

Nancy Reimers, DVM, MSpVM

Diplomate – American College of Poultry Veterinarians

Cutler Associates International

# Cleaning and Disinfecting Principles for Poultry

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## Tan Truck

Dry and  
"Dirty"

Wet

Disinfected

Contact  
Time

Rinsed



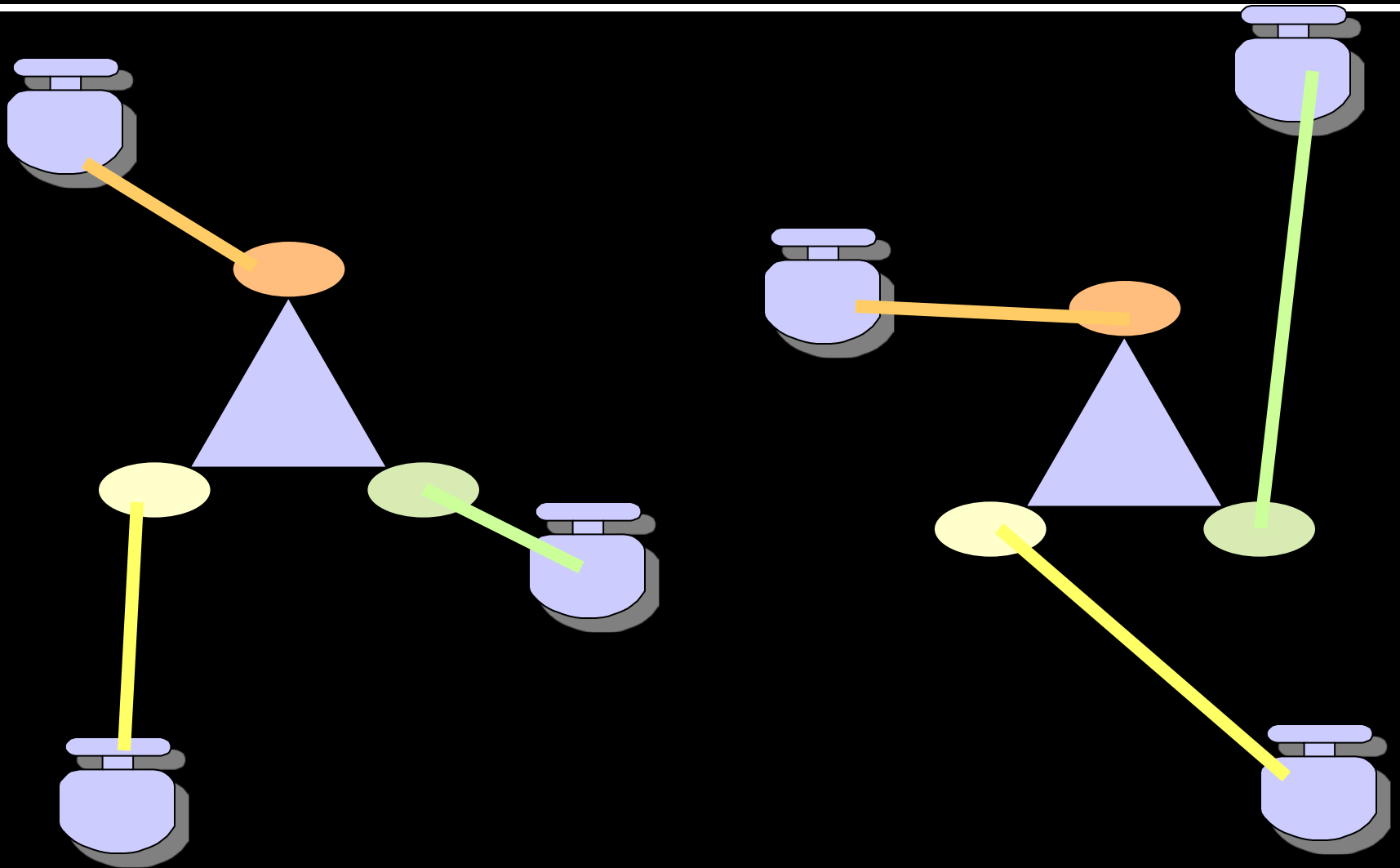
## Red Truck

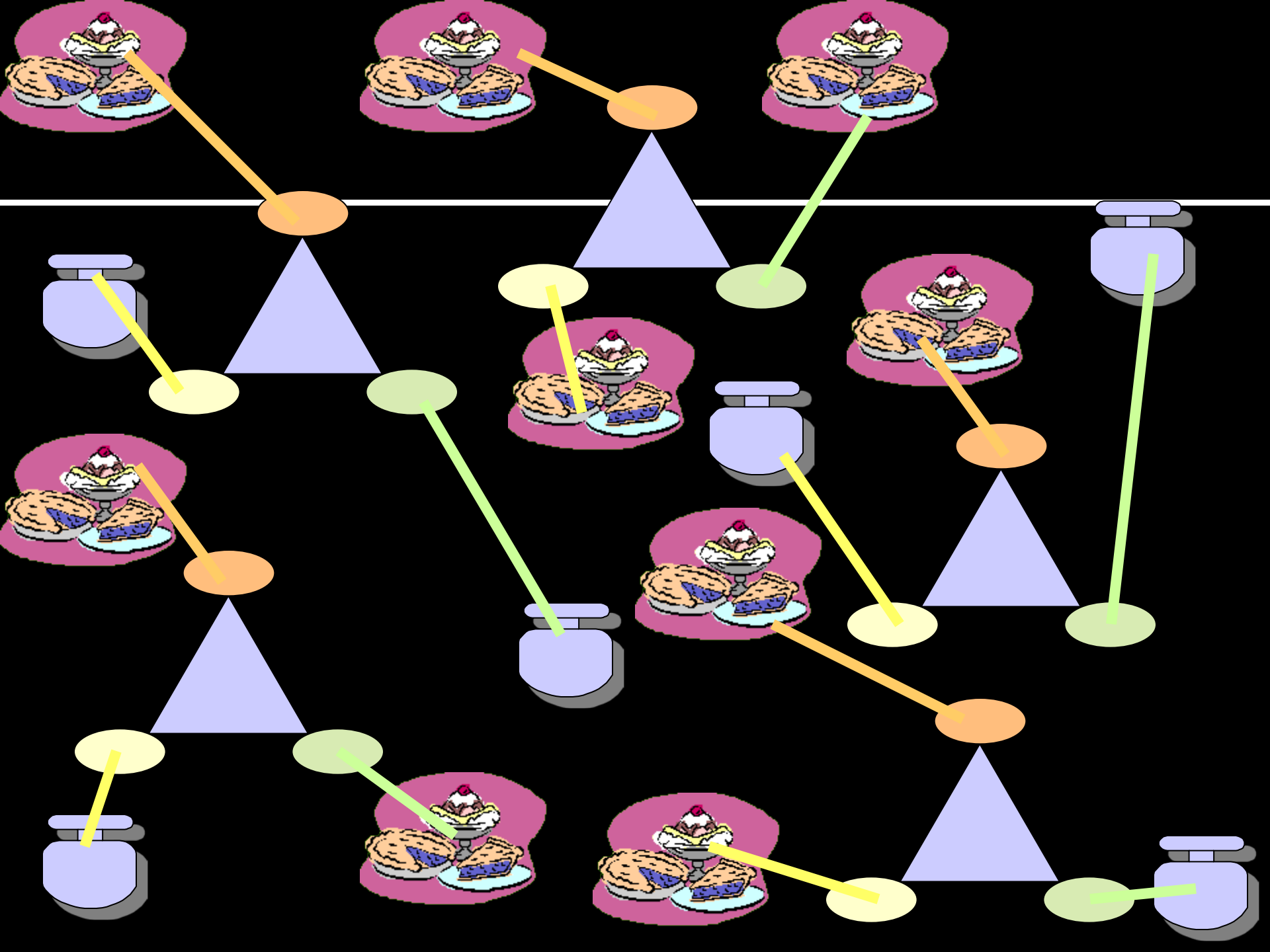
# What are Disinfectants?

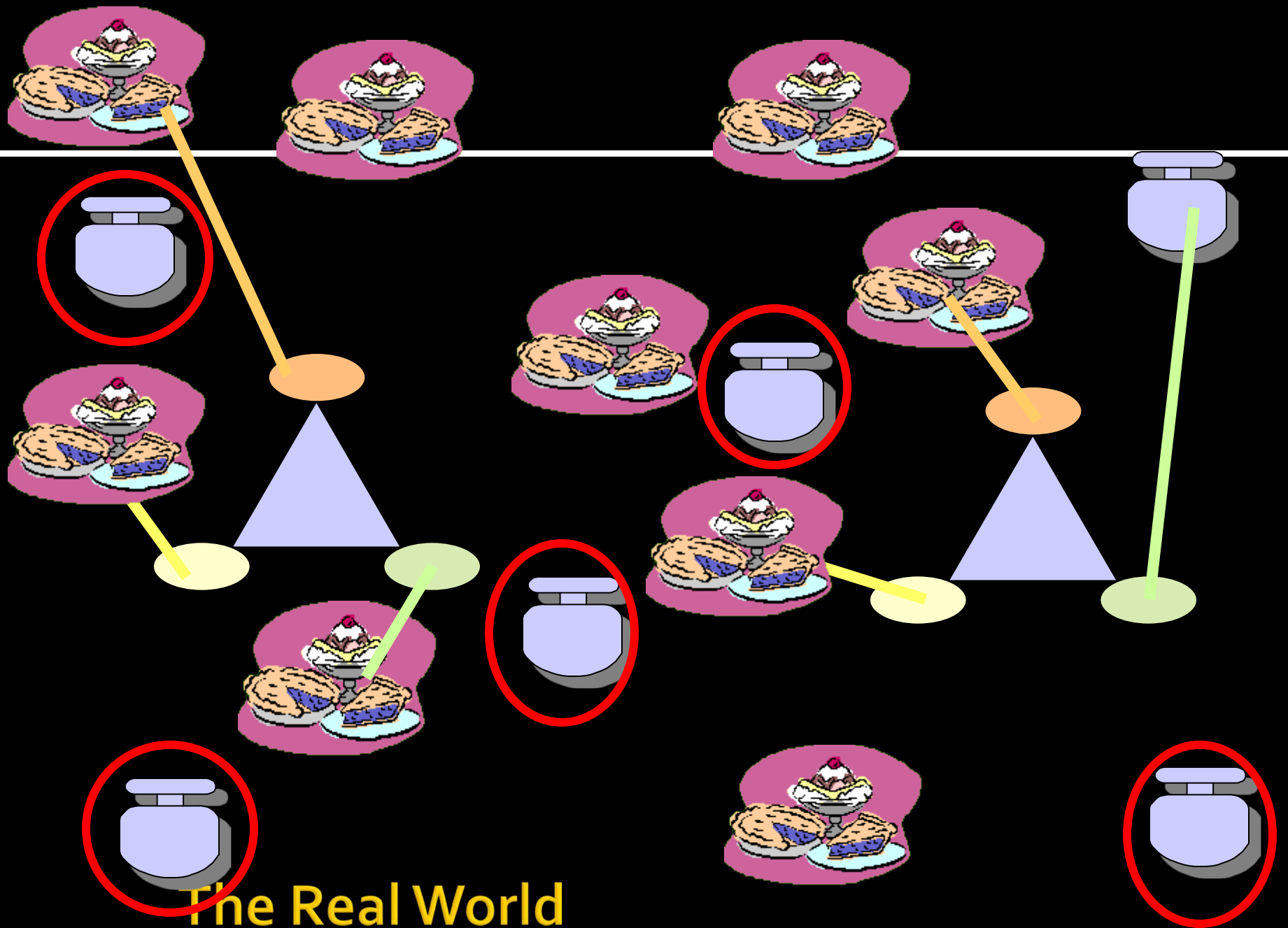
- A disinfectant is substance that can remove the infectivity of a disease causing organism.
- A sanitizer is a cleaning reagent that may or may not also act as a disinfectant.

**How do disinfectants work?**

# A label test







**What disinfectant would be effective here?**

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**Cleaning is too hard!**  
**Disinfectants are worthless!!**

Up to 95% of disinfection  
(pathogen reduction) is  
cleaning!!!!!!

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# What things do we worry about infecting our birds?

- Viruses (MDV, NDV, IBV, IBDV, AI...)
- Bacteria (MG, MS, E Coli, Salmonella, Campylobacter...)
- Fungi (Aspergillus, Yeasts...)
- Protozoa? (Cocci, Histomonads...)
- Worms? (Roundworms? Tapeworms?...)
- Insects? (Mites, Lice)

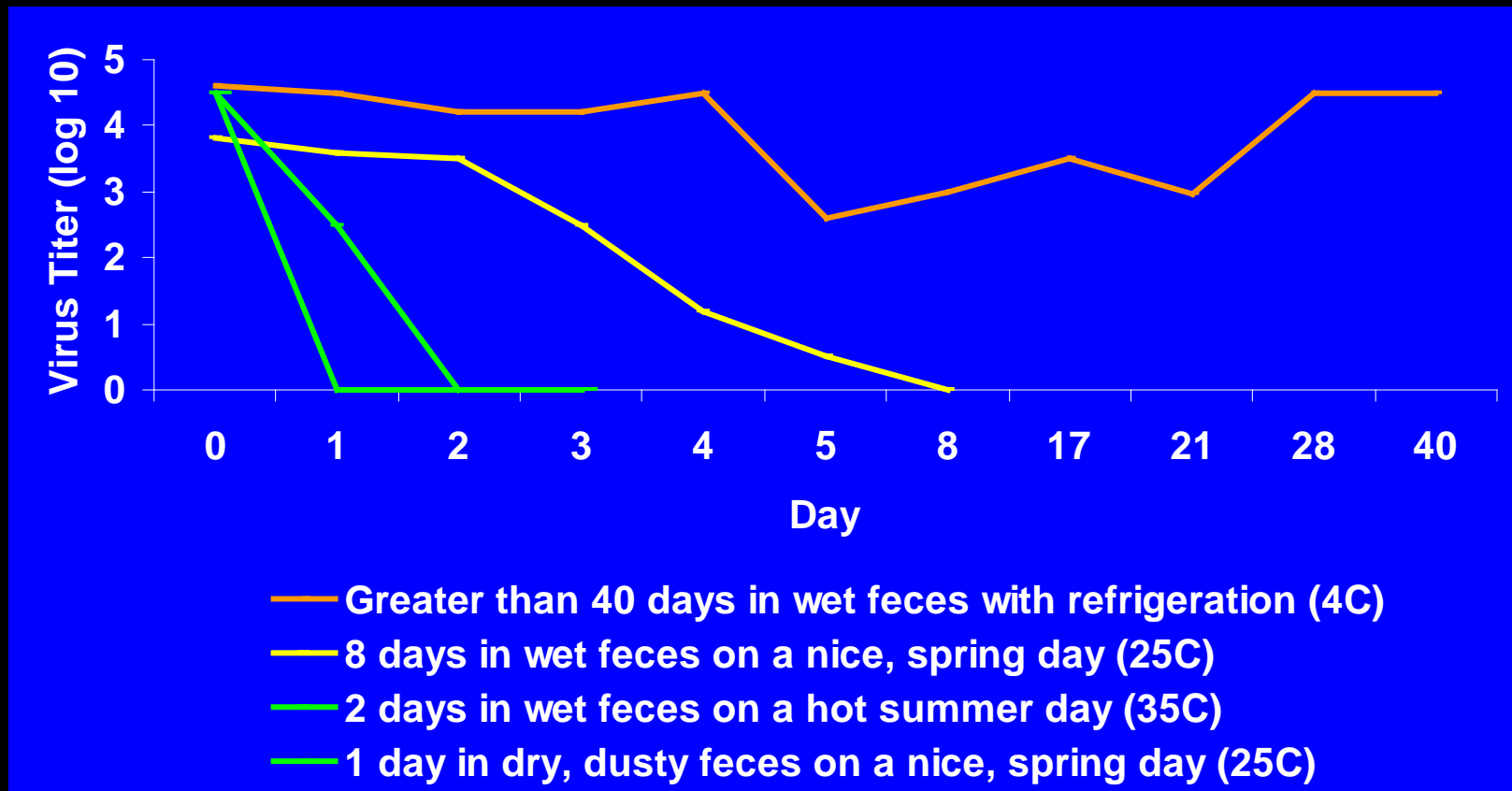
# How do we remove infectivity?

- “Kill” organisms
  - Inactivation
- Reduce Dose
- Prevent the progression to the infective stage.

# Viruses

- Inactivated
- Reproduce inside the host
  - Only can stay the same or reduce in the environment
- Most susceptible to drying
  - Scabs
  - Dander
  - Dirt

# AI can survive in feces on the farm, on shoes, and on truck tires. (Hong Kong H5N1)



**Without proper cleaning and disinfection, AI can travel between farms on egg racks and flats.  
(California H6N2)**

	Now	4 days
Dirty egg flat on a hot summer day (90F/32C)	+	+
Dirty egg flat in a very hot washer (120F/48.8C)	+	+
<b>Dirty egg flat on a hot summer day plus bleach (90F/32C)</b>	-	-
Clean egg flat on a hot summer day (90F/32C)	+	+
Clean egg flat in a very hot washer (120F/48.8C)	+	+
<b>Clean egg flat on a hot summer day plus bleach (90F/32C)</b>	-	-

# Fungi

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- Living
- Most can reproduce outside of the host
- Most susceptible to drying
  - Alternating moisture can be bad

# Protozoa

- Living
- Reproduce inside the host
- May have more than one host
- May develop in the environment
  - Developmental and reproductive stages may be very environmentally stable
- Variable response to temperature and drying.

# Worms

- Living
- Reproduce inside the host
- May have more than one host
  - Reproduction maybe host dependant
- May develop in the environment
  - Developmental and reproductive stages may be very environmentally stable
- Variable response to temperature and drying.

# Insects

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- Living
- Reproduce and live outside the host
- May develop in the environment
- Variable response to temperature and drying.

# So what works?

- Cleaning
- Mechanical Removal
- Drying
- Choose the right disinfectant
  - Not everything is susceptible to all disinfectants
- Avoid recontamination
  - Intermediate hosts
  - Vectors
  - Fomites



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# The right disinfectant...

- Will it be in contact w/ organic material?
- Does it need to have residual activity?
- Will it be used on metal or engines?
- Will it be used in wet or dry conditions?
- Will it be in contact with birds?
- How will it be applied?
- Is expense important?

	Chlorines	Iodines	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, viruses	Bacteria, fungi, viruses
Organic material	No	No	Yes	Some	--	Yes
Residual activity	No	No	Yes	Yes	--	Yes

# Using disinfectants safely...

- Minimize use
  - Use proper dilutions
  - Use only on clean (preferably dry) surfaces
  - Use with biosecurity
  - Use alternatives to disinfectants
- Avoid run off
- Properly dispose of concentrates and containers

# Adjuncts to disinfectants

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Sunlight

Downtime

Contact Time

Alternative Applications

- Fogging

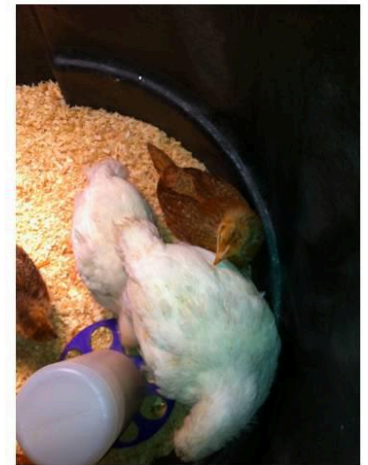
- Dry Disinfectants

# Choosing Materials?

Day "2" - Birds were raised together on a commercial starter ration



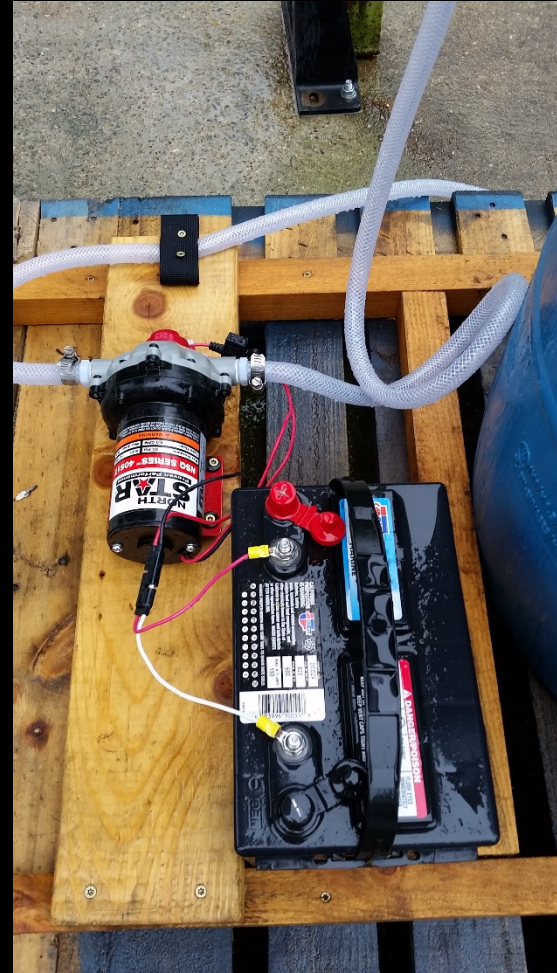
Week 4 – Flock was split into two pens by size



Week 6 – Young birds outside with 24 week old dual purpose hens in lay



Address your problem. Think  
outside the box



# What areas do you need to work on?

