



Tackling flies and ticks in ruminants

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Tackling flies and ticks in ruminants





Contents in this lesson

- ▶ **Common flies affecting ruminants**
- ▶ **Ticks seen on ruminants**
- ▶ **Impact on animals**
- ▶ **Chemical methods used in their control and precautions to be taken**
- ▶ **Novel methods of control**



Common flies affecting ruminants

- ▶ Filth flies such as *Musca domestica*, *Fannia*
- ▶ *Stomoxys calcitrans*, *Tabanus* sp.
- ▶ *Haematobia exigua*
- ▶ *Hypoderma lineatum*



Tabanus feeding on the leg of cattle

Tabanus





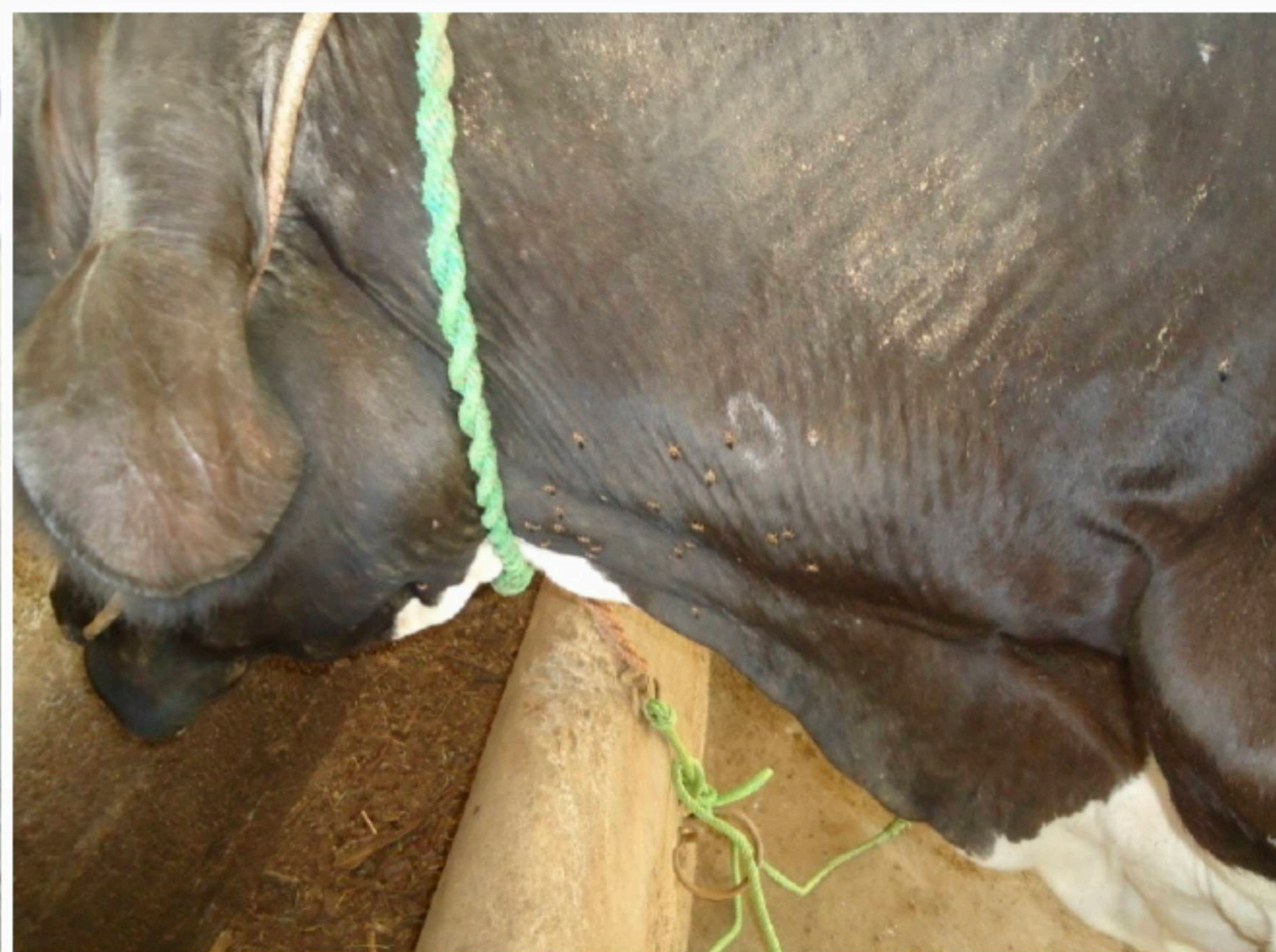
House flies



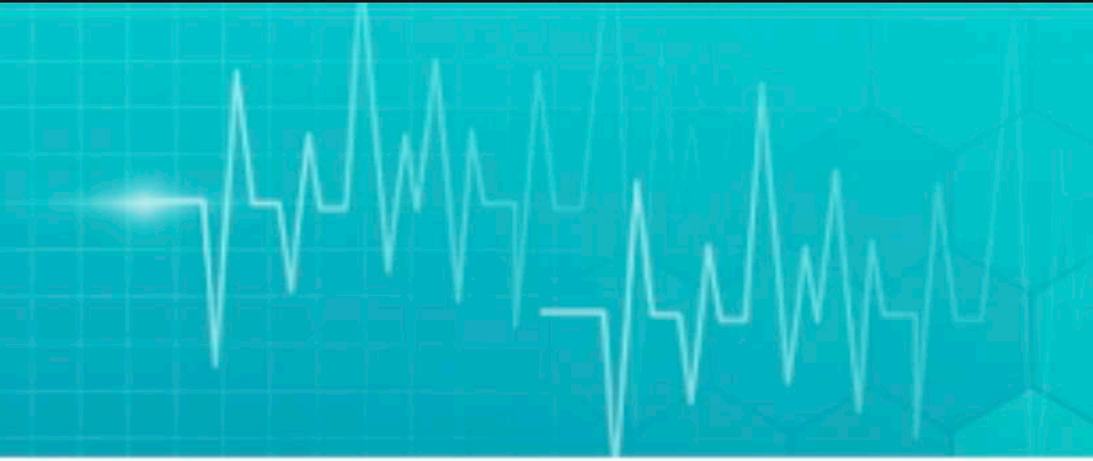
Stable flies feeding on a cow



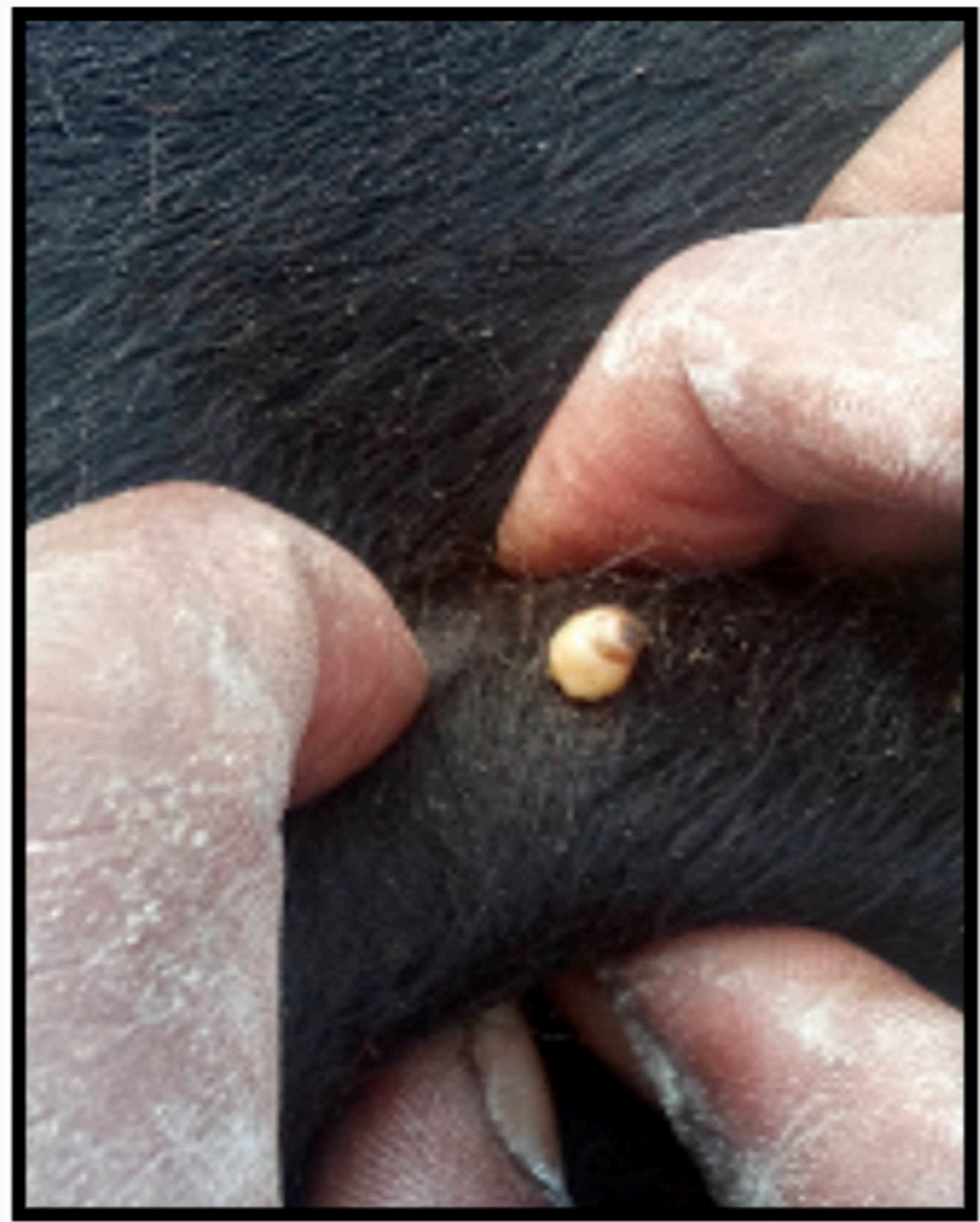
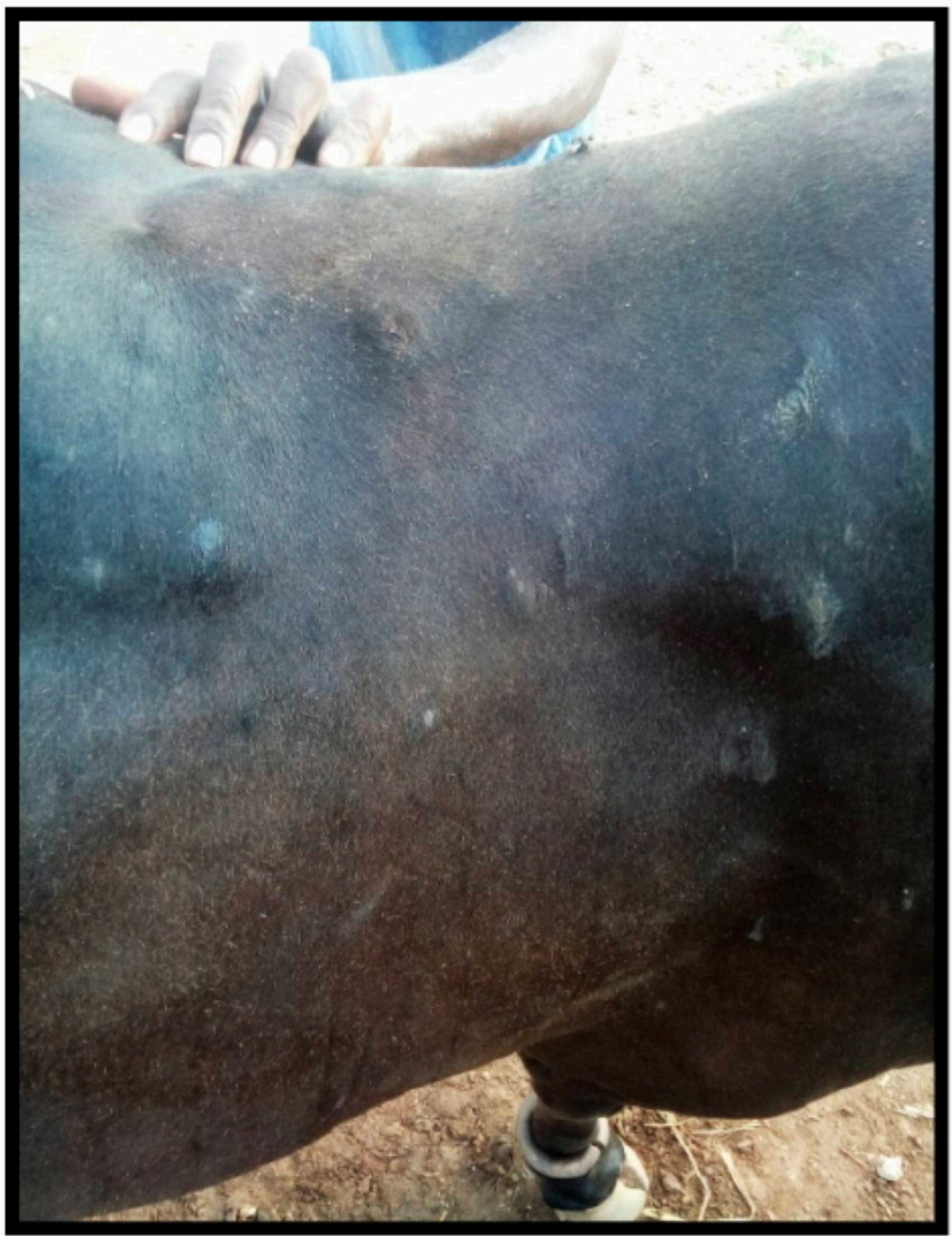
Flies feeding on the hind limb of a cow



***Hippobosca* flies feeding on cattle**



Hypoderma lineatum



Warble infestation in a Kandhari cow



Economic problems caused by high fly populations in dairy operations

- ▶ **Reduced milk production: cows must expend extra energy fending off flies, disrupted grazing / feeding due to - fly worry**
- ▶ **Reduced growth performance**
- ▶ **Reduced farm worker productivity: flies interfere with work such as feeding and milking**
- ▶ **Increased frequency of animal disease transmission, leading to - increased medication costs, and - increased veterinary service costs**



Ticks seen on ruminants

- ▶ The cattle tick-*Rhipicephalus (Boophilus) microplus*
- ▶ *Rhipicephalus haemaphysaloides*
- ▶ *Hyalomma marginatum* and *H.anatolicum*
- ▶ *Haemaphysalis intermedia*
- ▶ *Amblyomma integrum*



Severe tick infestation in cattle



Hyalomma tick-male



Amblyomma integrum male tick.

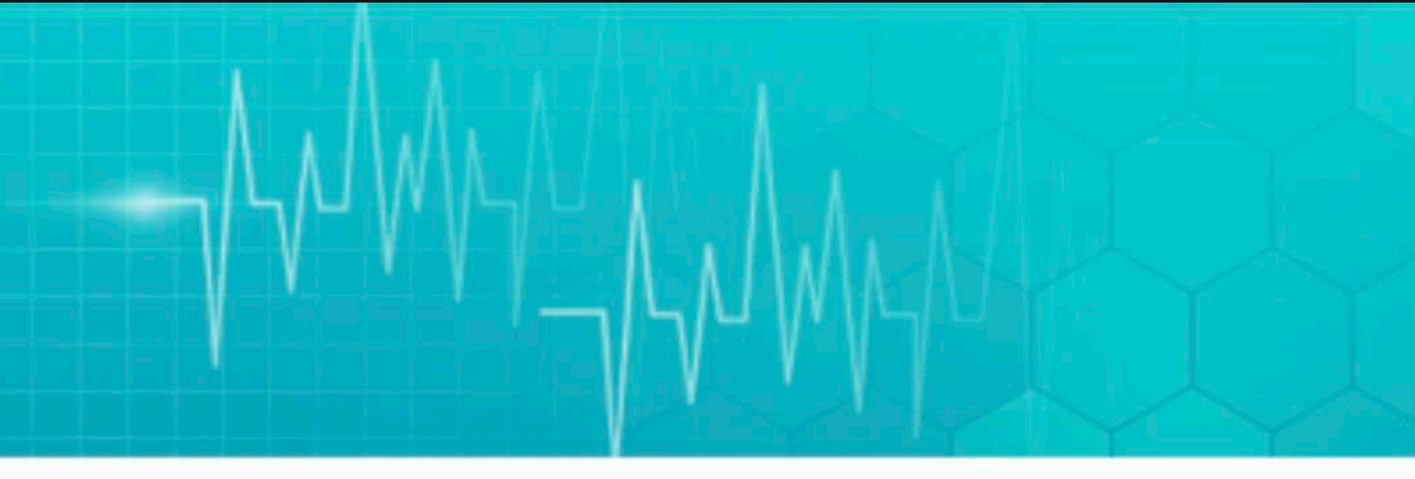


Droplets of blood oozing out from the tick bite sites after manual removal of ticks in a cow



Haematobia exigua

- ▶ **Horn flies are one of the most economically harmful external parasites for grazing animals**
- ▶ **These flies reduce weaning weights by 12 percent and decrease growth rates of cattle by as much as 16 percent**
- ▶ **They are blood feeders and spend most of their life on the host, targeting the back and shoulders of grazing animals. Females only leave the host to lay eggs in fresh manure pats and can lay 100-200 eggs in their short 10-14 day lifetime.**



Stable flies

- ▶ **Stable flies tend to congregate on the lower legs and belly of cattle**
- ▶ **Very painful biter and both males and females suck blood**
- ▶ **Transmit diseases such as anaplasmosis.**



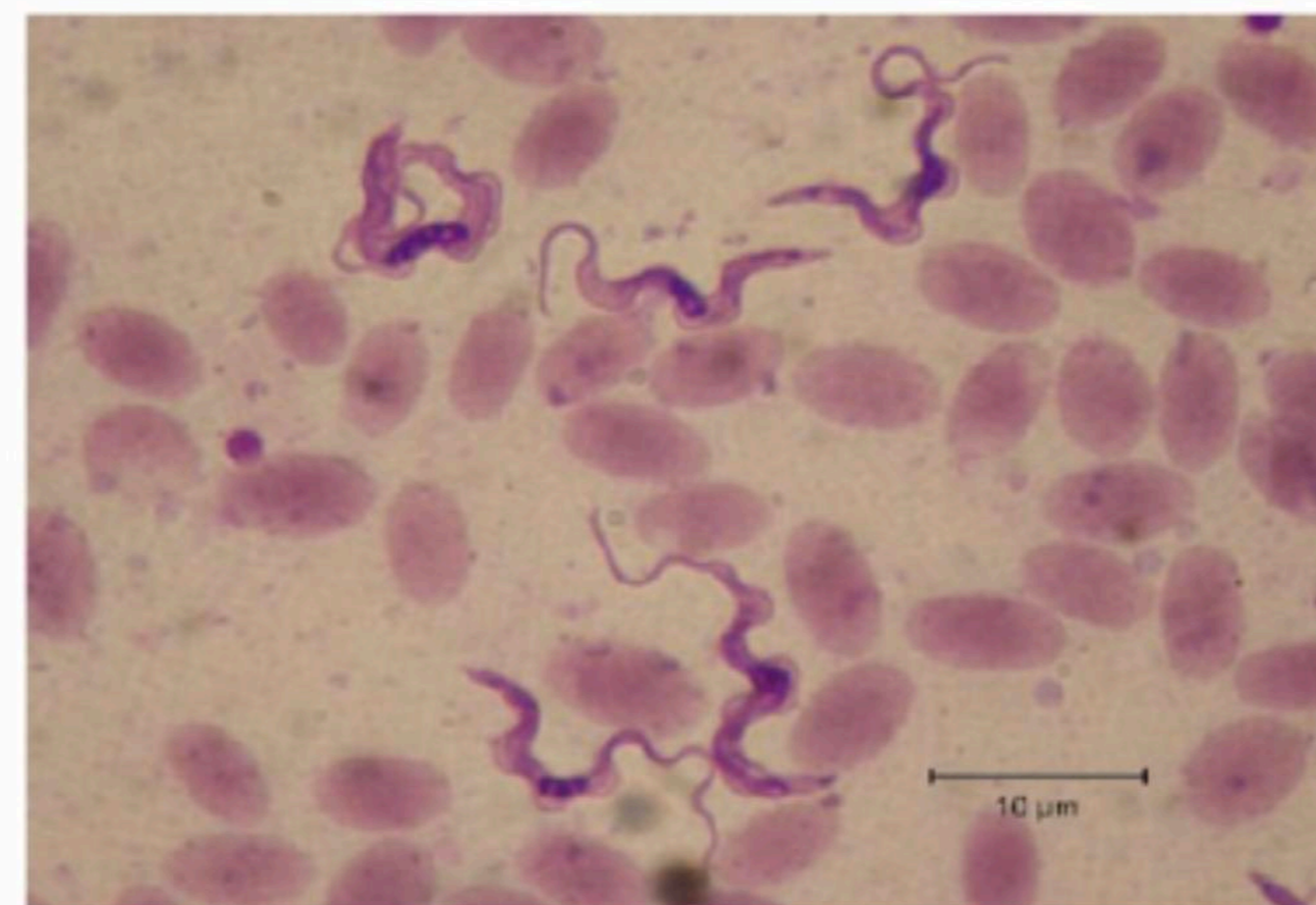
Horse flies and warble flies

- ▶ horse flies can cause severe blood loss, alter grazing behavior, and create grazing inefficiencies
- ▶ Transmit several diseases, including anaplasmosis
- ▶ *Hypoderma lineatum* common in temperate regions is the heel fly of cattle which causes warble



Why control arthropods?

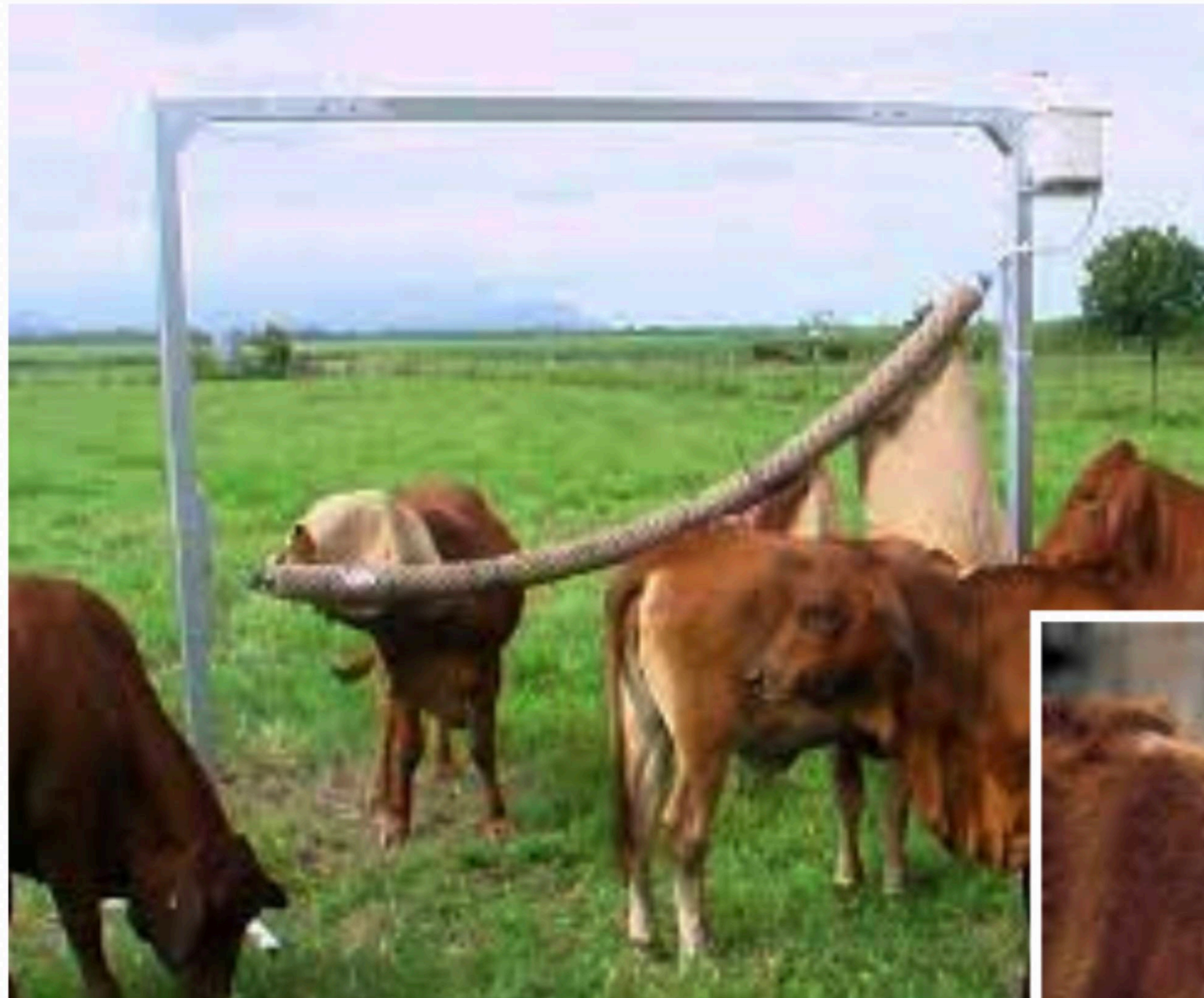
- ▶ Annoyance
- ▶ Poor production
- ▶ Economic loss
- ▶ Disease transmission-vector
- ▶ Reduction in performance of the host
- ▶ Discomfort to owners





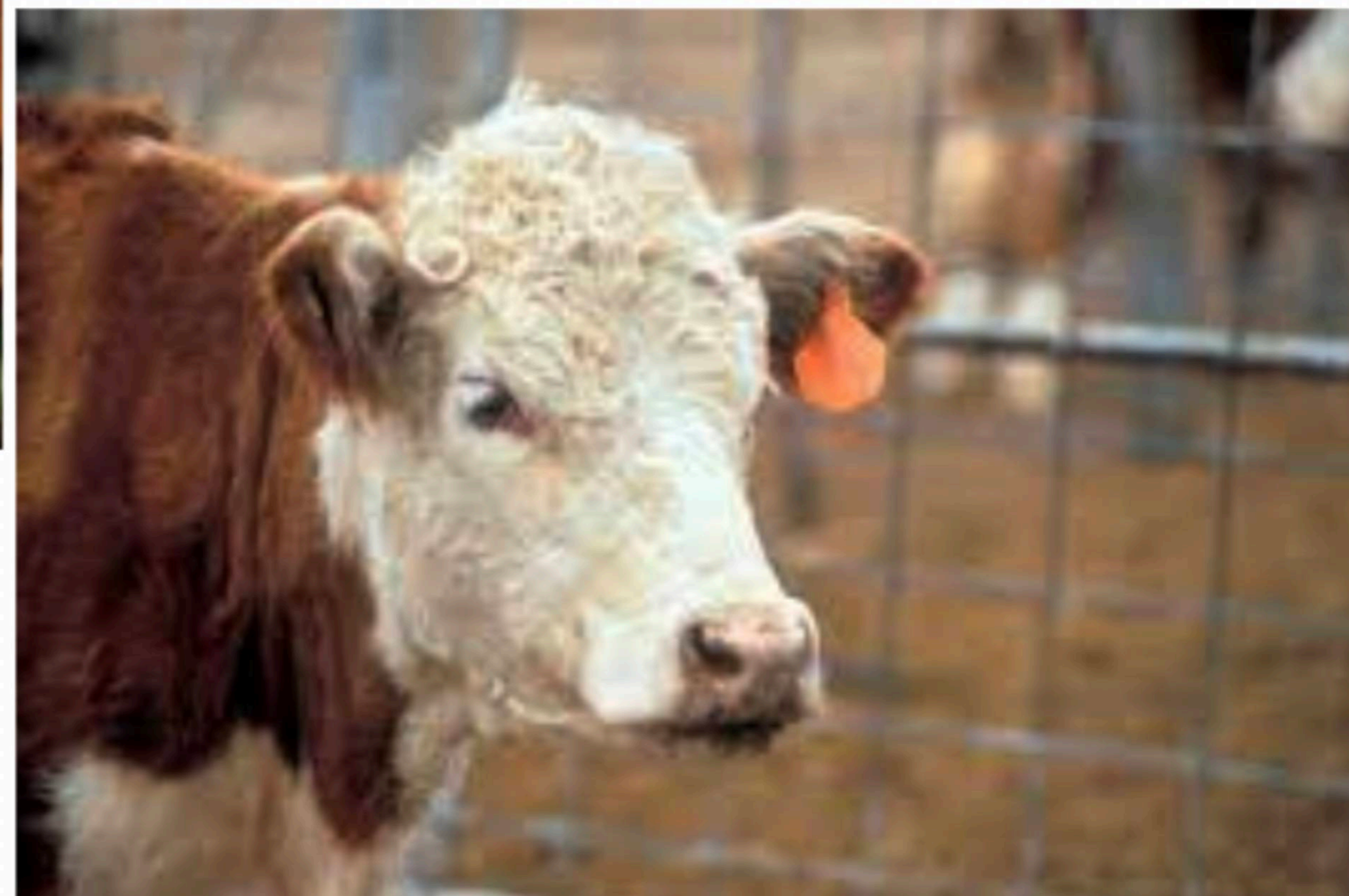
Chemical methods used in their control and precautions to be taken

- ▶ **Sprays and pour-ons are an effective method for controlling a large number of prevalent fly species in grazing livestock. This method requires treatment every 7-21 days throughout the fly season to maintain its effectiveness.**
- ▶ **Control of biting midges and mosquitos can be obtained by using an insecticide in a fogger or mister at dusk along vegetative areas**
- ▶ **Back Rubbers and Dust Bags Back rubbers and dust bags can be an effective and economical way to help control fly burdens on pastured livestock.**



Back rubbers

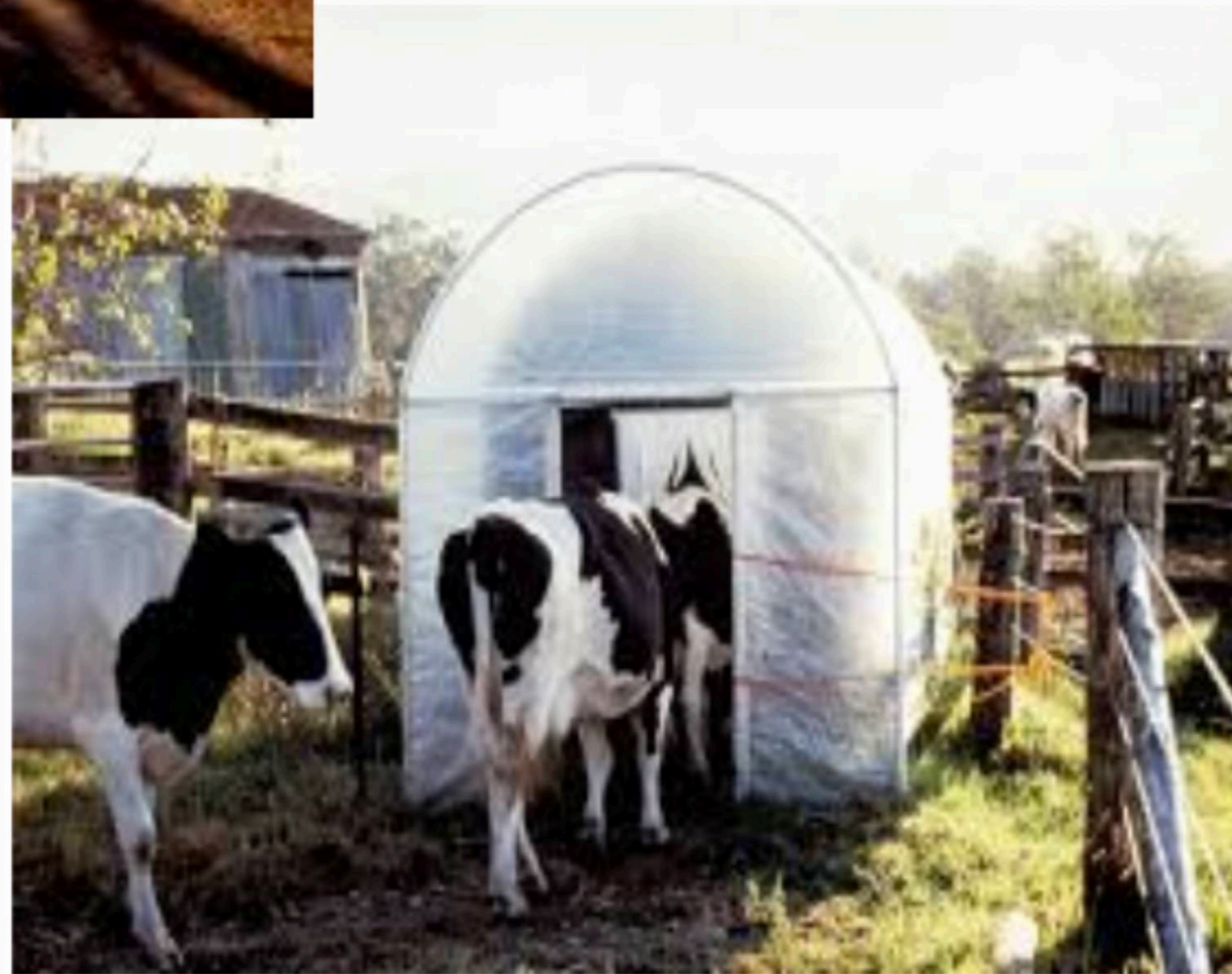
Insecticide impregnated ear tags





Fly control-traps

- ▶ **A walk-through fly trap, also known as the Bruce walkthrough trap, may be another non-chemical control method. This tunnel-like device brushes horn flies off livestock as they walk through. Flies are drawn into the double-walled sides where they are trapped and eventually die of starvation**





CONTROL OF TICKS

CONVENTIONAL METHODS

- Mechanical control
- Chemical control
- Biological control
- Managemental control
- Cultural control
- Botanical control

NOVEL METHODS

- Insect growth regulator
- Integrated pest management
- Pheromone based control
-semiochemicals
- Genetic control
- Immunological control