

Biosecurity on Pasture Poultry Farms

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About Me

Experience

- B.S. in Animal Science, UC Davis
- Worked at UC Davis Avian Facilities
- Worked with quail, cockatiels, Orange Winged Amazons and chickens
- Mostly worked with chickens

Goals

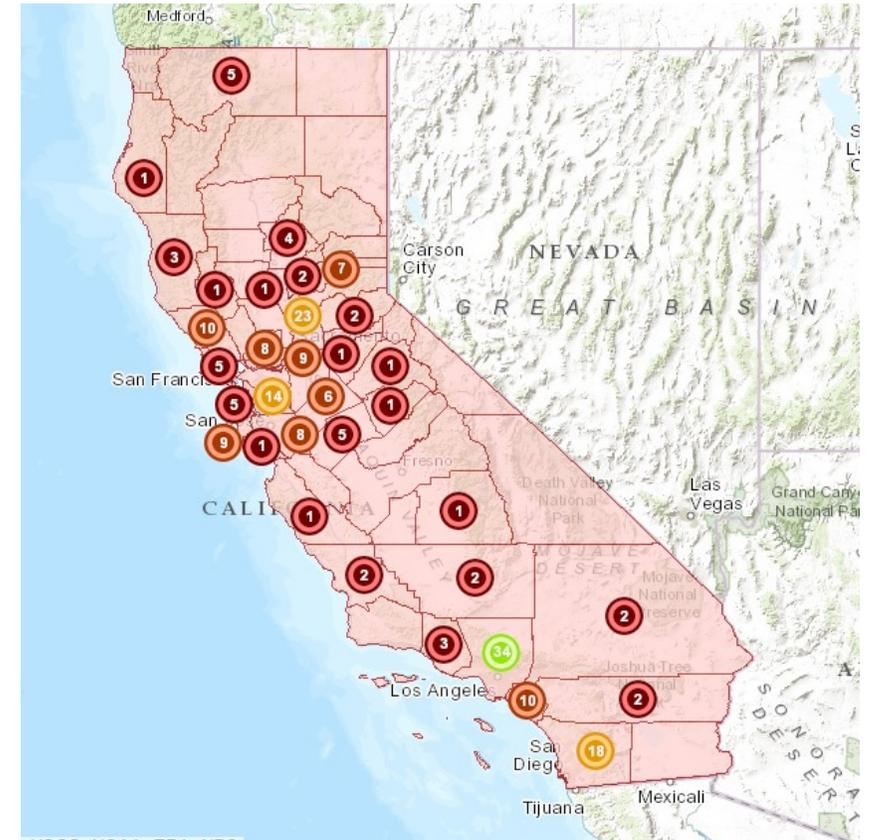
- PhD. In Epidemiology
- strong interest in food safety
- Develop extension skills



CA BYP Census

- Survey is designed to help us understand the poultry community
- All backyard poultry owners encouraged to participate in this short survey (~3)
- Good tool to keep in mind to understand your surroundings and the potential risks tied to them
- Keep in mind it's fairly new, activated in September

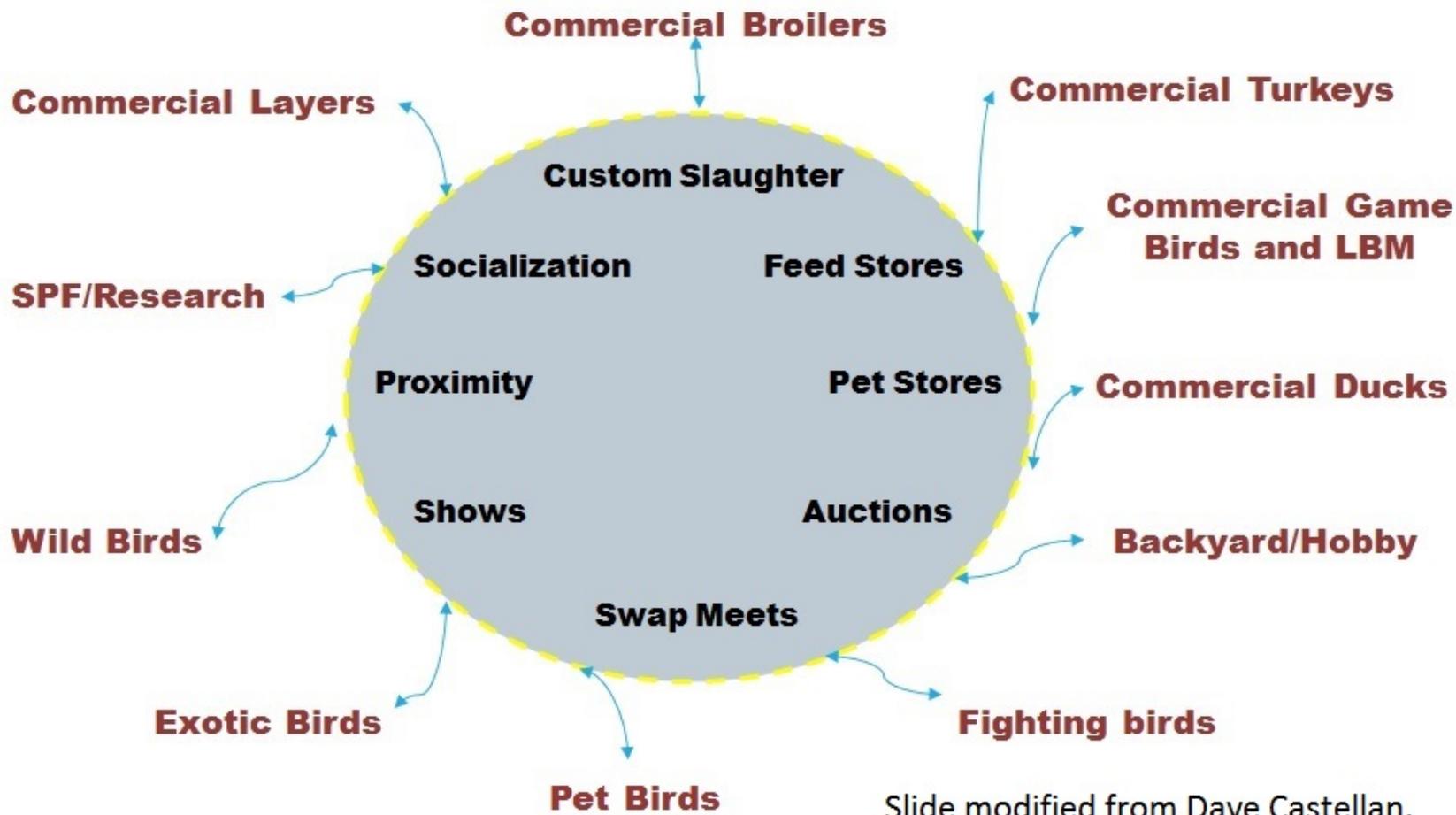
http://ucanr.edu/sites/poultry/California_Poultry_Census/



Poultry Ponderings Newsletter

- To keep up-to-date on poultry related work at the University of California, please email Dr. Maurice Pitesky at mepitesky@ucdavis.edu to subscribe
- Visit our website to access past newsletters at <http://ucanr.edu/sites/poultry/PP/>





Slide modified from Dave Castellano.

Biosecurity:

A set of management practices designed to help reduce the introduction and spread of disease-causing organisms onto and between farms.



Wildlife Control

Shade/Shelter Structure

- Birds can go underneath and escape predators
- Makes it harder for the predators and discourages them from trying again
- Anything that can make the farm less attractive overall will help keep carriers of disease away



Wildlife on Our Pasture

- Geese on our pasture are very concerning because of the potential of disease transmission
- Even after they leave, the fomites they leave behind are still capable of spreading disease (ie. feathers, droppings)
- Examples include Avian Influenza and Salmonella
- Can persist up to months in the environment depending on the environmental conditions



What footprint is this???

- In any case, not a good sign
- Close to our eggmobile and pasture
- Can carry disease
- Important to remember zoonotic diseases
- Want to protect our birds and ourselves
- Can act as a predator as well
- Good habit to walk around farm and learn about the wildlife in your area



Predator Repellent Tape

- Relatively inexpensive from \$7 (150ft) to \$27 (100ft)
- Easy to use/install
- attach to 6-8in. string and hang around farm
- Hang strategically in trees, at eye level for ground predators and around enclosures
- Can potentially scare your birds so they should be placed farther away from flock
- Humane; flashes in all directions in the sun and makes a noise as it flaps in the wind
- Need to move it to different locations regularly so wildlife won't get acclimated
- Currently testing on our farm



Terror Eyes Balloon

- \$9-\$25
- Covers about 1,000 sq. ft.
- Easy to use/install
- Hang strategically in trees, at eye level for ground predators and around enclosures
- Humane; eyes are holographic
- Need to move it around as often as you can to prevent birds from acclimating



Coyote/Fox Decoy

- \$30-\$67
- Also, easy to use/install
- Humane
- Must moved around to be effective (consider changing position daily); birds can start to catch on
- May be why some reviews are poor, not being used properly.
- Need about one decoy per $\frac{1}{4}$ acre
- Currently testing this on our farm



Propane Cannon

- \$300-\$600
- Propane tank ~\$20
- Produces loud bangs, frequency depends on the model
- Need to consider neighbors before buying, noise could be too loud
- Most effective when wildlife such as geese, deer and coyotes have other places to go
- One person should be responsible for maintaining it and should follow strict biosecurity protocol
- Wear PPE and boots specifically for that task



Electronic Bird Repellents

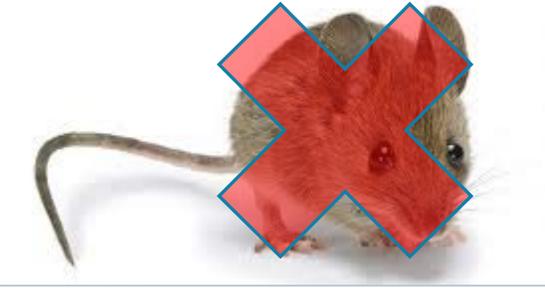
- \$55-\$3,500
- Uses combinations of sounds to repel them
- Distress and alarm calls made by common problem birds
- Natural predator sounds
- Noises that are irritating to birds
- Some models let you customize the sounds for your specific problem birds, more expensive though



Bird-X Lasers

- ~\$1,200-\$1,400
- Covers up to ~10,000 sq. ft.
- Multi-colored and changes patterns to prevent the birds from acclimating
- Need to make sure it is allowed on property; Federal Aviation Administration regulations may not allow if too close to airport
- Our farm is close to an airport so we decided against it
- But it is a humane and easy to install tool





Structural Features that Deter Wildlife from Entering our Eggmobile

Wire Mesh

- Recommended because it is thick and wildlife (ie. mice, rats, skunks, opossums) cannot break through
- Size of squares should be no bigger than $\frac{3}{4}$ in. sq.
- The thicker and closer together the squares are, the better
- Our eggmobile has thick wire mesh that overlaps well with the frame
- Hard to get in through the layers



Eggmobile Floor

- Solid bottom floor helps keep wildlife out
- Want to make it hard for them to get in so they get discouraged
- Once they get in, they will keep trying to come back



Important Differences

MICE

- Mainly vegetarian
- Shy; tend to avoid contact with humans
- Not adequate swimmers
- Can drink water less frequently
- Nest site ~10ft. to 30ft. from food source
- Conservative behavior; tend to follow the same tendencies (ie. same feeding routes)



RATS

- Eat a wider range of foods, such as eggs, birds, small animals
- Curious, less shy
- Good swimmers; willing to swim in order to reach food or harborage
- Require water daily
- Nest site ~50ft. to 100ft. from food source
- Will change behavior if find better food or shelter



Traps

- Place every 25ft. along the high-traffic spots and along potential runways (ie. walls, beams)
- Should also move some around since rats can change routes regularly
- Rats tend to avoid traps with another rat inside so need to clean them out after one capture
- Mouse traps can be checked every two-weeks; can capture multiple with one trap
- Check them regularly and keep good records of how many rodents have been captured to make sure they are working and to assess how severe the infestation is
- Rat infestation trickier to assess since they are harder to trap
- So need to actively look for signs of them (ie. feces, chewing marks, burrows, fur, tracks)



Restrict Access to Feed

- If they can't access feed, they will nest somewhere else
- Like to nest near food and shelter
- Make sure to clean up spilled feed as it can attract them and then they will keep coming back
- Mice in particular don't like to change diet and will keep coming back
- Rats more willing to look for other food sources



Buffer Zone around Pasture Fence

- Buffer zone between fencing and pasture can help make weak spots/signs of entries more visible
- Rodents dislike digging through gravel
- So under gaps/weak spots in our fence, we will add gravel to discourage them from digging
- Our buffer zone is 20ft. long



Electrical Fence

- Coyotes and foxes are around our area
- So installing an electrical fence is really important
- Will help deter other wildlife like raccoons, possums from entering as well
- Will have to make sure it has good charge and that it is working regularly
- Make sure grass is not close to the fence as it can affect the charge circulation
- Walk along the fence once a week



Lethal Control

- Rodenticides can be tricky to use
- Restrictions and limitations can apply (ie. Vitamin D3 can only be used for mouse control)
- Anticoagulants not associated with bait shyness
- Toxicants (ie. zinc phosphide) are associated with bait shyness
- Non-anticoagulants (ie. zinc phosphide, bromethalin and Vit. D3) recommended for big clean outs
- Motomco has really good resources on rodent control

MOTOMCO BIOSECURITY RODENT CONTROL SYSTEM

No biosecurity initiative is complete without the implementation of a comprehensive rodent control program.

Inspection
Rodent signs helps determine the size of the infestation and where the rodents are traveling and feeding

Sanitation & Harborage Reduction

Baiting Strategies

Rodent Identification

	Norway Rats	Roof Rats	House Mouse
Scientific Name:	Rattus Norvegicus	Rattus Rattus	Mus Musculus
Color:	Brownish Red	Dark Gray	Black, Dusty Gray
Weight:	10-17 oz.	8 oz.	3/4 oz.
Length (including tail):	12-18 inches	13-17 inches	6-7 inches
Body:	Thick body, blunt nose	Thin body, pointed nose	Small heads body
Sexual Maturity:	2-3 months	2-3 months	1 month
Gestation Period:	22 days	22 days	19 days
No. of Young:	6-12 per litter	6-8 per litter	5-6 per litter
No. of Litters:	Ave. 4-7 per year	Ave. 4-6 per year	Ave. 8 per year
Diet:	Meats, fish, grains, almost anything	Fruits, vegetables, seeds, grains	Grains, or nuts, meats, fish etc.
Daily Food:	1 oz. food	1 oz. food	1/20 oz. food
Water Consumption:	1 cc. water	1 cc. water	1/20 cc. water
Length of Adult Life:	18 months	18 months	15-18 months
Signs:	Blunt ends	Pointed ends	Pointed ends
Nests:	Burrows, 100-150 ft. from food & water	Trees/Roof/rafters, 100-150 ft. from food & water	Corrers, 10-30 ft. from food and water

Perimeter of the Property:

- Place tamper resistant bait stations along the perimeter of the property
- Use BAIT CHUNK® as it can be secured inside bait stations on vertical or horizontal securing rods

Exterior Baiting:

- Rodents tend to gravitate to warm air currents or where food odors emerge
- Tamper-resistant bait stations or traps should be placed every 30-50 ft depending on the severity of the infestation
- Place bait or traps around all entry door
- Burrow baiting – place loose pellets deep into the burrows

Interior Baiting:

- Rodent device placement depends on the type of infestation you are dealing with:
- MICE:** Space placements at 8-12 foot intervals depending on the severity of the infestation
- RATS:** Space placements at 15-30 foot intervals depending on the severity of the infestation

Sanitation & Harborage Reduction:

- Eliminate all spilled feed
- Remove debris from around building
- Keep a 3-foot sterile zone around building mowed or sprayed

Baiting Strategies:

HAWK 6 months
JAGUAR 4 months
RAMPAGE 2 months

Planning Ahead for Extreme Cases

- Coming up with a plan for the worst case scenario (ie. Coyote, fox problem) beforehand can go a long way
- Contact wildlife services or a wildlife specialist to come up with an appropriate protocol
- Knowing what to do in a timely manner can be difference between saving a few birds and saving most of your flock
- **Prevention and preparedness is key!**



Questions?

