

**Family : Oestridae**

**Genus : Oestrids**

**Morphology, bionomics, life cycle,  
pathogenesis & control.**

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# Oestrids : Introduction

Common name - Hypoderma spp. ( warble fly)  
Gasterophilus spp. (Bot fly)

Host- Cattle .horses, sheep, goats and man also.

Species- *Hypoderma bovis*  
*Hypodema lineatum.*

# Oestrids : Morphology

- Abdominal area of adult is covered with yellow-orange hairs.  
They are having a broad band of dark hairs in the middle of abdomen.



# *Hypoderma lineatum*

DR.R.K.SHARMA

SOURCE – GOOGLE

*Warble fly*



*Hypoderma bovis*



# *Gasterophilus intestinalis*



# *Gasterophilus nasalis*

# Oestrids : Life cycle

- The female flies laid eggs in hairs with a characteristics ‘**Buzzing sound**’.

After hatching larva come out and penetrate in the hair follicle.

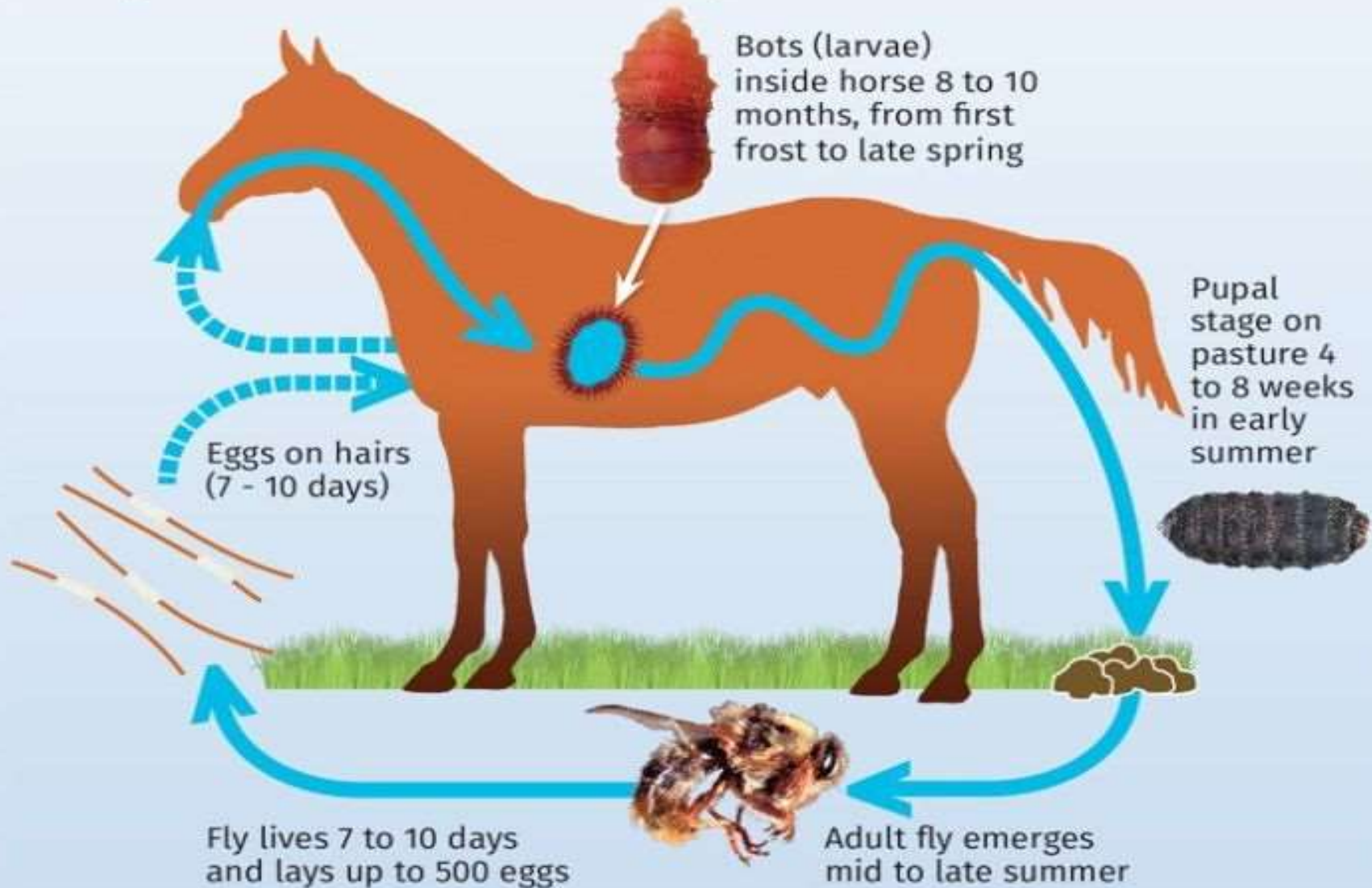
Then enter into the inner organ.

Further migrate in the skin region , where swelling occurs.

The swelling perforate in the centre , called ‘ **Warble**’.

The larva fall on the ground and transformed into pupa then adult fly.





# Life cycle of Gasterophilus spp.

# Oestrids : Pathogenesis

- The affected animal become restless.
- Reduction in milk production in milch animals.
- Formation of ‘warble’ under the skin.
- Due to perforation of skin hide quality deteriorate.
- Trimming of flesh produce greenish gelatinous jelly material called ‘butcher’s jelly’



# Warble



# Warble in cat



## Butcher's jelly in flesh

# Oestrids :Control

- Squeezing of larva from the warble or wound .
- Topical application of insecticide on the warble.
- Systemic use of oral larvicidal insecticide.