

Introduction to Pig Production

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Designed as a quick-reference guide for students, extension agents, and new swine producers.

1. Why Pig Production Matters

Aspect	Key Points
Economic	- High feed-to-gain efficiency (2.5kg feed per 1kg gain). - Short production cycle (6 months to market). - Strong global demand for pork and pork by-products.
Nutritional	- Pork provides high-quality protein, B vitamins, iron, and zinc.
Socio-cultural	- Integral to many cuisines and rural livelihoods.
Environmental	- Manure can be recycled as fertilizer or biogas feedstock when managed properly.

2. Basic Biology of the Domestic Pig (*Sus scrofa domesticus*)

Feature	Description
Classification	Mammal, order Artiodactyla, family Suidae.
Reproductive Traits	- Polyestrous (cycles every 21 days). - Gestation 114 days (3½ months). - Litter size: 8–12 piglets (large breeds up to 20).
Growth	- Birth weight: 1–1.5kg. - Market weight (finisher): 100–130kg. - Daily gain: 0.6–0.9kg in optimal conditions.
Digestive System	- Monogastric, omnivorous. - Stomach pH 2–4; efficient carbohydrate and fat digestion.
Thermoregulation	- Limited sweat glands; rely on behavior and environment to maintain body temperature (18–24°C optimal).

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3. Production Systems Overview

System	Description	Typical Scale	Advantages	Limitations
Extensive (Outdoor/Free-range)	Pigs roam on pasture or woodland; minimal confinement.	Small farms (<50 sows).	Low capital, natural behavior, manure spread on land.	Higher disease exposure, slower growth, weather-related losses.
Semi-intensive (Partial confinement)	Sows housed, piglets moved to outdoor pens; some feed supplementation.	Medium farms (50–200 sows).	Better feed control, moderate biosecurity.	Requires more management, land for pens.
Intensive (Commercial)	All stages housed in climate-controlled buildings; total feed formulation.	Large operations (>200 sows).	Maximal growth rates, high biosecurity, efficient labor.	High capital, waste handling challenges, animal welfare scrutiny.
Niche / Specialty	Organic, heritage breeds, “grass-fed” pork, or integrated crop-livestock systems.	Variable	Premium market price, consumer appeal.	May need certification, lower yields.

4. Core Production Stages

1. Breeding & Sow Management

- *Selection*: Genetic merit for litter size, growth, carcass quality.
- *Estrus detection*: Visual signs (standing heat) + boar exposure.
- *Mating*: Artificial insemination (AI) preferred for genetics control.
- *Gestation care*: 114 days; balanced diet (13% CP, adequate vitamins/minerals).
- *Farrowing*: Provide farrowing crate or pen; monitor for