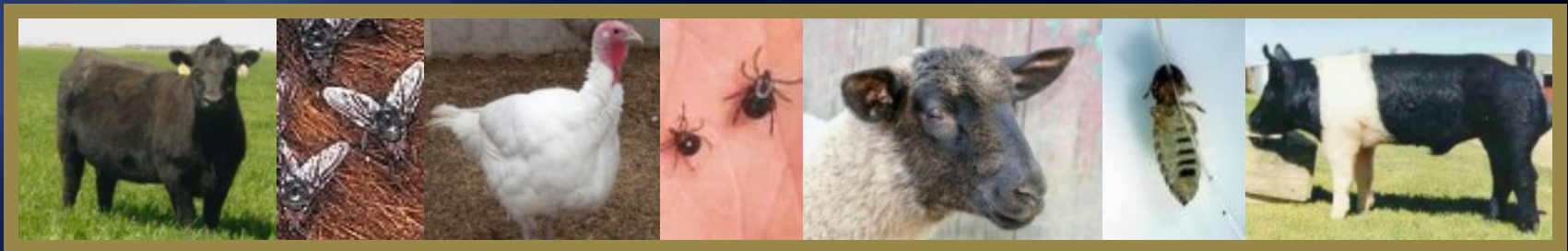


ECTOPARASITES OF LIVESTOCK

William A. Donahue, Jr., Ph.D.
Sierra Research Laboratories



Parasitism and Disease Transmission

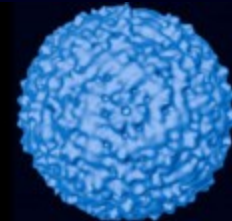
坛 Host-Parasite Interactions (Two Living Factors)

- Obligatory/Facultative
- Continuous/Intermittent



坛 Host-Pathogen-Vector Interactions (Three Living Factors)

- Mechanical Transmission
- Biological Transmission



坛 Reservoir and susceptible hosts



Lice

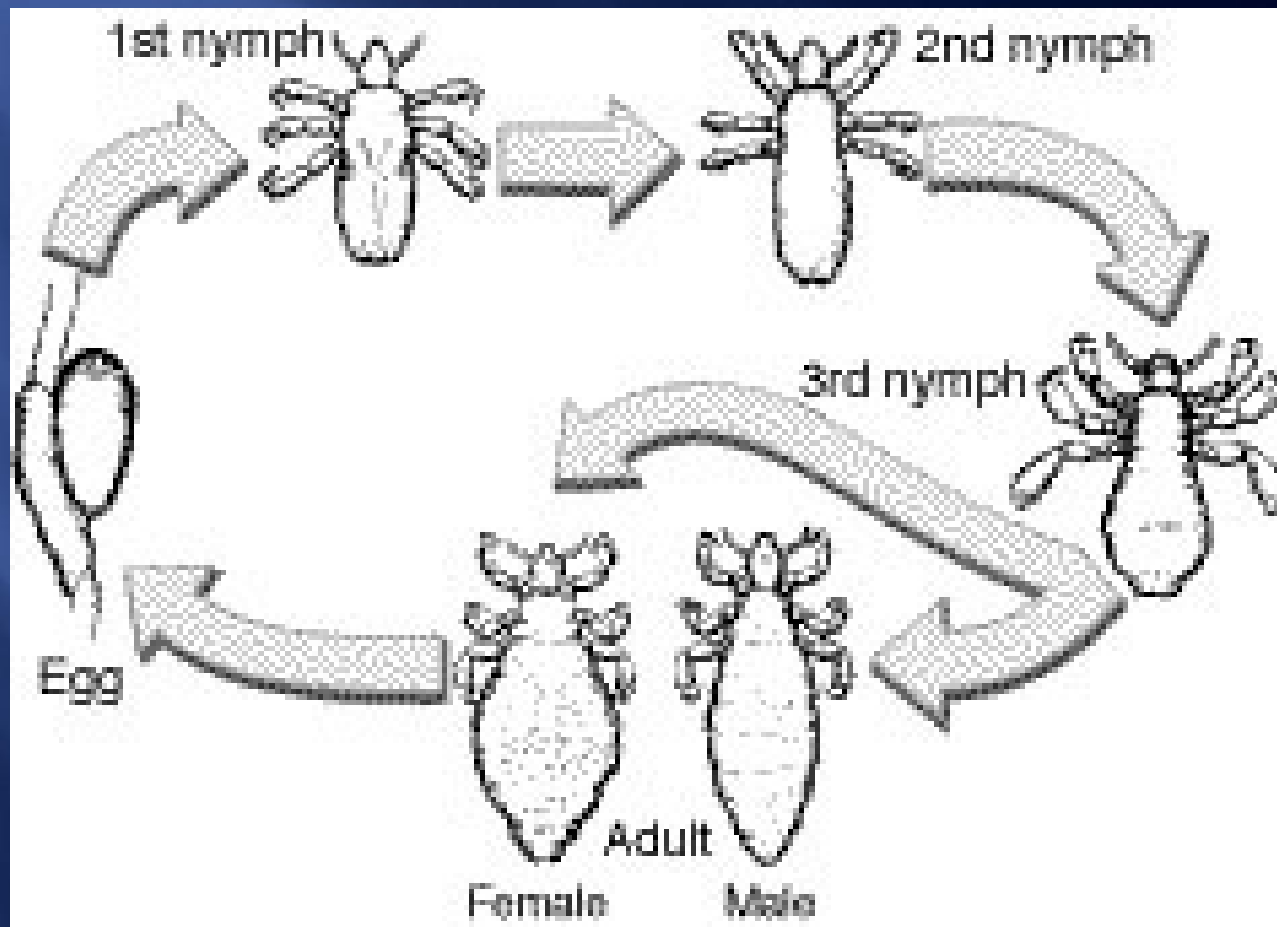
Order: Phthiraptera



- Wingless
- Dorso-ventrally flattened
- Obligatory ectoparasite of birds and mammals
- Host-specific



Generalized Louse (Hemimetabolous) Life Cycle



Common Sub-Orders of Lice

- **Mallophaga (biting and chewing lice)**

- Mandibulate mouthparts
- Feed on feathers, hair and epidermal skin scales; some species feed on blood
- Head wider than prothorax



- **Anoplura (sucking lice)**

- Head narrower than prothorax
- Piercing mouthparts in a pouch concealed in the head
- Feed on blood



Poultry Lice

Affecting Chickens and Turkeys



Chicken head louse
Cuculotogaster heterographus



Shaft louse
Menopon gallinae



Large chicken louse
Gonoides gigas



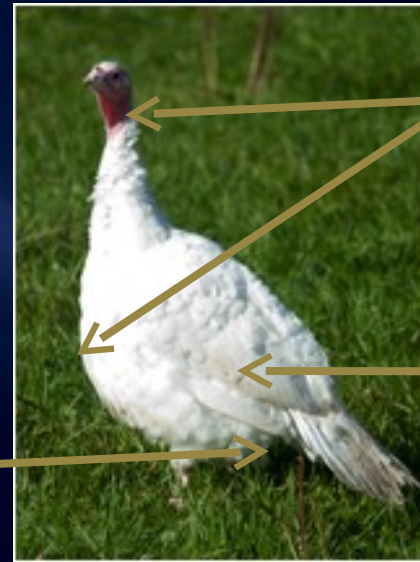
Wing louse
Lipeurus caponis



Chicken body louse
Menacanthus stramineus



Fluff louse
Goniocotes gallinae



Large turkey louse
Chelopistes meleagridis



Slender Turkey Louse
Oxylipeurus polytrapezius

Cattle Lice

- Cattle biting louse, *Bovicola bovis*
 - Small (1-1.5 mm), yellowish-tan with dark transverse bands
 - Located on tail, shoulders, back, and down the sides of the body
- Short-nosed cattle louse, *Haematopinus eurysternus*
 - Often affects mature animals and beef cattle
 - Large (~3mm), short head, cone-shaped plates on abdominal lateral margins
 - Located primarily on neck; also on dewlap, back, base of horns and tail
- Long-nosed cattle louse, *Linognathus vituli*
 - Often on young animals and dairy cattle
 - Long rostrum, narrow body, blueish-black abdomen, smooth lateral margins
 - Infest dewlap, shoulders; may occur all over the body if infestation is severe



Cattle Lice

- Cattle tail louse, *Haemalopinus quadripertusus*
 - Large (4.5mm), dark brown
 - Eggs deposited on switch, lice migrate to tender areas (tail, ears, eyelids)
- “Little blue” louse, *Solenopotes capillatus*
 - Congregates on head, dewlap, and neck as well as topline and under the tail
 - Short, broadly-rounded head



Hog Louse

坛 Eggs glued
to shaft of
hairs on the
host

坛 “nits”

坛 Nit-picker



Sheep Lice



Sucking body louse
Linognathus setosus

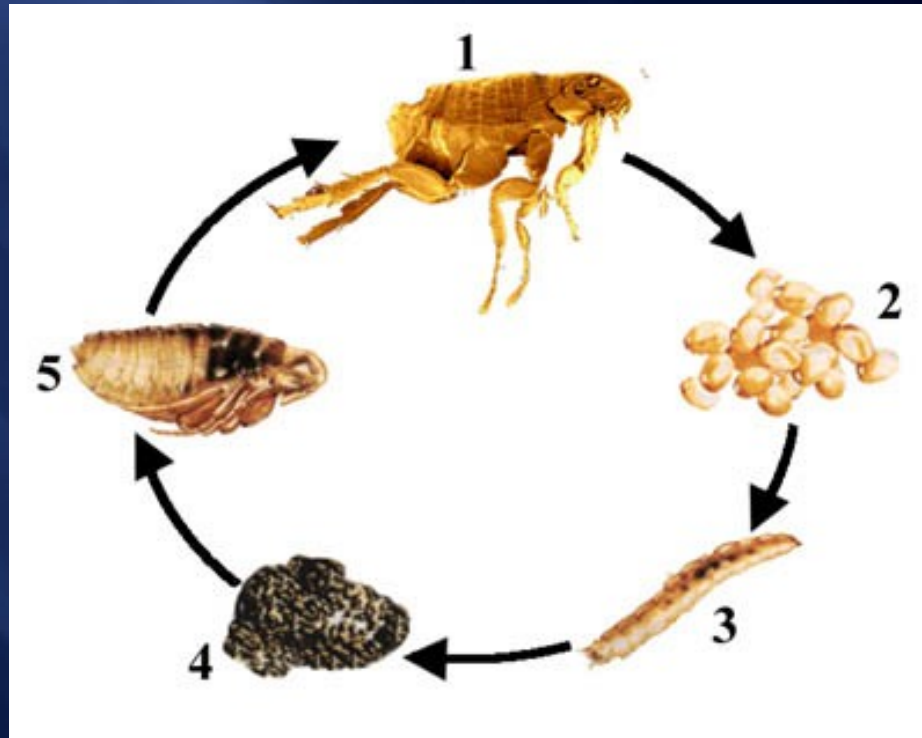


Sheep foot louse
Linognathus pedalis



Fleas, *Siphonaptera*

Holometabolous Life Cycle - Egg, Larvae, Pupae & Adult



Common Flea Species

坛 Cat Flea

坛 Dog Flea

坛 Human flea

坛 Oriental rat flea

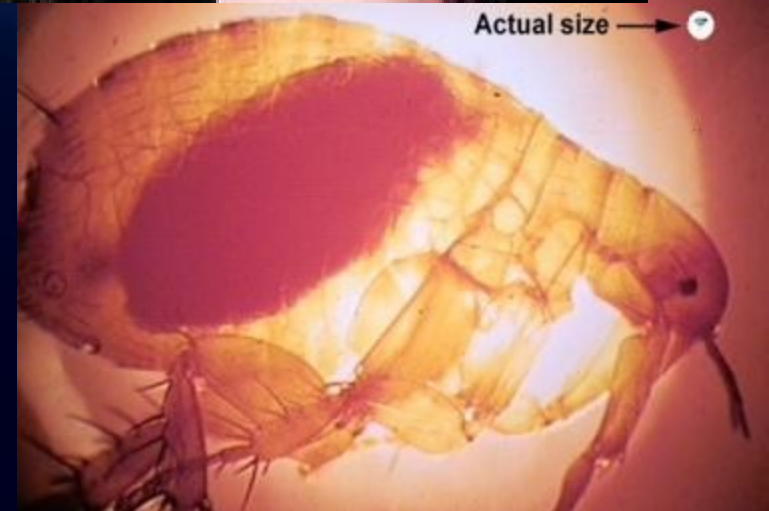
坛 **Sticktight flea**

坛 Chigoe flea



Rodent Flea

坛 Rodent Flea
坛 Bubonic Plague



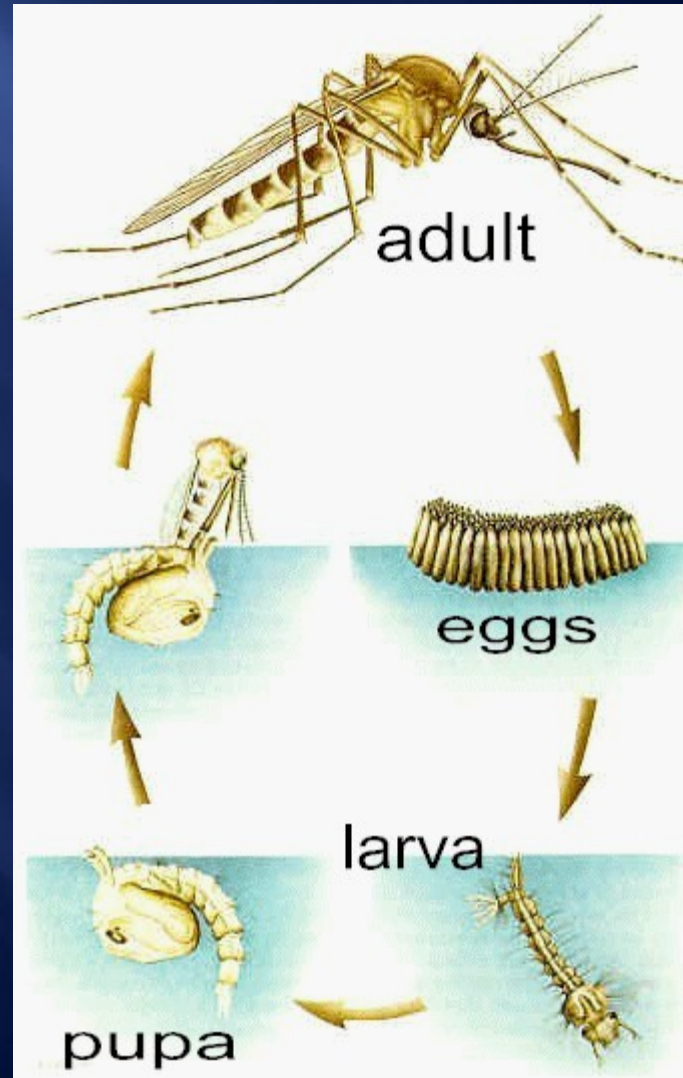
Mosquitoes and Midges

坛 Mosquitoes – wide vertebrate host range

坛 Midge (Blackflies, Culicoides)



Life Cycle of Mosquitoes



Monitoring



Diseases Transmitted by Mosquitoes and Midges

坛 Mosquitoes

- Encephalitis
- Canine heartworm
- West Nile Virus



坛 Midges

- Bluetongue



Nuisance and Biting Flies

Nuisance flies

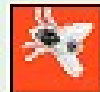


Musca autumnalis
(temporarily on the animal)



Hydrotaea irritans
(temporarily on the animal)

Biting flies



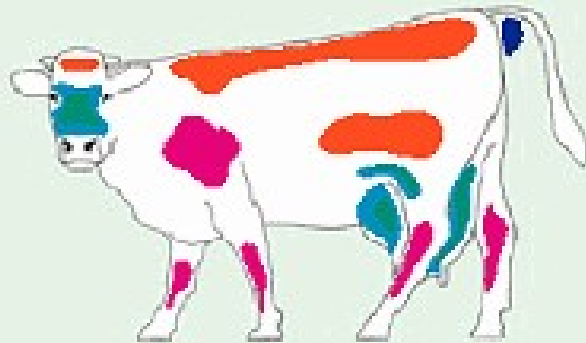
Haematobia irritans
(permanently on the animal)



Hippobosca equina
(permanently on the animal)



Stomoxys calcitrans
(permanently on the animal)



A close-up photograph of a brown horse's head, focusing on the forehead and eye area. Several dark, clustered flies are visible on the horse's forehead and around the eye. The horse is wearing a green halter with a black chain and a green tag with the number '11' in yellow. The background is a blurred outdoor setting with grass.

Predominant Fly Species

Stomoxys calcitrans

Musca domestica

Musca autumnalis

Haematobia irritans

Culex pipiens

Aedes nigromaculus

Complete Life Cycle



Stable & Horn Flies



Horse and Deer Flies



Other Flies

坛 Blowflies and Fleeceworms

- Screwworm flies

坛 Bot Flies





Ticks

坛 Hard Ticks (Ixodidae)

- Brown dog tick, American dog tick, Deer tick, Lone Star tick, Southern cattle tick, Rabbit tick

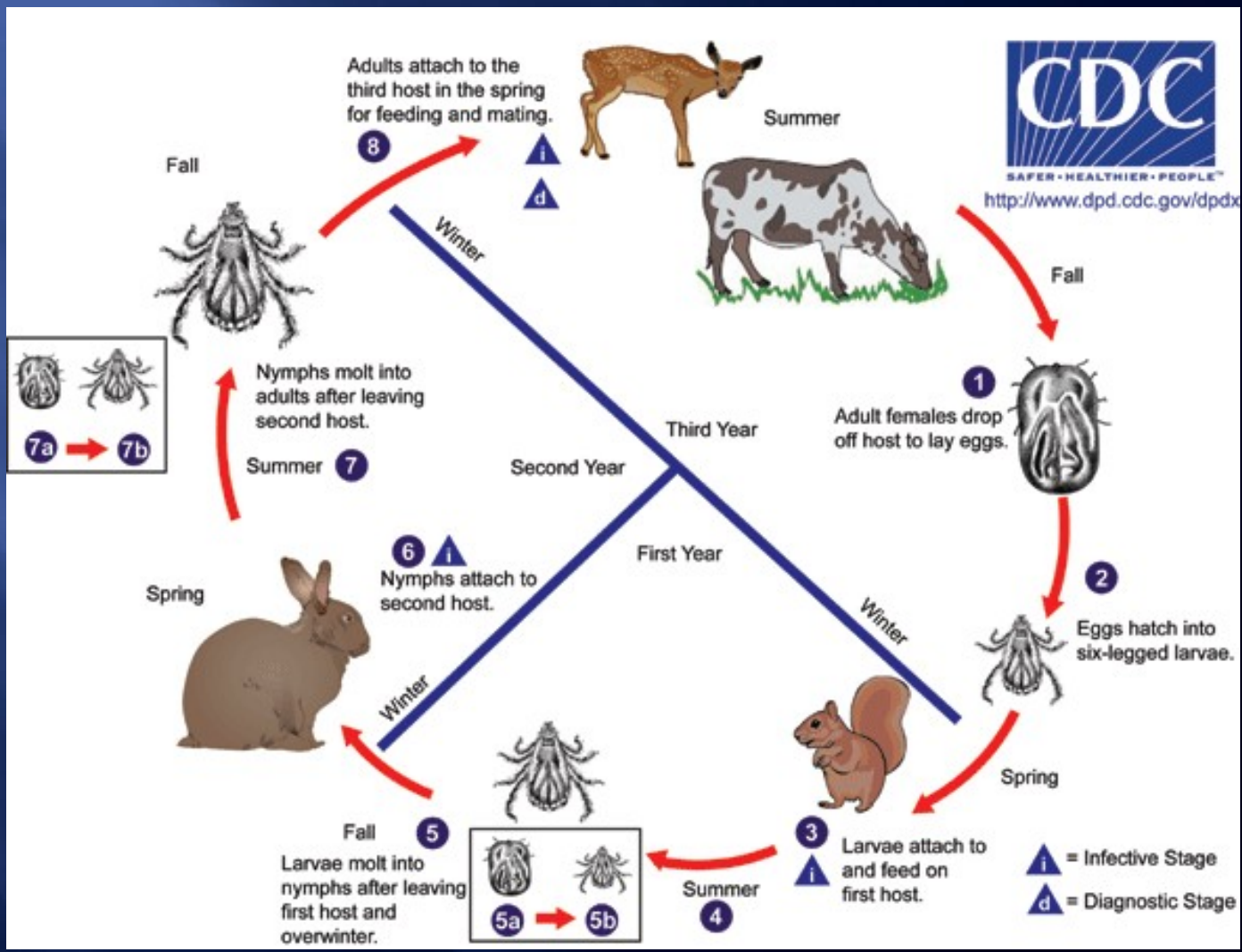


坛 Soft Ticks (Argasidae)

- Fowl tick, "Spinose" ear tick, Pajaroello tick,



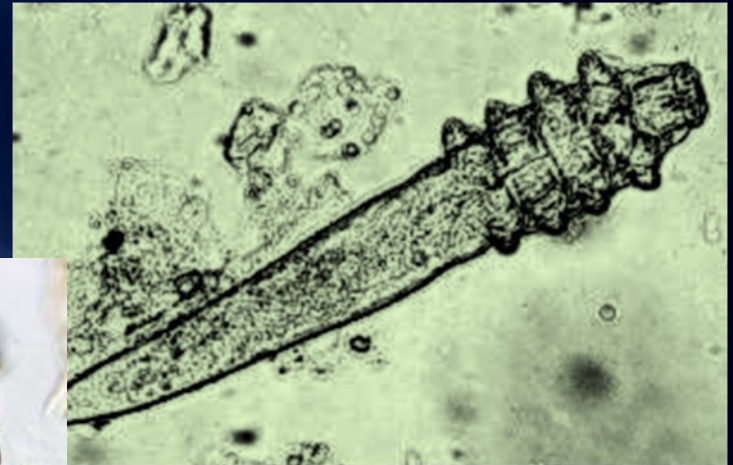
Tick Life Cycle



DISEASES TRANSMITTED BY TICKS

- 坛 Lyme Disease – Spirochete
- 坛 Rocky Mountain. Spotted Fever – Rickettsia
- 坛 Colorado Tick Fever – Virus
- 坛 Ehrlichiosis & Babesiosis – Protozoan
- 坛 Tularemia – Bacteria
- 坛 Q-Fever – Rickettsia
- 坛 Relapsing Fever – Spirochete
- 坛 Tick Paralysis - Toxin

Parasitic Mites



Mites

坛 Poultry Mites

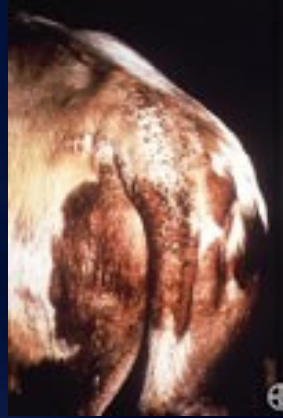
- Northern Fowl Mite
- Chicken Mite (Red Mite)
- Scaly Leg Mite
- Turkey Chiggers



Livestock Mites

坛 Psoroptes, Sarcoptes, Demodex

- Psoroptic Scab Mites - Psoroptes
- Sarcoptic Itch Mite - Sarcoptes
- Demodectic or Follicular Mange Mite - Demodex



Ear Mites

Common in
Rabbits and Cats

Topical
Treatments



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Bed Bugs ?

New, Returning or Invasive Pests



Invasive Species Inspection and Quarantine



QUESTIONS?

Are You Itching & Scratching Yet ?

