

peri-weaning failure to thrive
syndrome
situation in Germany

Dr. Andreas Palzer

FTA for pigs, Dipl. ECPHM

Girona, 21.10.2015

PFTS 2011

peri-weaning failure to thrive syndrome

- mostly 4-10 days after weaning, in some cases later
 - in most cases bigger piglets
 - up to 20% affected, in some cases more than 50%
 - mortality after 17 days
 - letality 10-15%, in some cases more than 20%
 - lack of appetite
 - apathy
-
- independent of gender
 - independent of weaning age?

PFTS 2011

peri-weaning failure to thrive syndrome

blood parameters:

- leukocytosis
 - hematocrit high
 - glucose low
 - phosphor low
 - bilirubin high
-
- gastrointestinal changes:
 - gastritis, colitis
 - fat liver
 - atrophy of villi (by anorexia or primary?)

PFTS 2011/2012

peri-weaning failure to thrive syndrome

- Cases in Canada, USA, Spain and Portugal
- Morbidity: 1 – 10% (20%)
- Pathology: chronic rhinitis, gastritis

PFTS 2011/2012

peri-weaning failure to thrive syndrome

- clinical signs:
 - licking
 - chewing
 - chomping

PFTS 2012/2013

peri-weaning failure to thrive syndrome

- causes:

- Virus?

Rotavirus A

Betacoronavirus 1

- other infectious agents?

- Vitamin-D-deficiency in suckling piglets?

PFTS 2012/2013



Diagnostic investigation of porcine periweaning failure-to-thrive syndrome: lack of compelling evidence linking to common porcine pathogens

Journal of Veterinary Diagnostic Investigation
24(1) 96–106
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sagepub.com/journalsPermissions.nav
DOI: 10.1177/1040638711425939
<http://jvdi.sagepub.com>

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Abstract. Porcine periweaning failure-to-thrive syndrome (PFTS), an increasingly recognized syndrome in the swine industry of North America, is characterized by the anorexia of nursery pigs noticeable within 1 week of weaning, and progressive loss of body condition and lethargy during the next 1–2 weeks. Morbidity caused by PFTS is moderate, but case fatality is high. The etiology of PFTS is presently unknown and may include infectious agent(s), noninfectious factors, or both. PFTS was identified in a high health status farm with good management in early 2007. A diagnostic investigation was undertaken to identify the pathological lesions of, and infectious agents associated with, pigs demonstrating typical clinical signs. Affected

– vitamin D deficiency in suckling piglets:

PFTS 2014/2015

peri-weaning failure to thrive syndrome

- causes:

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Paper

Paper

Evidence that periweaning failure-to-thrive syndrome (PFTS) has a genetic predisposition

OPEN ACCESS Freely available online



Attempted Experimental Reproduction of Porcine Periweaning-Failure-to-Thrive Syndrome Using Tissue Homogenates

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Abstract

Porcine periweaning failure-to-thrive syndrome (PFTS) is characterized by anorexia and progressive debilitation of newly weaned pigs, of which some also demonstrate repetitive oral behaviour. Although no relevant porcine pathogens have been shown to be causally associated, inoculation of susceptible pigs using tissue homogenates is needed to rule out infectious etiologies. Eight snatched-farrowed porcine-colostrum-deprived (SF-pCD) pigs were inoculated with tissue homogenates made from PFTS-affected pigs orally, or combined orally, intraperitoneally (IP) and intramuscularly (IM) at day (D) 14 of age (INOC). On D21, IP and IM inoculation were repeated. Four sham-inoculated pigs served as control (CTRL). Three INOC pigs developed mixed bacterial septicemia between the first and second inoculation. All other pigs survived until termination on D49. Average daily gain (ADG) and the frequencies of diarrhea did not differ between INOC and CTRL pigs D14 and D29. Additionally, the progressive debilitation characteristic of PFTS was not observed in any pig, and repetitive oral behaviour was observed in both groups. In conclusion, PFTS was not experimentally reproduced by the current experimental approach providing evidence that PFTS may not have an infectious etiology.

, G. Swierczynski, J. M. Abellaneda,

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iweaning failure-to-thrive
agnosed based on clinical
infectious pathogens was
n, sires of the affected

Aetiology?

Clinical cases seen in Germany occur more if:

- Weaning at an age of three weeks
- Cases occur not after weaning, but some days/weeks later
- Overcrowding in the nursery
- Inadequate water supply

What do we do against PFTS?

- Separation of the animals in special pen
- dry and warm pen, soft rubber mat
- Special feed e.g. milk powder with pre-starter
- Treatment of any secondary infections
- Take care of the animals

Morbidity in Germany

Clinical cases:

- Were already seen before the description of the syndrome
- I am not aware of a pathological diagnosis in Germany or Austria
- In most of the cases we can save the piglets (if the farmer takes care of them)

Other diseases causing a clinical picture like PFTS

- Mycotoxins
- Wrong feed composition
- Wrong feeding (e.g. too less dry matter in liquid feed)

Aetiology/predisposition– Deoxynivalenol?

- Vomiting if concentration > 2000 ppb
- Reduced feed intake > 1200 ppb
- Dysfunction in gastrointestinal tract by inflammation and dysfunction of the cellular barrier if concentration > 900 ppb
 - Reduced resorption of nutritive substances
 - Immunosuppression (secondary infections)

Liquid feed in fattening farms

Sensorischer Befund:

produkttypische Farbe,
dickflüssig

Ergebnis der mycotoxikologischen Untersuchung :

Mycotoxin - Gehalte :		88 % TS	Orientierungs-Werte für Schweine Alleinfuttermittel
- Zearalenon	µg / kg	230	250
- Deoxynivalenol (DON)	µg / kg	1243	900
- Ochratoxin	µg / kg	16,5	50
- T2/HT2-Toxin	µg / kg	45,6	500

untersucht nach HPLC-Methode

Trocke

Bearbeiter: Frau Günther

Prüfzeitraum: 09.07.2015 - 14.07.2015

Sensorischer Befund:

produkttypische Farbe,
dickflüssig

Ergebnis der mycotoxikologischen Untersuchung :

Mycotoxin - Gehalte :		88 % TS	Orientierungs-Werte für Schweine Alleinfuttermittel
- Zearalenon	µg / kg	172	250
- Deoxynivalenol (DON)	µg / kg	1489	900
- Ochratoxin	µg / kg	< 15 µDL	50
- T2/HT2-Toxin	µg / kg	41,4	500

Clinical outcome of DON

weight	Concentration ppb/kg feed	Symptoms	References
-	3600	Reduced feed intake 20%	Forsyth et al., 1977
-	2500-4000	Abnormal estrus, abortions, reduced number of piglets, reduced feed intake, reduced DWG, diarrhea	Cote et a., 1984
23kg	3700	Reduced feed intake 23%, reduced DWG	Friend et al., 1986
27 kg	2100-5200	Reduced feed intake 23%, reduced DWG	Foster et al., 1986
25 kg	2000 and 4000	Reduced feed intake 23%, reduced DWG	Bergsjo et al., 1992
12 kg	3000	Reduced feed intake 23%, reduced DWG	Prelusky et al., 1994
-	-	Reduced feed intake 23%, reduced DWG, gastric lesions	Friend et al., 1992

Feeding

- Less than 15% dry matter in liquid feed

