



## Uniferon Best Practice Recommendation

### Laboratory blood testing to diagnose anaemia

Haemoglobin concentrations of the blood are key markers when diagnosing anaemia.

For extensive blood testing, blood samples are drawn by puncture of vena cava or the jugular vein.

Take approx. 3 ml in special collection devices (EDTA stabilised and plain vacutainer tubes) and cool blood samples in refrigerator immediately after sampling. Testing at a reference lab is carried out as soon as possible and preferably no later than the following day.

Samples need to be collected in a way that the piglet is not unnecessarily stressed. Samples must be handled with care to avoid exposure to excessive heat or cold. Stress during sampling can result in elevations in the haemoglobin concentrations that are measured. Swine blood coagulates rapidly, and when collected in vials, the vials should contain anticoagulants to prevent clotting of blood cells.

Diagnosis of iron deficiency anaemia (IDA) is easily done by a few routine tests:

Tests	Significance	Notes
Blood haemoglobin	Measures amount of Hb in blood Value <90g/l suggests severe IDA Value <110 g/l suggests IDA	Blood Hb may be normal in initial stages of IDA
RBC count	Quantifies red blood cells in blood Value <6.4-8.4*10 <sup>12</sup> /l suggests IDA	Normal count of RBCs with low Hb content may be predominant in IDA Due to slow turn over (120 days) of RBC, initial iron deficiency may be missed
Haematocrit	Measures volume % of RBC in blood Value <0.26-0.41 L/L suggests IDA	Better indicator of IDA than Hb measurement in piglets

Clean needles should be used for each piglet to be sampled.

#### What to measure – haematology

EDTA stabilised blood samples may be tested for: Erythrocyte count, reticulocyte indices, haemoglobin concentration, haematocrit, mean cell volume, mean cell haemoglobin and mean cell haemoglobin concentration.

Destabilised blood samples from plain tubes may be tested for: Total protein, serum iron, total-iron-binding capacity and serum ferritin.

Even though anaemia may generally be detected with these parameters, additional tests are required to detect iron deficient erythropoiesis as seen in cases of mild iron deficiency. These tests are: Mean corpuscular volume (MCV); Mean corpuscular haemoglobin (MCH); Mean corpuscular haemoglobin, concentration (MCHC); Serum iron; Total iron binding capacity and Serum ferritin.

Sincerely  
The Uniferon Team