**WHAT NUTRIENTS DO PIGS NEED?**

Pigs require a balanced diet to ensure optimal growth, reproduction, and overall health. Their nutritional needs include six main categories:

1. Energy

* Source: Primarily carbohydrates and fats.
* Function: Provides the fuel needed for growth, reproduction, and daily activity.
* Common Ingredients: Corn, sorghum, barley, and fats/oils (e.g., soybean or canola oil).

2. Proteins and Amino Acids

* Importance: Needed for muscle development, tissue repair, and overall growth.
* Essential Amino Acids:
  + Lysine (most limiting for pigs in many diets)
  + Methionine
  + Threonine
  + Tryptophan
* Protein Sources: Soybean meal, fish meal, dried whey, and other plant-based or animal-based proteins.

3. Vitamins

* Fat-Soluble: A, D, E, and K for vision, bone health, antioxidant function, and blood clotting.
* Water-Soluble: B vitamins (e.g., niacin, riboflavin, pantothenic acid) for energy metabolism.
* Supplementation: Often added to commercial pig feeds to ensure sufficient levels.

4. Minerals

* Macrominerals:
  + Calcium and Phosphorus (for bone health)
  + Sodium and Chloride (for fluid balance)
* Microminerals:
  + Iron (especially for young piglets to prevent anemia)
  + Zinc, Copper, Selenium (important for growth, immunity, and enzyme functions)
* Sources: Limestone, dicalcium phosphate, salt, and premixes.

5. Fiber

* Function: Improves gut health and prevents digestive disturbances, especially in sows.
* Sources: Wheat bran, rice bran, or alfalfa meal.
* Note: Pigs are monogastric animals and cannot digest large amounts of fiber like ruminants.

6. Water

* Importance: Essential for all bodily functions, including digestion, metabolism, and temperature regulation.
* Access: Pigs should have constant access to clean and fresh water.

**FEEDING STAGES AND NUTRITIONAL ADJUSTMENT**

Feeding pigs requires adjusting their diet according to their growth stages to meet their changing nutritional needs. Here's a breakdown:

* 1. **Nursing Piglets (Birth to Weaning)**
* Primary Nutrition: Sow's milk (provides immunoglobulins and essential nutrients).
* Supplementary Feed: Creep feed (highly digestible and nutrient-rich feed introduced from 7–10 days old).
* Key Nutrients:
  + High protein (20–22% crude protein).
  + Energy-dense feed (milk powders, dried whey).
  + Essential amino acids (lysine, methionine).
  + Minerals like iron (to prevent anemia).
  1. **Weaned Piglets (4–8 Weeks Old)**
* Transition: Shift to solid feed; diets must mimic milk's digestibility.
* Key Nutrients:
  + Protein: 18–22% CP to support rapid growth.
  + Energy: Grains like corn or wheat.
  + Specialty Ingredients: Plasma proteins, whey, or fishmeal.
  + Enzymes and probiotics to improve gut health.
  1. **Grower Pigs (20–50 kg Body Weight)**
* Goal: Promote lean tissue growth efficiently.
* Key Nutrients:
  + Protein: 16–18% CP.
  + Energy: Moderate; includes grains and fat sources.
  + Balance of amino acids for muscle development.
  1. **Finisher Pigs (50–100 kg Body Weight)**
* Goal: Maximize weight gain and fattening while maintaining feed efficiency.
* Key Nutrients:
  + Protein: 13–16% CP (reduced to avoid excess nitrogen excretion).
  + Energy: Higher levels for fat deposition.
  + Vitamins and minerals for overall health.
  1. **Breeding Sows and Boars**
* Gestating Sows:
  + Moderate energy and protein.
  + High fiber (e.g., wheat bran) to prevent constipation.
  + Adequate calcium and phosphorus for fetal bone development.
* Lactating Sows:
  + High energy and protein to support milk production.
  + Increased water intake.
  1. **Replacement Gilts (Breeding Age Pigs)**
* Goal: Support growth while preparing for reproduction.
* Key Nutrients: Balanced diet with moderate protein and energy, plus additional vitamins for reproductive health.

**Nutrient Adjustments Based on Growth**

* Energy Needs: Increase energy content as pigs grow to support fat deposition.
* Protein and Amino Acids: Higher protein is needed for young pigs and decreases with age.
* Minerals: Iron for piglets, calcium, and phosphorus for bone health at all stages.
* Additives: Include enzymes, probiotics, or feed acidifiers to enhance nutrient utilization and gut health.