Leptospirosis

Leptospirosis is a contagious disease of swine and many other animal species, including humans. Therefore, it is a potential occupational zoonosis with public health implications. It affects the reproductive system of gilts and sows worldwide. When a herd becomes infected, the disease spreads continuously. The infected sows become carriers. Although it is true that they develop antibodies, the maternal immunity does not last long after weaning.

Causing

- Abortions and stillborn pigs
- Weak piglets
- Other hidden effects (when leptospirosis is endemic)

Economic impact

The costs of non-controlled Leptospirosis

could reach up to $ 8.28 per piglet.

	Direction of effect	Controlled leptospirosis	Uncontrolled clinical leptospirosis	% Diff
Total pigs born	↓	14.0	13.0	-6.8%
Stillborn	↑	0.7	1.0	30.0%
Pigs born live	↓	13.0	10.9	16.0%
Pigs weaned	↓	12.0	9.8	18.8%
Abortion %	↑	1.0%	2.0%	100.0%
Farrowing rate	↓	89.0%	75.0%	12.0%

In UK, a **Leptospira outbreak** lasting four months led to a 300-sow herd suffering a **drop in annual production of 1.3 pigs per sow per year or 400 pigs less weaned.** At a marginal **cost of £35 per pig, this implied a cost of £14,000.**

Prevalence

Seroprevalence of the disease **varies considerably between countries** and even between different regions in the same country.

The rates also vary depending on the laboratory technique used to ascertain the disease.

1. Canada
Total: 100%[1] / 66.4%[1]
Icterohaemorragiae: 100%[1] / 57.1[2]
Bratislava: 100%[1] / 35.1%[2]
Pomona: 27%[1] / 1%[1]

2. United States
Total: 38%[1]
Icterohaemorragiae: 8.1%[1]
Bratislava: 41.8%[1]
Pomona: 2.4%[1]

3. Mexico
Icterohaemorragiae: 19%[1]
Bratislava: 66%[1]

4. Brazil
Total: 77.9%[1]
Hardjo: 35.5%[1]
Bratislava: 0.5%[1]

5. Argentina
Total: 30%[2]

6. Germany
Bratislava: 100%[3]
Pomona: 19%[3]

7. Poland
Tarassovi: 3%[1]
Pomona: 16%[1]

8. Zimbawe
Total: 34%[1]

9. South Africa
Total: 22%[1]
Icterohaemorragiae: 100%[2]
Bratislava: 7.5%[1]

10. Thailand
Total: 11.2%[1]
Tarassovi: 2.2%[1]
Australis: 2%[1]

11. Vietnam
Total: 8.2%[2]
Tarassovi: 2.2%[2]
Australis: 2%[2]

12. New Zeland
Total: 90%[1]

Based on: Garcia Pena, Francisco Javier, Essential guides on swine health and production, leptospirosis, Servet 2018

[1] Prevalence on a farm level: animals from different farms. Were tested and farms that had at least one positive animal were considered positive

[2] Individual prevalence: percentage positive out of all animals tested, regardless of the farm origin.

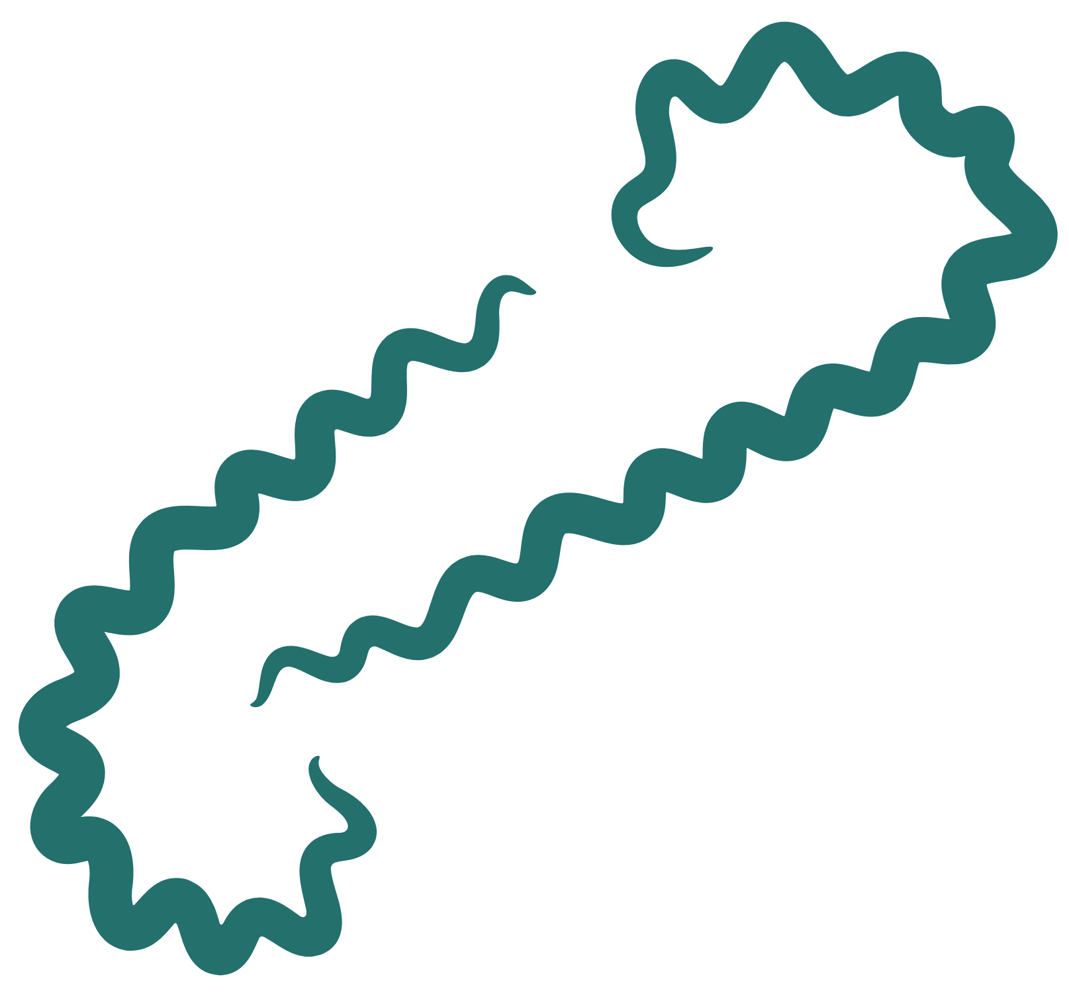
[3] Prevalence of infected animals: percentage positive for a particular serve out of all animals infected by leptospira

An overall **Leptospira seropositivity of 20.2% has been recently reported in Germany**, with an increasing trend over time, between 16.3% in 2011 and 30.9% in 2016.2

Diagnosis

Pigs infected with *Leptospira* **rarely develop clinical signs themselves**, they often go unnoticed in mature, nonpregnant swine or in growing pigs.

- **Reproductive failure** (the most common clinical sign in gestating sows).
- Finishing pigs may have scattered foci of interstitial nephritis or generalized kidney scarring which **may only be noticed at slaughter** as "white-spotted kidneys".



Key points to recognize leptospirosis:

- Abortions, particularly in **late gestation**
- Increase in **weak pigs born**, stillbirths and mummification
- **Infertility** (regular and irregular returns to oestrus during first weeks of pregnancy)

Antibodies can be detected from 5-10 days after infection to no more than approx. 3 weeks after infection.

Many blood samples are required to map out an endemic leptospirosis infection.

Treatment and prevention

Control measures should include strict biosecurity, hygiene protocols, vaccination and medication when needed.

- Rodent and bird control programs.
- Cleaning and disinfection
- Vaccination. to improve immunity and reduce disease prevalence
- Antimicrobials to control outbreaks

Leptospirosis is likely to remain endemic in swine herds.

MSD
Animal Health

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