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DAKAR/HANN

ANIMAL PASTEURELLOSIS

The Senegalese experience

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ANIMAL PASTEURELLOSIS : THE SENEGALESE EXPERIENCE.

INTRODUCTION

- marked interest in pasteurellosis since 1930.
- production of poultry, cattle and sheep vaccines despite the use of unsuited building.
- intensification of diagnosis activities and vaccine production after moving in suited building.
  organization and intensification of research on epidemiology.
- brighter future and prospects for research on animal pathologies after acquisition of modern fermentor.

PASTEURELLOSIS BEFORE THE USE OF FERMENTOR

A. Vaccination

- early clinical suspicion leading to production of vaccine.
- type of vaccine: ordinary culture medium of *P. multocida* type E + culture on gelose with blood + formol + potash alum.
- vaccination twice a year.

B. Diagnosis

- clinical diagnosis not very easy.
- experimental diagnosis by inoculation and culture.
  ex: 14 hearth-breaks; 66 infections and 39 deaths.
  vaccination 30133 in cattle and 417 in sheep.

PASTEURELLOSIS WITH THE STERNE'S APPARATUS

A. Amelioration of vaccine production

- important. period 1965: acquisition of 2 sterne's apparatus : "fermentor without thermal regulator put into an incubator chamber".
- production medium with pancreas digested in papain (in place of the sterne's pancreas medium).
- constant ventilation and regular supply of new medium.

B. Etiological studies

- the entire country is covered by the disease with emphasis on the south zone,
- germ identified: *P. multocida*, *P. haemolytica*, *P. pneumotropica* and *Pasteurella sp.*
- study on antigenic structure
  basis for vaccine production: litterature review on antigenic analysis and geographical distribution.
  vaccine against:
  . bovine haemorrhagic septicaemia with *P. multocida* type E.
  small ruminant pasteurellosis with *P. multocida* type A and D.
  . avian cholera with *P. multocida* type A.
  antigenic analysis were done in IEMVT (France) laboratory,

C. Epidemiological studies

1) survey

starting point: germ known leads to systematic vaccination.

objectives: perfect **the epidemiological knowledge in three** areas:

etiological complex

primary pathogenic Pasteurella

bovine haemorrhagic septicaemia type **E in Senegal and** primarily **in the south.**

avian cholera **type A frequent in Senegal .**

secondary pathogenic Pasteurella

in Peste des Petits Ruminants (PPR): primary viral infection with secondary involvement of *P. multocida* type A3 or *P. haemolytica* and *Pasteurella* sp.

NB: respiratory symtomps leading usually **in mistake or confusion between PPR and Pasteurel** losis.

Pasteurel losis **involvement** is possible but **not** absolute.

in Pneomonopathies: **multifactorial etiology. germ found are:** *P. multocida* **and** *P. haemolytica.* **association** known: ***P. multocida* + *Mycoplasma ovipneumoniae*** in pneumony's lesions; **or** ***P. haemolytica*** type **9** **in** sheep's cerebral **tissue struck down by** oestrosis **(*Oestrus ovis*).**

study on conveyance or porterage

in sheep

sampling studied: lung, **trachea,** larynx, **cornet.** and frontal **sinus** lining **rnucosa.**

germ isolated: *P. multocida* type A1, A3, **A7, A8, A9 and DL.**

P. heamolytica type 1 , 7 8 and 9 .

distribution from **sinus** to larynx in **a** decrease trend (trachea and lung germ free) .

evolution: healthy animal carrier with bad physiological state **leads** to **sickness.**

in goats

same methodology as for sheep .

NB: ***P. heamolytica*** more frequent in goat than in sheep; and *P. multocida* type A3 more frequent in goat and sheep; conveyance greater in upper **sinus level** than in laryn**Y** level; and regular association with *Mycoplasma arginin***7** in goats **and** sheep.

in cattle

same methodology **as** above

f reouerit infection from slaugther house sampling: **sinus** and pharynx ,

germ isolated: ***P. multocida*** type A1 and A7.

P. *haemolytica* type 6 . 11 and 13.

association: *P. haemolytica* + Mycoplasma bovis (causal **germ of bovine** enzootic pneumoniae) in **the** upper respiratory track.

in cat

play a role in human infection by bite or/and scratchs.

buccal conveyance for: *P. multocida* type A3, A7 and A9.

in rat (*Rattus rattus*)

rats in laboratory compound.

buccal conveyance for *P. pneumotropica* and *P. multocida*.

important epidemiological fact.

serological surveys

in small ruminant pneumonopathies

. basis: its multifactorial and sequential for-m.

use of suited method for rural environment: prospective type of lengthwise (longitudinal) sero-epidemiological study.

. kinetic study of antibodies during infectious events: best dignostical value.

. sera were tested for viral, chlamys and mycoplasmic infections and also for *P. multocida* (A and D) and 8 serotypes *of F. haemolytica*.

. serological method used was: H.A.P. (passive haemagglutination).

. data analysis has started.

in diagnostic treatment methodology

Pasteurellosis and PPR indirect study by vaccination against pasteurelosis in September (rainy season) and in Mars (cold dry season) and against PPR once a year.

variables results by site and species.

2) experimental disease

- principle: proper methodology for defined pathological entities.
- basis facts: pneumonopathies have multifactorial ano sequential etiology
- consequence: no action has yet been taken in Senegal.

PASTEURELLOSIS WITH MODERN BIOFERMENTORS

Actual state: numerous requests.

New Opportunities: products highly competetive in quality and quant-i ty.

SUMMARY

The author recall the evolution scheme in knowledge for Pasteurellosis by of tracking major events happened during the years as: acquiring new and suited buildings for research and vaccine production and fermentors of primary type first then modern ones later. Important steps on Pasteurellosis epidemiological stydies were described.