

# Subclinical salmonellosis in piglets: ¿should we be concerned?

R.C. Mainar-Jaime<sup>1</sup>, O. Deza<sup>2</sup> and S. Andrés<sup>2</sup>

(1) Dpt. Patología Animal. Facultad de Veterinaria. Universidad de Zaragoza. Avda. Miguel Servet, 177. 50013 Zaragoza, Spain. E-mail: [rcmainar@unizar.es](mailto:rcmainar@unizar.es); (2) Unidad de Sanidad Animal, Centro de Investigación y Tecnología Agroalimentaria (CITA) de Aragón. Avda. Montañana, 930. 50059 Zaragoza, Spain;

## INTRODUCTION & OBJECTIVES

- The dynamic of *Salmonella* infection in pigs during the first weeks of life is not very well known.
- Previous studies suggest that *Salmonella* prevalence is low (0-9%) in piglets.
- Estimating *Salmonella* prevalence and seroprevalence in piglets and characterizing the serotypes involved help to understand the infection at the farm level.

## MATERIAL & METHODS

- Piglets from 3 *Salmonella* positive farms.
- Animals: 210 four-week old (wo) and 99 six-wo piglets.
- Samples:
  - Mesenteric lymph nodes (MLN)
  - Faecal content
  - Muscle juice (diaphragm) → indirect ELISA (IDEXX Lab.)



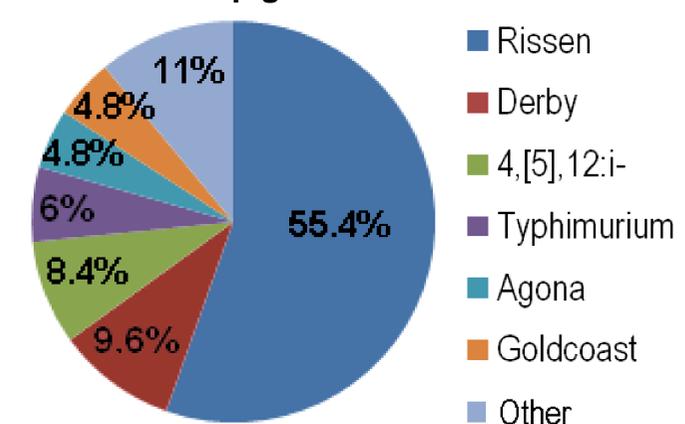
## RESULTS

- The prevalence of infection and of shedding of *Salmonella* spp. was similar (14.6% y 14.2%, respectively), but significant differences were observed among pig farms (Table 1).
- There was a significant association between isolation of *Salmonella* from MLN and shedding (OR=16.1; 95%CI=7.6-34.2), being this association much greater for the six-wo pigs (OR=121, 95%CI=20-736).
- Piglet age was not associated either with prevalence nor with shedding.
- To date, 83 serotypes have been identified, being Rissen the most common (46 strains) (Fig. 1).
- Same serotype was found in MLN and faeces in 89% of the 28 infected pigs that were shedding.
- Seroprevalence (OD≥20%) did not change with season and did not follow the trends showed by the infection or shedding (Fig. 2).
- Seroprevalence was significantly higher in 4-wo pigs compared to 6-wo pigs (48% vs. 18%, respectively;  $P<0.01$ ).

**Table 1. *Salmonella* prevalence, shedding and seroprevalence (OD ≥20%) in piglets.**

Farm	Pig age (weeks)	Prevalence (%)	Shedders (%)	Seroprevalence (%)
A	4	3.2	1.6	46
	6	10	15	10
TOTAL A		5.8	6.8	32
B	4	15.7	7.2	63.9
	6	0	0	26.3
TOTAL B		12.7	5.9	56.9
C	4	25	32.8	29.7
	6	25	25	22.5
TOTAL C		25	29.8	26.9
All farms		14.6	14.2	38.5

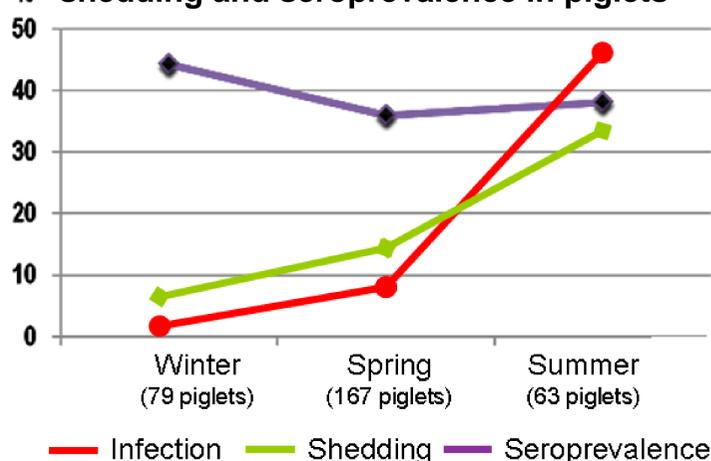
**Figure 1. *Salmonella* serotypes identified from infected piglets.**



## DISCUSSION AND CONCLUSIONS

- Piglets 4 to 6-weeks old are clearly at risk of becoming infected with *Salmonella* spp. and act as effective shedders as shown by the isolation of the bacterium from MLN, and the recovery of the same serotype from faecal samples.
- *Salmonella* prevalence was higher than that showed by other studies, probably because the thorough microbiological analysis.
- The infection during the first weeks of age seemed related with low levels of maternal immunity and with the natural decline of maternal antibodies after 4-5 week of age.
- The most common serotype, Rissen, is the most prevalent in sows in Spain (EFSA, 2008) → sow-to-piglet transmission likely important.
- Individual farm factors appear to have an important role on the risk of *Salmonella* infection in piglets.

**Figure 2. Trends of *Salmonella* prevalence, shedding and seroprevalence in piglets**



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**References:** Barber et al. 2002. J. Food. Prot., 65: 1861-1868; Beloeil et al. 2003. Prev. Vet. Med., 60: 207-226; EFSA 2009. EFSA J., 7(12):1377; Funk et al. 2001. Vet. Microbiol., 83: 45-60.