



## Common Diseases of Neonatal Piglets and Strategies for Their Control

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The first weeks after farrowing decide whether a piglet becomes a profitable pig or a loss. On an average farm 12–19 per cent of liveborn piglets die before weaning, more than half of them within 48 hours of birth. Newborn piglets have little body fat, small iron and glycogen reserves and no antibodies of their own, so they depend entirely on the sow's colostrum, milk and warmth. This article describes five common disorders of suckling piglets: iron deficiency anaemia, neonatal hypoglycaemia, neonatal polyarthritis, fading piglet syndrome and coccidiosis. For each, it outlines the cause, recognisable signs, treatment with commonly used drugs and doses and practical prevention. Most losses can be avoided through early colostrum intake, a warm creep area, routine iron supplementation, clean farrowing pens and prompt care of weak piglets.

**Keywords:** Neonatal piglets, preweaning mortality, colostrum, iron deficiency anaemia, hypoglycaemia, polyarthritis, fading piglet syndrome, coccidiosis

### Introduction

Pig farming is expanding rapidly in India, but profit depends on how many piglets reach weaning. Preweaning mortality ranges from 5 to 48 per cent (average 12–19 per cent), and more than half of these deaths occur before the second day of life (Kirkden et al., 2013). Losses rise with larger litters and lower birth weights; piglets under about 1 kg rarely survive without extra care (Muns et al., 2016). A newborn piglet is fragile for three reasons. First, its lower critical temperature is about 34°C, so an ordinary farrowing shed chills it (Herpin et al., 2002). Second, its fat and glycogen reserves last only hours. Third, it is born without antibodies and must absorb them from colostrum within the first 24–36 hours; each piglet needs at least 200–250 g of colostrum on day one (Le Dividich et al., 2005; Quesnel et al., 2012).

| Cause of loss                                              | Approximate share           |
|------------------------------------------------------------|-----------------------------|
| Starvation and crushing                                    | 75–80% of preweaning deaths |
| Infectious diseases                                        | About 6%                    |
| Congenital defects (atresia ani, splay leg, heart defects) | About 5%                    |
| Stillbirths (70–90% alive at start of farrowing)           | 4–6% of piglets born        |

Chilled, weak piglets move slowly and are easily crushed, so starvation and crushing usually go together (Edwards, 2002). Common infections include streptococcal and *Listeria* septicaemia, *E. coli* scours, clostridial and rotaviral enteritis, TGE, erysipelas and coccidiosis (Zimmerman et al., 2019).

## Iron Deficiency Anaemia

This is the commonest nutritional disease of indoor-reared piglets, affecting up to 90 per cent of unsupplemented litters (Constable et al., 2017).

**Cause:** A piglet needs 7–15 mg of iron daily, but sow's milk supplies only about 1 mg, and liver stores last just two to three weeks (Svoboda and Drábek, 2005). Indoor piglets cannot root for iron in soil. Haemoglobin falls from 90–110 g/L at birth, and signs appear near 40 g/L.

**Signs:** Peak at about three weeks: pale skin, rough hair coat, slow growth, laboured breathing after exertion ("thumps"), puffy head and shoulders, diarrhoea, secondary infections and sometimes sudden death. The anaemia is microcytic and hypochromic and haemoglobin estimation confirms it.

| Drug                               | Dose per piglet     | Route and timing                                                           |
|------------------------------------|---------------------|----------------------------------------------------------------------------|
| Iron dextran (100 mg/mL)           | 100–200 mg (1–2 mL) | Deep IM, neck, day 1–3; repeat 100 mg at 2–3 weeks if creep intake is poor |
| Gleptoferron (200 mg/mL)           | 200 mg (1 mL)       | IM once, day 1–3                                                           |
| Oral iron paste (ferrous fumarate) | As per label        | Day 1–3, where injection is not possible                                   |

**Prevention:** A single 200 mg iron injection in the first three days protects most piglets. Alternatives include painting the sow's udder with iron sulphate solution or placing clean soil in the pen. Creep feed should carry about 240 mg iron/kg. Ensure sows receive adequate vitamin E and selenium, as deficient piglets may react badly to iron injection (Lipiński et al., 2010).

## Neonatal Hypoglycaemia (Baby Pig Disease)

Low blood sugar strikes piglets in their first week, especially the first day. It is essentially a disease of hunger.

**Cause:** Blood glucose is 30–60 mg/dL at birth and rises to about 95 mg/dL after colostrum. Until about day seven the piglet cannot make enough glucose itself, so it depends on frequent suckling (Herpin et al., 2002). Milk failure in the sow, weak or small piglets, TGE and other diarrhoeas, septicaemia and cold housing all cut intake and cause a rapid crash.

**Signs:** Wobbly gait progressing to recumbency, shivering, weak squeal, cold clammy pale skin, slow heart rate (about 80/min), paddling, jaw champing, convulsions and coma. Death follows in 24–36 hours. Blood glucose below 50 mg/dL confirms the diagnosis and separates it from pseudorabies and viral encephalomyelitis.

| Drug                     | Dose             | Route and frequency                             |
|--------------------------|------------------|-------------------------------------------------|
| Dextrose 20% (warmed)    | 15 mL per piglet | Intraperitoneal, every 4–6 hours until suckling |
| Dextrose 5%              | 25 mL/kg         | Intraperitoneal, with oral fluids               |
| Oral glucose-electrolyte | 10–15 mL/kg      | Every 2–3 hours if the piglet can swallow       |

Injected fluid should not exceed 8 per cent of body weight per day (Constable et al., 2017). Warm the piglet gradually and return it to the teat.

**Prevention:** early colostrum, a steady 30–34°C creep area and fostering of surplus piglets.

## Neonatal Polyarthritis (Joint Ill)

A bacterial blood infection that settles in several joints, seen from 3–4 days of age.

**Cause:** Bacteria enter through the navel, floor abrasions, teeth-clipping, docking or castration wounds or the mouth. *Streptococcus dysgalactiae* subsp. *equisimilis* is most common, followed by staphylococci, *E. coli* and *Trueperella pyogenes* (Constable et al., 2017). Poor colostrum immunity, dirty damp pens and overcrowding raise the risk.

**Signs:** Hot, swollen, painful knees, hocks, elbows or stifles; lameness; fever; poor suckling and poor growth. Culture of joint fluid or blood identifies the organism and guides the choice of antibiotic.

| Drug                                                  | Dose         | Route and duration        |
|-------------------------------------------------------|--------------|---------------------------|
| Procaine penicillin G (first choice for streptococci) | 20,000 IU/kg | IM once daily, 3–5 days   |
| Amoxicillin, long-acting                              | 15 mg/kg     | IM, repeat after 48 hours |
| Ceftiofur (reserve drug)                              | 3–5 mg/kg    | IM once daily, 3 days     |
| Meloxicam                                             | 0.4 mg/kg    | IM, single dose           |

Early treatment gives the best results; chronic cases respond poorly (Papich, 2016).

**Prevention:** colostrum within six hours, iodine navel dipping, dry bedded pens and hygienic handling procedures.

### Fading Piglet Syndrome

A pattern rather than a single disease: a piglet normal at birth gradually weakens, stops suckling, wastes and dies within one to three weeks (Muns et al., 2016).

**Cause:** Non-infectious factors (poor colostrum intake, chilling, hypoglycaemia, anaemia, birth weight under 1 kg, large litters, birth defects, milk failure, crushing) combine with infections (*E. coli*, streptococci, staphylococci, *Clostridium perfringens*, rotavirus, TGE, coccidia). A missed feed leads to chilling and low sugar, then weakness, dehydration and infection, a vicious circle that ends in death (Edwards, 2002).

**Signs:** Poor suckling, lethargy, lying apart from the litter, weak squeal, cold extremities, dehydration, rough coat, pale skin and sometimes diarrhoea or swollen joints. Blood glucose, haemoglobin, faecal tests, culture and post-mortem of dead piglets help identify the main cause.

| Measure                                       | Dose or target                                                    |
|-----------------------------------------------|-------------------------------------------------------------------|
| Warming                                       | Creep area 30–34°C                                                |
| Colostrum or milk replacer                    | Small feeds every 1–2 hours, by stomach tube if needed            |
| Immunoglobulin for colostrum-deprived piglets | 10 g/kg on day 1, then 2 g/kg daily for 10 days                   |
| Dextrose and fluids                           | As for hypoglycaemia                                              |
| Trimethoprim-sulfonamide                      | 15–25 mg/kg (combined) IM daily, 3–5 days, if infection suspected |
| Iron dextran                                  | 100–200 mg IM, if not yet given                                   |

**Prevention:** colostrum within six hours, warmth, crush protection, navel disinfection, routine iron, sow nutrition and vaccination, fostering and extra feeding of small piglets (Kirkden et al., 2013).

### Piglet Coccidiosis

Caused mainly by *Cystoisospora suis* (formerly *Isospora suis*), coccidiosis produces a pasty, yellow-grey, sour-smelling diarrhoea at 5–15 days of age that does not respond to antibiotics (Zimmerman et al., 2019). Piglets become dehydrated and uneven, though deaths are few. Faecal examination for oocysts confirms it.

| Drug                      | Dose                 | Route and timing                        |
|---------------------------|----------------------|-----------------------------------------|
| Toltrazuril 5% suspension | 20 mg/kg (0.4 mL/kg) | Oral, single dose at 3–5 days of age    |
| Oral electrolyte solution | 10–15 mL/kg          | Several times daily in scouring piglets |

A preventive dose of toltrazuril greatly reduces oocyst shedding and diarrhoea (Mundt et al., 2006). Thorough cleaning and drying of pens between batches is essential.

### Responsible Use of Drugs

The doses above are standard guideline doses for piglets (Papich, 2016; Budde and McCluskey, 2023). Antibiotics and anti-inflammatory drugs should be used only on veterinary advice,

ideally after culture and sensitivity testing, with treatment records kept and withdrawal periods observed. Reserve drugs such as ceftiofur should be saved for cases that need them, to limit antimicrobial resistance.

### The Five Conditions at a Glance

| Condition               | Usual age     | Key signs                   | Key treatment                        | Prevention                     |
|-------------------------|---------------|-----------------------------|--------------------------------------|--------------------------------|
| Iron deficiency anaemia | 2–6 weeks     | Pallor, thumps, poor growth | Iron dextran 100–200 mg IM           | Iron injection, day 1–3        |
| Hypoglycaemia           | Birth–7 days  | Shivering, paddling, coma   | 20% dextrose 15 mL IP                | Early suckling, warmth         |
| Polyarthritis           | From 3–4 days | Swollen joints, lameness    | Procaine penicillin 20,000 IU/kg IM  | Colostrum, navel dipping       |
| Fading piglet syndrome  | 1–3 weeks     | Gradual weakness, wasting   | Warmth, glucose, fluids, antibiotics | Good farrowing management      |
| Coccidiosis             | 5–15 days     | Yellow-grey pasty scours    | Toltrazuril 20 mg/kg orally          | Pen hygiene, preventive dosing |

### Conclusion

Most piglet deaths follow a predictable path that begins with a missed feed or a cold pen. The five conditions described here share the same remedies: attended farrowing, colostrum within six hours, a warm creep area, routine iron, hygiene, sensible drug use and twice-daily checks. These measures cost little compared with the value of one extra weaned pig per litter, and with timely veterinary support they bring healthier litters and better returns.

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