Research trends in main terrestrial animal diseases using a bibliometric analysis

Muniesa, A.[1]; Ruiz-Zarzuela, I.[1]; Muzquiz, J.L.[1]; de Blas, I.[1]*

[1] *Department of Animal Pathology. Instituto Agroalimentario de Aragón IA2 (Universidad de Zaragoza - CITA), Spain*

** e-mail of main author*: animuni@unizar.es

Ana Muniesa

Introduction

On 25th January 1924, it is ratified the Agreement to create the Office International des Epizooties (OIE, now the World Organization for Animal Health) based in Paris. The aim was organize and supervise the campaign for the global eradication of rinderpest as consequence of the outbreaks started in 1920 in Belgium. This disease was also the reason to establish the first modern veterinary school in Lyon (France) in 1762 in order to combat the same disease. Later, other diseases were included in OIE, and FMD is the first disease for which the OIE established an official list of free countries and zones with or without vaccination.

Since 1998, the OIE has the mandate from the World Trade Organization (WTO) to officially recognise disease-free areas of countries for trade purposes. The procedure for the official recognition of disease status by the OIE is voluntary and applies currently to seven diseases:

World Organisation for Animal Health

	English	Español	Français
AHS	African horse sickness	Peste equina	Peste équine
FMD	Foot and mouth disease	Fiebre aftosa	Fièvre aphteuse
BSE	Bovine spongiform encephalopathy	Encefalopatía espongiforme bovina	Encéphalopathie spongiforme bovine
PPR	Peste des petits ruminants	Peste de pequeños rumiantes	Peste des petits ruminants
CSF	Classical swine fever	Peste porcina clásica	Peste porcine classique
RP	Rinderpest	Peste bovina	Peste bovine
CBPP	Contagious bovine pleuropneumonia	Perineumonía contagiosa bovina	Péripneumonie contagieuse bovine

Methodology

The search of publications about previous diseases was carried out in databases included in Web of Science™ (Thomson Reuters™) as Web of Science™ Core Collection, Current Contents Connect®, SciELO Citation Index and MEDLINE®.

The fields for search were the names of diseases in English, Spanish and French as ***Topic*** combined with OR (for CBPP also the name of pathogen was included, *Mycoplasma mycoides* subsp. *mycoides*), and later the results were refined taking into account only ***Type of documents*** corresponding to *Article* + *Review* + *Case Report* + *Clinical Trial*.

The number of publications each year, the total of number of cites, the H-index, the most cited publication and the oldest publication were collected.

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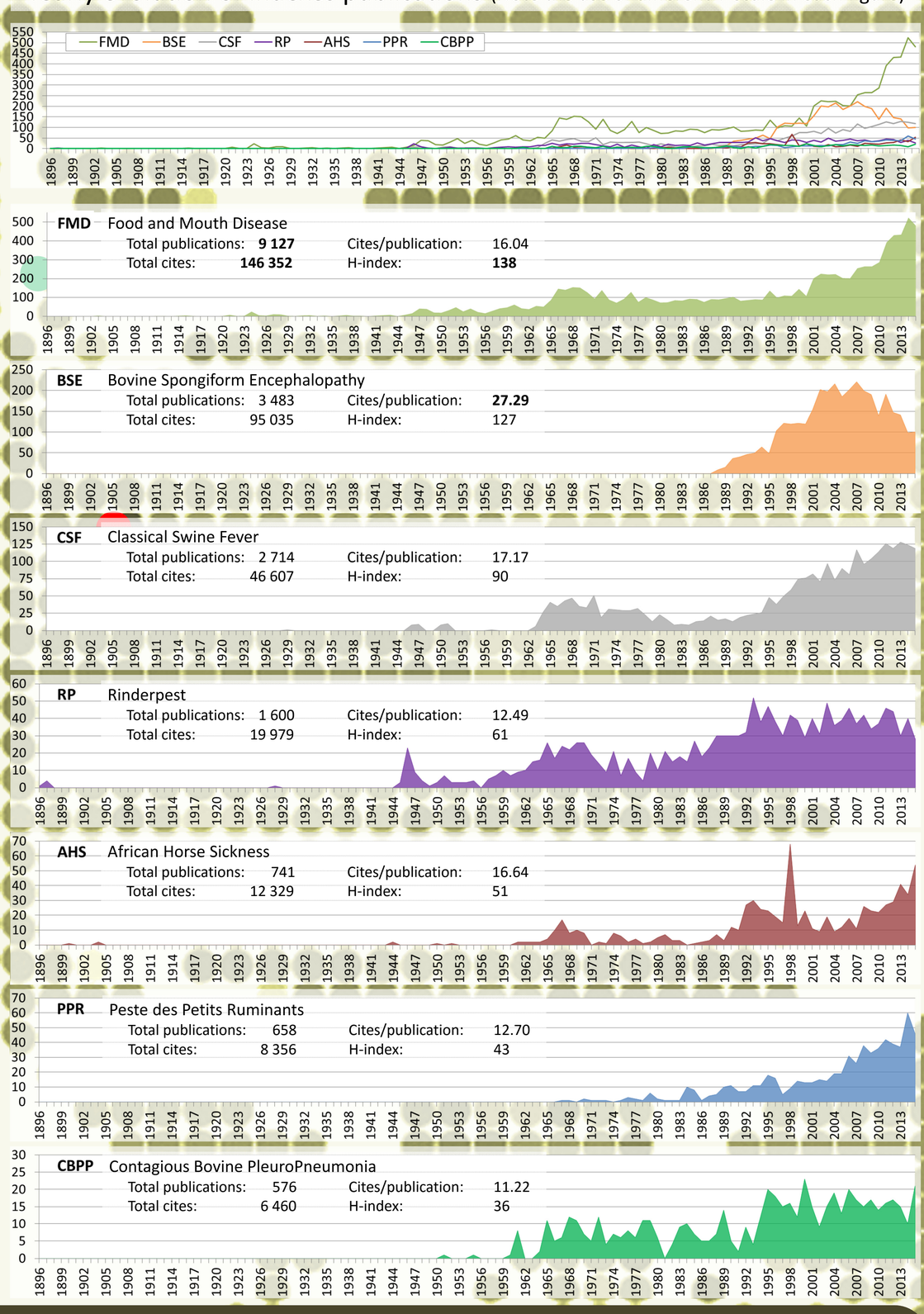
Results & Discussion

The yearly evolution of publications of each year is show in the figures for each disease. FMD is the most relevant disease attending to bibliographic analysis, and it has experimented a strong increment in publications in last 20 years. Despite its first publication is the most recent (1988), the second one is BSE that obtains the highest ratio cites/publications; however the number of publications is decreasing in last 10 years.

CSF, AHS and PPR show an increasing trend in last years; and RP and CBPP had undergone a variable evolution.

Disease	First report	First pub.	Most cited publication	Cites
RP	3000 BC Egypt	1896	Yilma T , Hsu D Jones L, Owens, S, Grubman M, Mebus C, Yamanaka M, Dale B. Protection of cattle against rinderpest with Vaccinia virus recombinants expressing the HA ORF-gene. SCIENCE, 1988;242(4881): 1058-1061	133
FMD	1514 Italy	1872	Geysen HM, Meloen RH, Barteling SJ. Use of peptide-synthesis to probe viral-antigens for epitopes to a resolution of a single amino-acid. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA-BIOLOGICAL SCIENCES, 1984;81(13):3998-4002	1 273
AHS	~1650 Sahara *1959 Saudi Arabia & Iran*	1900	Mellor PS, Boorman J, Baylis M. Culicoides biting midges: Their role as arbovirus vectors. ANNUAL REVIEW OF ENTOMOLOGY 2000;45: 307-340	444
CBPP	1773 Switzerland	1951	Westberg J, Persson A, Holmberg A, Goesmann A, Lundeberg J, Johansson KE, Pettersson B, Uhlen M. The genome sequence of Mycoplasma mycoides subsp mycoides SC type strain PG1(T), the causative agent of contagious bovine pleuropneumonia (CBPP). GENOME RESEARCH, 2004;14(2):221-227	295
CSF	1833 Ohio (USA)	1929	Pestova, TV, Shatsky IN, Fletcher SP, Jackson RT, Hellen CUT. A prokaryotic-like mode of cytoplasmic eukaryotic ribosome binding to the initiation codon during internal translation initiation of hepatitis C and classical swine fever virus RNAs. GENES & DEVELOPMENT, 1998;12(1) 67-831998	525
PPR	1942 Côte d'Ivoire	1967	Gibbs EPJ, Taylor WP; Lawman MJP, Bryant J. Classification of peste des petits ruminants virus as the 4th member of the genus Morbillivirus. INTERVIROLOGY, 1979;11(5):268-274	184
BSE	1986 United Kingdom	1988	Prusiner SB. Prions. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, 1998;95(23) :13363-13383	3 835

Yearly evolution of indexes publications (Note the use of different Y-scale in each figure)



Conclusions

The research measured taking into account bibliographic parameters indicates a rising research activity for FMD and CSF. Research in BSE is in clear recession. And finally, despite their economic impact, the amount of the research is relative low in AHS, PPR and CBPP.

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