Livestock farming includes production of poultry meat, eggs, pork, beef, mutton and milk as food items.

- **Self-sufficiency**
  - Beef 25%
  - Mutton 8%
  - Milk 5%
  - Poultry and eggs
  - Pork

Self-sufficient
• **Beef cattle productive systems**

1. Extensive system - rotational grazing (cow – calf operation)

2. Integration in plantation (cow – calf operation)
   
e.g. Kedah kelantan (kk) medium size crosses.
   
Oil palm integration stocking rate
new 5 hectare plot daily for 100 female breeders
Electric fencing
Extensive system

Integration in plantation
3. **Intensive system**

Feedlotting (finishing males) animal are imported and from integration system

a) Feedlot young growing cattle are fed high energy diet to produce marketable beef at the lowest cost and in the shortest possible time

b) It’s a type of animal feeding operation use in finishing livestock beef cattle

c) Weaned male calve are transferred into feedlot at 1 year of age

d) Fed PKC and agricultural by product eg. Rice bran, rice straw, oil palm frond, brewers spent grain and palm oil sludge

e) In a typical feedlot the cows diet is 95% grain

f) Floor space requirement 30 square feet per head

g) Average initial weight 200 kg

h) Finished cattle body weight 400kg

i) Average daily weight gain 0.75kg /head/day

j) Cost of animal feed 70% of operational cost
Intensive system

Feedlot
BEEF BREEDS

• Kedah Kelantan
• Brahman
• Braford
• Brangus
• Charolias
• Simmental
FEED
Ruminants consume 3% of body weight of dry matter

• GRASS
  1. Bracharia decumben (Signal grass)
  2. Guinea grass
  3. Setaria splendida
  4. Setaria kazungula
  5. Cynodon plectostahyus (African star grass)
Agricultural by products and mineral supplement

- Comercial concentrate
- Brewers spent grain
- Soya bean meal waste
- Rice bran
- Palm kernel cake (PKC)
- Palm kernel de-oil meal
Mineral supplement

- Content:
  - Phosphorus: 22.8%
  - Calcium: 8.5%
  - Magnesium: 0.5%
  - Salt: 50%
  - Iron: 3000 p.p.m
  - Cobalt: 50 p.p.m
  - Manganese: 2500 p.p.m
  - Iodine: 300 p.p.m
  - Zink: 300 p.p.m
• PALM KERNEL CAKE
  a) Medium grade feed 14-16% crude protein
  b) Fattening cattle and supplementary feeding with high fiber content
  c) PKC of 2 types:
     - Solvent extract 0.5 – 3% fat
     - Expeller pressed 5 - 12% fat
  d) Feed containing more than 5% fat reduce rate of cellulose digestion resulting in depression of feed intake
• CONSTRAINTS TO THE DEVELOPMENT OF FEEDLOT INDUSTRY

1. Inadequate supply of local feeder cattle
2. High cost of local feeder cattle
3. Inferior feedlot gain potential of local cattle
4. High cost of PKC in open market
5. Importation of cheap beef effected local market
PRINCIPLES OF ANIMAL MANAGEMENT

• BREEDING – mating of selected male and female of superior merit result in progeny for better production capacity

• FEEDING
  1. Balance ration
  2. Body requirement
  3. Production capacity
• **CULLING**
  1. Uneconomic
  2. Unhealthy
  3. Low producing animals

• **ANIMAL WELFARE**
  1. Sanitation
  2. Disease control (HHP)
  3. Housing and care
**BREEDING CYCLE A**
1. Heifers bred at 18 – 24 month of age having attained body weight of 320 – 350 kg (kk 220 – 250 kg)
2. First heat animal bred if it does not conceive it will recycle in 21 days (18 – 24 days) second heat
3. If it conceive with second mating (second heat) gestation period 9 months and 1 week (280 days)
4. First calving
5. Lactation period 200 – 305 days twice daily
6. Dry cows when 7 months pregnant

**BREEDING CYCLE B**
1. Postpartum cows are bred 45 - 60 days after calving
2. If animal does not conceive on first mating (1st heat) it will recycle in 18 – 24 days (21 days)
BREEDING

1. **Natural mating** – allowing bull and cows to be together during breeding season and mating occurs
   - Ratio 1 bull : 20- 25 cows
   - Breeding season :- April/May or Oct/Nov

2. **Artificial Insemination (AI)**
   - A technique that deposit semen into the cows reproductive tract with inseminating instrument (rod)

<table>
<thead>
<tr>
<th>INSEMINATION DOSE</th>
<th>LOCATION</th>
<th>INSEMINATION STRATEGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>15- 25 million sperm in 0.5 – 1.0 ml</td>
<td>uterus</td>
<td>Once 12 – 18 hours after detected estrus (heat)</td>
</tr>
</tbody>
</table>
ARTIFICIAL INSEMINATION

NATURAL MATING
• Advantages of AI:
  - Prevention of sexually transmitted disease (STD) eg. Brucellosis
  - Genetic improvement of farm animals
  - Semen can be transported to various geographical areas
  - Bull of high genetic merit are available with AI

3. **Embryo transfer**
• Signs of heat (estrus):
  - Vulva swollen
  - Clear thin mucous discharge
  - Attempt to ride others
  - May bawl and withhold milk
TEASER BULL – vasectomized bull fitted with chain ball mating harness used to detect cows in heat

SIGNS OF HEAT (ESTRUS)
Livestock Identification

- Animal identification is important factor in managing herd health, breeding and record keeping

1. Tatooing: permanent means of identification (2-3 days of age)
2. Ear tagging identification that can be read from distance
3. Branding permanent identification readable from distance
branding
- freeze
- hot iron
tattoo
tagging
• **Weighing** – regular weighing of animal is essential:
  1. Gives idea about their body condition and well being
  2. Scientific feeding is base on body weight
  3. Drugs are administered according to body weight

WEIGHBAND - there is relationship between the weight of animal and it’s length and girth measurement

WEIGHBRIDGE
1. Measure the length of body, from the point-of-shoulder (A) to the point-of-rump or pin bone (B).

2. Measure the circumference or heart girth (C). Measure from a point slightly behind the shoulder blade, down the fore-ribs and under the body behind the elbow all the way around. After these measurements are made in inches – use the following formula.

3. \((\text{Heart girth} \times \text{heart girth} \times \text{body length}) \div 300 = \text{weight in pounds}\)
DEHORNING

Advantages:
1. Requires less feeding space
2. Reduce risk of injury to handlers
3. Fight less and inflict fewer injuries to each other

Chemical dehorning – caustic paste containing sodium hydroxide and calcium hydroxide (7 – 10 days of age)
Debudding – cauterizer (3 weeks of age)
Dehorning – gouche and cauterizer when horn buds are visible

* For humane reasons injection of local anesthetic around the cornual nerve will desensitizes the area
• CASTRATION – neutering of male animals (bull calves above of 6 months of age)

• Advantages :-
  1. Calmer disposition
  2. Relative ease of handling

• Burdizzo – castration device to break blood vessels leading into testicles

• Steer – a castrated male calf
BURDIZZO – closed method of castration

OPEM METHOD OF CASTRATION

EMASCULATOR - In older calves, use an emasculator to crush and cut both blood vessels and spermatic cord at the same time. An emasculator lessens the risk of bleeding. (The emasculator must be placed on the cord correctly in order to crush the cord properly).

* Local anaesthesia plus a non-steroidal anti-inflammatory drug are needed to eliminate acute pain caused by Burdizzo castration and emasculator
• **Ways of preventing kicking in cattle**

1. Tying the animals head high so that the neck is stretched upwards will prevent kicking
2. Raise the tail straight over the animals back
3. Non Kick Clamp it is used to control a cow while milking or for examination of the udder
4. Bull ring - It is fixed to the nasal septum of bulls (one or one and a half years)
NON KICK CLAMP

NOSE BULL RING
TECHNIQUE OF ANIMAL RESTRAINT

Casting
- Refers to causing the animal to lie down on its side due to pressure exerted on its muscle and nerves by a series of carefully placed tightened ropes. This restraint is used when total immobilization is required and no chutes are available.
- To minimize the risk of injuring the penis of a bull, wrap the rope with soft material such as cotton bag.
- Before the animal is cast, the lie down area should be cleared of rock, stones or any other material could cause cuts or bruises. Bedding should be used to cushion the fall (grassy spot or sandy area)

Caution
This technique can cause pregnancy complication and displaced abomasum from twisting or bloat and pneumonia from having the animal lie on its side for too long.
Casting Procedure

1.

2.

3.

4.
Flanking the calf
- The calf cornered and caught or it can beroped. Management techniques such as treating the navel with iodine, ear tagging, tattooing, castration and injection can be performed when calves are flanked and restrained on the ground.
• **Cattle crush** is strongly built stall or cage for holding cattle or other livestock safely while they are being examined or given veterinary treatment. The front end has a head gate to catch the animals and to minimize risk of injury to both animal and the operator while working on the animal.
Good handling skills during animal restraint

1) Safe & humane
2) Prevent staff from being injured
3) Reduce stress on animals
BODY CONDITION SCORE (BCS)

- BCS is an indicator of the amount of store energy reserve and changes with different stages of lactation
- Beef animal 1-9 score (above 6 score)
- Dairy 1–5 score (above 3 score)
- BCS effects
  a) Milk production
  b) Calf growth
  c) Cows will rebreed earlier
  d) Higher conception rate
**Key Places To Look for Body Condition:**

There are several key places to assess body condition in beef cattle.

- Overall body fat should be evaluated along with fat cover over the tailhead, ribs, shoulder, and in the brisket.

- Muscling should be evaluated to determine if it has been broken down for energy. This occurs when cattle reach the low end of the body condition scoring scale.
Ribs
- Foreribs
- 12th and 13th

Backbone/Spinous Processes

Transverse Processes

Hooks

Tailhead

Pins

Shoulder

Brisket

Key places on a live beef animal to evaluate body condition
Condition Score 1 - Emaciated
Condition Score 2 - Very Thin

![Cow Image]
Condition Score 3 - Thin
Condition Score 4 - Borderline
Condition Score 5 - Moderate
Condition Score 6 - Good
Condition Score 7 - Very Good
Condition Score 8 - Fat
Condition Score 9 - Very Fat
THANK YOU