

Category B Study Guide (* Many Category A topics are covered on the Category B Exam)

Know major California mosquito species and their common name, preferred larval habitats, biting behavior, medical importance and flight range on page 40 in *The Biology and Control of Mosquitoes in California*

Examples:

Anopheles freeborni – rice fields

Ochlerotatus taeniorhynchus – black salt marshes

Psorophora columbiae – irrigated crops, date groves, pastures

Culex tarsalis – man made sources, etc.

Culiseta incidens – shaded, clear, natural or man made sources

Culex quinquefasciatus – polluted waters, residential and commercial sources

Aedes sierrensis – treeholes, tires

Ochlerotatus tahoensis – snow melt

Aedes vexans – Irrigated pastures, woodland pools

Culex stigmatosoma – polluted water, dairy ponds, etc

Culex pipiens – polluted water, residential and commercial sources

Culex erythrorhax – ponds, lakes, marshes with tules and cattails

* study hint page 19: example – *Anopheles occidentalis* – info not listed in the manual, so may think to immediately cross it off the possible list of choices

* study hint: an easy way to remember the names of the mosquitoes is to anthropomorphize them. Treat them as if they were human names, e.g., first name is *Culex* (Jonathan), last name is *tarsalis* (Kwan)

Know major characteristics of mosquito genera Summary on page 37 in *The Biology and Control of Mosquitoes in California*

Culex, *Culiseta*, *Aedes*, *Ochlerotatus*, *Anopheles*, *Psorophora*

Examples: length of palpi, feed in the typical head down and rear legs stance, lay egg rafts as opposed to single eggs, lays eggs on water as opposed to mud or dry (soon to be flooded) surfaces, “nuisance” mosquitoes vs disease carrying mosquitoes, when they are more likely to bite, distinct larval and adult characteristics (siphon, hairs, color, etc)

Types of control methods and when and where to use them

Adulticiding vs Larviciding

Chemical (page 87)– used for quick immediate kills

Petroleum oils, Pyrethrins, Pyrethroids, Malathion, Methoprene (BTI), etc

Biological (page 68) – sustainable control and environmentally compatible

Mosquito fish, aquatic predators, BTI, bat boxes?

Physical (page 77) – sustainable control

Agricultural/Irrigated areas (e.g. open circulation), source reduction (e.g., vegetation removal, BMP designs, shore lines deeper than 4 ft, etc.), grading and drainage of land, water-tight levees,

Integrated Pest Management

Resistance issues

Advantages and Disadvantages to using particular control methods

Target animals

Expensive

Persistence in environment

Mosquito-borne diseases and the primary mosquito vectors and principal reservoirs (page 44)

Western Equine Encephalitis

Eastern Equine Encephalitis

California Encephalitis

Dog Heartworm
St. Louis Encephalitis
West Nile Virus
Malaria
Jamestown Canyon Virus

Surveillance methods

Adult mosquito Trap types (page 109)

- CDC Type CO₂ Baited Trap – attracts host seeking females
- Standing Red Box – the red color attracts both male and female mosquitoes seeking shelter during the day
- New Jersey Light Trap – tracks seasonal abundance and monitors control activities
- Gravid Trap – attracts gravid female house mosquitoes (*Cx. quinquefasciatus* and *Cx. pipiens*)

Pros and Cons to different methods

- Chicken flocks
- Avian – both live and dead
- Horses

Mapping techniques

- Standard township sizes
- Area and Zone maps
- Street map vs Topo map vs agricultural maps (what information is provided)

Mosquito Control Operator and Program Responsibilities

Meeting with the public (knowing the latest laws and regs, safety information, etc)

Being an “unsung hero”

Mosquito abatement orders

Mosquito Prevention methods

Repellent

Long sleeves and pants

Drain

Conversions (page 148)

1 acre = 43,560 ft²

1 gallon = 128 fl oz = 8 pints = 4 quarts

1 fl oz = 2 tablespoons = 6 teaspoons

1 mile = 5,280 ft

1 lb = 16 oz

1 inch = 2.54 cm