

i. **Definition of Malnutrition:** Malnutrition refers to a condition where there is an imbalance, deficiency, or excess of nutrients in the diet, leading to negative health outcomes. It can manifest as undernutrition, where there is insufficient intake of essential nutrients, overnutrition, where there is excessive intake of certain nutrients leading to obesity or related health issues, or specific nutrient deficiencies. Malnutrition can affect individuals of all ages and can have serious consequences for health and well-being if left untreated.

ii. **Symptoms of Malnutrition:** The symptoms of malnutrition can vary depending on the specific nutrient deficiencies or imbalances present, but common signs may include:

- Weight loss or failure to thrive (in cases of undernutrition)
- Fatigue and weakness
- Reduced immune function and increased susceptibility to infections
- Delayed wound healing
- Poor growth and development (especially in children)
- Muscle wasting
- Brittle hair and nails
- Skin changes (dryness, discoloration, or lesions)
- Edema (swelling due to fluid retention)
- Cognitive impairments and developmental delays (especially in children)

iii. **Causes of Malnutrition:** Malnutrition can have multiple causes, including:

- Inadequate dietary intake of essential nutrients due to poverty, food insecurity, or limited access to nutritious foods
- Poor dietary diversity and reliance on low-nutrient, high-calorie foods
- Digestive disorders or malabsorption syndromes that impair nutrient absorption
- Chronic illnesses or medical conditions that increase nutrient requirements or interfere with nutrient metabolism
- Environmental factors such as contamination of food or water sources with toxins or pathogens

- Socioeconomic factors such as lack of education about proper nutrition, cultural beliefs, or food taboos

iv. **Effects of Malnutrition on Livestock Production:** Malnutrition in livestock can have significant negative effects on production outcomes, including:

- Reduced growth rates and weight gains
- Decreased milk production in dairy animals
- Poor reproductive performance, including decreased fertility and increased rates of abortion or stillbirths
- Weakened immune function and increased susceptibility to infectious diseases
- Poor feed conversion efficiency, leading to higher feed costs and reduced profitability
- Increased mortality rates, especially among young or vulnerable animals
- Lower quality products such as meat, milk, or eggs, which may impact marketability and consumer acceptance