BIOSECURITY /

CLEANING and DISINFECTING / VACCINATIONS

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California Poultry Federation Backyard Flock Workshop

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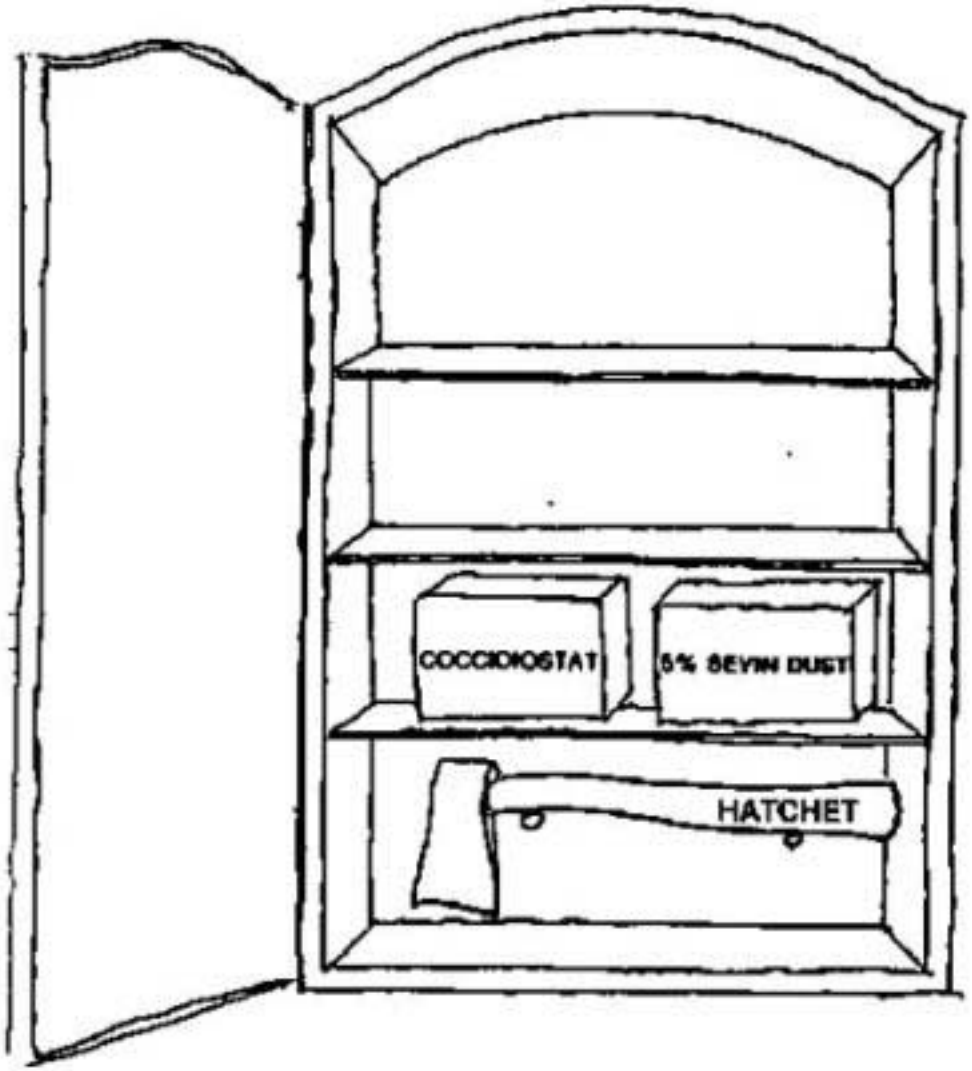
Today's Presentation

- REVIEW BASIC CONCEPTS
  - Bio-security, C & D and Vaccines & vaccinations
  - EACH IS A FORTY-FIVE MINUTE TALK
- PRACTICAL SUBJCT MATTER
- PROVIDE INFORMATION & RESOURCES

THOSE WHO IGNORE HISTORY ARE DOOMED TO REPEAT IT

BIOSECURITY

- Bottom Line
  - "Biosecurity means the safe guarding of the life and health of livestock, in our case poultry". (DR. YAN)
  - A type of flock insurance policy in the health and safety as well as reducing the opportunity for disease agent to be **introduced** into your flock or farm
  - COMMON SENSE!



The Author's Medicine Cabinet

Missing from the shelves are fresh air, sunlight, genes for resistance to disease, soil, humus, green grass, insects, worms, commercial feed and a small container of uncommon sense.

POULTRY HUSBANDRY
AUTHOR'S MEDICINE CABINET

- BEST MANAGEMENT PRACTICES (Poultry Science 101)
  - Flock isolation,
  - Fresh air, feed and water
  - Uncommon Sense
    - Reasonable and practical (common sense)
    - You have the right to farm, but not the right to
    - pxxss off your neighbors

- 70 - 80 % HEALTH PROBLEMS
  - RELATED TO MANAGEMENT!!!!!!

UNDERSTANDING BIO - SECURITY

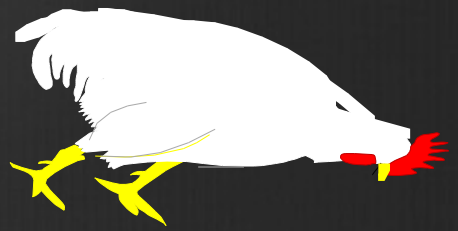
- ITS NOT IF …….
  - you break with a devastating poultry disease …

- LOTTERY TICKET…

UNDERSTANDING BIO - SECURITY

- ITS NOT IF …….
  - you break with a devastating poultry disease …

- IT'S WHEN ….
  - you break with a disease



UNDERSTANDING BIO - SECURITY

- ATTITUDE / FRAME OF MIND
  - Common sense
  - Negative comments does not get you anywhere
  - Everyone must by into it!

- DEVELOPING WORKING RELATIONSHIPS
  - Between backyard & commercial producers, poultry industry groups, poultry veterinarians, diagnostic labs, and government officials
    - TEAM EFFORT & COMMUNICATION

- ACCOUNTABILITY (producer, industry & gov)
  - Look for the solution (s) vs looking for excuses & blame

UNDERSTANDING BIO - SECURITY

- WRITTEN FARM PLAN (Commercial Poultry Farms)
  - Detailed protocols covering visitors, C & D of buildings & equipment, live haul, hatchery, chick/poult delivery, feed mill ect.
  - Documentation is important!
- It's everyone's responsibility
- BLACK VS WHITE VS GRAY
  - GOAL: To reduce the gray areas of the Bio - Security Plan.

WHAT IS THE GOAL OF BIOSECURITY?

Limit a disease outbreak to the smallest possible biosecurity unit / geographic area

- Think Globally, Act Locally
  - –Public health concerns
  - –World trade markets
    - »(politics)

BIO - SECURITY PRINICIPLES

- ISOLATION
- TRAFFIC CONTROL
- PURCHASE DISEASE FREE CHICKS
- SANITATION
- PEST CONTROL (Rodents/flies)

BIO - SECURITY PRINICIPLES

- EDUCATION
  - Producers and employees (Commercial Poultry Slide)
    - Must have a firm understanding
      - Biosecurity
        - Flock health & job security
      - Backyard poultry
        - Need to be educated as well (Biosecurity)
      - Outside poultry contact
        - What to do before going back to the farm!!!

BIO - SECURITY PRINICIPLES

- Poultry management (owners)
  - Is this a business or hobby?
  - Flock medicine or individual bird treatments
  - Submit the affected bird to CAHFS Lab or Cull
    - Lab submission is FREE !!!!!
    - Culling (What is in the best interest of the flock and individual bird
      - Economics (Business / commercial)
      - Animal Welfare
      - Flock health issues

BIO - SECURITY
Recommendations and Comments

- BIOSECURITY IS NOT JUST FOR AI / END
  - SALMONELLA: Food safety, S. enteritidis, S. typhimurium, Arizona
  - CHOLERA: Carriers, high to sporadic mortality, outside access
  - MITES / LICE: Pain to deal with
  - BLACK HEAD (HISTOMONIAISIS): No legal RX, high mortality
  - MYCOPLASMA;
    - Breeders (egg transmission),
    - Commercial birds
      - (mortality, plant condemnations)

BIOSECURITY
Principles

- Disease agents are generally introduced!
  - Marek's Disease (MD)
  - Fowl Cholera (outdoor access, rodents, mammals)
  - Mycoplasma (MG, MS, MM)
  - Newcastle Disease (PMV1, VVND)
  - Avian Influenza (Low & high path)
  - Salmonella
  - Avian Pox
  - Infectious Bronchitis (IBV)
  - Infectious Bursal Disease (IBDV / vvIBDV)

  - Mites / Lice / Worms (parasites)

BIOSECURITY
Principles

- VECTORS
  - FOMITES (inanimate objects)
    - Transportation crates, egg flats, pallets, hand tools
    - Vehicles
  - PEOPLE
    - Hair, skin, fingernails, shoes, clothing
  - ANIMALS
    - Rodents, free flying birds, cats, dogs, poultry, water fowl
  - INSECTS
    - Darkling beetles, flies, mosquitoes

BIOSECURITY
Principles

- CONTAMINATED FEED
  - Mycotoxins, Salmonella
- CONTAMINATED / DIRTY WATER
  - Bordetella
  - E. coli
- EGG TRANSMISSION
  - Mycoplasma, Leukosis Complex,
  - Salmonella,
  - Various bacteria (E. coli etc)

BIOSECURITY
Principles

- Disease agents may be introduced by vectors as well as being part of the poultry environment!
  - Aspergillosis
    - Brooder pneumonia
  - Colibacillosis (E. coli)
    - Dust, ammonia (poor air quality), dirty drinking water
  - Enteric viruses and other bacteria (Clostridium)
    - Not picking up mortality on a daily basis
  - Parasites (Cocci, roundworms, mites, lice)

BIOSECURITY
Principles

- Environment and or management factors may also play a part in inducing or complicating a disease challenge!
  - Ammonia
  - Weather
    - Temperature differentials (spring / fall)
  - Air quality (dust, dander)
  - Live vaccines
    - Cholera, Newcastle, Bronchitis, Infectious Laryngotracheitis (ILT)
  - Drinking water
    - Bordetella, E. coli

BIOSECURITY

- Different levels (economic risk)
  - Primary Breeders
    - Fences
    - Shower in / shower out
  - Multipliers
  - Commercial
  - Backyard

BIOSECURITY
Principles

- ISOLATION
  - Location
    - How close are you to another poultry farm or BY flock
  - Keep to your self!
    - Do not share equipment / feed with other poultry owners
    - Avoid contact with other poultry and pet birds (disease but show now clinical signs)
  - Poultry shows, farmer markets, visitors
    - Isolate new birds for 21 plus days from your main flock
  - All - in / All - out flock placements
    - Ideal, sometimes not practical
    - Multiple poultry species on site

BIOSECURITY
Principles

- Traffic control
  - Controlling movement of people & equipment
    - Written plan (may not be practical for BY)
      - Should not visit other poultry facilities or BY flocks
        - Take precautions if you do!
    - Restrict access
      - Post a "DO NOT ENTER" sign
        - At all entry points to the farm
      - Keep a record (log) of visitors to your facility
      - Fence / gates / traffic patterns/ vehicle wash station (Disease issues)
      - Visitors park off-site

BIOSECURITY
Principles

- TRAFFIC CONTROL
  - Includes onto the farm and within the farm
  - Keep farm to farm contact to a minimum

  - Visitors follow proper protocol
    - Wear protective personal clothing and footwear
    - Hand sanitation (alcohol gel)

  - Mortality disposal
  - Transportation of market birds
  - Delivery of chicks, feed and propane

BIOSECURITY
Principles

- PURCHASE DISEASE FREE CHICKS
  - NPIP participating hatchery / pullets /
    - NPIP form 9-3, or letter stating that provider certifies disease free or monitored status of chicks or pullets.
    - Chicks / Poults arrive in clean vehicles & boxes
    - Monitor chick / poult pads (Public egg production) for Salmonella (SE)
      - File laboratory reports by flock number
  - Keep a "closed flock"
  - Outside birds
    - Flock history , examine the birds, isolate from your main flock
    - Vaccination History (ILT / Bronchitis / Newcastle)

BIOSECURITY
Principles

- SANITATION
  - Monitor vehicles that enter your facility
    - Disinfect vehicles prior to entry??
  - Bathrooms
    - Clean and well supplied
    - Wash hands after using the facility
  - Cleaning & Disinfecting barns
    - Remove all organic material from barn
    - 90 % of work is “elbow grease”
    - More to come…….

BIOSECURITY
Principles

- Proper protective or work clothing
  - Designated for a particular farm / facility

- Have a visitor kit
  - 3x disposable coveralls
  - 6 ml plastic boots
  - Hair nets
  - Hand sanitation

BIOSECURITY
Principles

- Water Quality
  - Test at least once a year
  - Potability, total bacteria, coliforms, nitrate levels

- Develop a water sanitation program
  - Drinking water and water lines

BIOSECURITY
Principles

- Single age vs multiple ages
  - All in all out
- Other types of fowl present
- Prevent standing water, avoid having ponds or lakes
  - Waterfowl (AI)
  - Mosquitoes (Pox)

BIOSECURITY Principles

- Poultry structures should have doors and screened openings properly maintained and free of holes that may allow the intrusion of wild birds.
- Protect the flock from weather
- Protective Fence
- Store feed in sealed containers
- Keep sack feed off the ground








BIOSECURITY Principles

- THE CHICKEN COOP
  - Protection
    - Drafts,
      - South facing
    - Outside run, fence, cover?
      - 5 – 6’ high, buried 12” deep
      - Electric barrier?

BIOSECURITY
Principles (QA PLAN)

- Pest control
  - Rodents
  - Wild Birds
  - Flies, Darkling Beetles
  - Small mammals


AMPAC

BIOSECURITY
Principles (QA PLAN)

- Insect Control (written protocol)
  - Prevent fly breeding environments
    - Avoid weeds, trash, spilled feed around tanks
    - Standing water
    - Wet litter conditions
      - Drinker & Fogger management

BIOSECURITY
Principles

- Fly Jars (visual), strips, insecticides (alternate)
- Start early (prior to warm weather)
- Flies in vehicles
- MANAGEMENT!!!

Avoid weeds, trash, spilled feed around tanks, standing water, manure management.

MANAGEMENT!!!

Spilled feed provides an environment for wild birds, rodents, and fly propagation.

BIOSECURITY
Principles

- Follow Best Management Practices
  - Appropriate density, light, feed & water space
  - Cull sick or injured birds or treat the flock
    - Do not treat individual birds
  - Monitor
    - Flock twice daily
    - Remove mortality daily & dispose properly
    - Air quality, humidity & temperature
    - Serology (NDV, IBV & MG)
    - Environment (egg sales to the public)
      - Chick papers & push-out / retire (<3,000 birds)

BIOSECURITY
Principles

- Follow Best Management Practices
  - Feed
    - Keep properly stored & dry
  - Medicated feed
    - Document when feed medications is used
    - Use proper medication levels for appropriate time
    - Adhere to appropriate feed withdrawal schedule
    - Avoid cross contamination of bins or feed
      - Two feed bins best

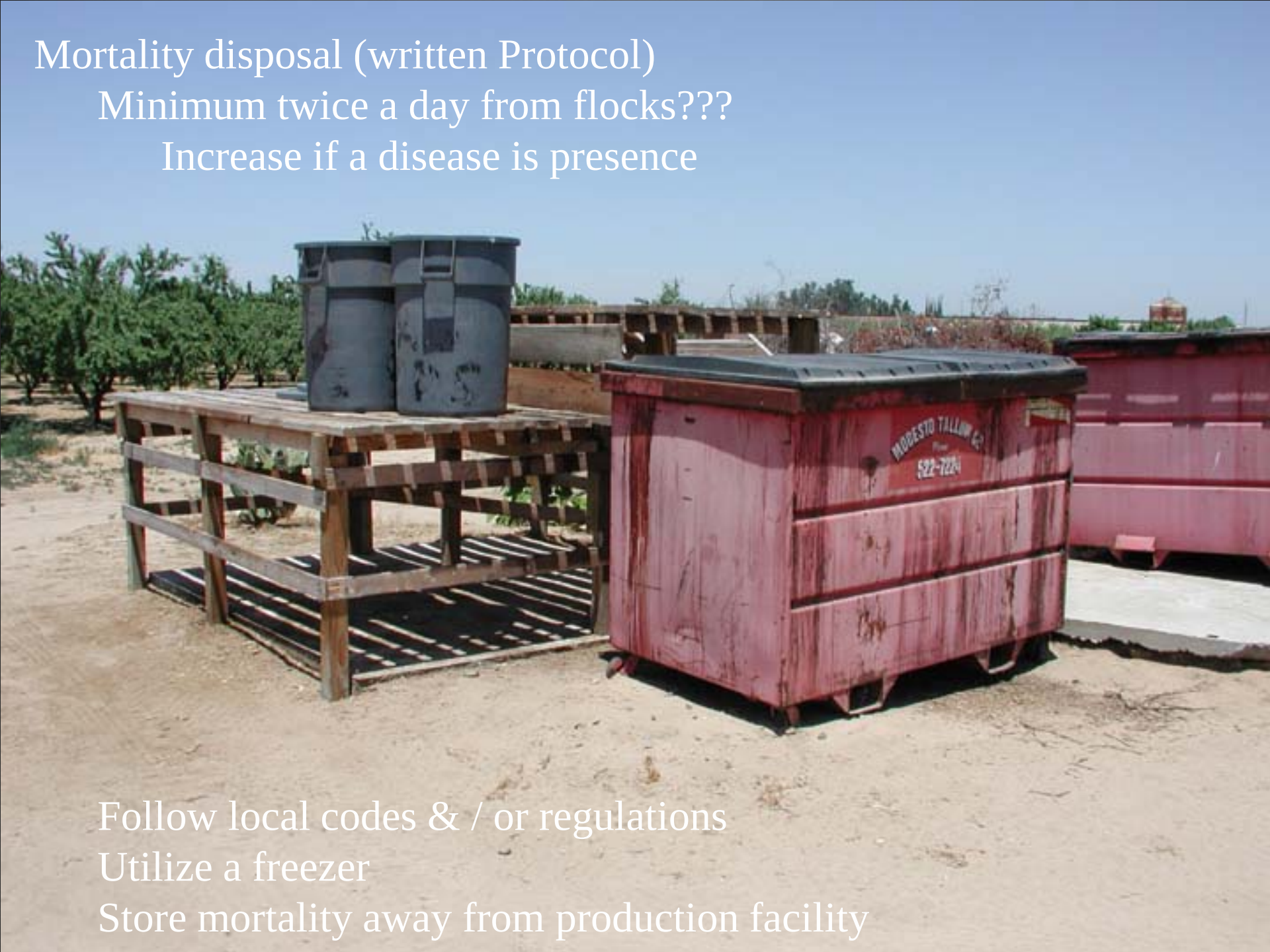
BIOSECURITY
Principles

- Follow Best Management Practices
  - Records
    - Mortality card
    - Medication
    - Vaccination (Type, exp. date, lot #, time of admin)
      - Written protocol
    - Pesticide application
      - Premise Use Log
      - MSDS / Product Label (Training)
    - Laboratory / veterinary

Mortality disposal (written Protocol)

Minimum twice a day from flocks???

Increase if a disease is presence



Follow local codes & / or regulations

Utilize a freezer

Store mortality away from production facility

Manure: C & D equipment handling manure

Avoid multiple pickups from different farms

Store so as to avoid recontamination of building

Tarp all vehicles transporting manure

Do not store or spread manure close to other poultry facilities

BIOSECURITY

- IT'S EVERYBODY'S RESPONSIBILITY!!

CLEANING & DISINFECTING

- Cleaning & Disinfection (C&D)between flocks
  - Written Plan
  - C & D is 90 % Physical (Elbow grease)
    - Must remove organic material
  - Requires attention to detail
  - Inspect & Document
    - Document
      - Disinfectant used, date, signature
      - Product label & MSDS
      - Monitor environment post C&D

CLEANING & DISINFECTING
The Basics

- Intensify rodent control & Remove all birds (live & dead)
- Remove all organic material
  - Feed, manure, dust
  - Sweep out structure
- Remove manure from farm
  - Compost or tarp
- Wash down with detergent (barn cleaner)
  - Remove excess water
  - Let barn dry out

CLEANING & DISINFECTING
The Basics

- Clean & sweep area where manure was handled
- Use an approved disinfectant per label instructions
  - Disinfect the ceiling, side-walls, floor and equipment (feeders ect)
  - Let building dry
- Clean & disinfect all equipment involved with clean out
- Rinse feeders and drinkers with potable water
- Down time is essential

	Chlorine	Iodine	Phenols	Quats	Chlor hexidine	Peroxy gens
Toxicity	Fumes are toxic	NO	NO	NO	NO	NO
Corrosive	YES	NO	NO	NO	NO	VERY
Spectrum	Bacteria viruses	Bacteria fungi	Bacteria fungi viruses	Bacteria fungi viruses	Fungi	Bacteria fungi viruses
Organic material	NO	NO	YES	SOME	--------	YES
Residual activity	NO	NO	YES	YES	---------	YES

BIOSECURITY
Principles (QA PLAN)

- Cleaning & disinfecting transportation vehicles and equipment
  - Inspect & Document
    - Record
      - Disinfectant used, date, signature
      - Product label & MSDS

VACCINES: My opinion

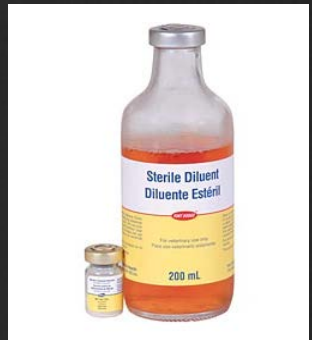
- Pupose of vaccinations
  - Immunize the flock
    - Anybody can vaccinate a flock, but can you immunize the flock
  - Prevent or reduce clinical signs of the disease
  - Does not prevent infection

VACCINES: My opinion

- Basic vaccination program
  - Based on flock / farm history
  - Based on disease surveillance in the surrounding area
    - Exotic Newcastle Disease (END)
    - Infectious Laryngotracheaitis (ILT)
    - Avian Pox

VACCINES: My opinion

- Program A: Marek's Disease
  - Caused by Herpes virus, chickens only
  - Neoplastic disease (young chickens)
  - Day of age or at the hatchery
- Vaccinate (BY) with MD-Vac CFL (Zoetis)
  - 0.2mL subQ in back of neck in 1 day old chicks
  - Only vaccine that doesn't require a liquid nitrogen tank for storage
  - Cannot save once it has been rehydrated, so need a new bottle for every hatch
  - Costs about $ 20.00 / bottle (1,000 doses)



VACCINES: My opinion

- Program B: Marek's Disease & Infectious Bursal Disease (IBDV)
  - Request MD plus IBDV vectored vaccine
  - Administered at day of age at the hatchery
  - Due to vvIBDV in the greater Petaluma area

VACCINES: My opinion

- That's all I would recommend
  - Why?

  - Most live vaccines made for poultry come in doses of 1,000 -10,000
    - Difficult to administer to small numbers under 100 birds.
    - Must be administered within 2 hours after opening

  - Most backyard flocks have multiple ages on site
    - Live vaccines (NDV / IBV) will spread among the different ages
    - Actually cause a mild disease in the flock
    - Results in "rolling reactiosn"

VACCINES: My opinion

- The Exceptions:
  - Avian Pox
    - Farm history, administered between 10 – 14 weeks of age
    - On-site infection (treatment)
    - Administered by Wing-web

VACCINES: My opinion

- The Exceptions:
  - Infectious Laryngotracheitis (ILT)
    - Farm history,
    - On-site infection (treatment)
    - Administered by Eye-drop (Tissue Culture Origin / TCO)
      - Doesn't spread bird to bird
      - Doesn't heat "heat-up"

VACCINES: My opinion

- The Exceptions:
  - Based on disease surveillance in the surrounding area
    - Exoctic Newcastle Disease (END
      - USDA does not pay for dead birds!
    - Newcastle Disease vaccine (Lasota strain)
      - Administered by Eye-drop
        - This will spread bird to bird
        - Doesn't heat "heat-up"

VACCINES: My opinion

- The Exceptions: Business or selling meat or eggs to the public
- Basic program
  - MD & IBDV at the hatchery
    - If no IBDV at hatchery,
      - IBDV at 2 and 4 wks of age (water administration)
  - Salmonella (Live ST) at day of age, 3 -5 wks and 10 – 14 wks (killed)
  - Newcastle / Bronchitis at 10 – 14 wks
    - (killed injectable / IM breast muscle)
    - Can be combined with Salmonella (SE) killed