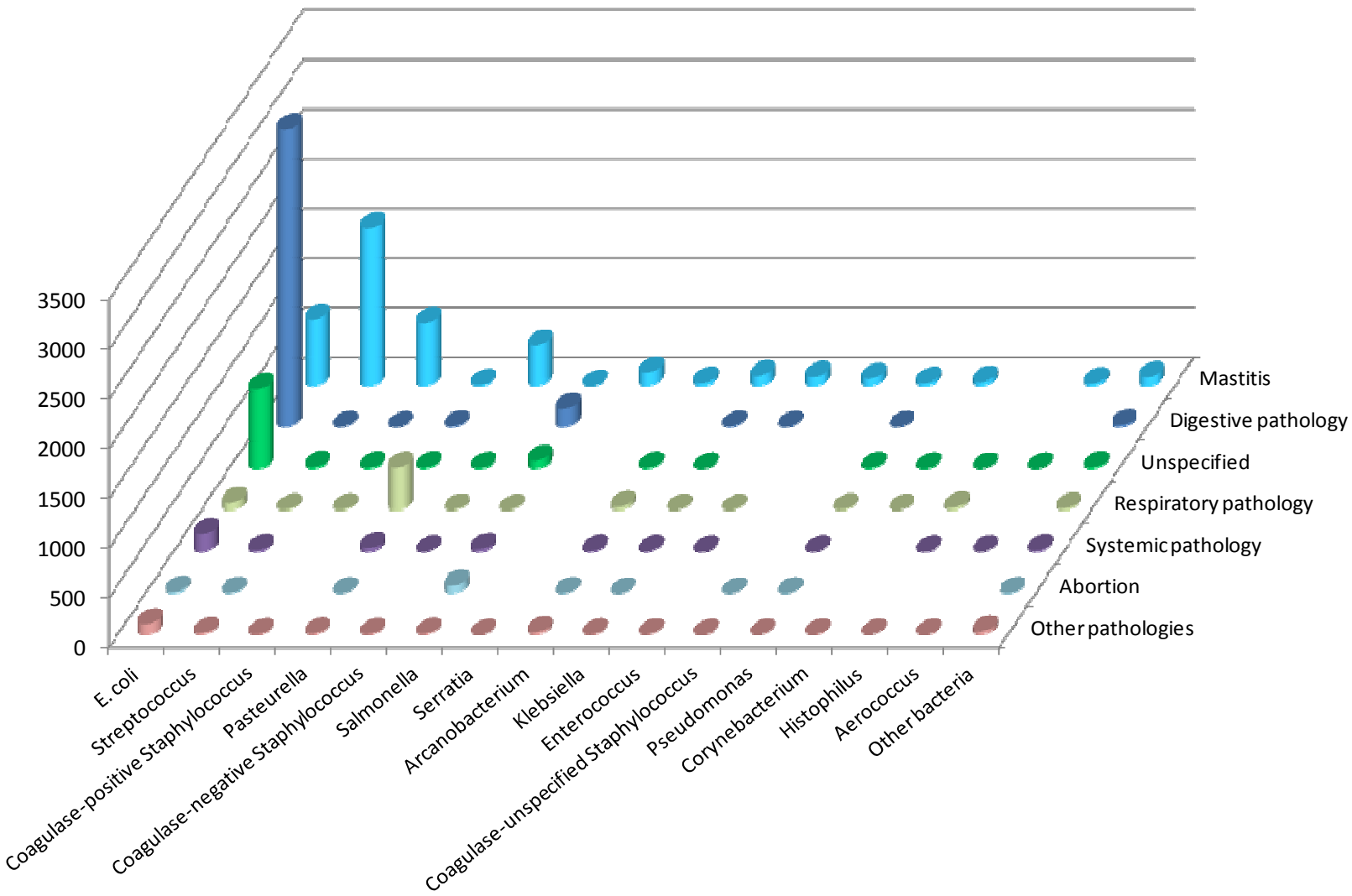


Note: *all values are detailed in table 1 (including other pahologies, representing less than 1%, grouped together)*

Table 1 - Cattle 2013 – Number of antibiograms by age group and pathology

	Pathology N (%)																	
Age group N (%)	Mastitis	Digestive pathology	Unspecified	Respiratory pathology	Systemic pathology	Abortion	Septicemia	Reproductive pathology	Arthritis	Nervous system pathology	Omphalitis	Skin and mucous membrane pathology	Ocular pathology	Kidney and urinary tract pathology	Cardiac pathology	Oral pathology	Otitis	**Total N *(%)***
Adult	3,913	113	14	43	8	119	3	58	2	3		4	8	3		3	1	**4,295**
	(41.44)	*(1.20)*	*(0.15)*	*(0.46)*	*(0.08)*	*(1.26)*	*(0.03)*	*(0.61)*	*(0.02)*	*(0.03)*		*(0.04)*	*(0.08)*	*(0.03)*		*(0.03)*	*(0.01)*	***(45.48)***
Young		2,833	55	404	151		65		7	13	15	4	2	5	1	1	1	**3,557**
		(30.00)	*(0.58)*	*(4.28)*	*(1.60)*		*(0.69)*		*(0.07)*	*(0.14)*	*(0.16)*	*(0.04)*	*(0.02)*	*(0.05)*	*(0.01)*	*(0.01)*	*(0.01)*	***(37.67)***
Unspecified		285	913	189	146		6		17	8	5	11	5	2	4			**1,591**
		(3.02)	*(9.67)*	*(2.00)*	*(1.55)*		*(0.06)*		*(0.18)*	*(0.08)*	*(0.05)*	*(0.12)*	*(0.05)*	*(0.02)*	*(0.04)*			***(16.85)***
Total N *(%)*	**3,913**	**3,231**	**982**	**636**	**305**	**119**	**74**	**58**	**26**	**24**	**20**	**19**	**15**	**10**	**5**	**4**	**2**	**9,443**
	(41.44)	***(34.22)***	***(10.40)***	***(6.74)***	***(3.23)***	***(1.26)***	***(0.78)***	***(0.61)***	***(0.28)***	***(0.25)***	***(0.21)***	***(0.20)***	***(0.16)***	***(0.11)***	***(0.05)***	***(0.04)***	***(0.02)***	***(100.00)***

Figure 2 - Cattle 2013 – Number of antibiograms by bacteria and pathology (all age groups included)

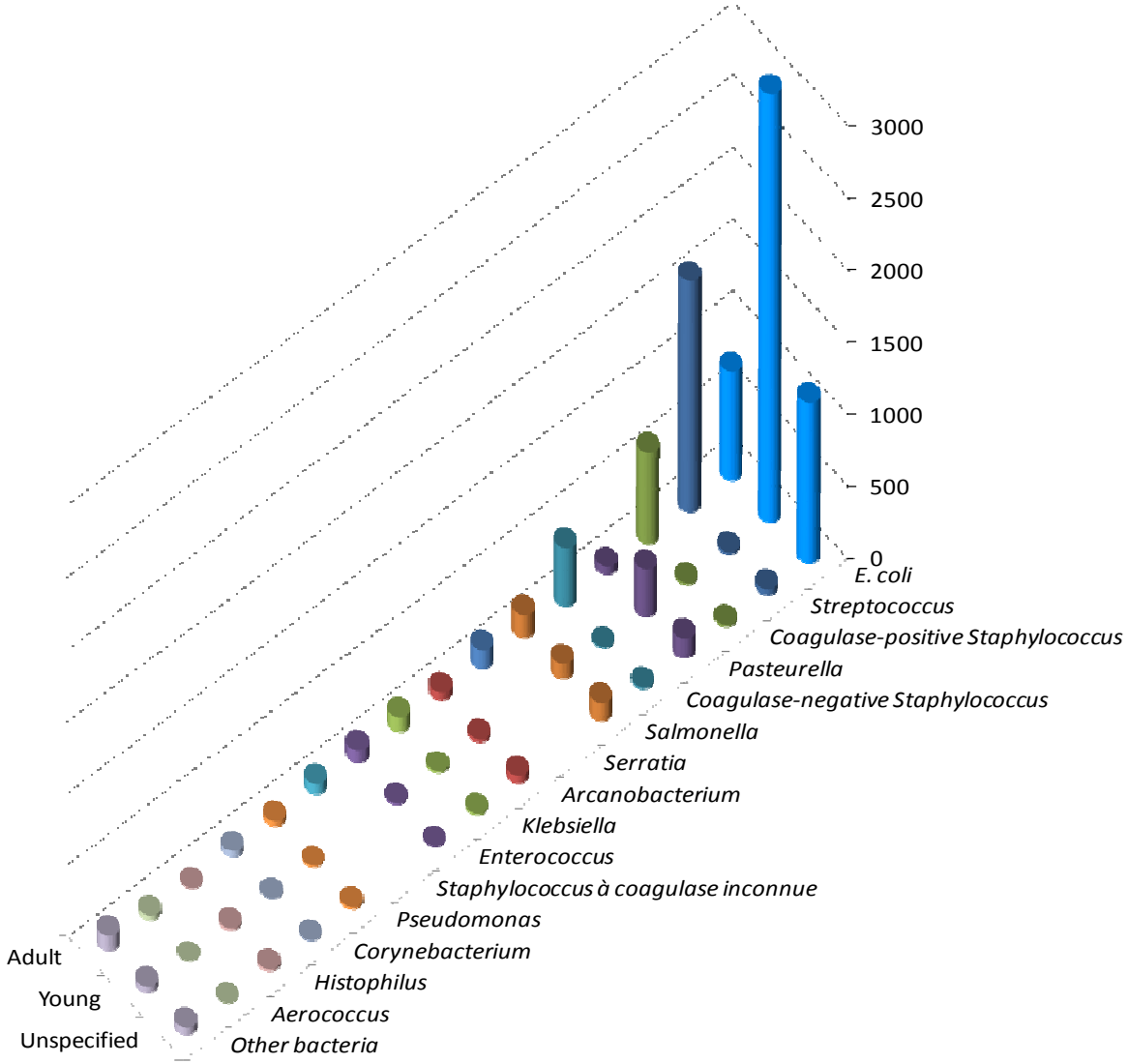


Note: *all values for pathologies >1% and bacteria groups having more than 30 occurrences are represented. Detailed values are presented in table 2 below.*

Table 2 - Cattle 2013 – Number of antibiograms by bacteria and pathology (all age groups included)

	Pathology N (%)																	
Bacteria N (%)	Mastitis	Digestive pathology	Unspecified	Respiratory pathology	Systemic pathology	Abortion	Septicemia	Reproductive pathology	Arthritis	Nervous system pathology	Omphalitis	Skin and mucous membrane pathology	Ocular pathology	Kidney and urinary tract pathology	Cardiac pathology	Oral pathology	Otitis	**Total N *(%)***
E. coli	666 *(7.05)*	3,001 *(31.78)*	804 *(8.51)*	73 *(0.77)*	178 *(1.88)*	19 *(0.20)*	59 *(0.62)*	20 *(0.21)*	6 *(0.06)*	10 *(0.11)*	5 *(0.05)*	3 *(0.03)*		5 *(0.05)*	3 *(0.03)*			**4,852** ***(51.38)***
Streptococcus	1,588 *(16.82)*	3 *(0.03)*	19 *(0.20)*	9 *(0.10)*	18 *(0.19)*	6 *(0.06)*		4 *(0.04)*	4 *(0.04)*	2 *(0.02)*	4 *(0.04)*	1 *(0.01)*	1 *(0.01)*	1 *(0.01)*	1 *(0.01)*			**1,661** ***(17.59)***
Coagulase-positive Staphylococcus	633 *(6.70)*	1 *(0.01)*	12 *(0.13)*	8 *(0.08)*				1 *(0.01)*	1 *(0.01)*	1 *(0.01)*		2 *(0.02)*	2 *(0.02)*				1 *(0.01)*	**662** ***(7.01)***
Pasteurella	13 *(0.14)*	8 *(0.08)*	13 *(0.14)*	429 *(4.54)*	38 *(0.40)*	3 *(0.03)*	6 *(0.06)*	2 *(0.02)*	3 *(0.03)*				1 *(0.01)*			2 *(0.02)*		**518** ***(5.49)***
Coagulase-negative Staphylococcus	402 *(4.26)*		10 *(0.11)*	5 *(0.05)*	3 *(0.03)*			2 *(0.02)*	2 *(0.02)*			4 *(0.04)*					1 *(0.01)*	**429** ***(4.54)***
Salmonella	2 *(0.02)*	184 *(1.95)*	82 *(0.87)*	4 *(0.04)*	28 *(0.30)*	77 *(0.82)*	5 *(0.05)*	4 *(0.04)*		2 *(0.02)*								**388** ***(4.11)***
Serratia	133 *(1.41)*							1 *(0.01)*										**134** ***(1.42)***
Arcanobacterium	34 *(0.36)*		10 *(0.11)*	37 *(0.39)*	11 *(0.12)*	4 *(0.04)*		12 *(0.13)*	7 *(0.07)*		2 *(0.02)*	5 *(0.05)*			1 *(0.01)*	1 *(0.01)*		**124** ***(1.31)***
Klebsiella	97 *(1.03)*	9 *(0.10)*	2 *(0.02)*	3 *(0.03)*	6 *(0.06)*	1 *(0.01)*		1 *(0.01)*	1 *(0.01)*	1 *(0.01)*	1 *(0.01)*			2 *(0.02)*				**124** ***(1.31)***
Enterococcus	90 *(0.95)*	3 *(0.03)*		4 *(0.04)*	1 *(0.01)*		3 *(0.03)*	1 *(0.01)*				1 *(0.01)*						**103** ***(1.09)***
Staphylococcus à coagulase inconnue	70 *(0.74)*					1 *(0.01)*		1 *(0.01)*										**72** ***(0.76)***
Pseudomonas	32 *(0.34)*	2 *(0.02)*	8 *(0.08)*	10 *(0.11)*	3 *(0.03)*	2 *(0.02)*	1 *(0.01)*											**58** ***(0.61)***
Corynebacterium	40 *(0.42)*		4 *(0.04)*	2 *(0.02)*					1 *(0.01)*		1 *(0.01)*	1 *(0.01)*	1 *(0.01)*					**50** ***(0.53)***
Histophilus			1 *(0.01)*	31 *(0.33)*	3 *(0.03)*			1 *(0.01)*										**36** ***(0.38)***
Aerococcus	26 *(0.28)*		2 *(0.02)*		1 *(0.01)*			3 *(0.03)*										**32** ***(0.34)***
Other bacteria < 30 occurrences	87 *(0.92)*	20 *(0.21)*	15 *(0.16)*	21 *(0.22)*	15 *(0.16)*	6 *(0.06)*		5 *(0.05)*	1 *(0.01)*	8 *(0.08)*	7 *(0.07)*	2 *(0.02)*	10 *(0.11)*	2 *(0.02)*		1 *(0.01)*		**200** ***(2.12)***
Total N *(%)*	**3,913** ***(41.44)***	**3,231** ***(34.22)***	**982** ***(10.40)***	**636** ***(6.74)***	**305** ***(3.23)***	**119** ***(1.26)***	**74** ***(0.78)***	**58** ***(0.61)***	**26** ***(0.28)***	**24** ***(0.25)***	**20** ***(0.21)***	**19** ***(0.20)***	**15** ***(0.16)***	**10** ***(0.11)***	**5** ***(0.05)***	**4** ***(0.04)***	**2** ***(0.02)***	**9,443** ***(100.00)***

Figure 3 - Cattle 2013 – Number of antibiograms by bacteria and age group



Note: *only bacterial groups having more than 30 occurrences are represented. Detailed values are presented in table 3 below.*

Table 3 - Cattle 2013 – Number of antibiograms by bacteria and age group

	Age group N *(%)*			
Bacteria N ***(%)***	Adult	Young	Unspecified	**Total N** ***(%)***
E. coli	758 *(8.03)*	2,973 *(31.48)*	1,121 *(11.87)*	**4,852** ***(51.38)***
Streptococcus	1,607 *(17.02)*	15 *(0.16)*	39 *(0.41)*	**1,661** ***(17.59)***
Coagulase-positive Staphylococcus	637 *(6.75)*	12 *(0.13)*	13 *(0.14)*	**662** ***(7.01)***
Pasteurella	55 *(0.58)*	327 *(3.46)*	136 *(1.44)*	**518** ***(5.49)***
Coagulase-negative Staphylococcus	408 *(4.32)*	8 *(0.08)*	13 *(0.14)*	**429** ***(4.54)***
Salmonella	158 *(1.67)*	106 *(1.12)*	124 *(1.31)*	**388** ***(4.11)***
Serratia	134 *(1.42)*			**134** ***(1.42)***
Arcanobacterium	54 *(0.57)*	21 *(0.22)*	49 *(0.52)*	**124** ***(1.31)***
Klebsiella	100 *(1.06)*	13 *(0.14)*	11 *(0.12)*	**124** ***(1.31)***
Enterococcus	91 *(0.96)*	10 *(0.11)*	2 *(0.02)*	**103** ***(1.09)***
Coagulase-unspecified Staphylococcus	72 *(0.76)*			**72** ***(0.76)***
Pseudomonas	34 *(0.36)*	10 *(0.11)*	14 *(0.15)*	**58** ***(0.61)***
Corynebacterium	42 *(0.44)*	3 *(0.03)*	5 *(0.05)*	**50** ***(0.53)***
Histophilus	4 *(0.04)*	17 *(0.18)*	15 *(0.16)*	**36** ***(0.38)***
Aerococcus	30 *(0.32)*	1 *(0.01)*	1 *(0.01)*	**32** ***(0.34)***
Other bacteria	111 *(1.18)*	41 *(0.43)*	48 *(0.51)*	**200** ***(2.12)***
Total N ***(%)***	**4,295** ***(45.48)***	**3,557** ***(37.67)***	**1,591** ***(16.85)***	**9,443** ***(100.00)***

Table 4 - Cattle 2013 – Digestive pathology – Young animals – *E. coli*: susceptibility to antibiotics (proportion) (N=2,720)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*2,226*	**15**
Amoxicillin-Clavulanic ac.	*2,718*	**42**
Cephalexin	*2,008*	**74**
Cephalothin	*420*	**60**
Cefoxitin	*1,831*	**91**
Cefuroxime	*707*	**65**
Cefoperazone	*848*	**80**
Cefotaxime	*139*	**50**
Ceftazidime	*138*	**81**
Ceftiofur	*2,647*	**92**
Cefepime	*139*	**46**
Cefquinome 30 µg	*2,634*	**85**
Ertapenem	*138*	**99**
Aztreonam	*139*	**54**
Streptomycin 10 UI	*1,332*	**13**
Spectinomycin	*1,060*	**47**
Kanamycin 30 UI	*1,371*	**49**
Gentamicin 10 UI	*2,716*	**80**
Neomycin	*1,483*	**50**
Apramycin	*1,047*	**86**
Tetracycline	*2,284*	**21**
Chloramphenicol	*83*	**51**
Florfenicol	*2,044*	**76**
Nalidixic ac.	*1,410*	**55**
Oxolinic ac.	*923*	**56**
Flumequine	*1,380*	**57**
Enrofloxacin	*2,494*	**75**
Marbofloxacin	*2,423*	**79**
Danofloxacin	*1,272*	**70**
Sulfonamides	*330*	**19**
Trimethoprim	*35*	**86**
Trimethoprim-Sulfonamides	*2,611*	**61**

Table 5 - Cattle 2013 – Mastitis – Adults – *E. coli:* susceptibility to antibiotics (proportion) (N=666)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*566*	**75**
Amoxicillin-Clavulanic ac.	*663*	**83**
Cephalexin	*544*	**87**
Cephalothin	*175*	**88**
Cefoxitin	*486*	**97**
Cefuroxime	*263*	**94**
Cefoperazone	*501*	**97**
Ceftazidime	*49*	**96**
Ceftiofur	*524*	**98**
Cefepime	*72*	**97**
Cefquinome 30 µg	*584*	**99**
Streptomycin 10 UI	*341*	**72**
Spectinomycin	*140*	**84**
Kanamycin 30 UI	*261*	**89**
Gentamicin 10 UI	*661*	**98**
Neomycin	*466*	**88**
Apramycin	*111*	**96**
Tetracycline	*619*	**81**
Chloramphenicol	*45*	**91**
Florfenicol	*383*	**97**
Nalidixic ac.	*306*	**92**
Oxolinic ac.	*120*	**98**
Flumequine	*232*	**96**
Enrofloxacin	*549*	**97**
Marbofloxacin	*578*	**97**
Danofloxacin	*204*	**97**
Difloxacin	*44*	**100**
Sulfonamides	*96*	**84**
Trimethoprim	*77*	**92**
Trimethoprim-Sulfonamides	*577*	**92**

Table 6 - Cattle 2013 – All pathologies and age groups included – *Salmonella* Typhimurium*:* susceptibility to antibiotics (proportion) (N=157)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*149*	**23**
Amoxicillin-Clavulanic ac.	*156*	**53**
Cephalexin	*134*	**100**
Cephalothin	*51*	**100**
Cefoxitin	*140*	**100**
Cefuroxime	*62*	**95**
Cefoperazone	*77*	**49**
Ceftiofur	*156*	**100**
Cefquinome 30 µg	*140*	**100**
Streptomycin 10 UI	*84*	**23**
Spectinomycin	*73*	**33**
Kanamycin 30 UI	*76*	**97**
Gentamicin 10 UI	*156*	**99**
Neomycin	*140*	**97**
Apramycin	*64*	**100**
Tetracycline	*151*	**19**
Chloramphenicol	*33*	**45**
Florfenicol	*133*	**51**
Nalidixic ac.	*74*	**88**
Oxolinic ac.	*54*	**93**
Flumequine	*79*	**96**
Enrofloxacin	*151*	**98**
Marbofloxacin	*143*	**100**
Danofloxacin	*90*	**100**
Sulfonamides	*40*	**12**
Trimethoprim-Sulfonamides	*155*	**99**

Table 7 - Cattle 2013 – All pathologies and age groups included – *Salmonella* Mbandaka*:* susceptibility to antibiotics (proportion) (N=60)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*59*	**98**
Amoxicillin-Clavulanic ac.	*60*	**97**
Cephalexin	*59*	**98**
Cephalothin	*42*	**98**
Cefoxitin	*59*	**98**
Cefuroxime	*46*	**100**
Cefoperazone	*49*	**100**
Ceftiofur	*60*	**100**
Cefepime	*42*	**100**
Cefquinome 30 µg	*59*	**100**
Streptomycin 10 UI	*46*	**37**
Kanamycin 30 UI	*46*	**100**
Gentamicin 10 UI	*59*	**100**
Neomycin	*57*	**100**
Tetracycline	*60*	**97**
Florfenicol	*58*	**100**
Nalidixic ac.	*47*	**98**
Enrofloxacin	*60*	**98**
Marbofloxacin	*58*	**98**
Danofloxacin	*55*	**98**
Sulfonamides	*43*	**100**
Trimethoprim	*42*	**100**
Trimethoprim-Sulfonamides	*60*	**98**

Table 8 - Cattle 2013 – Respiratory pathology – Youngs animals – *Pasteurella multocida:* susceptibility to antibiotics (proportion) (N=167)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*158*	**98**
Amoxicillin-Clavulanic ac.	*164*	**99**
Cephalexin	*131*	**98**
Ceftiofur	*161*	**100**
Cefquinome 30 µg	*165*	**96**
Streptomycin 10 UI	*40*	**57**
Spectinomycin	*99*	**80**
Gentamicin 10 UI	*148*	**96**
Neomycin	*105*	**92**
Tetracycline	*154*	**77**
Doxycycline	*96*	**77**
Florfenicol	*165*	**99**
Nalidixic ac.	*36*	**92**
Oxolinic ac.	*95*	**89**
Flumequine	*119*	**90**
Enrofloxacin	*157*	**99**
Marbofloxacin	*159*	**99**
Danofloxacin	*116*	**97**
Trimethoprim-Sulfonamides	*153*	**94**

Table 9 - Cattle 2013 – Respiratory pathology – Youngs animals – *Mannheimia haemolytica:* susceptibility to antibiotics (proportion) (N=124)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*117*	**82**
Amoxicillin-Clavulanic ac.	*122*	**98**
Cephalexin	*92*	**97**
Ceftiofur	*117*	**98**
Cefquinome 30 µg	*121*	**97**
Streptomycin 10 UI	*33*	**24**
Spectinomycin	*70*	**77**
Gentamicin 10 UI	*118*	**81**
Neomycin	*88*	**82**
Tetracycline	*117*	**65**
Doxycycline	*65*	**52**
Florfenicol	*121*	**96**
Nalidixic ac.	*42*	**86**
Oxolinic ac.	*70*	**83**
Flumequine	*81*	**74**
Enrofloxacin	*118*	**91**
Marbofloxacin	*116*	**94**
Danofloxacin	*84*	**85**
Trimethoprim-Sulfonamides	*112*	**94**

Table 10 - Cattle 2013 – Mastitis – Adults – *Serratia marcescens:* susceptibility to antibiotics (proportion) (N=113)

Antibiotic	*Total (N)*	**% S**
Amoxicillin-Clavulanic ac.	*113*	**18**
Cephalexin	*92*	**3**
Cefoxitin	*84*	**82**
Cefoperazone	*83*	**98**
Ceftiofur	*96*	**98**
Cefquinome 30 µg	*96*	**100**
Streptomycin 10 UI	*53*	**70**
Spectinomycin	*34*	**62**
Gentamicin 10 UI	*112*	**100**
Neomycin	*83*	**99**
Tetracycline	*104*	**13**
Florfenicol	*61*	**93**
Nalidixic ac.	*49*	**100**
Flumequine	*37*	**100**
Enrofloxacin	*93*	**99**
Marbofloxacin	*96*	**100**
Danofloxacin	*32*	**100**
Trimethoprim-Sulfonamides	*97*	**99**

Table 11 - Cattle 2013 – Mastitis – Adults – *Klebsiella pneumoniae:* susceptibility to antibiotics (proportion) (N=46)

Antibiotic	*Total (N)*	**% S**
Amoxicillin-Clavulanic ac.	*46*	**87**
Cephalexin	*35*	**100**
Cefoxitin	*37*	**97**
Cefoperazone	*35*	**91**
Ceftiofur	*36*	**100**
Cefquinome 30 µg	*45*	**100**
Streptomycin 10 UI	*33*	**94**
Gentamicin 10 UI	*46*	**100**
Tetracycline	*45*	**87**
Enrofloxacin	*35*	**100**
Marbofloxacin	*40*	**100**
Trimethoprim-Sulfonamides	*38*	**100**

Table 12 - Cattle 2013 – Mastitis – Adults – Coagulase-positive *Staphylococcus*: susceptibility to antibiotics (proportion) (N=633) including 417 identified *S. aureus strains*.

Antibiotic	*Total (N)*	**% S**
Penicillin	*629*	**70**
Cefoxitin	*562*	**96**
Oxacillin	*120*	**92**
Erythromycin	*522*	**94**
Tylosin	*387*	**97**
Spiramycin	*623*	**96**
Lincomycin	*601*	**97**
Pirlimycin	*89*	**100**
Streptomycin 10 UI	*461*	**92**
Kanamycin 30 UI	*356*	**99**
Gentamicin 10 UI	*610*	**99**
Neomycin	*304*	**99**
Tetracycline	*608*	**95**
Doxycycline	*46*	**96**
Chloramphenicol	*39*	**97**
Florfenicol	*221*	**99**
Enrofloxacin	*560*	**100**
Marbofloxacin	*595*	**100**
Danofloxacin	*157*	**99**
Sulfonamides	*31*	**94**
Trimethoprim-Sulfonamides	*505*	**100**
Rifampicin	*177*	**98**

Table 13 - Cattle 2013 – Mastitis – Adults – Coagulase-negative *Staphycoccus*: susceptibility to antibiotics (proportion) (N=402)

Antibiotic	*Total (N)*	**% S**
Penicillin	*395*	**68**
Cefoxitin	*341*	**96**
Oxacillin	*92*	**92**
Erythromycin	*367*	**85**
Tylosin	*215*	**93**
Spiramycin	*392*	**91**
Lincomycin	*388*	**85**
Pirlimycin	*42*	**100**
Streptomycin 10 UI	*244*	**83**
Kanamycin 30 UI	*219*	**96**
Gentamicin 10 UI	*397*	**97**
Neomycin	*230*	**99**
Tetracycline	*395*	**87**
Doxycycline	*38*	**95**
Florfenicol	*180*	**99**
Enrofloxacin	*327*	**98**
Marbofloxacin	*346*	**99**
Danofloxacin	*146*	**95**
Trimethoprim-Sulfonamides	*342*	**97**
Rifampicin	*131*	**98**

Table 14 - Cattle 2013 – Mastitis – Adults – *Streptococcus uberis*: susceptibility to antibiotics (proportion) (N=1,298)

Antibiotic	*Total (N)*	**% S**
Ampicillin	*186*	**97**
Oxacillin	*1,006*	**84**
Erythromycin	*1,124*	**82**
Tylosin	*771*	**77**
Spiramycin	*1,244*	**82**
Lincomycin	*1,211*	**83**
Pirlimycin	*37*	**100**
Streptomycin 500 µg	*1,113*	**88**
Kanamycin 1000 µg	*906*	**95**
Gentamicin 500 µg	*1,106*	**98**
Tetracycline	*1,127*	**82**
Doxycycline	*113*	**90**
Chloramphenicol	*83*	**93**
Florfenicol	*531*	**97**
Enrofloxacin	*1,088*	**67**
Marbofloxacin	*1,003*	**89**
Danofloxacin	*201*	**38**
Trimethoprim-Sulfonamides	*1,175*	**92**
Rifampicin	*321*	**71**

Table 15 - Cattle 2013 – Mastitis – Adults – *Streptococcus dysgalactiae:* susceptibility to antibiotics (proportion) (N=202)

Antibiotic	*Total (N)*	**% S**
Oxacillin	*152*	**97**
Erythromycin	*169*	**86**
Tylosin	*116*	**87**
Spiramycin	*197*	**88**
Lincomycin	*191*	**92**
Streptomycin 500 µg	*182*	**95**
Kanamycin 1000 µg	*157*	**94**
Gentamicin 500 µg	*179*	**99**
Tetracycline	*185*	**25**
Florfenicol	*69*	**99**
Enrofloxacin	*157*	**47**
Marbofloxacin	*154*	**92**
Trimethoprim-Sulfonamides	*185*	**93**
Rifampicin	*65*	**69**

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Annex 3

Sheep

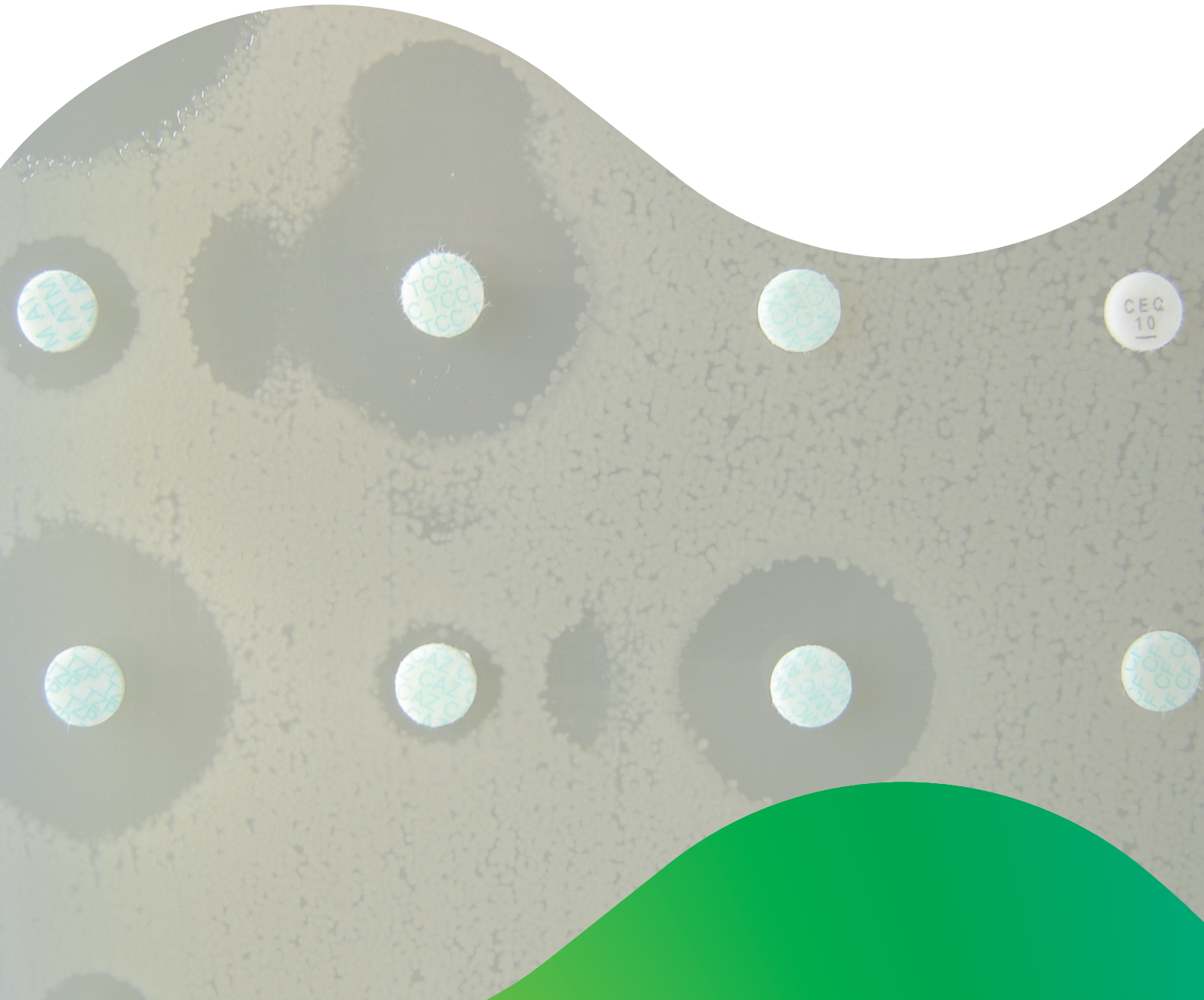


Figure 1 - Sheep 2013 – Number of antibiograms by age group and pathology

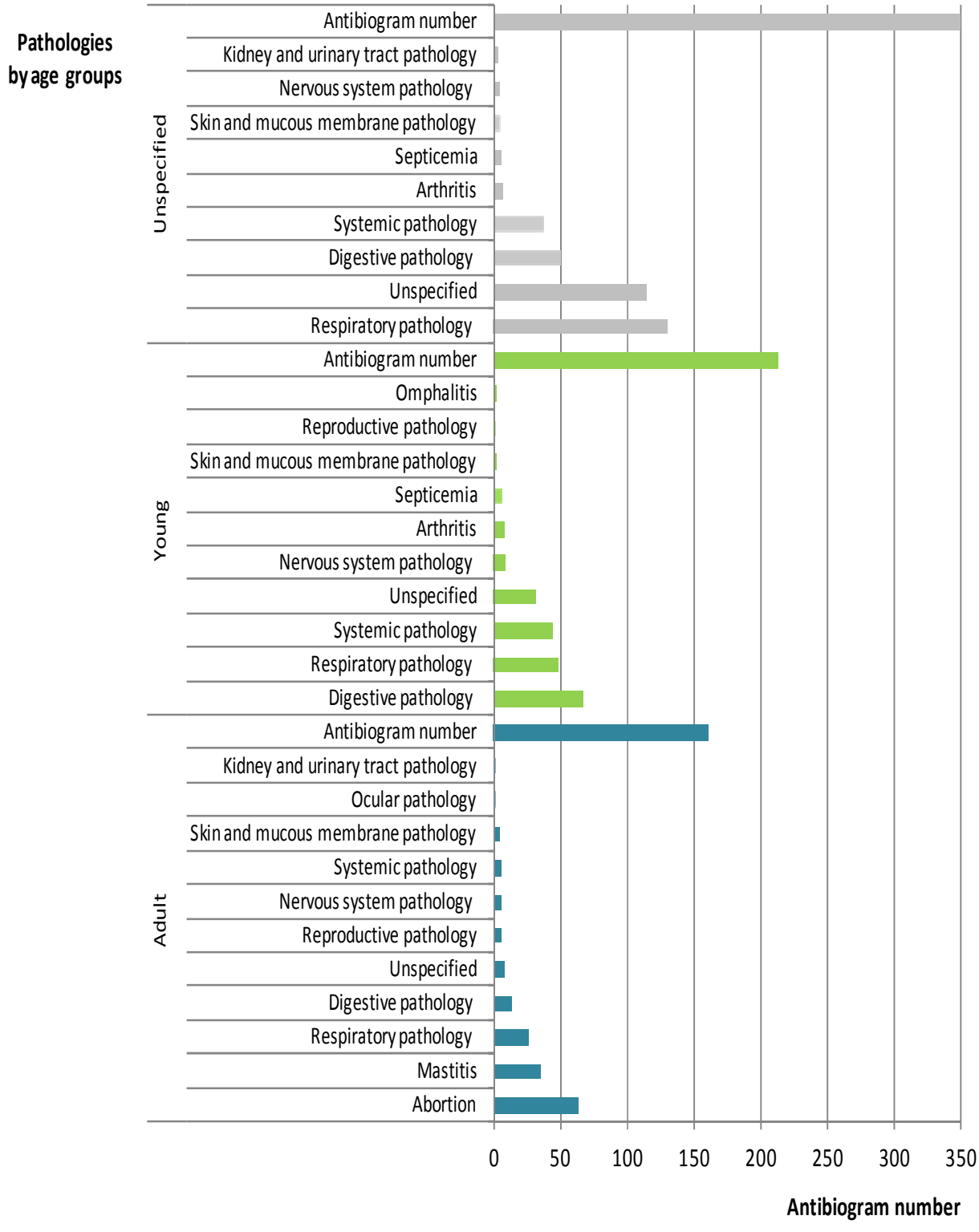
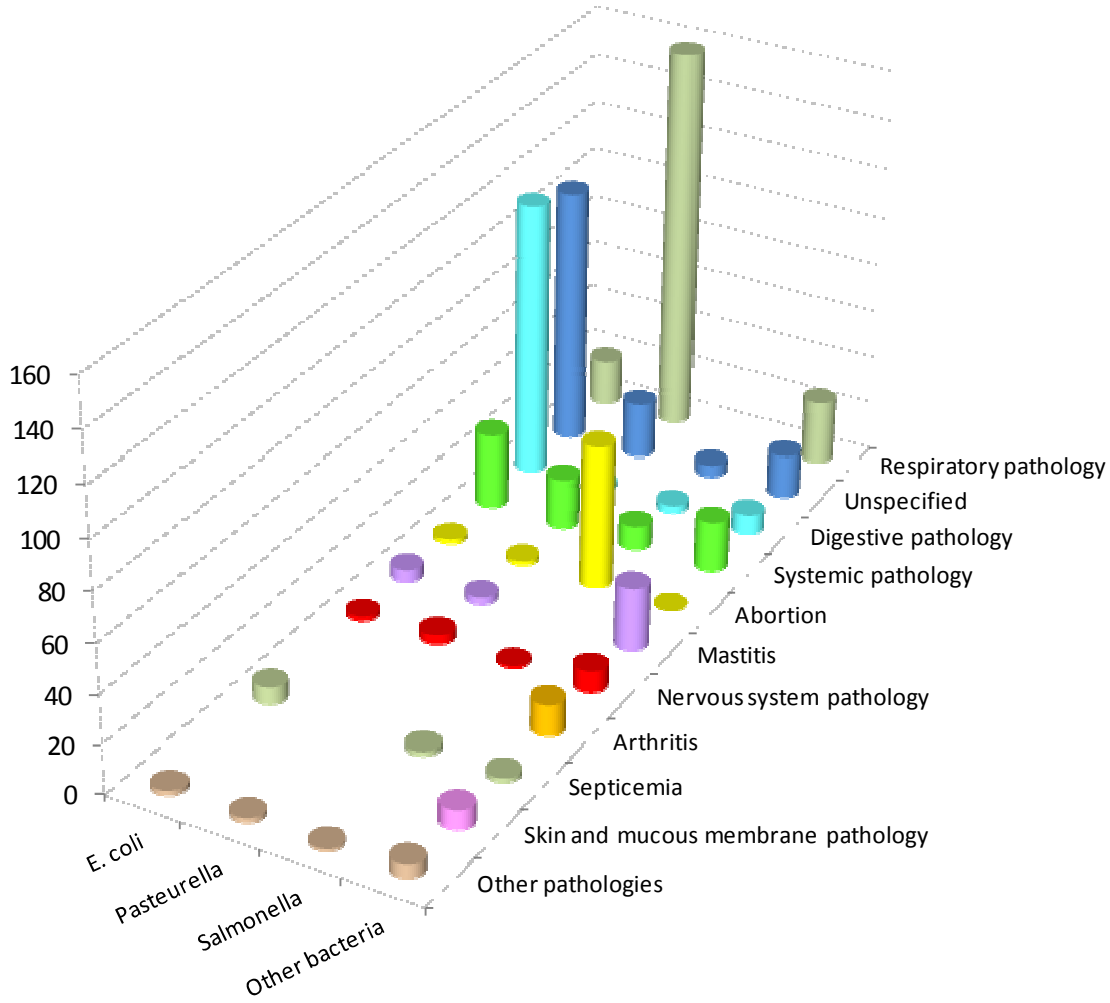


Table 1 - Sheep 2013 – Number of antibiograms by age group and pathology

	Pathology N (%)														
Age group N *(%)*	Respiratory pathology	Unspecified	Digestive pathology	Systemic pathology	Abortion	Mastitis	Nervous system pathology	Arthritis	Septicemia	Skin and mucous membrane pathology	Reproductive pathology	Kidney and urinary tract pathology	Ocular pathology	Omphalitis	**Total N *(%)***
Unspecified	130 *(18.0)*	114 *(15.8)*	49 *(6.8)*	36 *(5.0)*			3 *(0.4)*	6 *(0.8)*	5 *(0.7)*	4 *(0.6)*		2 *(0.3)*			**349 *(48.4)***
Young	48 *(6.7)*	31 *(4.3)*	66 *(9.2)*	43 *(6.0)*			8 *(1.1)*	7 *(1.0)*	6 *(0.8)*	1 *(0.1)*	1 *(0.1)*			1 *(0.1)*	**212 *(29.4)***
Adult	25 *(3.5)*	7 *(1.0)*	12 *(1.7)*	4 *(0.6)*	63 *(8.7)*	34 *(4.7)*	5 *(0.7)*			3 *(0.4)*	5 *(0.7)*	1 *(0.1)*	1 *(0.1)*		**160 *(22.2)***
Total N *(%)*	**203 *(28.2)***	**152 *(21.1)***	**127 *(17.6)***	**83 *(11.5)***	**63 *(8.7)***	**34 *(4.7)***	**16 *(2.2)***	**13 *(1.8)***	**11 *(1.5)***	**8 *(1.1)***	**6 *(0.8)***	**3 *(0.4)***	**1 *(0.1)***	**1 *(0.1)***	**721 *(100.0)***

Figure 2 - Sheep 2013 – Number of antibiograms by bacteria group and pathology



Note: *all values for pathologies >1% and bacteria groups having more than 30 occurrences are represented . Detailed values are presented in table 2 below.*

Table 2 - Sheep 2013 – Number of antibiograms by bacteria group and pathology

	Pathology N (%)														
Bacteria N (%)	Respiratory pathology	Unspecified	Digestive pathology	Systemic pathology	Abortion	Mastitis	Nervous system pathology	Arthritis	Septicemia	Skin and mucous membrane pathology	Reproductive pathology	Kidney and urinary tract pathology	Ocular pathology	Omphalitis	**Total N *(%)***
E. coli	19 *(2.6)*	106 *(14.7)*	114 *(15.8)*	31 *(4.3)*	2 *(0.3)*	5 *(0.7)*	2 *(0.3)*		7 *(1.0)*		1 *(0.1)*	1 *(0.1)*			288 *(39.9)*
Pasteurella	158 *(21.9)*	23 *(3.2)*	2 *(0.3)*	21 *(2.9)*	2 *(0.3)*	3 *(0.4)*	4 *(0.6)*				1 *(0.1)*			1 *(0.1)*	215 *(29.8)*
Salmonella		5 *(0.7)*	3 *(0.4)*	10 *(1.4)*	59 *(8.2)*		1 *(0.1)*		2 *(0.3)*		1 *(0.1)*				81 *(11.2)*
Other bacteria < 30 occurrences	26 *(3.6)*	18 *(2.5)*	8 *(1.1)*	21 *(2.9)*		26 *(3.6)*	9 *(1.2)*	13 *(1.8)*	2 *(0.3)*	8 *(1.1)*	3 *(0.4)*	2 *(0.3)*	1 *(0.1)*		137 *(19.0)*
Total N *(%)*	**203 *(28.2)***	**152 *(21.1)***	**127 *(17.6)***	**83 *(11.5)***	**63 *(8.7)***	**34 *(4.7)***	**16 *(2.2)***	**13 *(1.8)***	**11 *(1.5)***	**8 *(1.1)***	**6 *(0.8)***	**3 *(0.4)***	**1 *(0.1)***	**1 *(0.1)***	**721 *(100.0)***

Table 3 - Sheep 2013 – Digestive pathology – *E. coli:* susceptibility to antibiotics (proportion) (N=114)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*84*	**57**
Amoxicillin-Clavulanic ac.	*114*	**78**
Cephalexin	*81*	**84**
Cefoxitin	*51*	**100**
Ceftiofur	*102*	**97**
Cefquinome 30 µg	*105*	**96**
Streptomycin 10 UI	*55*	**47**
Spectinomycin	*58*	**84**
Kanamycin 30 UI	*32*	**81**
Gentamicin 10 UI	*113*	**94**
Neomycin	*81*	**85**
Tetracycline	*90*	**50**
Florfenicol	*96*	**93**
Nalidixic ac.	*69*	**87**
Oxolinic ac.	*51*	**82**
Flumequine	*92*	**85**
Enrofloxacin	*107*	**93**
Marbofloxacin	*78*	**91**
Danofloxacin	*49*	**88**
Trimethoprim-Sulfonamides	*110*	**74**

Table 4 - Sheep 2013 – Respiratory pathology – All Age groups – *Mannheimia haemolytica:* susceptibility to antibiotics (proportion) (N=101)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*97*	**95**
Amoxicillin-Clavulanic ac.	*101*	**97**
Cephalexin	*83*	**100**
Cefoxitin	*60*	**98**
Ceftiofur	*96*	**99**
Cefquinome 30 µg	*95*	**97**
Streptomycin 10 UI	*74*	**76**
Seulement Spectinomycin	*63*	**87**
Gentamicin 10 UI	*98*	**90**
Neomycin	*93*	**80**
Tetracycline	*97*	**90**
Florfenicol	*100*	**100**
Nalidixic ac.	*83*	**98**
Flumequine	*92*	**91**
Enrofloxacin	*101*	**97**
Marbofloxacin	*45*	**96**
Trimethoprim-Sulfonamides	*97*	**96**

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Annex 4

Goats

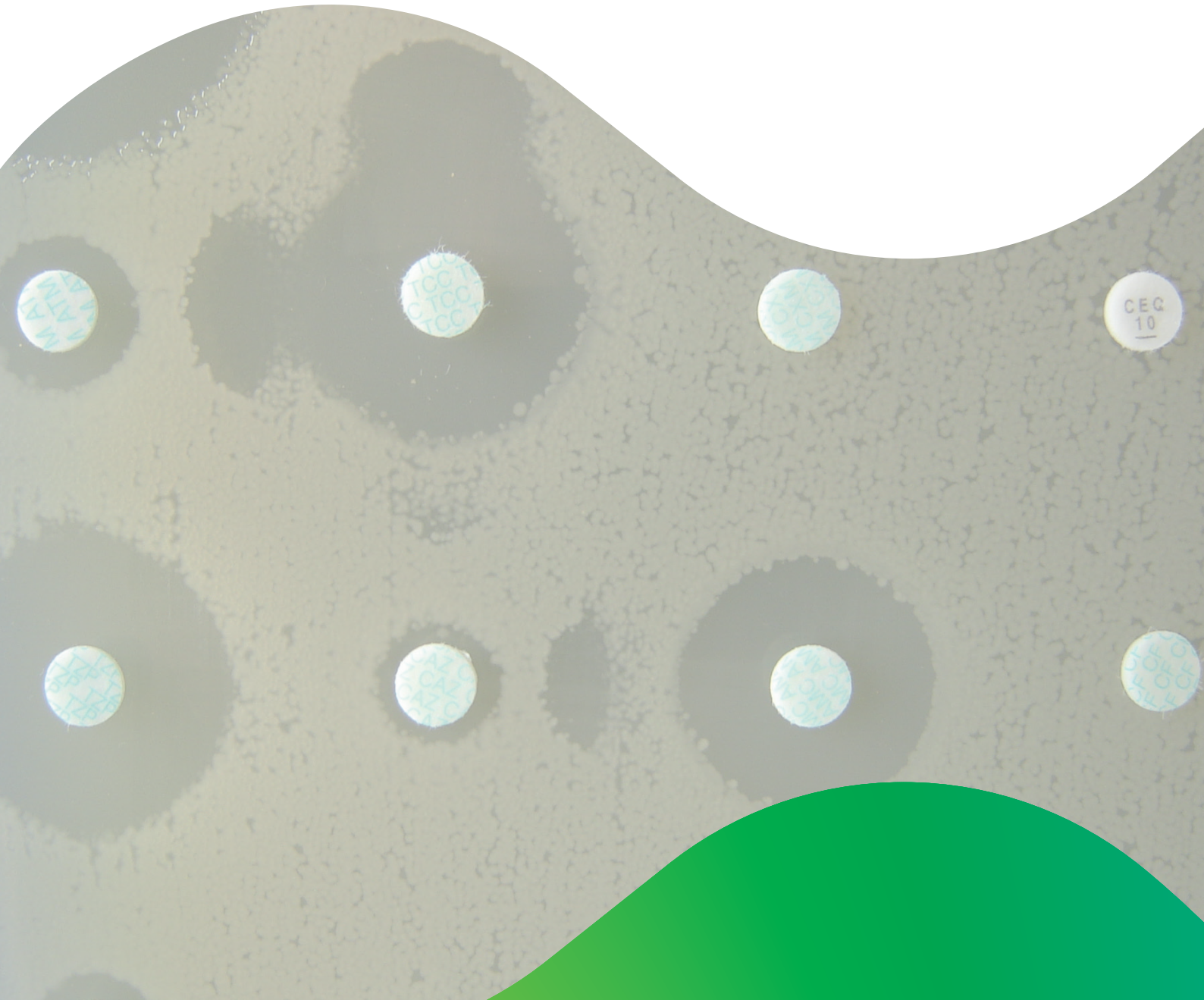


Figure 1 - Goats 2013 – Number of antibiograms by age group and pathology

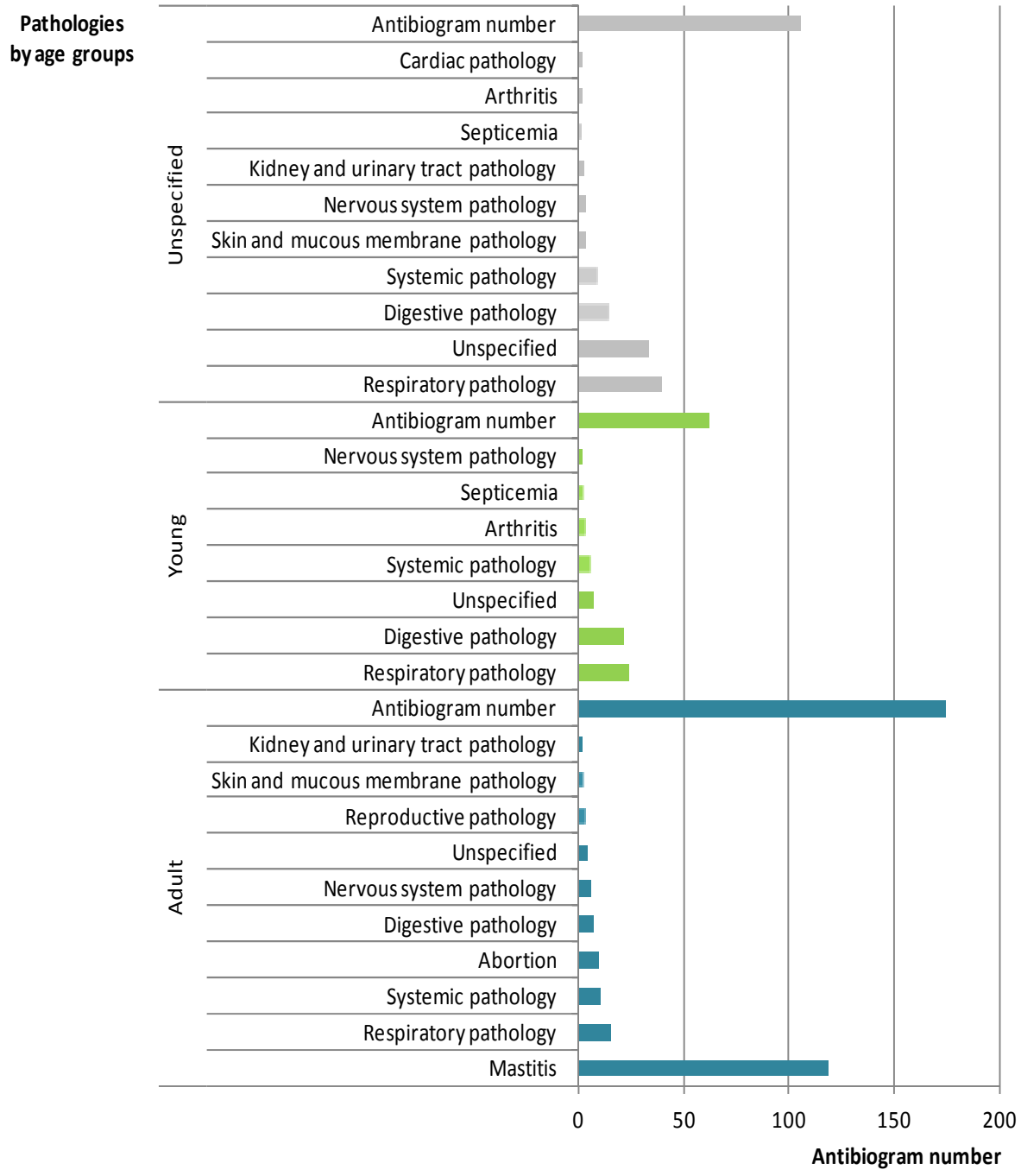
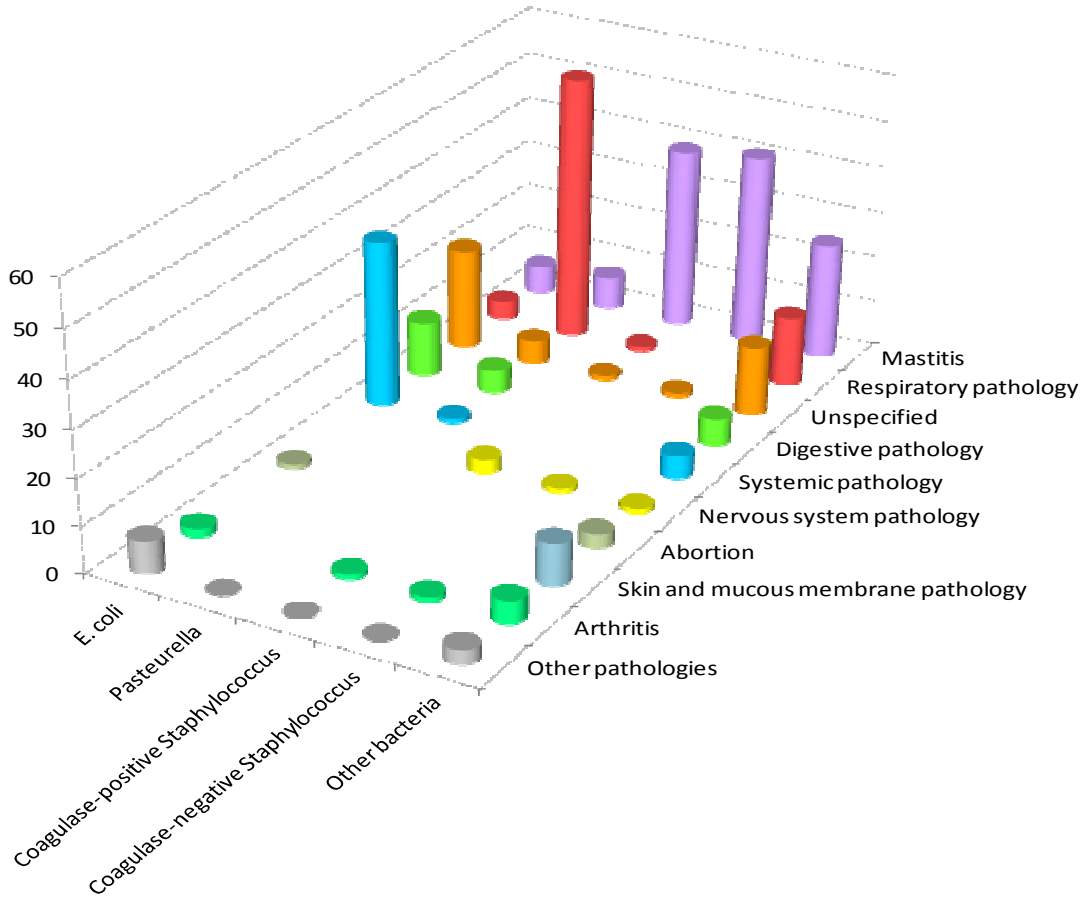


Table 1 - Goats 2013 – Number of antibiograms by age group and pathology

	Pathology N (%)													
Age group N *(%)*	Mastitis	Respiratory pathology	Unspecified	Digestive pathology	Systemic pathology	Nervous system pathology	Abortion	Skin and mucous membrane pathology	Arthritis	Kidney and urinary tract pathology	Septicemia	Reproductive pathology	Cardiac pathology	**Total N *(%)***
Adult	118 *(34.6)*	15 *(4.4)*	4 *(1.2)*	7 *(2.1)*	10 *(2.9)*	5 *(1.5)*	9 *(2.6)*	2 *(0.6)*		1 *(0.3)*		3 *(0.9)*		**174 *(51.0)***
Unspecified		39 *(11.4)*	33 *(9.7)*	14 *(4.1)*	8 *(2.3)*	3 *(0.9)*		3 *(0.9)*	1 *(0.3)*	2 *(0.6)*	1 *(0.3)*		1 *(0.3)*	**105 *(30.8)***
Young		23 *(6.7)*	7 *(2.1)*	21 *(6.2)*	5 *(1.5)*	1 *(0.3)*			3 *(0.9)*		2 *(0.6)*			**62 *(18.2)***
Total N *(%)*	**118 *(34.6)***	**77 *(22.6)***	**44 *(12.9)***	**42 *(12.3)***	**23 *(6.7)***	**9 *(2.6)***	**9 *(2.6)***	**5 *(1.5)***	**4 *(1.2)***	**3 *(0.9)***	**3 *(0.9)***	**3 *(0.9)***	**1 *(0.3)***	**341 *(100.0)***

Figure 2 - Goats 2013 – Number of antibiograms by bacteria group and pathology



Note: *all values for pathologies >1% and bacteria groups having more than 30 occurrences are represented . Detailed values are presented in table 2 below.*

Table 2 - Goats 2013 – Number of antibiograms by bacteria group and pathology

	Pathology N (%)													
Bacteria N (%)	Mastitis	Respiratory pathology	Unspecified	Digestive pathology	Systemic pathology	Nervous system pathology	Abortion	Skin and mucous membrane pathology	Arthritis	Kidney and urinary tract pathology	Septicemia	Reproductive pathology	Cardiac pathology	**Total N *(%)***
E. coli	6 *(1.8)*	4 *(1.2)*	22 *(6.5)*	36 *(10.6)*	12 *(3.5)*		2 *(0.6)*		1 *(0.3)*	1 *(0.3)*	3 *(0.9)*	2 *(0.6)*	1 *(0.3)*	**90** ***(26.4)***
Pasteurella	7 *(2.1)*	57 *(16.7)*	5 *(1.5)*	1 *(0.3)*	5 *(1.5)*									**75** ***(22.0)***
Coagulase-positive Staphylococcus	39 *(11.4)*	1 *(0.3)*	1 *(0.3)*				1 *(0.3)*	3 *(0.9)*						**45** ***(13.2)***
Coagulase-negative Staphylococcus	41 *(12.0)*		1 *(0.3)*				1 *(0.3)*	1 *(0.3)*						**44** ***(12.9)***
Other bacteria < 30 occurrences	25 *(7.3)*	15 *(4.4)*	15 *(4.4)*	5 *(1.5)*	6 *(1.8)*	9 *(2.64)*	5 *(1.5)*	1 *(0.3)*	3 *(0.9)*	2 *(0.6)*		1 *(0.3)*		**87** ***(25.5)***
Total N *(%)*	**118** ***(34.6)***	**77** ***(22.6)***	**44** ***(12.9)***	**42** ***(12.3)***	**23** ***(6.7)***	**9** ***(2.6)***	**9** ***(2.6)***	**5** ***(1.5)***	**4** ***(1.2)***	**3** ***(0.9)***	**3** ***(0.9)***	**3** ***(0.9)***	**1** ***(0.3)***	**341** ***(100.0)***

Table 3 - Goats 2013 – All pathologies and age groups included – tous *E. coli:* susceptibility to antibiotics (proportion) (N=90)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*90*	**39**
Amoxicillin-Clavulanic ac.	*90*	**71**
Cephalexin	*79*	**78**
Cefoxitin	*82*	**98**
Cefoperazone	*36*	**81**
Ceftiofur	*88*	**92**
Cefquinome 30 µg	*85*	**92**
Streptomycin 10 UI	*43*	**49**
Gentamicin 10 UI	*87*	**90**
Neomycin	*54*	**80**
Tetracycline	*81*	**33**
Florfenicol	*79*	**91**
Nalidixic ac.	*54*	**74**
Flumequine	*31*	**65**
Enrofloxacin	*60*	**83**
Marbofloxacin	*44*	**98**
Trimethoprim-Sulfonamides	*64*	**72**

Table 4 - Goats 2013 – All pathologies and age groups included –*Pasteurella*: susceptibility to antibiotics (proportion) (N=75)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*71*	**96**
Amoxicillin-Clavulanic ac.	*70*	**97**
Cephalexin	*62*	**98**
Ceftiofur	*72*	**99**
Cefquinome 30 µg	*71*	**94**
Streptomycin 10 UI	*63*	**44**
Gentamicin 10 UI	*70*	**87**
Tetracycline	*49*	**96**
Florfenicol	*45*	**100**
Enrofloxacin	*41*	**95**
Marbofloxacin	*44*	**100**
Trimethoprim-Sulfonamides	*47*	**98**

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Annex 5

Pigs

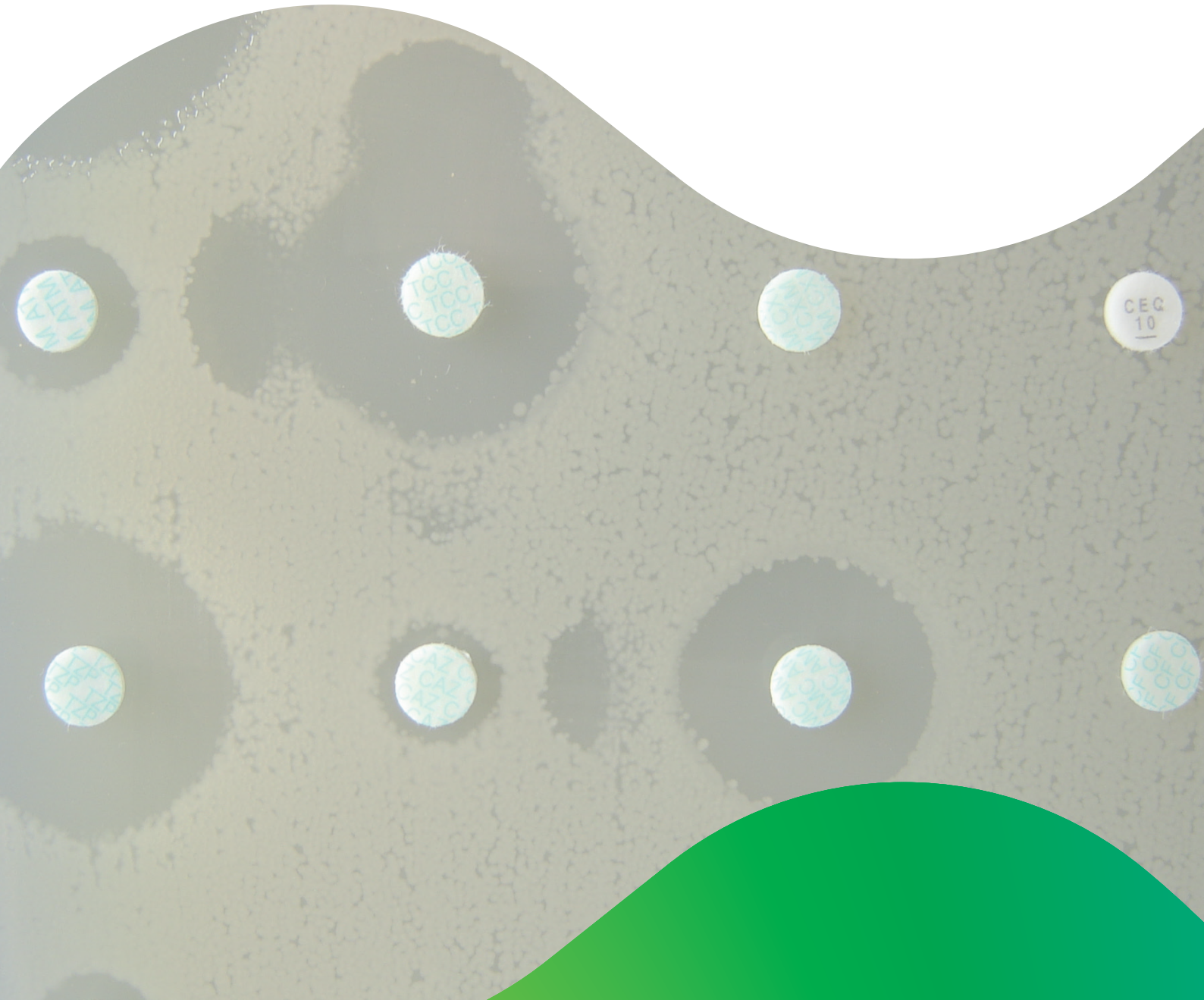


Figure 1 - Pigs 2013 – Antibiogram proportions by animal category

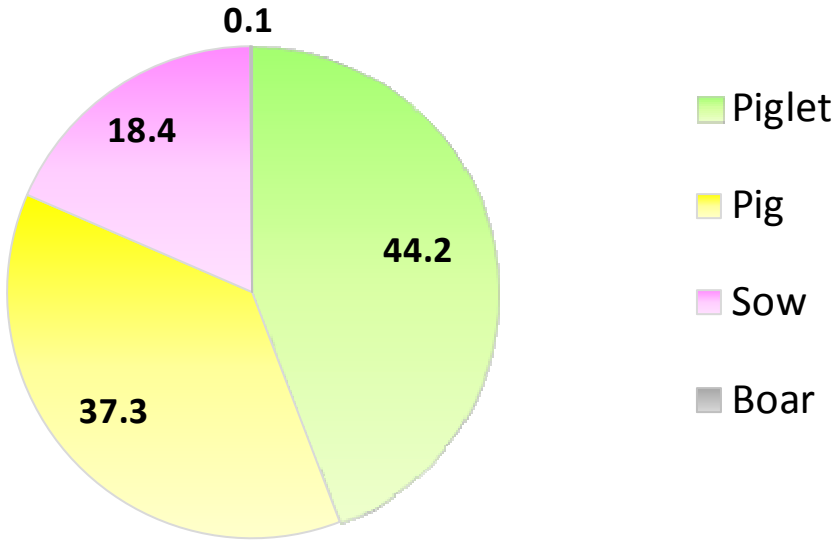


Figure 2 - Pigs 2013 – Number of antibiograms by pathology and animal category

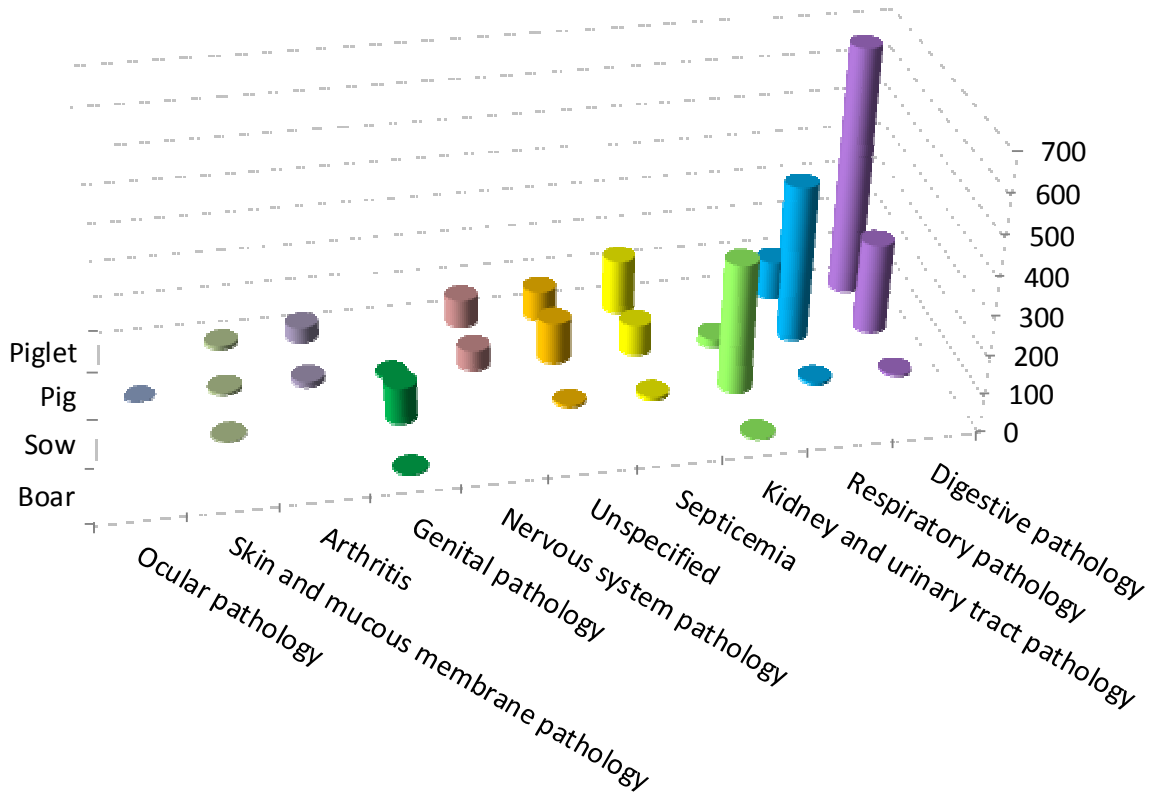
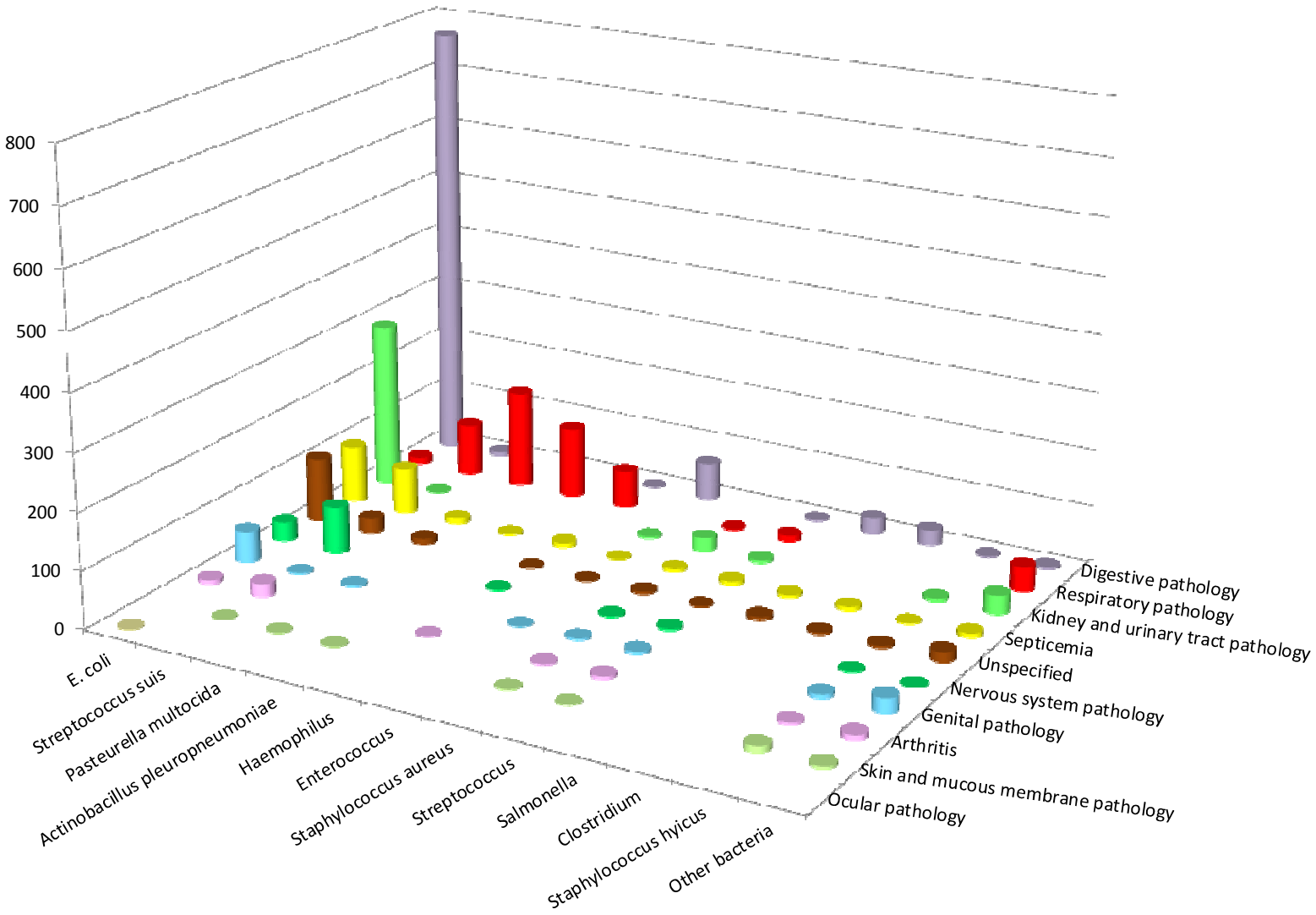


Table 1 - Pigs 2013 – Number of antibiograms by pathology and animal category

	Pathology N *(%)*										
Age group or physiological stage N (%)	Digestive pathology	Respiratory pathology	Kidney and urinary tract pathology	Septicemia	Unspecified	Nervous system pathology	Genital pathology	Arthritis	Skin and mucous membrane pathology	Ocular pathology	**Total N** *(%)*
Piglet	660 *(26.14)*	106 *(4.20)*		147 *(5.82)*	78 *(3.09)*	74 *(2.93)*		39 *(1.54)*	12 *(0.48)*		**1,116** *(44.20)*
Pig	242 *(9.58)*	411 *(16.28)*	23 *(0.91)*	80 *(3.17)*	106 *(4.20)*	53 *(2.10)*	4 *(0.16)*	14 *(0.55)*	8 *(0.32)*	1 *(0.04)*	**942** *(37.31)*
Sow	5 *(0.20)*	6 *(0.24)*	337 *(13.35)*	9 *(0.36)*	6 *(0.24)*		99 *(3.92)*		2 *(0.08)*		**464** *(18.38)*
Boar			1 *(0.04)*				2 *(0.08)*				**3** *(0.12)*
Total N (*%*)	**907** *(35.92)*	**523** *(20.71)*	**361** *(14.30)*	**236** *(9.35)*	**190** *(7.52)*	**127** *(5.03)*	**105** *(4.16)*	**53** *(2.10)*	**22** *(0.87)*	**1** *(0.04)*	**2,525** *(100.00)*

Figure 3 - Pigs 2013 – Number of antibiograms by bacteria and pathology



Note: *only values for pathologies and bacteria having more than 30 occurrences are represented. Detailed values are presented in table 2 below.*

Table 2 - Pigs 2013 – Number of antibiograms by bacteria and pathology

	Pathology N *(%)*										
Bacteria N *(%)*	Digestive pathology	Respiratory pathology	Kidney and urinary tract pathology	Septicemia	Unspecified	Nervous system pathology	Genital pathology	Arthritis	Skin and mucous membrane pathology	Ocular pathology	**Total N** *(%)*
E. coli	769 *(30.46)*	11 *(0.44)*	290 *(11.49)*	101 *(4.00)*	113 *(4.48)*	34 *(1.35)*	55 *(2.18)*	7 *(0.28)*		1 *(0.04)*	**1,381** ***(54.69)***
Streptococcus suis	7 *(0.28)*	92 *(3.64)*	1 *(0.04)*	80 *(3.17)*	25 *(0.99)*	82 *(3.25)*	3 *(0.12)*	23 *(0.91)*	1 *(0.04)*		**314** ***(12.44)***
Pasteurella multocida		172 *(6.81)*		10 *(0.40)*	10 *(0.40)*		3 *(0.12)*		1 *(0.04)*		**196** ***(7.76)***
Actinobacillus pleuropneumoniae		125 *(4.95)*		3 *(0.12)*					1 *(0.04)*		**129** ***(5.11)***
Haemophilus	1 *(0.04)*	66 *(2.61)*		8 *(0.32)*	2 *(0.08)*	2 *(0.08)*		1 *(0.04)*			**80** ***(3.17)***
Enterococcus	66 *(2.61)*		4 *(0.16)*	1 *(0.04)*	1 *(0.04)*		1 *(0.04)*				**73** ***(2.89)***
Staphylococcus aureus		2 *(0.08)*	23 *(0.91)*	5 *(0.20)*	5 *(0.20)*	2 *(0.08)*	4 *(0.16)*	2 *(0.08)*	2 *(0.08)*		**45** ***(1.78)***
Streptococcus	3 *(0.12)*	11 *(0.44)*	5 *(0.20)*	6 *(0.24)*	2 *(0.08)*	4 *(0.16)*	6 *(0.24)*	6 *(0.24)*	1 *(0.04)*		**44** ***(1.74)***
Salmonella	27 *(1.07)*			5 *(0.20)*	7 *(0.28)*						**39** ***(1.54)***
Clostridium	27 *(1.07)*			7 *(0.28)*	3 *(0.12)*						**37** ***(1.47)***
Staphylococcus hyicus	2 *(0.08)*		5 *(0.20)*	2 *(0.08)*	4 *(0.16)*	2 *(0.08)*	7 *(0.28)*	4 *(0.16)*	11 *(0.44)*		**37** ***(1.47)***
Other bacteria *< 30 occurrences*	5 *(0.20)*	44 *(1.74)*	33 *(1.31)*	8 *(0.32)*	18 *(0.71)*	1 *(0.04)*	26 *(1.03)*	10 *(0.40)*	5 *(0.20)*		**150** ***(5.94)***
Total N **(%)**	**907** ***(35.92)***	**523** ***(20.71)***	**361** ***(14.30)***	**236** ***(9.35)***	**190** ***(7.52)***	**127** ***(5.03)***	**105** ***(4.16)***	**53** ***(2.10)***	**22** ***(0.87)***	**1** ***(0.04)***	**2,525** ***(100.00)***

Table 3 - Pigs 2013 – All pathologies included – *E. coli*: susceptibility to antibiotics (proportion) (N=1,381)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*1,366*	**43**
Amoxicillin-Clavulanic ac.	*1,032*	**84**
Cephalexin	*701*	**88**
Cephalothin	*270*	**93**
Cefoxitin	*897*	**96**
Cefuroxime	*211*	**91**
Cefoperazone	*190*	**95**
Ceftiofur	*1,381*	**97**
Cefquinome 30 µg	*341*	**95**
Ceftazidime	*132*	**97**
Streptomycin 10 UI	*141*	**40**
Spectinomycin	*1,055*	**59**
Gentamicin 10 UI	*1,243*	**85**
Neomycin	*1,151*	**81**
Apramycin	*1,065*	**86**
Tetracycline	*1,140*	**27**
Florfenicol	*1,300*	**91**
Nalidixic ac.	*387*	**74**
Oxolinic ac.	*1,010*	**74**
Flumequine	*764*	**74**
Enrofloxacin	*1,219*	**89**
Marbofloxacin	*1,138*	**91**
Danofloxacin	*243*	**89**
Difloxacin	*131*	**67**
Trimethoprim	*483*	**41**
Trimethoprim-Sulfonamides	*1,369*	**43**

Table 4 - Pigs 2013 – Digestive pathology – Pigelets (post-weaning included) – *E. coli*: susceptibility to antibiotics (proportion) (N=560)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*558*	**40**
Amoxicillin-Clavulanic ac.	*426*	**85**
Cephalexin	*297*	**89**
Cephalothin	*106*	**92**
Cefoxitin	*377*	**97**
Ceftiofur	*561*	**96**
Spectinomycin	*521*	**57**
Gentamicin 10 UI	*554*	**81**
Neomycin	*551*	**79**
Apramycin	*528*	**85**
Tetracycline	*421*	**23**
Florfenicol	*544*	**89**
Nalidixic ac.	*143*	**66**
Oxolinic ac.	*445*	**77**
Flumequine	*324*	**72**
Enrofloxacin	*559*	**88**
Marbofloxacin	*454*	**91**
Trimethoprim	*257*	**38**
Trimethoprim-Sulfonamides	*555*	**39**

Table 5 - Pigs 2013 – Kidney and urinary tract pathology – Sows – *E. coli*: susceptibility to antibiotics (proportion) (N=274)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*272*	**42**
Amoxicillin-Clavulanic ac.	*152*	**85**
Cephalexin	*111*	**93**
Cefoxitin	*109*	**99**
Ceftiofur	*274*	**97**
Spectinomycin	*107*	**73**
Gentamicin 10 UI	*149*	**95**
Neomycin	*117*	**87**
Apramycin	*107*	**84**
Tetracycline	*269*	**34**
Florfenicol	*248*	**96**
Oxolinic ac.	*247*	**70**
Enrofloxacin	*154*	**84**
Marbofloxacin	*271*	**89**
Trimethoprim-Sulfonamides	*273*	**49**

Table 6 - Pigs 2013 – All pathologies included – *Actinobacillus pleuropneumoniae*: susceptibility to antibiotics (proportion) (N=129)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*129*	**98**
Amoxicillin-Clavulanic ac.	*111*	**99**
Ceftiofur	*129*	**99**
Tilmicosin	*128*	**92**
Tiamulin	*112*	**96**
Tetracycline	*129*	**88**
Florfenicol	*128*	**100**
Enrofloxacin	*129*	**98**
Marbofloxacin	*108*	**99**
Trimethoprim-Sulfonamides	*129*	**92**

Table 7 - Pigs 2013 – All pathologies included – *Pasteurella multocida*: susceptibility to antibiotics (proportion) (N=196)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*192*	**100**
Amoxicillin-Clavulanic ac.	*163*	**100**
Tilmicosin	*188*	**98**
Ceftiofur	*194*	**100**
Cefquinome 30 µg	*106*	**100**
Gentamicin 10 UI	*115*	**87**
Tetracycline	*193*	**94**
Florfenicol	*193*	**99**
Flumequine	*135*	**100**
Enrofloxacin	*195*	**100**
Marbofloxacin	*159*	**100**
Trimethoprim-Sulfonamides	*195*	**87**

Table 8 - Pigs 2013 – All pathologies included – *Streptococcus suis*: susceptibility to antibiotics (proportion) (N=314)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*275*	**99**
Erythromycine	*265*	**39**
Tylosin	*294*	**32**
Spiramycin	*297*	**37**
Lincomycin	*310*	**33**
Tiamulin	*105*	**95**
Streptomycin 500 µg	*186*	**94**
Kanamycin 1000 µg	*119*	**94**
Gentamicin 500 µg	*237*	**97**
Tetracycline	*246*	**19**
Trimethoprim-Sulfonamides	*309*	**86**

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Annex 6

Poultry

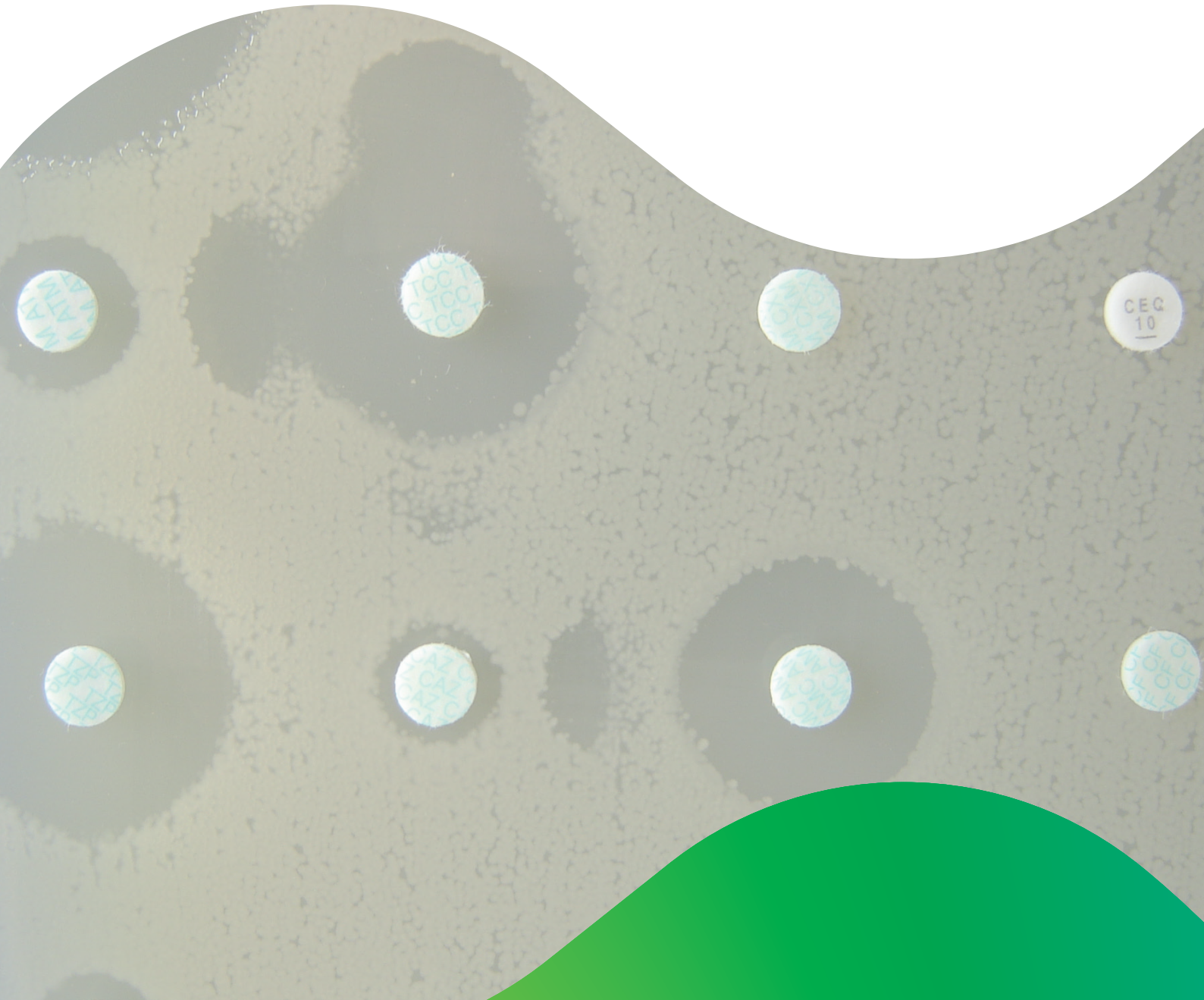
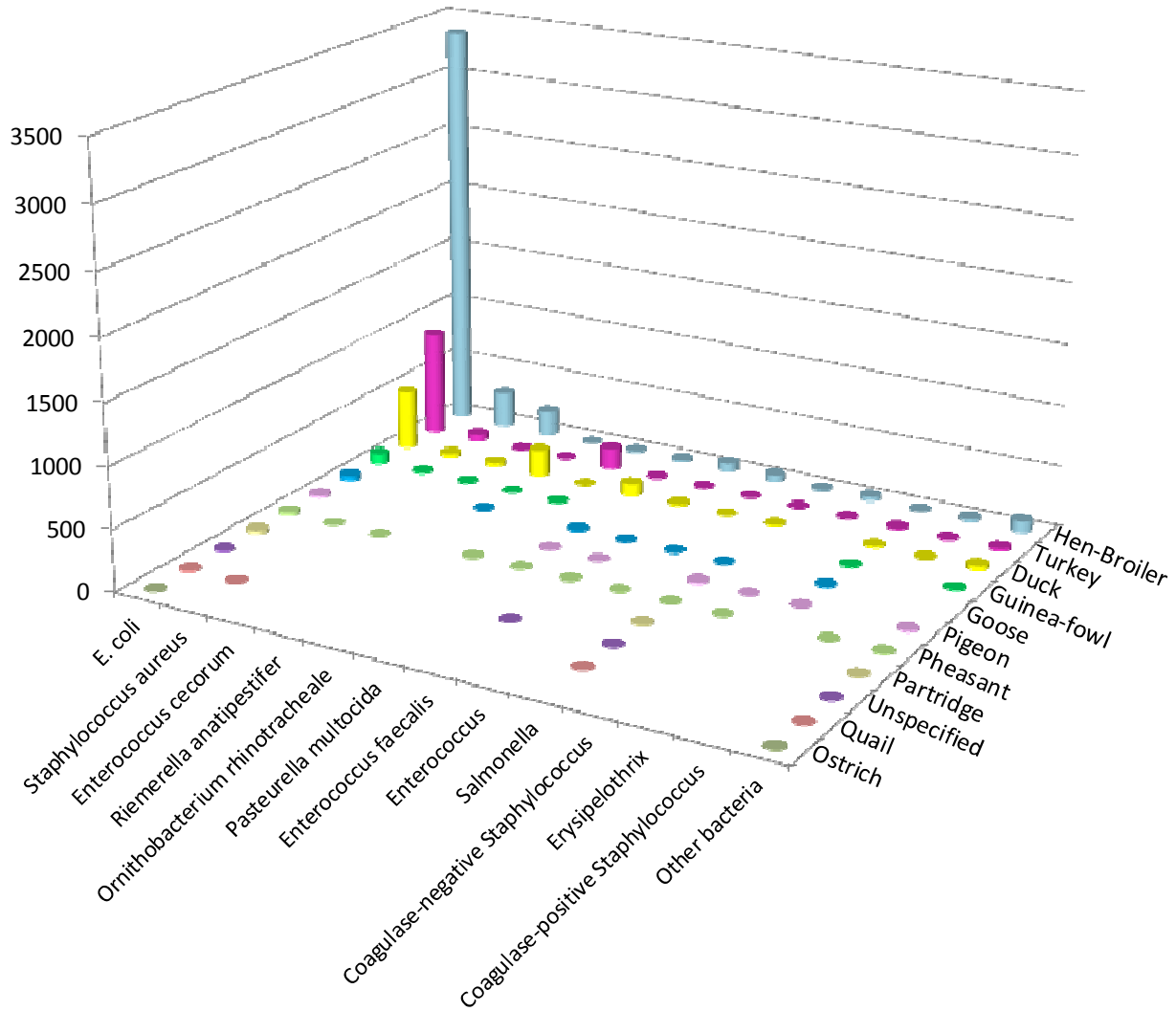


Figure 1 - Poultry 2013 – Number of antibiograms by bacteria and animal



Note: *only values for bacteria groups having more than 30 occurrences are represented. Detailed values are presented in table 1 below.*

Table 1 - Poultry 2013 – Number of antibiograms by bacteria and animal

	Animal species N *(%)*											
Bacteria N *(%)*	Hen-broiler	Turkey	Duck	Guinea-fowl	Goose	Pigeon	Pheasant	Partridge	Unspecified	Quail	Ostrich	**Total N *(%)***
E. coli	3,364 *(51.37)*	865 *(13.21)*	486 *(7.42)*	83 *(1.27)*	35 *(0.53)*	24 *(0.37)*	17 *(0.26)*	23 *(0.35)*	13 *(0.20)*	11 *(0.17)*	2 *(0.03)*	**4,923** ***(75.17)***
Staphylococcus aureus	284 *(4.34)*	54 *(0.82)*	25 *(0.38)*	6 *(0.09)*		3 *(0.05)*				1 *(0.02)*	0	**373** ***(5.70)***
Enterococcus cecorum	200 *(3.05)*	2 *(0.03)*	27 *(0.41)*	2 *(0.03)*		1 *(0.02)*						**232** ***(3.54)***
Riemerella anatipestifer	1 *(0.02)*	4 *(0.06)*	219 *(3.34)*	1 *(0.02)*	3 *(0.05)*							**228** ***(3.48)***
Ornithobacterium rhinotracheale	10 *(0.15)*	174 *(2.66)*	2 *(0.03)*	3 *(0.05)*		2 *(0.03)*						**191** ***(2.92)***
Pasteurella multocida	15 *(0.23)*	5 *(0.08)*	98 *(1.50)*		6 *(0.09)*	2 *(0.03)*	2 *(0.03)*					**128** ***(1.95)***
Enterococcus faecalis	69 *(1.05)*	3 *(0.05)*	11 *(0.17)*		1 *(0.02)*	1 *(0.02)*	1 *(0.02)*		1 *(0.02)*			**87** ***(1.33)***
Enterococcus	49 *(0.75)*	2 *(0.03)*	4 *(0.06)*		1 *(0.02)*	2 *(0.03)*						**58** ***(0.89)***
Salmonella	8 *(0.12)*	2 *(0.03)*	12 *(0.18)*		1 *(0.02)*	3 *(0.05)*	14 *(0.21)*	6 *(0.09)*	1 *(0.02)*	1 *(0.02)*		**48** ***(0.73)***
Coagulase-negative Staphylococcus	33 *(0.50)*	2 *(0.03)*				1 *(0.02)*	1 *(0.02)*					**37** ***(0.56)***
Erysipelothrix	2 *(0.03)*	8 *(0.12)*	14 *(0.21)*	6 *(0.09)*	6 *(0.09)*		1 *(0.02)*					**37** ***(0.56)***
Coagulase-positive Staphylococcus	23 *(0.35)*	5 *(0.08)*	1 *(0.02)*			1 *(0.02)*						**30** ***(0.46)***
Other bacteria < 30 occurrences	90 *(1.37)*	22 *(0.34)*	35 *(0.53)*	5 *(0.08)*		6 *(0.09)*	10 *(0.15)*	2 *(0.03)*	2 *(0.03)*	2 *(0.03)*	3 *(0.05)*	**177** ***(2.70)***
Total N (%)	**4,148** ***(63.34)***	**1,148** ***(17.53)***	**934** ***(14.26)***	**106** ***(1.62)***	**53** ***(0.81)***	**46** ***(0.70)***	**46** ***(0.70)***	**31** ***(0.47)***	**17** ***(0.26)***	**15** ***(0.23)***	**5** ***(0.08)***	6,549 ***(100.00)***

Table 2 - Hens and chickens 2013 – All pathologies included- *E. coli*: susceptibility to antibiotics (proportion) (N=3,364)

Antibiotic	*Total (N)*	**% S**
Ampicillin	*454*	**58**
Amoxicillin	*3,358*	**60**
Amoxicillin-Clavulanic ac.	*2,502*	**91**
Cephalexin	*617*	**83**
Cephalothin	*1,694*	**90**
Cefoxitin	*2,250*	**98**
Cefuroxime	*279*	**84**
Cefoperazone	*220*	**87**
Ceftiofur	*3,102*	**90**
Cefquinome 30 µg	*491*	**90**
Spectinomycin	*749*	**85**
Gentamicin 10 UI	*2,812*	**95**
Neomycin	*2,370*	**98**
Apramycin	*1,694*	**96**
Tetracycline	*2,872*	**42**
Florfenicol	*2,183*	**99**
Nalidixic ac.	*2,144*	**62**
Oxolinic ac.	*1,044*	**54**
Flumequine	*3,125*	**59**
Enrofloxacin	*3,352*	**94**
Marbofloxacin	*440*	**93**
Danofloxacin	*264*	**83**
Sulfonamides	*264*	**58**
Trimethoprim	*1,939*	**77**
Trimethoprim-Sulfonamides	*3,360*	**79**

Table 3 – Laying hens (table eggs and hatching) 2013 – All pathologies included - *E. coli*: susceptibility to antibiotics (proportion) (N=1,367)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*1,358*	**70**
Amoxicillin-Clavulanic ac.	*1,042*	**93**
Cephalothin	*891*	**94**
Cefoxitin	*997*	**98**
Ceftiofur	*1,280*	**94**
Spectinomycin	*175*	**84**
Gentamicin 10 UI	*1,137*	**95**
Neomycin	*961*	**98**
Apramycin	*717*	**95**
Tetracycline	*1,139*	**56**
Florfenicol	*960*	**99**
Nalidixic ac.	*1,000*	**71**
Oxolinic ac.	*211*	**64**
Flumequine	*1,319*	**68**
Enrofloxacin	*1,358*	**96**
Trimethoprim	*937*	**82**
Trimethoprim-Sulfonamides	*1,359*	**85**

Table 4 – Broilers 2013 – All pathologies included - *E. coli*: susceptibility to antibiotics (proportion) (N=1,711)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*1,698*	**53**
Amoxicillin-Clavulanic ac.	*1,171*	**92**
Cephalexin	*292*	**88**
Cephalothin	*761*	**86**
Cefoxitin	*1,011*	**98**
Ceftiofur	*1,521*	**88**
Spectinomycin	*375*	**86**
Gentamicin 10 UI	*1,388*	**96**
Neomycin	*1,160*	**98**
Apramycin	*797*	**97**
Tetracycline	*1,440*	**34**
Florfenicol	*982*	**100**
Nalidixic ac.	*1,078*	**53**
Oxolinic ac.	*658*	**52**
Flumequine	*1,677*	**52**
Enrofloxacin	*1,695*	**92**
Trimethoprim	*983*	**72**
Trimethoprim-Sulfonamides	*1,696*	**73**

Table 5 - Turkeys 2013 – All pathologies included - *E. coli*: susceptibility to antibiotics (proportion) (N=865)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*864*	**53**
Amoxicillin-Clavulanic ac.	*589*	**87**
Cephalexin	*314*	**88**
Cephalothin	*204*	**98**
Cefoxitin	*519*	**98**
Ceftiofur	*812*	**99**
Cefquinome 30 µg	*182*	**100**
Spectinomycin	*276*	**84**
Gentamicin 10 UI	*612*	**95**
Neomycin	*351*	**88**
Apramycin	*214*	**98**
Tetracycline	*666*	**37**
Florfenicol	*368*	**99**
Nalidixic ac.	*543*	**81**
Oxolinic ac.	*396*	**78**
Flumequine	*832*	**80**
Enrofloxacin	*863*	**94**
Trimethoprim	*451*	**85**
Trimethoprim-Sulfonamides	*863*	**81**

Table 6 - Ducks 2013 – All pathologies included - *E. coli*: susceptibility to antibiotics (proportion) (N=486)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*486*	**41**
Amoxicillin-Clavulanic ac.	*452*	**74**
Cephalexin	*218*	**89**
Cephalothin	*255*	**94**
Cefoxitin	*420*	**100**
Ceftiofur	*477*	**99**
Cefquinome 30 µg	*197*	**99**
Spectinomycin	*381*	**90**
Gentamicin 10 UI	*445*	**93**
Neomycin	*302*	**98**
Apramycin	*228*	**93**
Tetracycline	*475*	**19**
Florfenicol	*370*	**100**
Nalidixic ac.	*432*	**73**
Oxolinic ac.	*291*	**71**
Flumequine	*467*	**71**
Enrofloxacin	*485*	**89**
Trimethoprim	*307*	**54**
Trimethoprim-Sulfonamides	*485*	**58**

Table 7 - Hens and broilers 2013 – All pathologies included - *Staphylococcus aureus*: susceptibility to antibiotics (proportion) (N=284)

Antibiotic	*Total (N)*	**% S**
Penicillin G	*239*	**88**
Cefoxitin	*173*	**95**
Erythromycine	*192*	**92**
Tylosin	*204*	**93**
Spiramycin	*195*	**93**
Lincomycin	*217*	**90**
Tiamulin	*171*	**99**
Gentamicin 10 UI	*201*	**98**
Neomycin	*152*	**99**
Tetracycline	*224*	**71**
Enrofloxacin	*283*	**97**
Trimethoprim-Sulfonamides	*283*	**100**

Table 8 - Hens and broilers 2013 – All pathologies included – *Enterococcus cecorum*: susceptibility to antibiotics (proportion) (N= 200)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*200*	**99**
Erythromycine	*143*	**43**
Tylosin	*139*	**42**
Spiramycin	*130*	**44**
Lincomycin	*144*	**45**
Gentamicin 500 µg	*124*	**98**
Tetracycline	*152*	**5**
Trimethoprim-Sulfonamides	*200*	**47**

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Annex 7

Rabbits

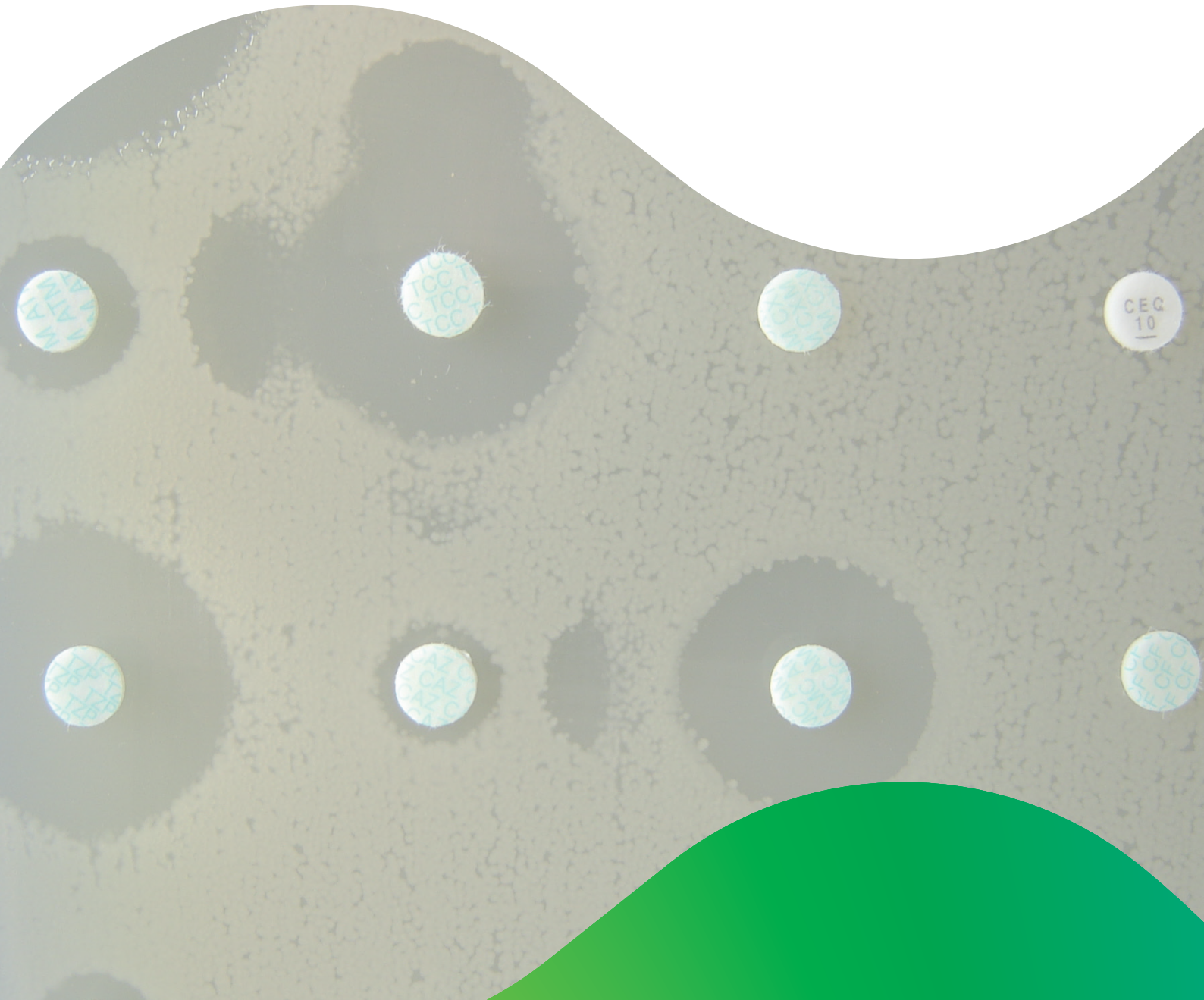
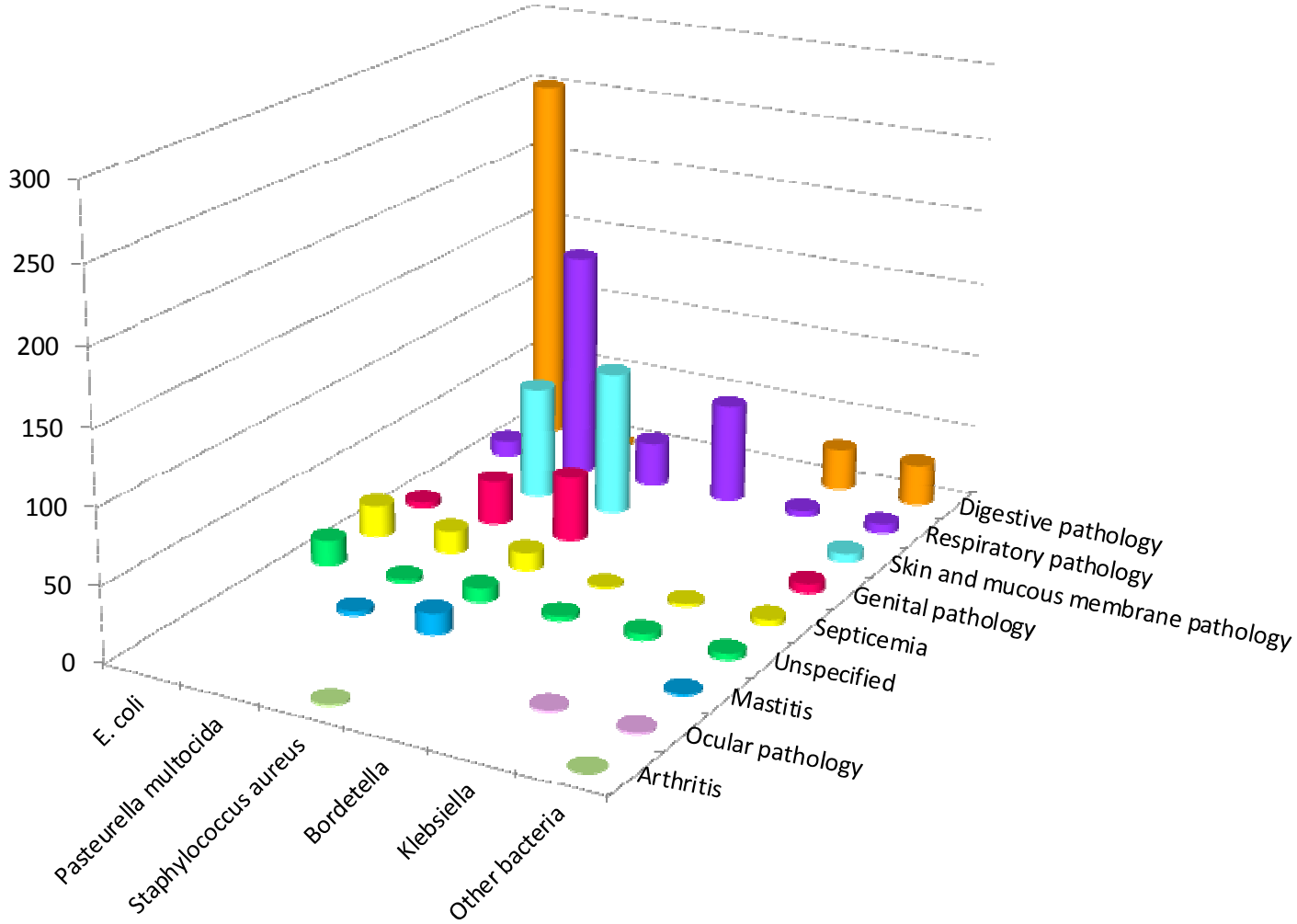


Figure 1 - Rabbits 2013 – Number of antibiograms by bacteria and animal



Note: *only values for bacteria groups having more than 30 occurrences are represented. Detailed values are presented in table 1 below.*

Table 1 - Rabbits 2013 – Number of antibiograms by bacteria and animal

	Pathology N *(%)*									
Bacteria N *(%)*	Digestive pathology	Respiratory pathology	Skin and mucous membrane pathology	Genital pathology	Septicemia	Unspecified	Mastitis	Ocular pathology	Arthritis	**Total N *(%)***
E. coli	253 *(26.19)*	11 *(1.14)*		4 *(0.41)*	21 *(2.17)*	17 *(1.76)*				**36** ***(31.68)***
Pasteurella multocida	1 *(0.10)*	153 *(15.84)*	77 *(7.97)*	3 *(3.11)*	15 *(1.55)*	3 *(0.31)*	3 *(0.31)*			**282** ***(29.19)***
Staphylococcus aureus		31 *(3.21)*	98 *(10.14)*	44 *(4.55)*	12 *(1.24)*	9 *(0.93)*	14 *(1.45)*		1 *(0.10)*	**29** ***(21.64)***
Bordetella		68 *(7.04)*			1 *(0.10)*	3 *(0.31)*				**72** ***(7.45)***
Klebsiella	29 *(3.00)*	4 *(0.41)*			2 *(0.21)*	4 *(0.41)*		1 *(0.10)*		**4** ***(4.14)***
Other bacteria < 30 occurrences		1 *(0.10)*	1 *(0.10)*	4 *(0.41)*	4 *(0.41)*	6 *(0.62)*	6 *(0.62)*	6 *(0.62)*	29 *(3.00)*	**57** ***(5.90)***
Total N (%)	**283** ***(29.30)***	**268** ***(27.74)***	**176** ***(18.22)***	**82** ***(8.49)***	**55** ***(5.69)***	**42** ***(4.35)***	**23** ***(2.38)***	**7** ***(0.72)***	**30** ***(3.11)***	**966** ***(100.00)***

Table 2 - Rabbits 2013 – All pathologies included- *E. coli*: susceptibility to antibiotics (proportion) (N =306)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*150*	**53**
Amoxicillin-Clavulanic ac.	*158*	**79**
Cephalexin	*143*	**84**
Cefoxitin	*175*	**98**
Ceftiofur	*237*	**99**
Cefquinome 30 µg	*124*	**98**
Spectinomycin	*149*	**89**
Streptomycin 10 UI	*101*	**44**
Gentamicin 10 UI	*305*	**91**
Neomycin	*297*	**79**
Apramycin	*282*	**89**
Tetracycline	*302*	**20**
Nalidixic ac.	*190*	**63**
Oxolinic ac.	*114*	**75**
Flumequine	*158*	**69**
Enrofloxacin	*304*	**92**
Danofloxacin	*125*	**87**
Trimethoprim-Sulfonamides	*303*	**30**

Table 3 - Rabbits 2013 – All pathologies included - *Pasteurella multocida*: susceptibility to antibiotics (proportion) (N=282)

Antibiotic	*Total (N)*	**% S**
Ceftiofur	*143*	**100**
Tilmicosin	*279*	**99**
Tiamulin	*270*	**77**
Gentamicin 10 UI	*215*	**99**
Tetracycline	*282*	**97**
Nalidixic ac.	*102*	**90**
Flumequine	*112*	**97**
Enrofloxacin	*282*	**100**
Danofloxacin	*122*	**100**
Trimethoprim-Sulfonamides	*282*	**96**

Table 4 - Rabbits 2013 – All pathologies included - *Staphylococcus aureus*: susceptibility to antibiotics (proportion) (N=209)

Antibiotic	*Total (N)*	**% S**
Penicillin G	*117*	**94**
Cefoxitin	*101*	**100**
Erythromycine	*150*	**35**
Spiramycin	*206*	**39**
Tiamulin	*203*	**95**
Gentamicin 10 UI	*208*	**47**
Tetracycline	*206*	**38**
Enrofloxacin	*208*	**92**
Trimethoprim-Sulfonamides	*207*	**63**

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Annex 8

Fish

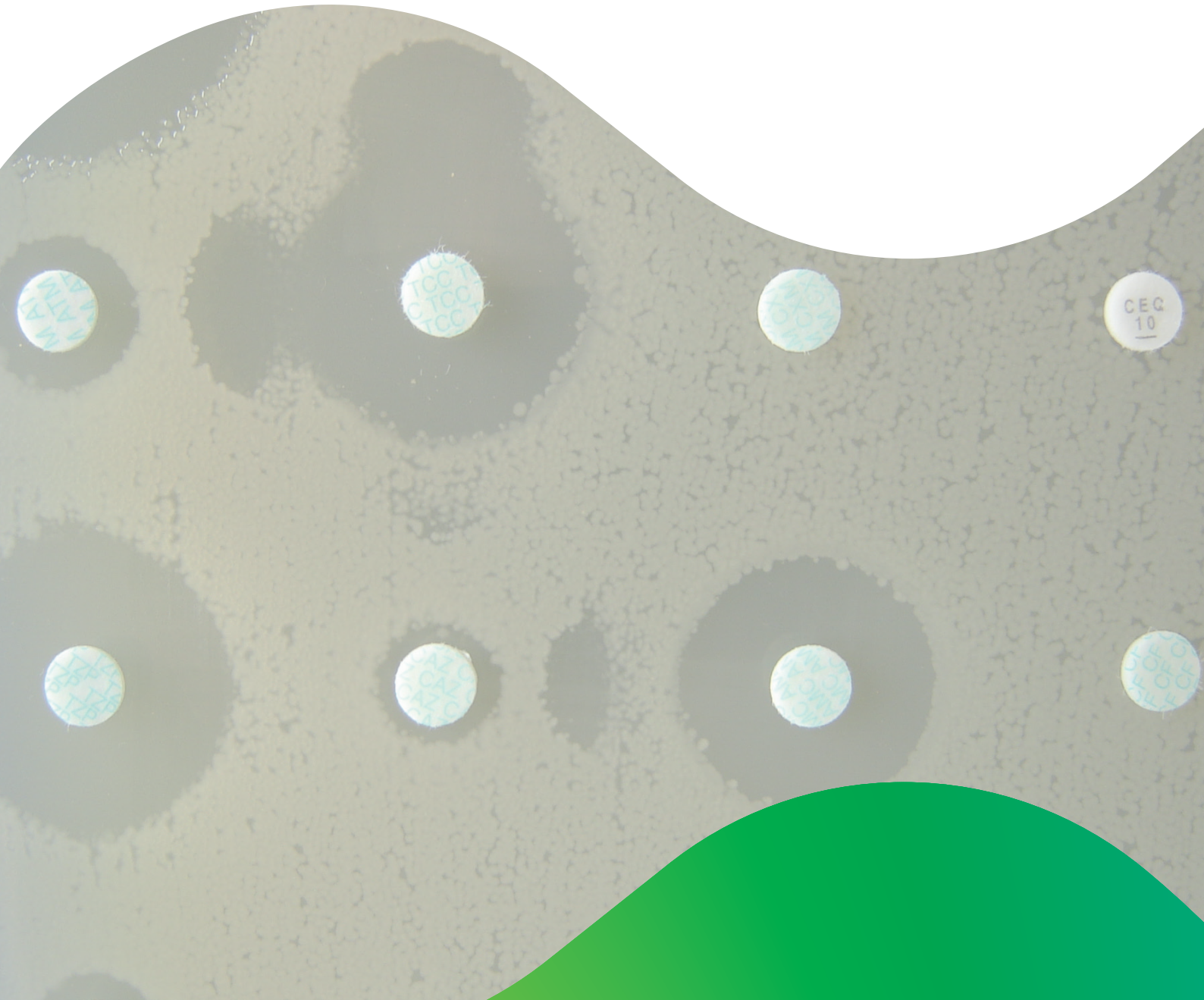

Figure 1 - Fish 2013 – Antibiogram proportions by animal species

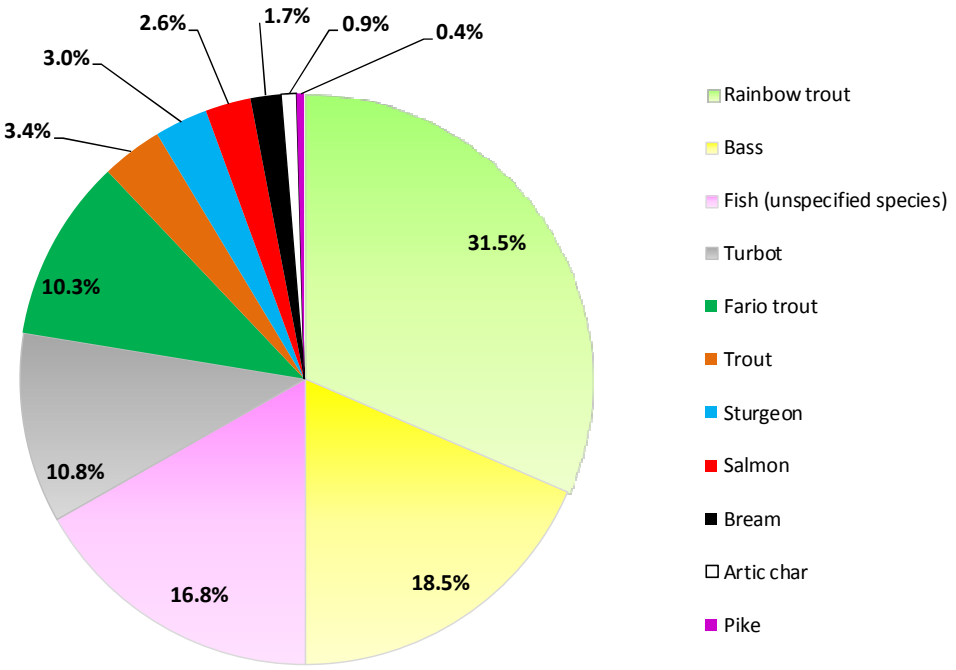

Table 1 - Fish 2013 – Number of antibiograms by bacteria and pathology

	Pathology N *(%)*			
Bacteria N *(%)*	Unspecified	Skin and mucous membrane pathology	Septicemia	**Total N *(%)***
Aeromonas	1 *(43.10)*	2 *(0.86)*	16 *(6.90)*	**118 *(50.86)***
Yersinia ruckeri	31 *(13.36)*		2 *(0.86)*	**33 *(14.22)***
Tenacibaculum	2 *(0.86)*	28 *(12.07)*		**3 *(12.93)***
Vibrio	1 *(4.31)*	5 *(2.16)*	8 *(3.45)*	**23 *(9.91)***
Edwardsiella tarda	2 *(0.86)*		4 *(1.72)*	**6 *(2.59)***
Streptococcus	2 *(0.86)*	1 *(0.43)*	2 *(0.86)*	**5 *(2.16)***
Photobacterium	1 *(0.43)*		2 *(0.86)*	**3 *(1.29)***
Citrobacter	2 *(0.86)*	1 *(0.43)*		**3 *(1.29)***
Pseudomonas	3 *(1.29)*			**3 *(1.29)***
Lactococcus	2 *(0.86)*			**2 *(0.86)***
Yersinia spp	2 *(0.86)*			**2 *(0.86)***
Carnobacterium	2 *(0.86)*			**2 *(0.86)***
Vagococcus	1 *(0.43)*			**1 *(0.43)***
Chryseobacterium	1 *(0.43)*			**1 *(0.43)***
Total N* *(%)	**161 *(69.40)***	**37 *(15.95)***	**34 *(14.66)***	**232 *(100.00)***

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Annex 9

Horses

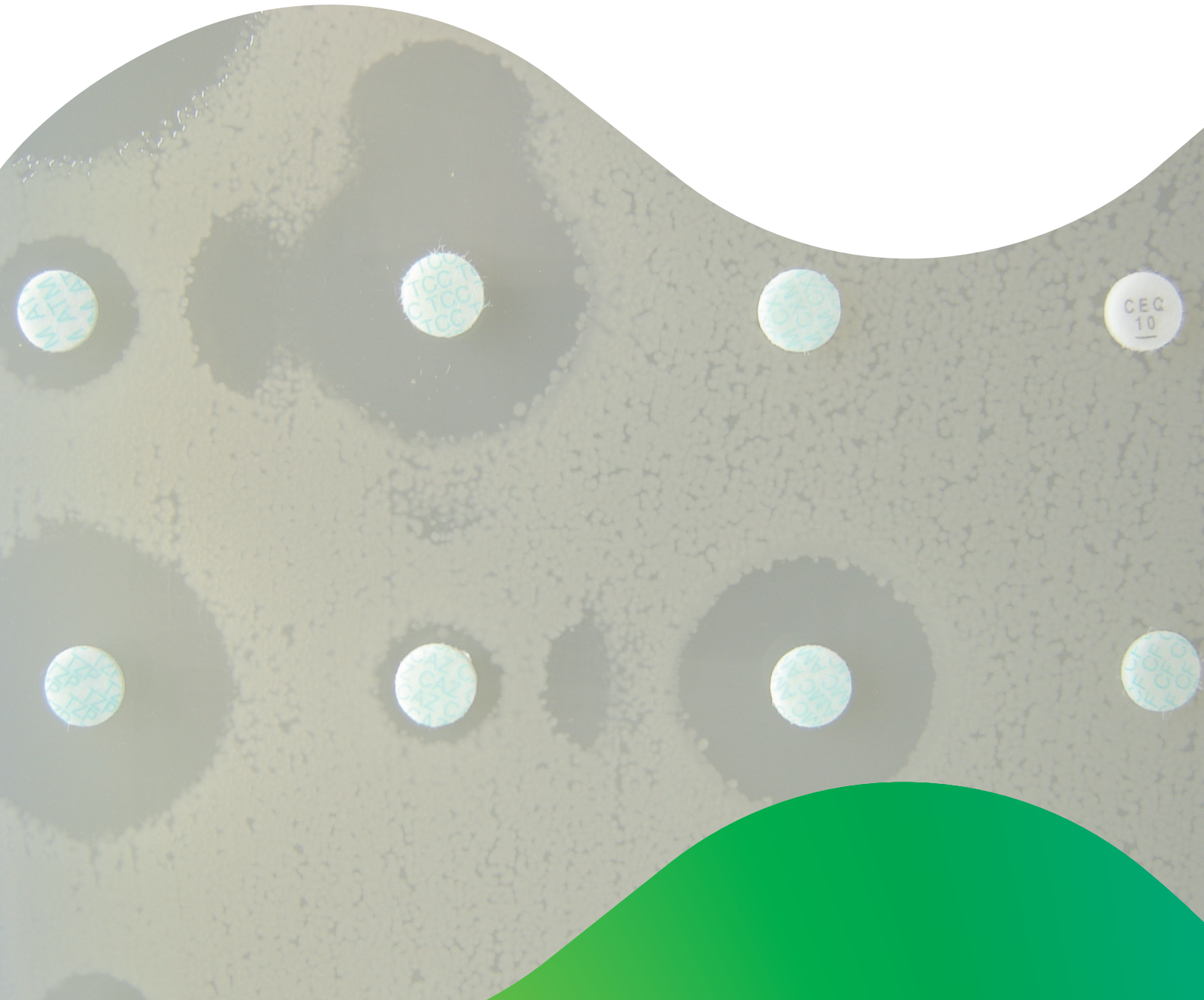


Figure 1 - Horses 2013 – Number of antibiograms by age group and pathology

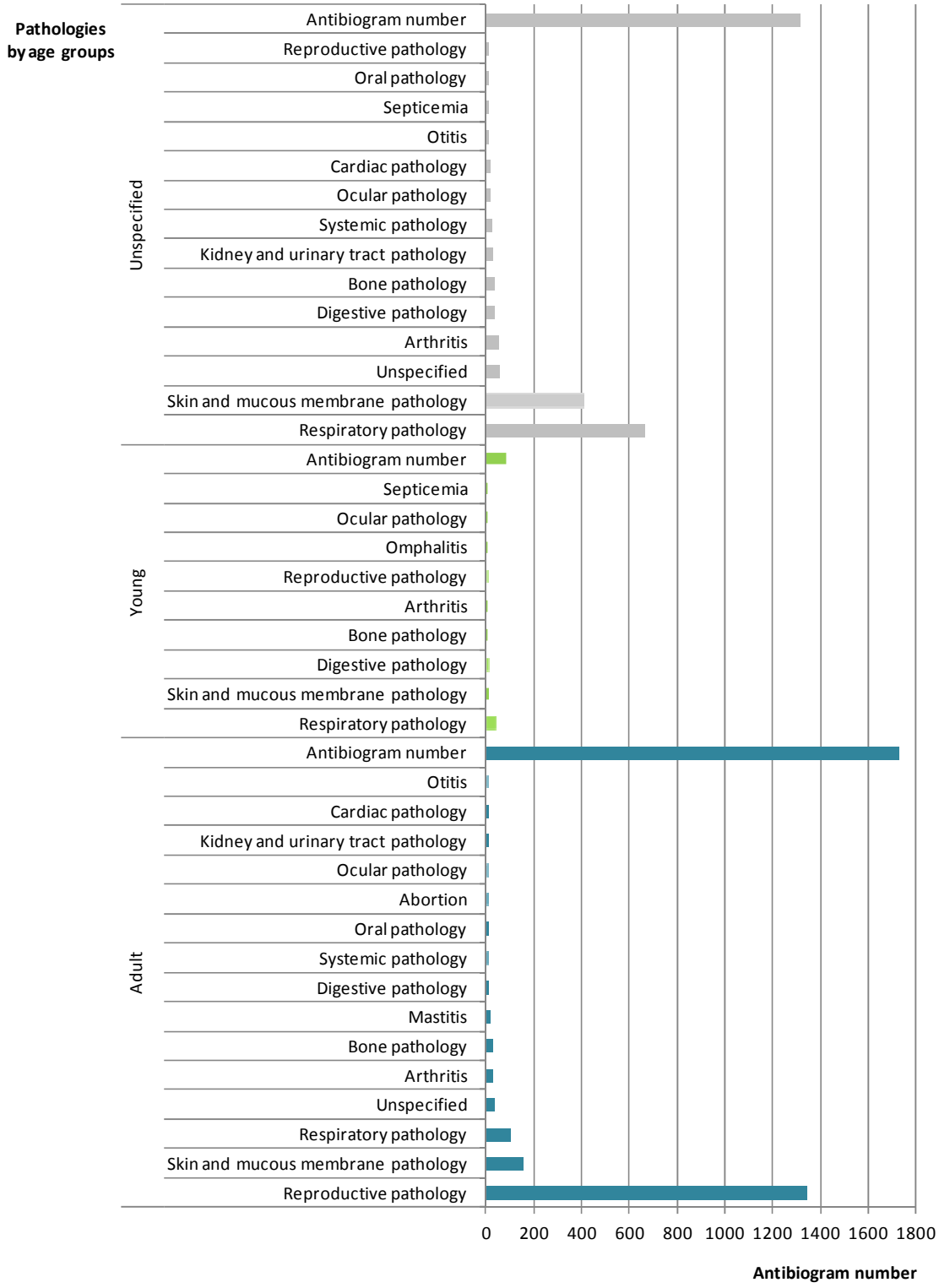
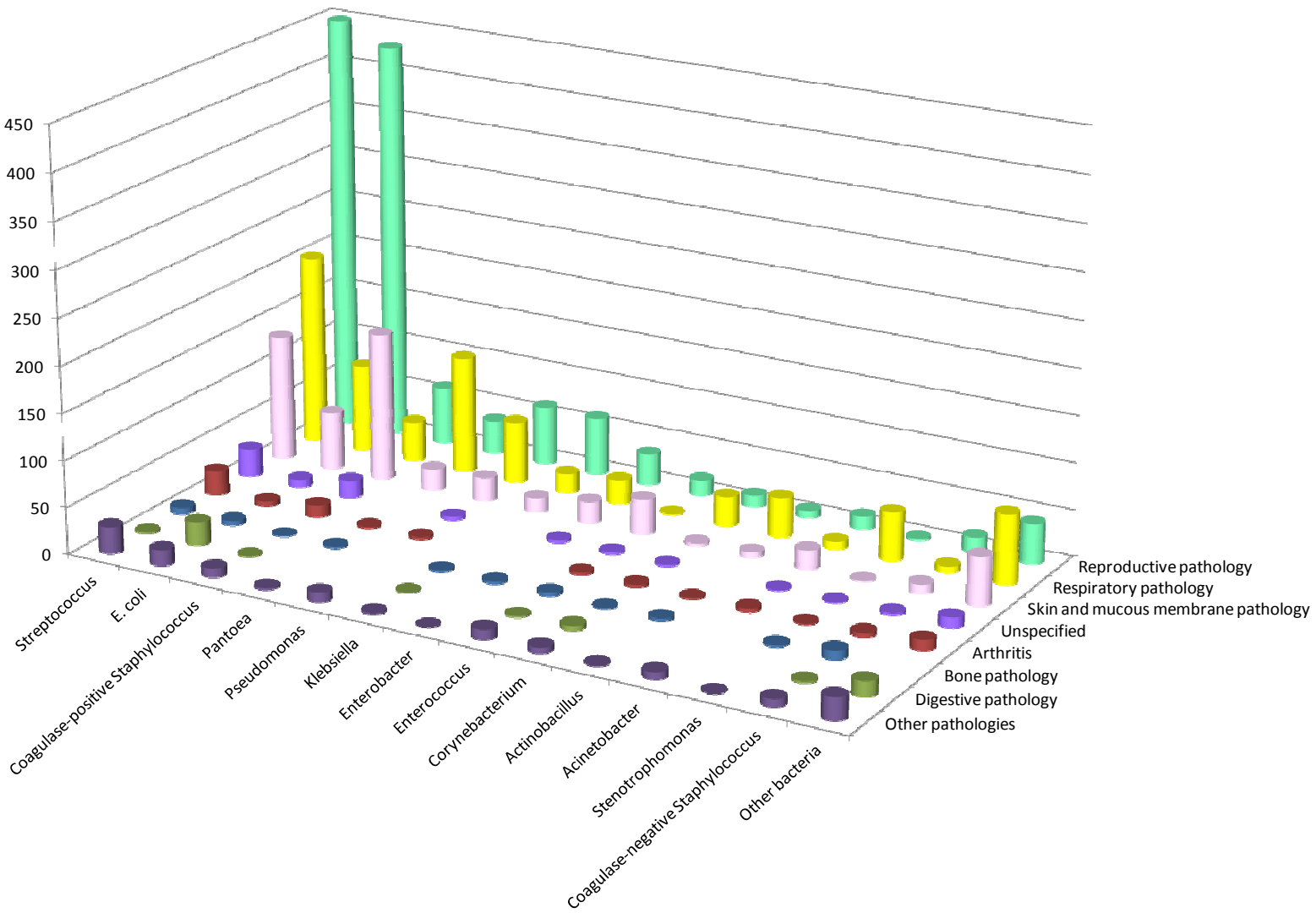


Table 1 - Horses 2013 – Number of antibiograms by age group and pathology

	Pathology N (%)																	
Age group N ***(%)***	Reproductive pathology	Respiratory pathology	Skin and mucous membrane pathology	Unspecified	Arthritis	Bone pathology	Digestive pathology	Kidney and urinary tract pathology	Systemic pathology	Ocular pathology	Mastitis	Cardiac pathology	Oral pathology	Abortion	Otitis	Septicemia	Omphalitis	**Total N** ***(%)***
Adult	1,339	100	149	30	24	23	10	2	8	3	15	1	8	8	1			**1,721**
	(42.93)	*(3.21)*	*(4.78)*	*(0.96)*	*(0.77)*	*(0.74)*	*(0.32)*	*(0.06)*	*(0.26)*	*(0.10)*	*(0.48)*	*(0.03)*	*(0.26)*	*(0.26)*	*(0.03)*			***(55.18)***
Unspecified	1	660	409	55	50	29	32	26	20	12		11	2		3	2		**1,312**
	(0.03)	*(21.16)*	*(13.11)*	*(1.76)*	*(1.60)*	*(0.93)*	*(1.03)*	*(0.83)*	*(0.64)*	*(0.38)*		*(0.35)*	*(0.06)*		*(0.10)*	*(0.06)*		***(42.06)***
Young	4	40	16		4	4	12			2						1	3	**86**
	(0.13)	*(1.28)*	*(0.51)*		*(0.13)*	*(0.13)*	*(0.38)*			*(0.06)*						*(0.03)*	*(0.10)*	***(2.76)***
Total N ***(%)***	**1,344** ***(43.09)***	**800** ***(25.65)***	**574** ***(18.40)***	**85** ***(2.73)***	**78** ***(2.50)***	**56** ***(1.80)***	**54** ***(1.73)***	**28** ***(0.90)***	**28** ***(0.90)***	**17** ***(0.55)***	**15** ***(0.48)***	**12** ***(0.38)***	**10** ***(0.32)***	**8** ***(0.26)***	**4** ***(0.13)***	**3** ***(0.10)***	**3** ***(0.10)***	**3,119** ***(100.00)***

Figure 2 - Horses 2013 – Number of antibiograms by bacteria group and pathology



Note: *all values for pathologies >1% and bacteria groups having more than 30 occurrences are represented. Detailed values are presented in table 2 below.*

Table 2 - Horses 2013 – Number of antibiograms by bacteria group and pathology

	Pathology N (%)																	
Bacteria N (%)	Reproductive pathology	Respiratory pathology	Skin and mucous membrane pathology	Unspecified	Arthritis	Bone pathology	Digestive pathology	Kidney and urinary tract pathology	Systemic pathology	Ocular pathology	Mastitis	Cardiac pathology	Oral pathology	Abortion	Otitis	Septicemia	Omphalitis	**Total N *(%)***
Streptococcus	546 *(17.51)*	205 *(6.57)*	135 *(4.33)*	30 *(0.96)*	26 *(0.83)*	16 *(0.51)*	2 *(0.06)*	7 *(0.22)*	5 *(0.16)*	6 *(0.19)*	2 *(0.06)*	1 *(0.03)*	1 *(0.03)*	4 *(0.13)*	2 *(0.06)*	1 *(0.03)*		**989** ***(31.71)***
E. coli	429 *(13.75)*	95 *(3.05)*	62 *(1.99)*	8 *(0.26)*	5 *(0.16)*	7 *(0.22)*	25 *(0.80)*	2 *(0.06)*	4 *(0.13)*		3 *(0.10)*	1 *(0.03)*	3 *(0.10)*	2 *(0.06)*		1 *(0.03)*	1 *(0.03)*	**648** ***(20.78)***
Coagulase-positive Staphylococcus	62 *(1.99)*	43 *(1.38)*	160 *(5.13)*	19 *(0.61)*	13 *(0.42)*	5 *(0.16)*	1 *(0.03)*		5 *(0.16)*	2 *(0.06)*	1 *(0.03)*		1 *(0.03)*		1 *(0.03)*			**313** ***(10.04)***
Pantoea	36 *(1.15)*	126 *(4.04)*	23 *(0.74)*		2 *(0.06)*	1 *(0.03)*				2 *(0.06)*								**190** ***(6.09)***
Pseudomonas	63 *(2.02)*	66 *(2.12)*	25 *(0.80)*	4 *(0.13)*	3 *(0.10)*	2 *(0.06)*		8 *(0.26)*	2 *(0.06)*									**173** ***(5.55)***
Klebsiella	62 *(1.99)*	21 *(0.67)*	15 *(0.48)*				1 *(0.03)*				1 *(0.03)*			1 *(0.03)*				**101** ***(3.24)***
Enterobacter	34 *(1.09)*	26 *(0.83)*	23 *(0.74)*	3 *(0.10)*		2 *(0.06)*												**88** ***(2.82)***
Enterococcus	17 *(0.55)*	1 *(0.03)*	38 *(1.22)*	3 *(0.10)*	3 *(0.10)*	3 *(0.10)*	2 *(0.06)*	2 *(0.06)*	3 *(0.10)*		1 *(0.03)*	3 *(0.10)*				1 *(0.03)*	1 *(0.03)*	**78** ***(2.50)***
Corynebacterium	12 *(0.38)*	32 *(1.03)*	3 *(0.10)*	2 *(0.06)*	3 *(0.10)*	4 *(0.13)*	5 *(0.16)*	1 *(0.03)*	2 *(0.06)*	1 *(0.03)*	1 *(0.03)*			1 *(0.03)*				**67** ***(2.15)***
Actinobacillus	8 *(0.26)*	43 *(1.38)*	6 *(0.19)*		2 *(0.06)*	1 *(0.03)*				1 *(0.03)*								**61** ***(1.96)***
Acinetobacter	14 *(0.45)*	8 *(0.26)*	21 *(0.67)*	1 *(0.03)*	4 *(0.13)*	3 *(0.01)*		2 *(0.06)*	2 *(0.06)*	2 *(0.06)*	1 *(0.03)*		1 *(0.03)*					**59** ***(1.89)***
Stenotrophomonas	2 *(0.06)*	52 *(1.67)*	1 *(0.03)*	1 *(0.03)*	1 *(0.03)*													**57** ***(1.83)***
Coagulase-negative Staphylococcus	16 *(0.51)*	7 *(0.22)*	10 *(0.32)*	3 *(0.10)*	5 *(0.16)*	2 *(0.06)*	2 *(0.06)*	3 *(0.10)*		2 *(0.06)*	2 *(0.06)*	1 *(0.03)*						**53** ***(1.70)***
Other bacteria < 30 occurrences	43 *(1.38)*	75 *(2.40)*	52 *(1.67)*	11 *(0.35)*	11 *(0.35)*	10 *(0.32)*	16 *(0.51)*	3 *(0.10)*	5 *(0.16)*	1 *(0.03)*	3 *(0.10)*	6 *(0.19)*	4 *(0.13)*		1 *(0.03)*		1 *(0.03)*	**242** ***(7.76)***
Total N *(%)*	**1,344** ***(43.09)***	**800** ***(25.65)***	**574** ***(18.40)***	**85** ***(2.73)***	**78** ***(2.50)***	**56** ***(1.80)***	**54** ***(1.73)***	**28** ***(0.90)***	**28** ***(0.90)***	**17** ***(0.55)***	**15** ***(0.48)***	**12** ***(0.38)***	**10** ***(0.32)***	**8** ***(0.26)***	**4** ***(0.13)***	**3** ***(0.10)***	**3** ***(0.10)***	**3,119** ***(100.00)***

Table 3 - Horses 2013 – Reproductive pathology – All age groups included– *E. coli*: susceptibility to antibiotics (proportion) (N=429)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*426*	**55**
Amoxicillin-Clavulanic ac.	*426*	**63**
Cephalexin	*44*	**93**
Cefoxitin	*50*	**96**
Cefuroxime	*35*	**94**
Cefoperazone	*36*	**94**
Ceftiofur	*426*	**96**
Cefquinome 30 µg	*425*	**97**
Streptomycin 10 UI	*293*	**34**
Kanamycin 30 UI	*413*	**82**
Gentamicin 10 UI	*429*	**94**
Neomycin	*171*	**94**
Amikacine	*376*	**99**
Tetracycline	*299*	**83**
Florfenicol	*39*	**97**
Nalidixic ac.	*280*	**92**
Oxolinic ac.	*129*	**95**
Flumequine	*398*	**95**
Enrofloxacin	*428*	**97**
Marbofloxacin	*425*	**98**
Danofloxacin	*34*	**97**
Trimethoprim-Sulfonamides	*429*	**83**

Table 4 - Horses 2013 – Respiratory pathology – All age groups included – *E. coli*: susceptibility to antibiotics (proportion) (N=95)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*93*	**45**
Amoxicillin-Clavulanic ac.	*93*	**56**
Ceftiofur	*94*	**88**
Cefquinome 30 µg	*93*	**88**
Streptomycin 10 UI	*94*	**40**
Kanamycin 30 UI	*91*	**82**
Gentamicin 10 UI	*95*	**87**
Amikacine	*90*	**98**
Tetracycline	*93*	**77**
Nalidixic ac.	*91*	**87**
Flumequine	*94*	**95**
Enrofloxacin	*95*	**95**
Marbofloxacin	*92*	**97**
Trimethoprim-Sulfonamides	*95*	**72**

Table 5 - Horses 2013 – Skin and mucous membrane pathology – All age groups included – Tous *E. coli*: susceptibility to antibiotics (proportion) (N=62)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*61*	**52**
Amoxicillin-Clavulanic ac.	*61*	**64**
Ceftiofur	*62*	**87**
Cefquinome 30 µg	*59*	**86**
Streptomycin 10 UI	*60*	**32**
Kanamycin 30 UI	*59*	**68**
Gentamicin 10 UI	*62*	**76**
Amikacine	*58*	**97**
Tetracycline	*59*	**68**
Nalidixic ac.	*61*	**82**
Flumequine	*60*	**85**
Enrofloxacin	*62*	**87**
Marbofloxacin	*59*	**92**
Trimethoprim-Sulfonamides	*62*	**58**

Table 6 - Horses 2013 – All pathologies and age groups included – *Klebsiella* spp: susceptibility to antibiotics (proportion) (N=101)

Antibiotic	*Total (N)*	**% S**
Amoxicillin-Clavulanic ac.	*100*	**91**
Cephalothin	*30*	**93**
Cefoxitin	*36*	**94**
Ceftiofur	*99*	**97**
Cefquinome 30 µg	*97*	**97**
Streptomycin 10 UI	*86*	**78**
Kanamycin 30 UI	*93*	**96**
Gentamicin 10 UI	*101*	**94**
Neomycin	*33*	**100**
Amikacine	*76*	**100**
Tetracycline	*88*	**80**
Nalidixic ac.	*84*	**77**
Flumequine	*81*	**91**
Enrofloxacin	*99*	**97**
Marbofloxacin	*97*	**100**
Trimethoprim-Sulfonamides	*101*	**84**

Table 7 - Horses 2013 – All pathologies and age groups included – *Enterobacter* spp*:* susceptibility to antibiotics (proportion) (N=88)

Antibiotic	*Total (N)*	**% S**
Amoxicillin-Clavulanic ac.	*88*	**12**
Ceftiofur	*88*	**91**
Cefquinome 30 µg	*86*	**94**
Streptomycin 10 UI	*76*	**72**
Kanamycin 30 UI	*83*	**87**
Gentamicin 10 UI	*88*	**86**
Amikacine	*81*	**100**
Tetracycline	*76*	**63**
Nalidixic ac.	*78*	**82**
Flumequine	*82*	**82**
Enrofloxacin	*88*	**92**
Marbofloxacin	*86*	**99**
Trimethoprim-Sulfonamides	*88*	**84**

Table 8 - Horses 2013 – Skin and mucous membrane pathology - All age groups included –*Staphylococcus aureus*: susceptibility to antibiotics (proportion) (N=118)

Antibiotic	*Total (N)*	**% S**
Penicillin	*114*	**72**
Cefoxitin	*111*	**94**
Oxacillin	*102*	**99**
Erythromycine	*114*	**96**
Streptomycin 10 UI	*113*	**89**
Kanamycin 30 UI	*107*	**93**
Gentamicin 10 UI	*117*	**93**
Tetracycline	*114*	**89**
Enrofloxacin	*117*	**97**
Marbofloxacin	*115*	**99**
Trimethoprim-Sulfonamides	*118*	**97**
Rifampicin	*105*	**99**

Table 9 - Horses 2013 – Reproductive pathology - All age groups included – Group C *Streptococcus et Streptococcus zooepidemicus:* susceptibility to antibiotics (proportion) (N=461)

Antibiotic	*Total (N)*	**% S**
Ampicillin	*65*	**98**
Oxacillin	*419*	**99**
Erythromycine	*460*	**92**
Spiramycin	*164*	**99**
Lincomycin	*99*	**99**
Streptomycin 500 µg	*398*	**96**
Kanamycin 1000 µg	*396*	**96**
Gentamicin 500 µg	*398*	**99**
Tetracycline	*399*	**27**
Florfenicol	*77*	**100**
Enrofloxacin	*454*	**26**
Marbofloxacin	*432*	**78**
Trimethoprim-Sulfonamides	*461*	**91**
Rifampicin	*407*	**56**

Table 10 - Horses 2013 – Respiratory pathology. All age groups included – *Streptococcus*: susceptibility to antibiotics (proportion) (N= 205)

Antibiotic	*Total (N)*	**% S**
Oxacillin	*199*	**98**
Erythromycine	*202*	**98**
Streptomycin 500 µg	*192*	**99**
Kanamycin 1000 µg	*192*	**98**
Gentamicin 500 µg	*192*	**99**
Tetracycline	*193*	**35**
Enrofloxacin	*200*	**24**
Marbofloxacin	*197*	**80**
Trimethoprim-Sulfonamides	*205*	**97**
Rifampicin	*194*	**63**

Table 11 - Horses 2013 – Skin and mucous membrane pathology. All age groups included – *Streptococcus*: susceptibility to antibiotics (proportion) (N= 135)

Antibiotic	*Total (N)*	**% S**
Oxacillin	*133*	**99**
Erythromycine	*134*	**93**
Streptomycin 500 µg	*131*	**92**
Kanamycin 1000 µg	*129*	**94**
Gentamicin 500 µg	*132*	**100**
Tetracycline	*132*	**36**
Enrofloxacin	*134*	**28**
Marbofloxacin	*132*	**83**
Trimethoprim-Sulfonamides	*134*	**98**
Rifampicin	*124*	**51**

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Annex 10

Dogs

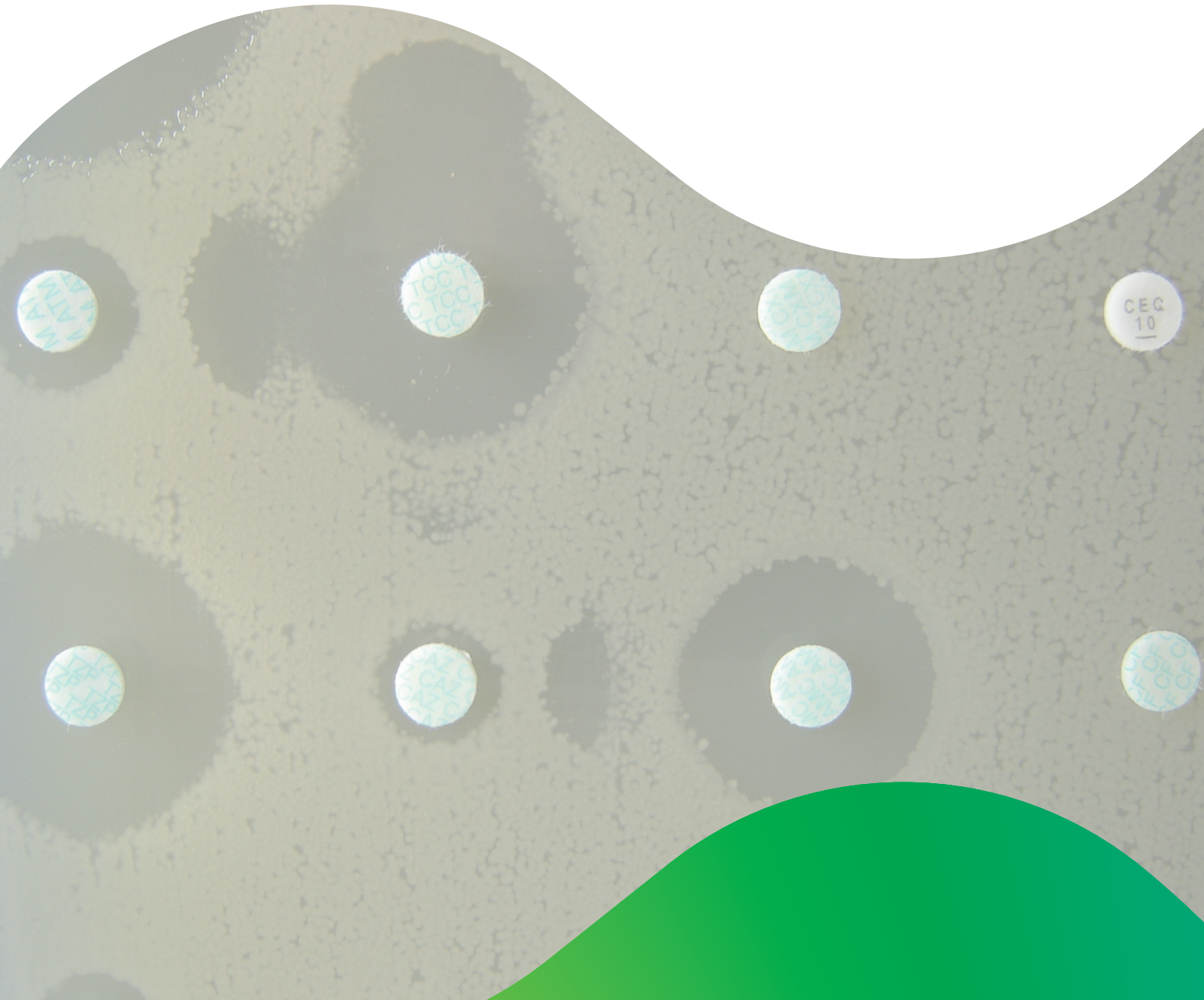


Figure 1 - Dogs 2013 – Number of antibiograms by age group and pathology

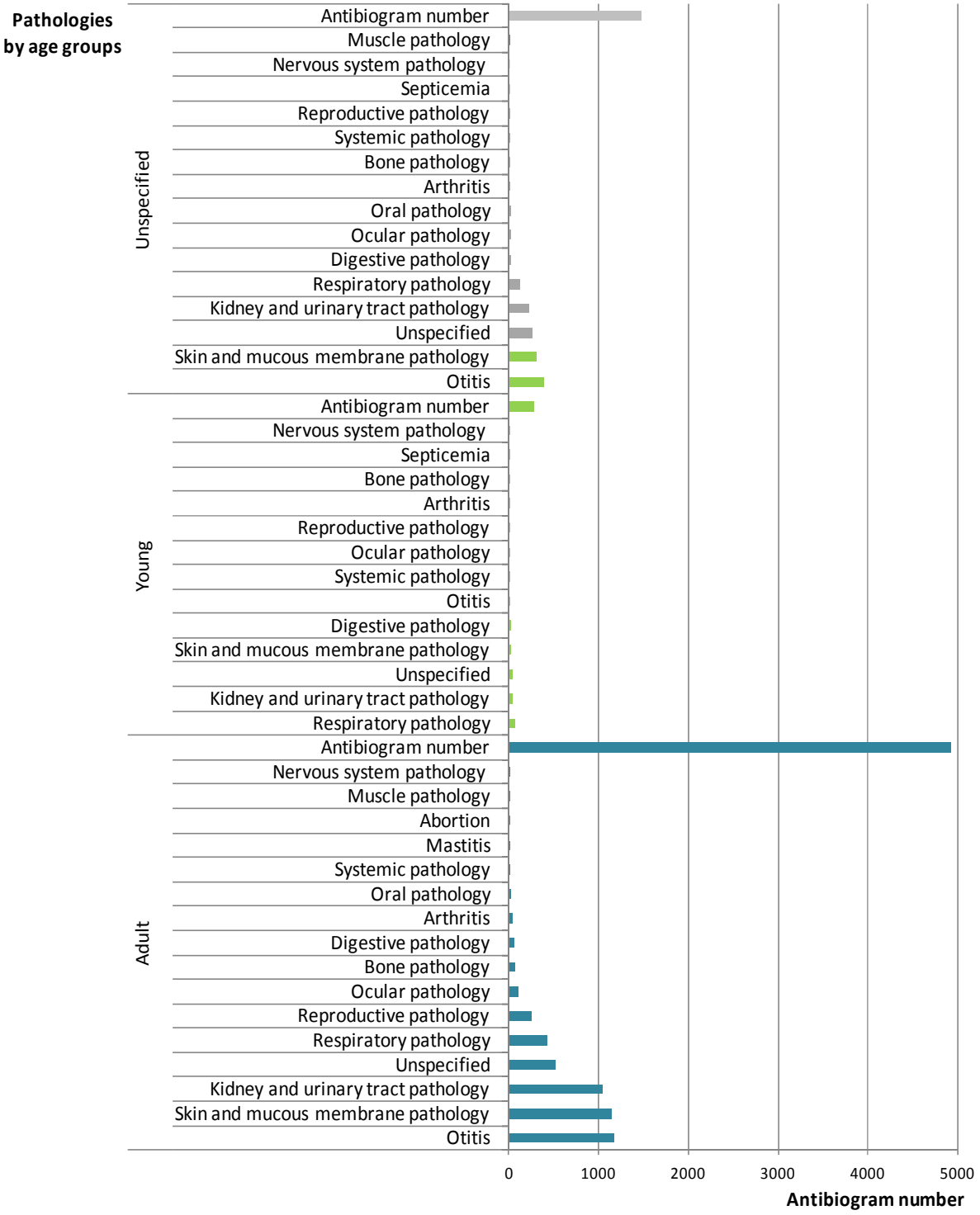
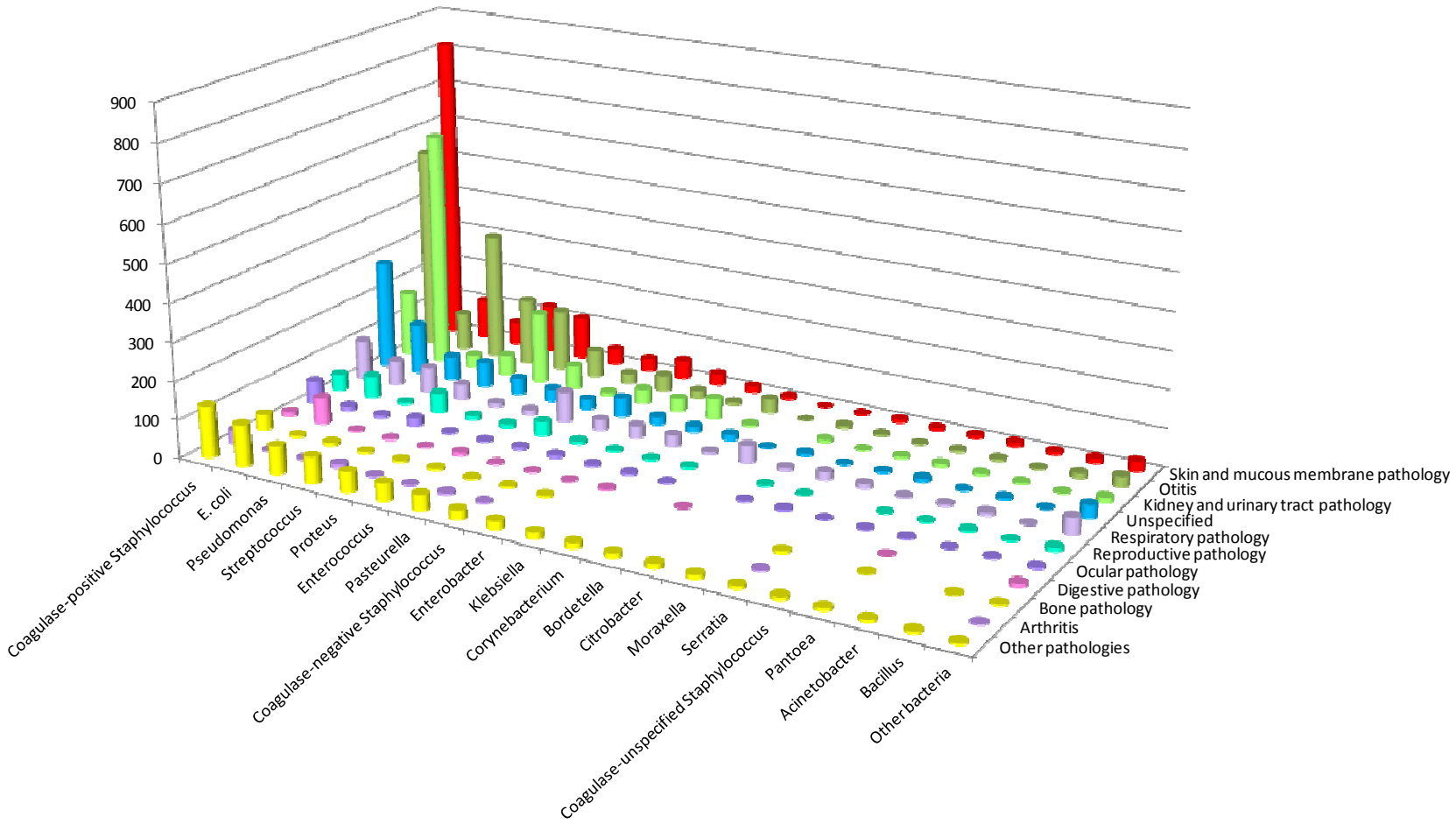


Table 1 - Dogs 2013 – Number of antibiograms by age group and pathology

	Pathology N (%)																	
Age group N *(%)*	Otitis	Skin and mucous membrane pathology	Kidney and urinary tract pathology	Unspecified	Respiratory hpatology	Reproductive pathology	Ocular pathology	Digestive pathology	Bone pathology	Arthritis	Oral pathology	Systemic pathology	Mastitis	Abortion	Nervous system pathology	Muscle pathology	Septicemia	**Total N *(%)***
Adult	1,177	1,142	1,052	512	430	253	117	51	73	43	29	22	11	8	3	4		**4,927**
	(17.60)	*(17.08)*	*(15.73)*	*(7.66)*	*(6.43)*	*(3.78)*	*(1.75)*	*(0.76)*	*(1.09)*	*(0.64)*	*(0.43)*	*(0.33)*	*(0.16)*	*(0.12)*	*(0.04)*	*(0.06)*		***(73.67)***
Unspecified	397	313	225	273	122	9	32	33	16	22	24	15			1	1	1	**1,484**
	(5.94)	*(4.68)*	*(3.36)*	*(4.08)*	*(1.82)*	*(0.13)*	*(0.48)*	*(0.49)*	*(0.24)*	*(0.33)*	*(0.36)*	*(0.22)*			*(0.01)*	*(0.01)*	*(0.01)*	***(22.19)***
Young	13	36	47	37	68	8	9	34	4	5		13			1		2	**277**
	(0.19)	*(0.54)*	*(0.70)*	*(0.55)*	*(1.02)*	*(0.12)*	*(0.13)*	*(0.51)*	*(0.06)*	*(0.07)*		*(0.19)*			*(0.01)*		*(0.03)*	***(4.14)***
Total N *(%)*	**1,587** ***(23.73)***	**1,491** ***(22.29)***	**1,324** ***(19.80)***	**822** ***(12.29)***	**620** ***(9.27)***	**270** ***(4.04)***	**158** ***(2.36)***	**118** ***(1.76)***	**93** ***(1.39)***	**70** ***(1.05)***	**53** ***(0.79)***	**50** ***(0.75)***	**11** ***(0.16)***	**8** ***(0.12)***	**5** ***(0.07)***	**5** ***(0.07)***	**3** ***(0.04)***	6,688 ***(100.00)***

Figure 2 - Dogs 2013 – Number of antibiograms by bacteria group and pathology



Note: *all values for pathologies >1% and bacteria groups having more than 30 occurrences are represented. Detailed values are presented in table 2 below.*

Table 2 - Dogs 2013 – Number of antibiograms by bacteria group and pathology

	Pathology N (%)																	
Bacteria N (%)	Otitis	Skin and mucous membrane pathology	Kidney and urinary tract pathology	Unspecified	Respiratory hpatology	Reproductive pathology l	Ocular pathology	Digestive pathology	Bone p athology	Arthritis	Oral pathology	Systemic pathology	Mastitis	Abortion	Nervous system pathology	Muscle pathology	Septicemia	**Total N *(%)***
Coagulase-positive Staphylococcus	540 *(8.07)*	816 *(12.20)*	173 *(2.59)*	286 *(4.28)*	102 *(1.53)*	43 *(0.64)*	60 *(0.90)*	11 *(0.16)*	41 *(0.61)*	35 *(0.52)*	8 *(0.12)*	7 *(0.10)*	4 *(0.06)*	3 *(0.04)*	3 *(0.04)*	1 *(0.01)*	1 *(0.01)*	**2,134** ***(31.91)***
E. coli	100 *(1.50)*	105 *(1.57)*	625 *(9.35)*	134 *(2.00)*	66 *(0.99)*	58 *(0.87)*	11 *(0.16)*	70 *(1.05)*	5 *(0.07)*	3 *(0.04)*	8 *(0.12)*	21 *(0.31)*	1 *(0.01)*	1 *(0.01)*		1 *(0.01)*	1 *(0.01)*	**1,210** ***(18.09)***
Pseudomonas	336 *(5.02)*	61 *(0.91)*	33 *(0.49)*	63 *(0.94)*	66 *(0.99)*	7 *(0.10)*	8 *(0.12)*	3 *(0.04)*	8 *(0.12)*	3 *(0.04)*	5 *(0.07)*	2 *(0.03)*						**595** ***(8.90)***
Streptococcus	174 *(2.60)*	126 *(1.88)*	52 *(0.78)*	67 *(1.00)*	40 *(0.60)*	52 *(0.78)*	21 *(0.31)*	3 *(0.04)*	5 *(0.07)*	11 *(0.16)*	6 *(0.09)*	5 *(0.07)*	4 *(0.06)*				1 *(0.01)*	**567** ***(8.48)***
Proteus	162 *(2.42)*	111 *(1.66)*	188 *(2.81)*	43 *(0.64)*	10 *(0.15)*	12 *(0.18)*	3 *(0.04)*	2 *(0.03)*	5 *(0.07)*	2 *(0.03)*	3 *(0.04)*	2 *(0.03)*				1 *(0.01)*		**544** ***(8.13)***
Enterococcus	70 *(1.05)*	42 *(0.63)*	63 *(0.94)*	33 *(0.49)*	12 *(0.18)*	11 *(0.16)*	3 *(0.04)*	9 *(0.13)*	6 *(0.09)*	2 *(0.03)*	1 *(0.01)*	4 *(0.06)*				1 *(0.01)*		**257** ***(3.84)***
Pasteurella	26 *(0.39)*	34 *(0.51)*	9 *(0.13)*	25 *(0.37)*	80 *(1.20)*	38 *(0.57)*	8 *(0.12)*	2 *(0.03)*	2 *(0.03)*	5 *(0.07)*	12 *(0.18)*	1 *(0.01)*		2 *(0.03)*		1 *(0.01)*		**245** ***(3.66)***
Coagulase-negative Staphylococcus	41 *(0.61)*	49 *(0.73)*	38 *(0.57)*	50 *(0.75)*	27 *(0.40)*	8 *(0.12)*	8 *(0.12)*	2 *(0.03)*	5 *(0.07)*	4 *(0.06)*	1 *(0.01)*	1 *(0.01)*		1 *(0.01)*	1 *(0.01)*			**236** ***(3.53)***
Enterobacter	19 *(0.28)*	31 *(0.46)*	34 *(0.51)*	20 *(0.30)*	32 *(0.48)*	5 *(0.07)*	5 *(0.07)*	1 *(0.01)*	4 *(0.06)*		1 *(0.01)*	1 *(0.01)*	2 *(0.03)*					**155** ***(2.32)***
Klebsiella	9 *(0.13)*	17 *(0.25)*	54 *(0.81)*	15 *(0.22)*	29 *(0.43)*	4 *(0.06)*	5 *(0.07)*	4 *(0.06)*			1 *(0.01)*	1 *(0.01)*						**139** ***(2.08)***
Corynebacterium	37 *(0.55)*	9 *(0.13)*	5 *(0.07)*	15 *(0.22)*	6 *(0.09)*	6 *(0.09)*	3 *(0.04)*				1 *(0.01)*							**82** ***(1.23)***
Bordetella	1 *(0.01)*	1 *(0.01)*		2 *(0.03)*	46 *(0.69)*			1 *(0.01)*				1 *(0.01)*						**52** ***(0.78)***
Citrobacter	8 *(0.12)*	4 *(0.06)*	8 *(0.12)*	9 *(0.13)*	9 *(0.13)*	3 *(0.04)*	3 *(0.04)*					2 *(0.03)*						**46** ***(0.69)***

	Pathology N (%)																	
Bacteria N (%)	Otitis	Skin and mucous membrane pathology	Kidney and urinary tract pathology	Unspecified	Respiratory hpatology	Reproductive pathology l	Ocular pathology	Digestive pathology	Bone p athology	Arthritis	Oral pathology	Systemic pathology	Mastitis	Abortion	Nervous system pathology	Muscle pathology	Septicemia	**Total N *(%)***
Moraxella	6 *(0.09)*	9 *(0.13)*	2 *(0.03)*	2 *(0.03)*	20 *(0.30)*	1 *(0.01)*	5 *(0.07)*							1 *(0.01)*				**46** ***(0.69)***
Serratia	2 *(0.03)*	7 *(0.10)*	5 *(0.07)*	5 *(0.07)*	12 *(0.18)*		2 *(0.03)*		7 *(0.10)*	3 *(0.04)*	1 *(0.01)*							**44** ***(0.66)***
Staphylococcus à coagulase inconnue	7 *(0.10)*	9 *(0.13)*	9 *(0.13)*	10 *(0.15)*	3 *(0.04)*	1 *(0.01)*	2 *(0.03)*				1 *(0.01)*							**42** ***(0.63)***
Pantoea	6 *(0.09)*	11 *(0.16)*	6 *(0.09)*	2 *(0.03)*	6 *(0.09)*	3 *(0.04)*	3 *(0.04)*	1 *(0.01)*	1 *(0.01)*			1 *(0.01)*						**40** ***(0.60)***
Acinetobacter	3 *(0.04)*	9 *(0.13)*	5 *(0.07)*	6 *(0.09)*	9 *(0.13)*	5 *(0.07)*	1 *(0.01)*				1 *(0.01)*							**39** ***(0.58)***
Bacillus	13 *(0.19)*	13 *(0.19)*	2 *(0.03)*	1 *(0.01)*	1 *(0.01)*	3 *(0.04)*	2 *(0.03)*		1 *(0.01)*			1 *(0.01)*						**37** ***(0.55)***
Other bacteria < 30 occurrences	27 *(0.40)*	27 *(0.40)*	13 *(0.19)*	34 *(0.51)*	44 *(0.66)*	10 *(0.15)*	5 *(0.07)*	9 *(0.13)*	3 *(0.04)*	2 *(0.03)*	3 *(0.04)*				1 *(0.01)*			**178** ***(2.66)***
Total N *(%)*	**1,587** ***(23.73)***	**1,491** ***(22.29)***	**1,324** ***(19.80)***	**822** ***(12.29)***	**620** ***(9.27)***	**270** ***(4.04)***	**158** ***(2.36)***	**118** ***(1.76)***	**93** ***(1.39)***	**70** ***(1.05)***	**53** ***(0.79)***	**50** ***(0.75)***	**11** ***(0.16)***	**8** ***(0.12)***	**5** ***(0.07)***	**5** ***(0.07)***	**3** ***(0.04)***	6,688 ***(100.00)***

Table 3 - Dogs 2013 – Kidney and urinary tract pathology – All age groups included –*E. coli:* susceptibility to antibiotics (proportion) (N=625)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*613*	**58**
Amoxicillin-Clavulanic ac.	*621*	**71**
Cephalexin	*611*	**76**
Cephalothin	*33*	**67**
Cefoxitin	*511*	**90**
Cefoperazone	*46*	**98**
Cefovecin	*318*	**90**
Ceftiofur	*591*	**91**
Cefquinome 30 µg	*117*	**95**
Streptomycin 10 UI	*215*	**46**
Kanamycin 30 UI	*138*	**67**
Gentamicin 10 UI	*620*	**92**
Neomycin	*131*	**95**
Tetracycline	*194*	**68**
Doxycycline	*424*	**70**
Chloramphenicol	*92*	**77**
Florfenicol	*91*	**85**
Nalidixic ac.	*491*	**77**
Oxolinic ac.	*31*	**97**
Flumequine	*85*	**82**
Enrofloxacin	*616*	**84**
Marbofloxacin	*261*	**84**
Danofloxacin	*35*	**94**
Pradofloxacin	*368*	**83**
Trimethoprim-Sulfonamides	*624*	**83**

Table 4 - Dogs 2013 – Skin and mucous membrane pathology – All age groups included – *E. coli:* susceptibility to antibiotics (proportion) (N=105)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*100*	**45**
Amoxicillin-Clavulanic ac.	*101*	**57**
Cephalexin	*101*	**73**
Cefoxitin	*84*	**88**
Cefovecin	*58*	**83**
Ceftiofur	*96*	**92**
Gentamicin 10 UI	*100*	**94**
Doxycycline	*76*	**61**
Nalidixic ac.	*96*	**67**
Enrofloxacin	*98*	**74**
Marbofloxacin	*35*	**86**
Pradofloxacin	*74*	**68**
Trimethoprim-Sulfonamides	*103*	**77**

Table 5 - Dogs 2013 – Otitis - All age groups included – *E. coli*: susceptibility to antibiotics (proportion) (N=100)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*96*	**66**
Amoxicillin-Clavulanic ac.	*99*	**79**
Cephalexin	*92*	**83**
Cefoxitin	*91*	**90**
Cefovecin	*54*	**89**
Ceftiofur	*96*	**93**
Streptomycin 10 UI	*31*	**65**
Gentamicin 10 UI	*100*	**90**
Tetracycline	*39*	**64**
Doxycycline	*60*	**78**
Nalidixic ac.	*96*	**77**
Enrofloxacin	*94*	**80**
Marbofloxacin	*41*	**90**
Pradofloxacin	*60*	**75**
Trimethoprim-Sulfonamides	*97*	**88**

Table 6 - Dogs 2013 – All pathologies and age groups included – *Pasteurella*: susceptibility to antibiotics (proportion) (N=245)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*244*	**85**
Amoxicillin-Clavulanic ac.	*244*	**87**
Cephalexin	*240*	**80**
Cefoxitin	*146*	**90**
Cefovecin	*100*	**92**
Ceftiofur	*220*	**80**
Cefquinome 30 µg	*57*	**89**
Streptomycin 10 UI	*95*	**49**
Kanamycin 30 UI	*90*	**57**
Gentamicin 10 UI	*239*	**88**
Neomycin	*57*	**75**
Tetracycline	*76*	**93**
Doxycycline	*166*	**85**
Florfenicol	*51*	**100**
Nalidixic ac.	*184*	**86**
Flumequine	*47*	**85**
Enrofloxacin	*241*	**86**
Marbofloxacin	*119*	**92**
Pradofloxacin	*123*	**81**
Trimethoprim	*41*	**66**
Trimethoprim-Sulfonamides	*242*	**88**

Table 7 - Dogs 2013 – Otitis - All age groups included –Coagulase-positive *Staphylococcus:* susceptibility to antibiotics (proportion) (N=540)

Antibiotic	*Total (N)*	**% S**
Penicillin	*526*	**39**
Oxacillin	*78*	**97**
Cefovecin	*233*	**88**
Erythromycine	*522*	**69**
Tylosin	*71*	**79**
Spiramycin	*265*	**66**
Lincomycin	*525*	**71**
Pristinamycin	*40*	**98**
Streptomycin 10 UI	*221*	**65**
Kanamycin 30 UI	*179*	**58**
Tobramycin	*32*	**28**
Gentamicin 10 UI	*530*	**86**
Neomycin	*102*	**80**
Tetracycline	*273*	**58**
Doxycycline	*290*	**80**
Chloramphenicol	*122*	**73**
Florfenicol	*72*	**100**
Enrofloxacin	*508*	**82**
Marbofloxacin	*276*	**86**
Danofloxacin	*55*	**93**
Pradofloxacin	*343*	**73**
Trimethoprim-Sulfonamides	*534*	**87**
Fusidic ac.	*373*	**95**
Rifampicin	*56*	**89**

Table 8 - Dogs 2013 – Skin and mucous membrane pathology – All age groups included –Coagulase-positive *Staphylococcus:* susceptibility to antibiotics (proportion) (N=816)

Antibiotic	*Total (N)*	**% S**
Penicillin	*701*	**29**
Oxacillin	*71*	**99**
Cefovecin	*368*	**80**
Erythromycine	*696*	**59**
Tylosin	*84*	**65**
Spiramycin	*364*	**55**
Lincomycin	*804*	**58**
Pristinamycin	*91*	**100**
Streptomycin 10 UI	*272*	**57**
Kanamycin 30 UI	*340*	**48**
Tobramycin	*121*	**50**
Gentamicin 10 UI	*798*	**84**
Neomycin	*207*	**70**
Tetracycline	*469*	**54**
Doxycycline	*412*	**73**
Chloramphenicol	*185*	**70**
Florfenicol	*150*	**99**
Enrofloxacin	*764*	**79**
Marbofloxacin	*480*	**84**
Danofloxacin	*73*	**88**
Pradofloxacin	*535*	**67**
Trimethoprim-Sulfonamides	*800*	**77**
Fusidic ac.	*572*	**96**
Vancomycin	*78*	**100**
Teicoplanin	*78*	**100**
Rifampicin	*149*	**99**

Table 9 - Dogs 2013 – Kidney and urinary tract pathology – All age groups included – Coagulase-positive *Staphylococcus:* susceptibility to antibiotics (proportion) (N=173)

Antibiotic	*Total (N)*	**% S**
Penicillin	*169*	**31**
Cefovecin	*90*	**82**
Erythromycine	*169*	**60**
Spiramycin	*84*	**56**
Lincomycin	*171*	**61**
Streptomycin 10 UI	*63*	**49**
Kanamycin 30 UI	*84*	**49**
Gentamicin 10 UI	*169*	**85**
Neomycin	*31*	**84**
Tetracycline	*89*	**48**
Doxycycline	*92*	**78**
Chloramphenicol	*49*	**69**
Enrofloxacin	*158*	**75**
Marbofloxacin	*97*	**78**
Pradofloxacin	*109*	**58**
Trimethoprim-Sulfonamides	*173*	**80**
Fusidic ac.	*120*	**94**

Table 10 - Dogs 2013 – Otitis - All age groups included – *Streptococcus*: susceptibility to antibiotics (proportion) (N=174)

Antibiotic	*Total (N)*	**% S**
Oxacillin	*77*	**87**
Cefovecin	*71*	**73**
Erythromycine	*166*	**78**
Tylosin	*31*	**81**
Spiramycin	*85*	**88**
Lincomycin	*168*	**76**
Streptomycin 500 µg	*85*	**91**
Kanamycin 1000 µg	*69*	**97**
Gentamicin 500 µg	*85*	**98**
Tetracycline	*88*	**32**
Doxycycline	*81*	**63**
Enrofloxacin	*153*	**31**
Marbofloxacin	*84*	**77**
Pradofloxacin	*77*	**12**
Trimethoprim-Sulfonamides	*166*	**78**

Table 11 - Dogs 2013 – Skin and mucous membrane pathology – All age groups included –*Streptococcus:* susceptibility to antibiotics (proportion) (N=126)

Antibiotic	*Total (N)*	**% S**
Oxacillin	*52*	**85**
Cefovecin	*59*	**81**
Erythromycine	*121*	**60**
Spiramycin	*46*	**78**
Lincomycin	*122*	**63**
Streptomycin 500 µg	*56*	**91**
Kanamycin 1000 µg	*45*	**93**
Gentamicin 500 µg	*56*	**91**
Tetracycline	*50*	**22**
Doxycycline	*79*	**44**
Enrofloxacin	*118*	**19**
Marbofloxacin	*60*	**67**
Pradofloxacin	*60*	**7**
Trimethoprim-Sulfonamides	*113*	**71**

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Annex 11

Cats

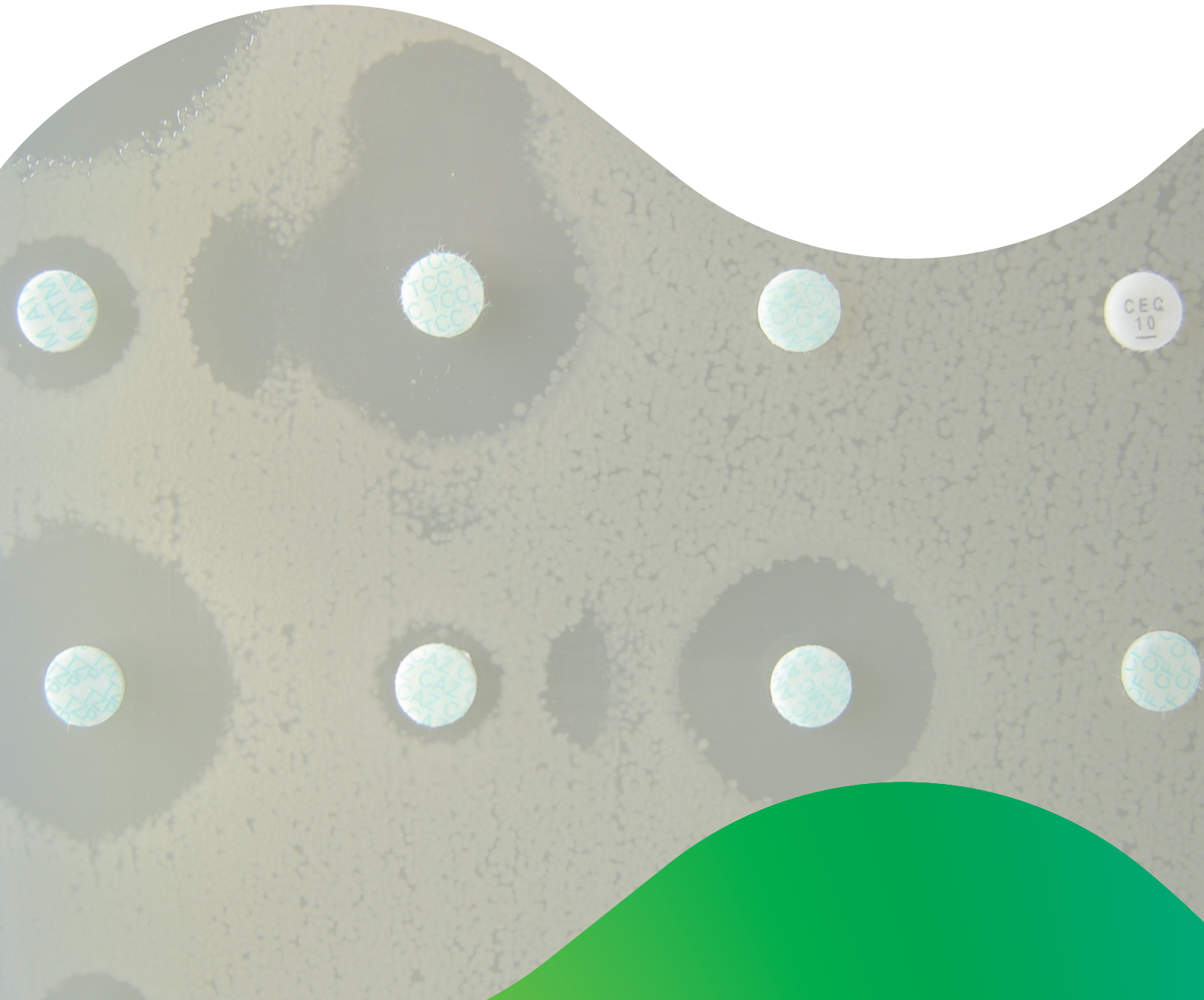


Figure 1 - Cats 2013 – Number of antibiograms by age group and pathology

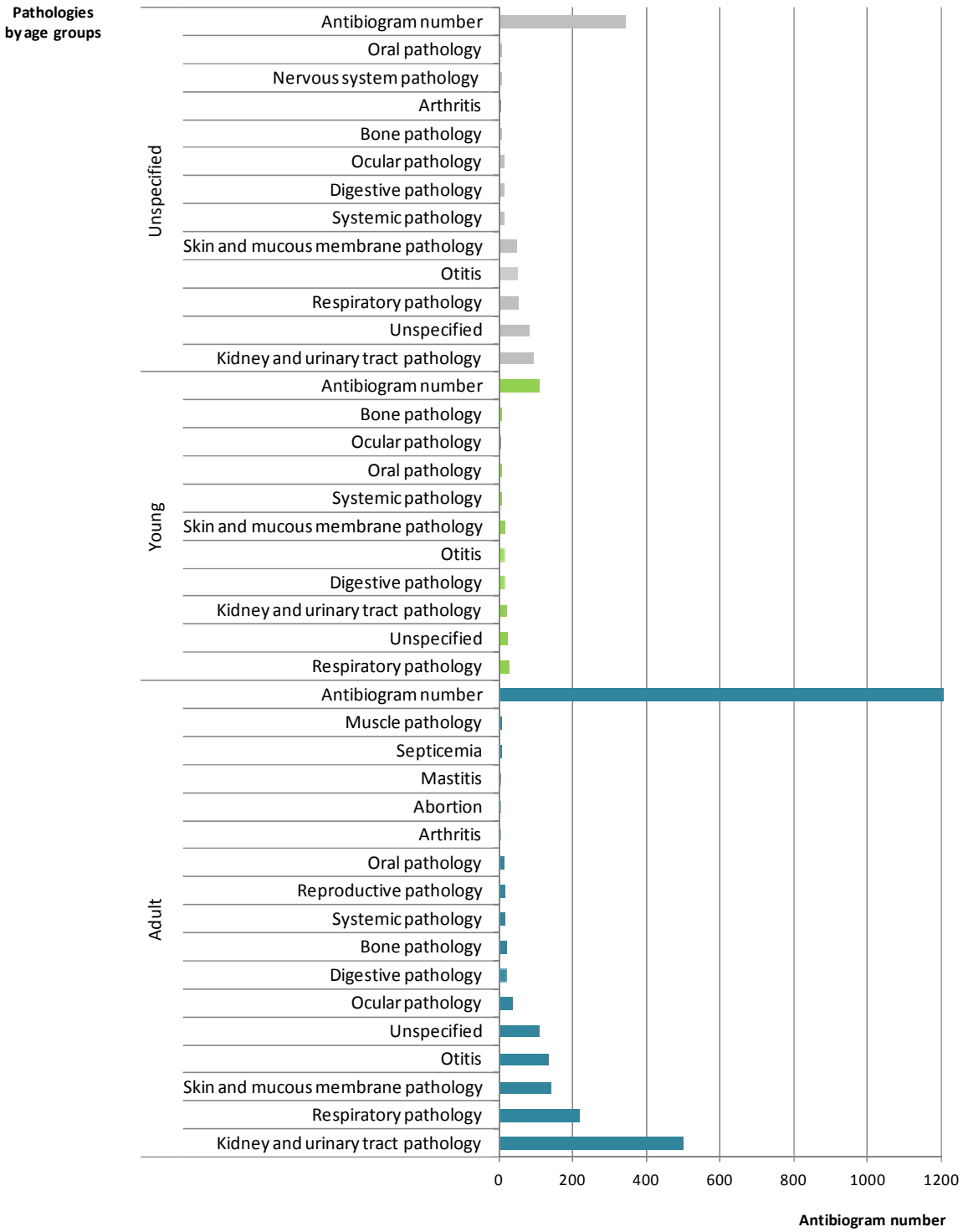
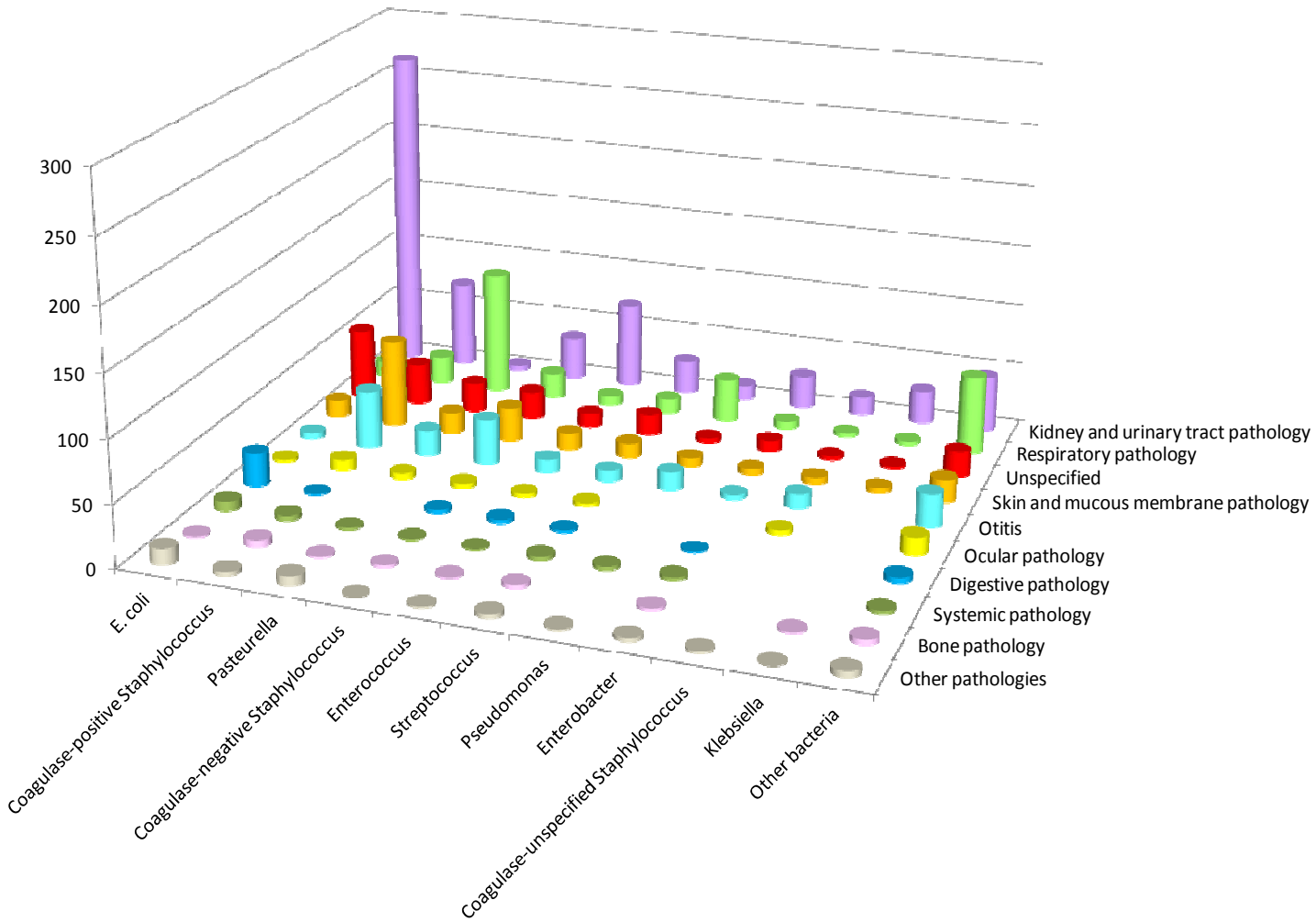


Table 1 - Cats 2013 – Number of antibiograms by age group and pathology

	Pathology N (%)																	
Age group N *(%)*	Kidney and urinary tract pathology	Respiratory pathology	Unspecified	Skin and mucous membrane pathology	Otitis	Ocular pathology	Digestive pathology	Systemic pathology	Bone pathology	Oral pathology	Reproductive pathology	Arthritis	Abortion	Septicemia	Nervous system pathology nerveux	Muscle pathology	Mastitis	**Total N *(%)***
Adult	496 *(30.10)*	216 *(13.11)*	106 *(6.43)*	139 *(8.43)*	131 *(7.95)*	34 *(2.06)*	18 *(1.09)*	14 *(0.85)*	15 *(0.91)*	10 *(0.61)*	13 *(0.79)*	4 *(0.24)*	3 *(0.18)*	1 *(0.06)*		1 *(0.06)*	1 *(0.06)*	**1,202** ***(72.94)***
Unspecified	88 *(5.34)*	49 *(2.97)*	79 *(4.79)*	43 *(2.61)*	44 *(2.67)*	8 *(0.49)*	10 *(0.61)*	10 *(0.61)*	4 *(0.24)*	1 *(0.06)*		2 *(0.12)*			1 *(0.06)*			**339** ***(20.57)***
Young	15 *(0.91)*	23 *(1.4)*	20 *(1.21)*	12 *(0.73)*	13 *(0.79)*	2 *(0.12)*	14 *(0.85)*	3 *(0.18)*	2 *(0.12)*	3 *(0.18)*								**107** ***(6.49)***
Total N *(%)*	**599** ***(36.35)***	**288** ***(17.48)***	**205** ***(12.44)***	**194** ***(11.77)***	**188** ***(11.41)***	**44** ***(2.67)***	**42** ***(2.55)***	**27** ***(1.64)***	**21** ***(1.27)***	**14** ***(0.85)***	**13** ***(0.79)***	**6** ***(0.36)***	**3** ***(0.18)***	**1** ***(0.06)***	**1** ***(0.06)***	**1** ***(0.06)***	**1** ***(0.06)***	**1,648** ***(100.00)***

Figure 2 - Cats 2013 – Number of antibiograms by bacteria group and pathology



Note: *all values for pathologies >1% and bacteria groups having more than 30 occurrences are represented. Detailed values are presented in table 2 below.*

Table 2 - Cats 2013 – Number of antibiograms by bacteria group and pathology

	Pathology N (%)																	
Bacteria N (%)	Kidney and urinary tract pathology	Respiratory pathology	Unspecified	Skin and mucous membrane pathology	Otitis	Ocular pathology	Digestive pathology	Systemic pathology	Bone pathology	Oral pathology	Reproductive pathology	Arthritis	Abortion	Septicemia	Nervous system pathology	Muscle pathology	Mastitis	**Total N *(%)***
E. coli	265	12	57	14	5	2	27	8	1	3	9		1					**404**
	(16.08)	*(0.73)*	*(3.46)*	*(0.85)*	*(0.3)*	*(0.12)*	*(1.64)*	*(0.49)*	*(0.06)*	*(0.18)*	*(0.55)*		*(0.06)*					***(24.51)***
Coagulase-positive Staphylococcus	71	23	34	71	47	9	1	4	6		1	1			1			**269**
	(4.31)	*(1.40)*	*(2.06)*	*(4.31)*	*(2.85)*	*(0.55)*	*(0.06)*	*(0.24)*	*(0.36)*		*(0.06)*	*(0.06)*			*(0.06)*			***(16.32)***
Pasteurella	4	101	24	17	21	5		2	1	4		2				1	1	**183**
	(0.24)	*(6.13)*	*(1.46)*	*(1.03)*	*(1.27)*	*(0.30)*		*(0.12)*	*(0.06)*	*(0.24)*		*(0.12)*				*(0.06)*	*(0.06)*	***(11.10)***
Coagulase-negative Staphylococcus	35	21	23	28	37	4	3	1	2									**154**
	(2.12)	*(1.27)*	*(1.40)*	*(1.70)*	*(2.25)*	*(0.24)*	*(0.18)*	*(0.06)*	*(0.12)*									***(9.34)***
Enterococcus	70	8	11	13	11	3	3	1	1				1					**122**
	(4.25)	*(0.49)*	*(0.67)*	*(0.79)*	*(0.67)*	*(0.18)*	*(0.18)*	*(0.06)*	*(0.06)*				*(0.06)*					***(7.40)***
Streptococcus	27	12	17	12	9	3	2	3	3	3		1						**92**
	(1.64)	*(0.73)*	*(1.03)*	*(0.73)*	*(0.55)*	*(0.18)*	*(0.12)*	*(0.18)*	*(0.18)*	*(0.18)*		*(0.06)*						***(5.58)***
Pseudomonas	12	35	4	7	15			3		1								**77**
	(0.73)	*(2.12)*	*(0.24)*	*(0.42)*	*(0.91)*			*(0.18)*		*(0.06)*								***(4.67)***
Enterobacter	27	6	9	5	4		1	3	2	2			1					**60**
	(1.64)	*(0.36)*	*(0.55)*	*(0.30)*	*(0.24)*		*(0.06)*	*(0.18)*	*(0.12)*	*(0.12)*			*(0.06)*					***(3.64)***
Coagulase-unspecified Staphylococcus	15	3	3	5	12	4						2						**44**
	(0.91)	*(0.18)*	*(0.18)*	*(0.30)*	*(0.73)*	*(0.24)*						*(0.12)*						***(2.67)***
Klebsiella	27	3	2	4					1									**37**
	(1.64)	*(0.18)*	*(0.12)*	*(0.24)*					*(0.06)*									***(2.25)***
Other bacteria < 30 occurrences	46	64	21	18	27	14	5	2	4	1	3			1				**206**
	(2.79)	*(3.88)*	*(1.27)*	*(1.09)*	*(1.64)*	*(0.85)*	*(0.30)*	*(0.12)*	*(0.24)*	*(0.06)*	*(0.18)*			*(0.06)*				***(12.50)***
Total N *(%)*	**599** ***(36.35)***	**288** ***(17.48)***	**205** ***(12.44)***	**194** ***(11.77)***	**188** ***(11.41)***	**44** ***(2.67)***	**42** ***(2.55)***	**27** ***(1.64)***	**21** ***(1.27)***	**14** ***(0.85)***	**13** ***(0.79)***	**6** ***(0.36)***	**3** ***(0.18)***	**1** ***(0.06)***	**1** ***(0.06)***	**1** ***(0.06)***	**1** ***(0.06)***	**1,648** ***(100.00)***

Table 3 - Cats 2013 – All pathologies and age groups included – *E. coli:* susceptibility to antibiotics (proportion) (N=404)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*385*	**60**
Amoxicillin-Clavulanic ac.	*390*	**72**
Cephalexin	*380*	**82**
Cefoxitin	*350*	**93**
Cefuroxime	*30*	**80**
Cefovecin	*201*	**93**
Ceftiofur	*373*	**90**
Cefquinome 30 µg	*91*	**91**
Streptomycin 10 UI	*151*	**52**
Kanamycin 30 UI	*87*	**70**
Gentamicin 10 UI	*384*	**94**
Neomycin	*117*	**90**
Tetracycline	*147*	**59**
Doxycycline	*242*	**66**
Chloramphenicol	*58*	**90**
Florfenicol	*80*	**91**
Nalidixic ac.	*318*	**83**
Flumequine	*54*	**81**
Enrofloxacin	*380*	**86**
Marbofloxacin	*173*	**87**
Pradofloxacin	*213*	**86**
Trimethoprim-Sulfonamides	*401*	**85**

Table 4 - Cats 2013 – Kidney and urinary tract pathology – All age groups included – *E. coli:* susceptibility to antibiotics (proportion) (N=265)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*263*	**63**
Amoxicillin-Clavulanic ac.	*264*	**75**
Cephalexin	*262*	**82**
Cefoxitin	*233*	**93**
Cefovecin	*161*	**91**
Ceftiofur	*254*	**90**
Streptomycin 10 UI	*93*	**54**
Kanamycin 30 UI	*39*	**56**
Gentamicin 10 UI	*261*	**94**
Neomycin	*61*	**90**
Tetracycline	*77*	**65**
Doxycycline	*188*	**67**
Chloramphenicol	*49*	**88**
Nalidixic ac.	*222*	**85**
Enrofloxacin	*258*	**87**
Marbofloxacin	*106*	**85**
Pradofloxacin	*160*	**89**
Trimethoprim-Sulfonamides	*265*	**87**

Table 5 - Cats 2013 – Respiratory pathology – All age groups included – *Pasteurella:* susceptibility to antibiotics (proportion) (N=101)

Antibiotic	*Total (N)*	**% S**
Amoxicillin	*101*	**93**
Amoxicillin-Clavulanic ac.	*101*	**94**
Cephalexin	*99*	**93**
Cefoxitin	*82*	**95**
Cefovecin	*59*	**97**
Ceftiofur	*96*	**95**
Gentamicin 10 UI	*100*	**85**
Doxycycline	*83*	**89**
Nalidixic ac.	*88*	**92**
Enrofloxacin	*97*	**92**
Pradofloxacin	*72*	**79**
Trimethoprim-Sulfonamides	*101*	**81**

Table 6 - Cats 2013 – All pathologies and age groups included – Coagulase-positive *Staphylococcus:* susceptibility to antibiotics (proportion) (N=269)

Antibiotic	*Total (N)*	**% S**
Penicillin	*262*	**42**
Cefoxitin	*261*	**85**
Cefovecin	*149*	**81**
Erythromycine	*262*	**66**
Spiramycin	*129*	**73**
Lincomycin	*268*	**73**
Pristinamycin	*30*	**100**
Streptomycin 10 UI	*103*	**69**
Kanamycin 30 UI	*113*	**64**
Tobramycin	*34*	**53**
Gentamicin 10 UI	*263*	**87**
Neomycin	*39*	**92**
Tetracycline	*133*	**74**
Doxycycline	*158*	**87**
Chloramphenicol	*76*	**80**
Florfenicol	*38*	**100**
Enrofloxacin	*257*	**76**
Marbofloxacin	*129*	**87**
Pradofloxacin	*190*	**57**
Trimethoprim-Sulfonamides	*268*	**87**
Fusidic ac.	*211*	**91**

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