

# A practical guide to differential diagnosis in swine



## 8 – Jaundice

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Jaundice, or icterus, is an increase of biliary salts in the blood that takes one of three forms. Pre-hepatic jaundice, or haemolytic icterus, occurs due to massive blood destruction that overwhelms the detoxifying capacity of the liver.

Hepatocellular icterus comes from direct

liver injury, and post-hepatic icterus is caused by obstruction of biliary drainage. The main symptom is yellow colouration of white connective tissue in the body, skin or eye sclera, the latter being the only sign in pigs.

Several infections can directly affect the blood or the liver: *Leptospira* (mainly foetuses), *Mycoplasma*, *E. coli* and *salmonella*. In all cases other signs can help

to address infective causes. *Ascaris suum* can also cause icterus through direct parasitosis of the liver with later migration to the lungs. At the abattoir white spots are evident in the liver.

Toxicoses such as copper excess and mycotoxins that primarily target the liver can lead to jaundice, particularly when aflatoxin and fumonisin concentrations reach high levels in feed. ■

Symptoms	Detection
<b>Factor: Mycotoxins:</b> aflatoxins and fumonisins	
<p><b>Aflatoxins:</b> Reduced protein synthesis, lower productivity and immune function; coagulopathy; depression, anorexia, anaemia, ascites, haemorrhagic diarrhoea, rough hair coat, elevated alkaline phosphatase; clay-coloured liver with centrilobular haemorrhage, fatty change, subserosal petechial to ecchymotic haemorrhages, intestinal and colonic haemorrhage; hepatomegalocytosis, interlobular fibrosis, biliary hyperplasia.</p> <p><b>Fumonisin:</b> Reduced feed intake, hepatitis, pulmonary oedema, liver necrosis, bile retention, characteristic increased serum AST-GGT-bilirubin-cholesterol levels.</p>	
<b>Factor: Leptospirosis (foetal)</b>	
Fever, anorexia, depression, infertility, mummification, abortion, stillbirth, weak born piglets, haemoglobinuria.	Epidemiology, serology (MAT-OIE 2008), PCR
<b>Factor: Mycoplasma suis</b>	
Pallor, fever, cyanosis of extremities (ears), anaemia, poor growth, anorexia, decreased milk production, poor maternal behaviour.	PCR, ELISA
<b>Factor: Postweaning Multisystemic Wasting Syndrome (PMWS)</b>	
Growth retardation, dyspnoea, enlargement of inguinal lymph nodes.	Multifactorial
<b>Factor: Ascaris suum</b>	
Major cause of icterus in swine; liver milk spots, pancreatic duct obstruction, cholangitis.	Eggs in faeces (flotation), liver milk spots
<b>Factor: Copper (Cu) excess</b>	
Anorexia, bloody faeces, reduced weight gain, haemoglobinuria, nephropathy with haemolytic crisis.	
<b>Factor: Haemolytic anaemia</b>	
Immune-mediated mechanism, erythrocyte parasitism ( <i>Mycoplasma suis</i> ), erythrocyte fragmentation: Haemoglobinuria	
<b>Factor: E. coli (ETEC) septicaemia</b>	
Petechial haemorrhages serosal membranes, splenomegaly, secretory diarrhoea, dehydration	IHC, indirect immunofluorescence, ELISA, PCR
<b>Factor: Salmonella choleraesuis</b>	
Cyanosis of ears-feet-tail-ventral abdominal skin, enlargement of mesenteric lymph nodes, spleen: enlarged-purple-pulpy.	PCR, ELISA

References are available from the author on request.