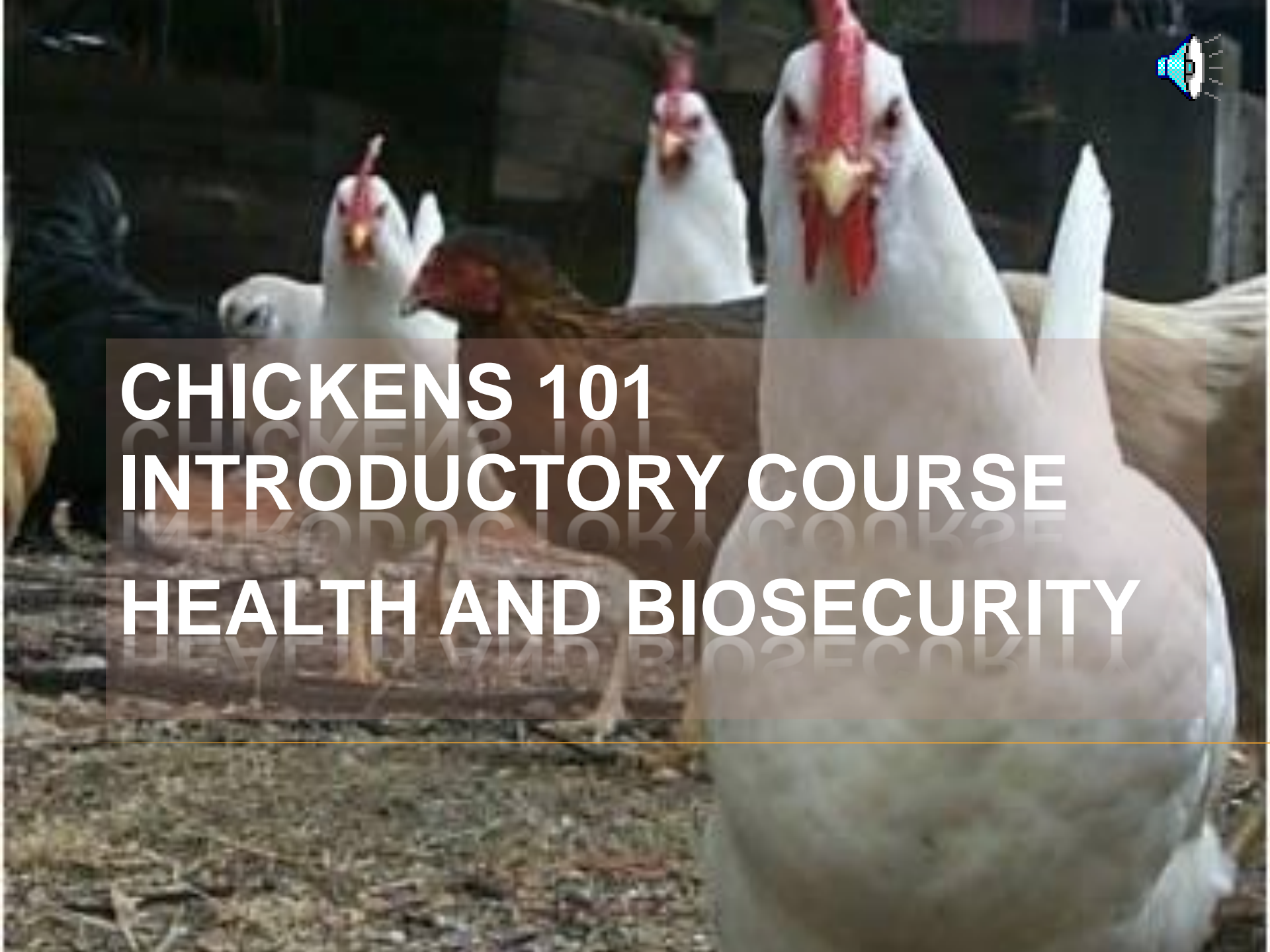




CHICKENS 101 INTRODUCTORY COURSE HEALTH AND BIOSECURITY



THE BASICS: HEALTH

Chicken Health Key Concepts

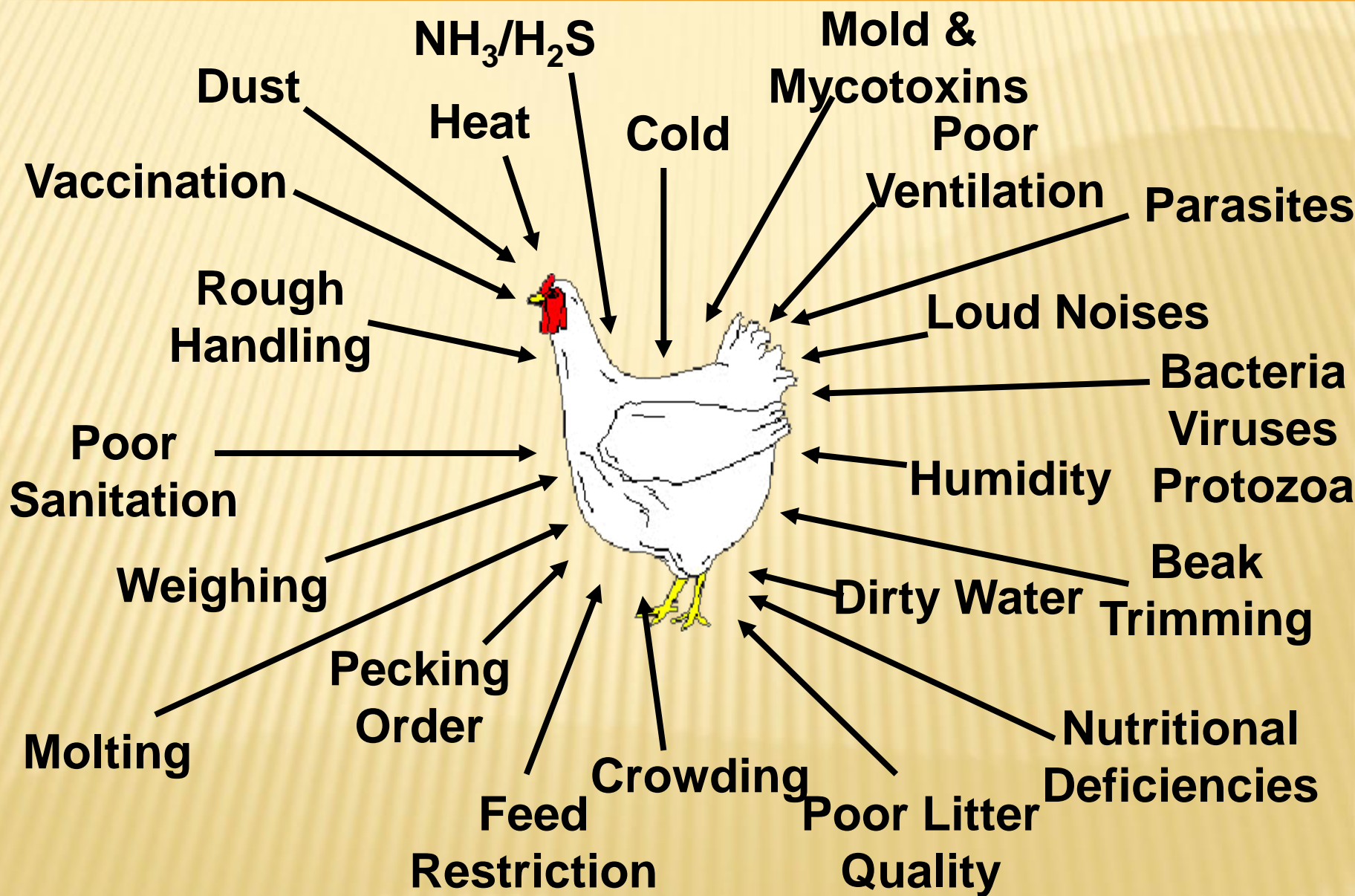
- + Disease
 - × any departure from the normal state of health
- + Observations – key to managing health
 - × Facilities
 - × Records
 - × Birds
- + Normal appearance and behavior
- + Many Diseases Produce Similar Signs

THE BASICS: HEALTH

Disease Categories & Examples for Poultry:

- ✘ External Parasites
 - + Lice, ticks, mites
- ✘ Internal Parasites
 - + Roundworms, tapeworms, protozoa
- ✘ Infectious Diseases
 - + Bacteria, virus
- ✘ Environment Related Problems
 - + Heat/cold stress, toxic plants, rodents & droppings

THE BASICS: HEALTH - STRESSORS



THE BASICS: HEALTH

- ✘ Preventative practices for all stressors are used in natural poultry health management
 - + Reducing stress
 - + Adequate spacing
 - + Proper temperature, ventilation and litter conditions
 - + Good nutrition
 - + Clean water

<http://ohioline.osu.edu/vme-fact/pdf/0011.pdf>

THE BASICS: HEALTH

- ✘ Maintaining a healthy gastro-intestinal (GI) system is a vital preventative practice of maintaining healthy poultry and preventing disease.
- ✘ **Natural intervention involves strategies**
 - + use of prebiotics and probiotics in the diet
 - + **competitive exclusion to alleviate GI problems**
 - + sanitation between flocks is particularly important
 - + **a downtime of 2-3 weeks will help control pathogens that need a host to survive**
 - + the house and equipment, including water lines, feeders, nestboxes, and roosts, should be cleaned and sanitized



OBSERVATIONS: FACILITIES

Do Daily Observations:

- ✘ Signs of outside influence
 - + Rodents, wildlife, insects
- ✘ Feed and water sources
 - + Number and availability
 - + Clean feed and water
- ✘ Litter or ground
- ✘ Roosts and manure



OBSERVATIONS: RECORDS

- ✗ Acceptable parameters
- ✗ **Measurable data**
- ✗ Past History
- ✗ **Current Information**
 - + What are the birds doing?
 - + How long?
 - + How many affected?
 - + When did it first happen?
 - + Has it happened before?
 - + What has been done?
(Changes)
 - ✗ Tests
 - ✗ Deaths
 - ✗ Treatments

Head & Neck Exam

Asymmetry of Face _____ Asymmetry of Legs _____ Swell _____
Tug _____
Masticatory Muscles _____
Chewing _____
Lateral Movement _____
Clicking/Grating of Coracoid _____
Vertical Deviation _____ Malocclusion (Functional Change) _____ Group Function _____
Wink of Cornea _____ Functional Change) _____ Abnormal Cornea _____
Classification of Oculonasal _____ Cornea Notation _____
Cilia Base _____ Other _____ Other _____

Soft Tissue Exam

Oral Cavity Exam _____
Tongue _____
Lips _____
Joseph Nodes _____
Palatal Tissue Health _____
Rhinopharynx _____
Salivary Glands _____
Larynx _____
Trachea _____
Heart _____
Other _____

Hard Tissues

Beak/Tongue _____
Tarsus _____
Alar Bone _____
Wing _____
Other _____

Radiographic Exam

Anterior _____
Posterior _____
Chest _____
Heavy Calcification _____
Fracture Breakdown _____
Other _____

Periodontal Exam

Disease Classification	CLASS I	CLASS II	CLASS III	CLASS IV	CLASS V
Architecture		Color			Type
Stability			Heeding Points		
Recession			Marginal Gingivitis		
Plaque Index			Heavy Calcification		
Brushing			Flapping		
Microleakage			Other		

Personal Profile

Allot Concern _____
Patient Requested The Following _____

Record vs Page

File Edit View Help

File No. 1 Name: JERRY A. CITTIZIN Address: 22 SUCCESS AVENUE
Date of Birth: 01/01/1941 Berkeley, CA 94710

Page No. 1

Page Created on: 9/23/99

This scrollable window is for writing case notes.

Medical Condition(s):
This scrollable window is for recording medical condition(s).

Regular Medication(s):
This scrollable window is for recording regular medication(s).

Allergies / Alerts
This scrollable window is for recording allergies and medical alerts...

Ad Hoc Medication(s):
This scrollable window is for recording ad hoc medication(s).

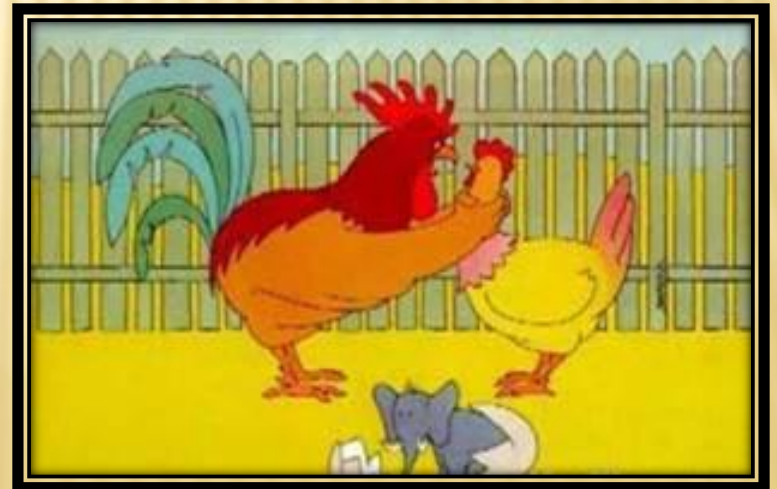
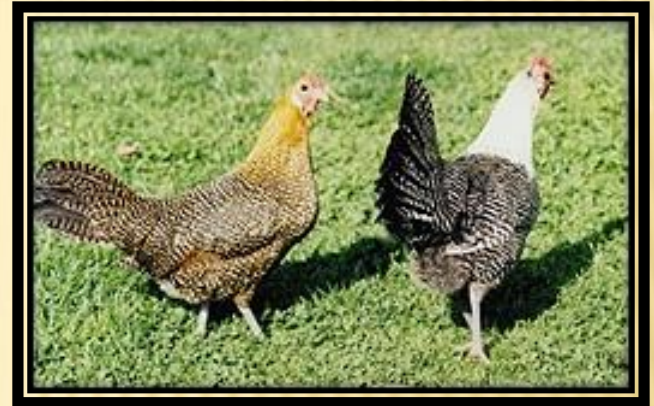
Monitor	HR	BP	SpO2	HbA1C	Chol	LDL	12/19/02	ACT	Demographics
02/12/03	120	140/90	7.0	6.5	5.5	3.2	03/01/99	Hep B 3	
12/09/02	130	150/90	8.0	7.5	7.0	4.0	10/06/99	Hep B 2	
09/06/02	150	160/100	9.0	8.5	8.5	4.5	06/05/99	Hep B 1	

Scanned Documents:

Date	Description	Source
02/07/03	Full Blood Count	Selfwds-Pathology Service
02/07/03	Urea Chart	Selfwds-Pathology Clinic

OBSERVATIONS: BIRDS

- × Behavior
 - + Flock
 - + Individual
- × Examples
 - + Eating, drinking, interactions



OBSERVATIONS: EXAMINATION

- × Preliminary
 - + done while observing birds
- × Complete
 - + must catch bird
 - + systematic examination of anatomic systems
 - + checking for variation from normal
- × Fecal observations
 - + For guide see <http://pluckandfeather.com/chicken-poo-chart-graphic.html>

LEARN SYMPTOMS OF DISEASE

- While backyard flocks typically have less disease risk, vigilance is required.
- Diseases can spread from wild birds and pests, so keep an eye out during your daily health checks for these symptoms:

Increased mortality

No appetite

Diarrhea

Lameness

Blisters, swellings

High number of ill animals

Decreased production

Unusual behaviors

Coughing

Depression

Unthriftiness



HEALTH: EXAMINATION EXAMPLE

× Mites & Lice



MITES & LICE

× Mites

Size: 1 millimeter in diameter

Color: Dark Reddish Black

Egg Color & Location:

White to off-white along the feather shaft

Mites live on the host and in the environment



MITES & LICE

× Lice

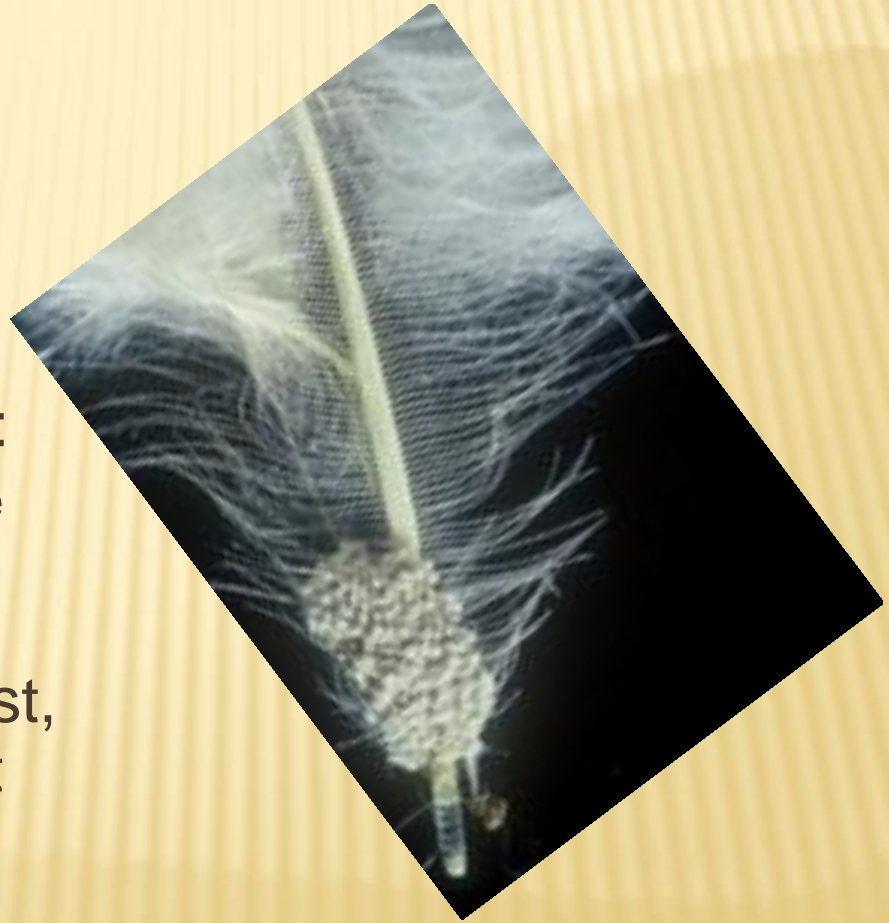
Size: 2-3 millimeters long

Color: Light Brown

Egg Color & Location:

White and at the base of the feather

Lice only live on the host, and appear to be fast moving.



MITES & LICE

Symptoms:

- + Decreased Food Intake
- + Decreased Egg Production
- + Decreased Weight Gain
- + Increased Susceptibility to Other Diseases

If any of these symptoms are observed a visual inspection around the vent for lice or mites is recommended.

MITES & LICE

- While naturally occurring, external parasites are generally not a major problem. Most flocks will have some level of exposure with little ill effect.
- Unsanitary coop conditions and wild bird exposure are the most common causes of transmission.
- The easiest treatment for mites is a dust bath.



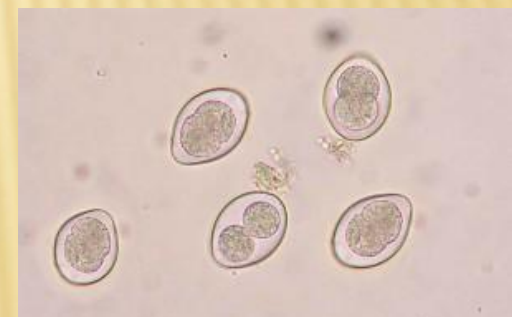
HEALTH: EXAMINATION EXAMPLE

✘ Internal Parasites

- Make a habit of checking out chicken droppings because some worms are visible in droppings.
- Even if the worms aren't visible, a veterinarian can examine the droppings in a lab.. Sometimes these lab tests aren't successful, because worm eggs weren't being produced when the sample was collected.
- Generally, treatment for chicken worms, if required, consists of worming the entire flock.



Fecal roundworms



Fecal float test of coccidia

HEALTH: EXAMINATION EXAMPLE

✘ Internal Parasites

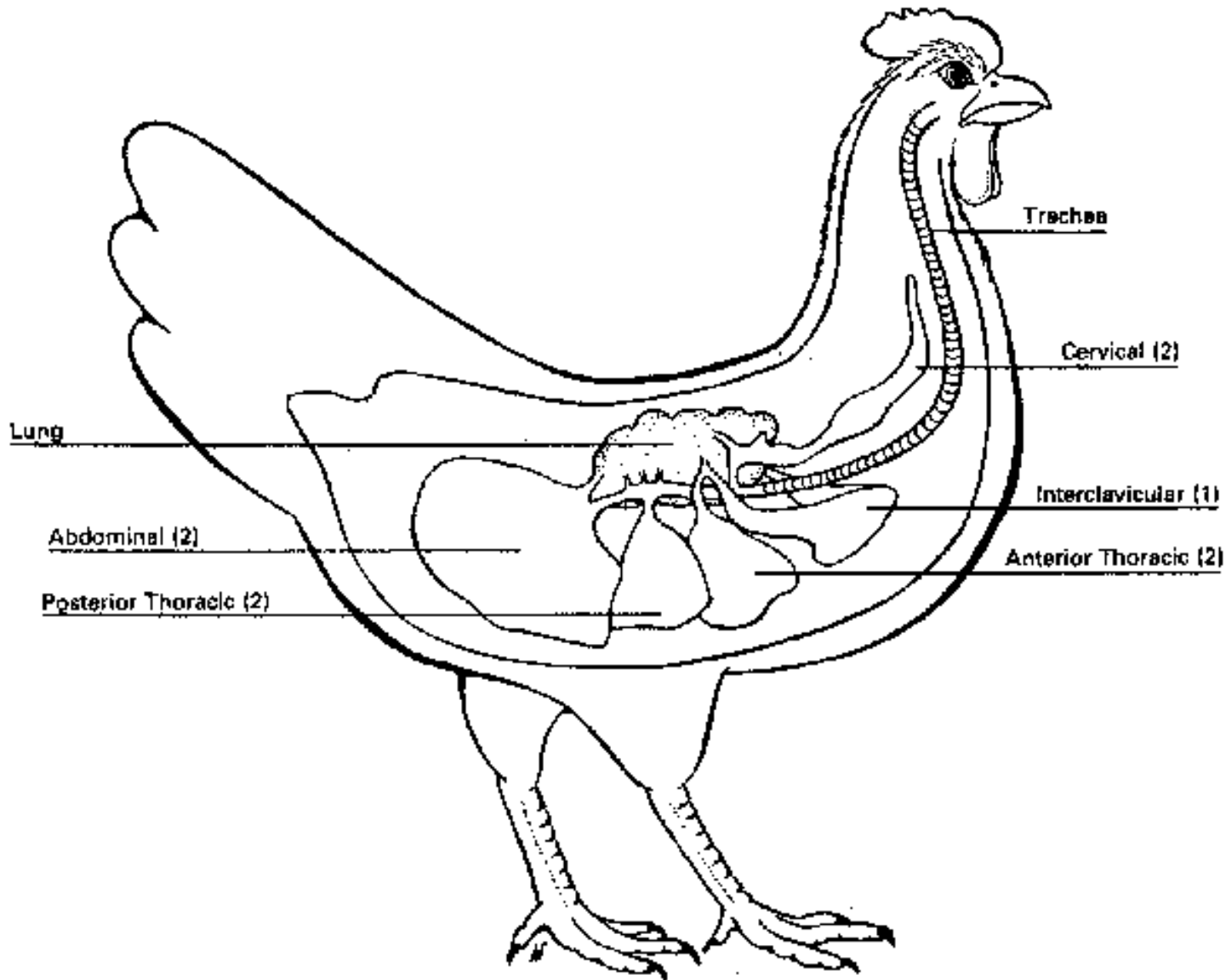
- A few internal parasites don't cause significant harm and may even be of value to the health of your flock.
- With proper attention to housing, nutrition and insect control parasite infestation can be kept to a minimum.
- Monitor your flock for signs of parasite infestation and identify the parasite likely to be the cause before determining the proper treatment for the most effective control.
- Blanket application of de-wormers is expensive and can contribute to the development of parasite resistance to approved treatments.

THE BASICS: HEALTH

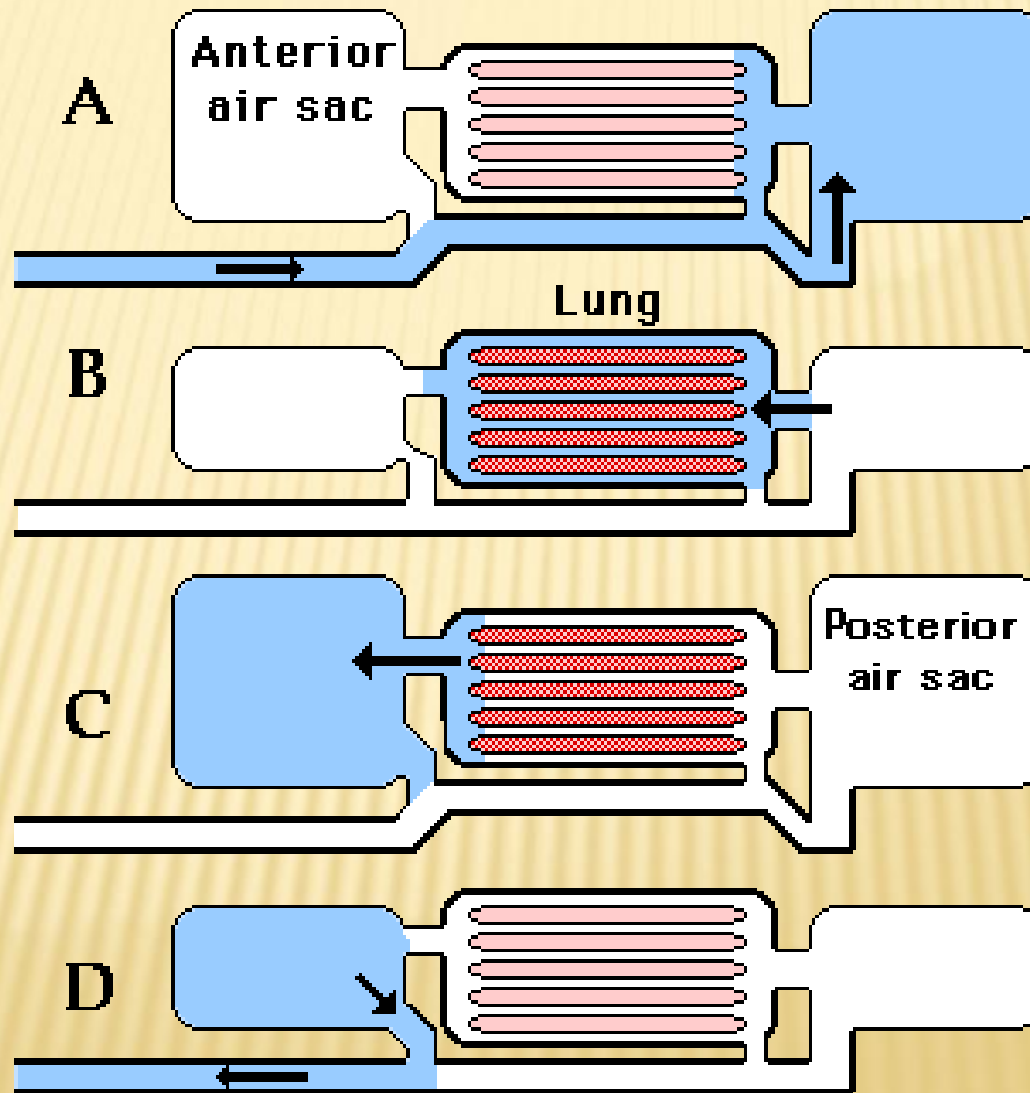
- At this time, a few words are appropriate about chicken mortality that is not disease related
- **For example, this situation could happen:**
 - **My kid was holding a chick and it just seemed to die in his/her hands. Is this normal? Were they stressed out? Were they sick?**
 - **The avian and mammalian respiratory systems are very different. It is possible to suffocate a bird by holding it too tight.**

www.ca.uky.edu/.../Jacob%20-%20PRESENTATION%20-%20BackyardChickens

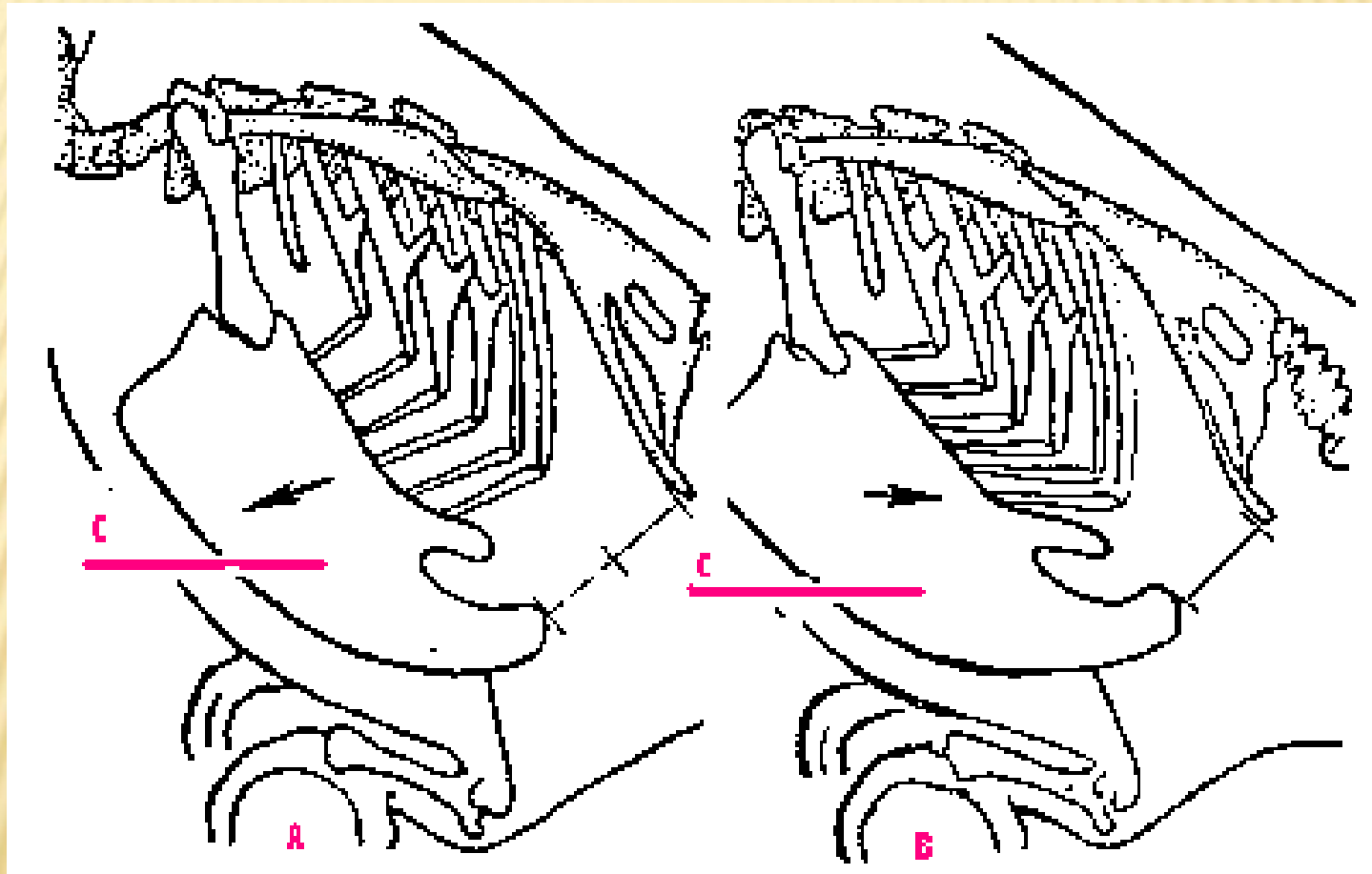
UNIQUE FEATURE OF BIRDS: AIR SACS



AIR FLOW IN AVIAN LUNGS IS IN ONE DIRECTION ONLY !!



BIRDS DON'T HAVE A DIAPHRAGM



Inspiration

Expiration

THE BASICS: HEALTH

- **More Non-Disease Mortality Factor Examples**
 - A bag of feed contains a mold toxin
 - **Birds are curious and can find sources of toxic substances that you may not think are a problem.**
 - Traumatic events include anything that causes bodily harm to birds, including predators. Injured birds should be isolated from the flock to prevent pecking and ensure adequate feed and water.
 - **Age-related events such as osteoporosis, tumors, and reproductive problems, e.g., egg binding,**

THE BASICS: HEALTH

Disease Killers Of Poultry:

Disease	Life Span Reduction Impact
• Gumboro (Bursal Disease)	Months
• Coccidiosis	Months
• Fowl Cholera	Weeks
• Infectious Coryza	Hours to days
• Avian Influenza	Days to weeks
• Laringotracheitis	Days
• Marek's Disease	Weeks
• Newcastle	Days to weeks
• Mycoplasmosis	Hours to days
• Salmonellosis	Weeks
• Avian Tuberculosis	Years

THE BASICS: HEALTH

Recognizing Common Poultry Diseases: Examples:

✗ **Coccidiosis**

- + intestinal parasite.
- + symptoms: weight loss, huddling, blood in feces, mortality in young, unthrifty.



✓ **Infectious Coryza**

- + caused by *Haemophilus paragallinarum*
- + symptoms: sticky eyelids, odor, rales, nasal discharge



THE BASICS: HEALTH

Recognizing Common Poultry Diseases: Examples

× Fowl Pox

- + viral disease
- + spread by mosquitoes & direct contact
- + symptoms: Blisters, scabs, skin growths, difficult breathing and swallowing, growth in mouth, death



× Marek's Disease

- + viral disease
- + symptoms: paralysis of legs, wings, neck of birds less than 6 months, tumor formation



THE BASICS: HEALTH

Recognizing Common Poultry Diseases: Examples

✘ Cannibalism

- + Genetics predisposition,
- + management factors,
- + controlled by trimming beak, reduced light intensity



✘ Avian Influenza

- + Viral disease,
- + Symptoms: High mortality, hemorrhages, depression, nasal discharge



THE BASICS: HEALTH



- ✘ Drug and antibiotic treatments may be limited and/or unavailable
- ✘ Most vaccines are given early in life
 - + 18 days of incubation
 - + Day 1

THE BASICS: HEALTH

*Provide Protection From Common Predators to
Avoid Stress That Can Affect Chicken Health:*



Raccoon



Fox



Hawk



Opossum



Owl



Coyote



Skunk



Dog



Snake



Panther

THE BASICS: HEALTH

- **What Do I Do With a Dead Chicken?**
 - If you have a backyard flock and only one or two dead birds to dispose of, the simplest thing to do is to double wrap the carcasses in plastic bags and place them in the garbage.
 - **Owners with a small flock (< 25) & more mortalities can dispose them on the property. Approved methods for disposal include burial (>2 ft), composting, & incineration.**
 - It is best to dispose of birds, particularly birds that died from an infectious disease, on your property rather than removing them, which could result in disease spread.

http://www.ces.ncsu.edu/depts/poulsci/tech_manuals/Backyard_Chickens.pdf

<http://www.extension.org/pages/67362/disposing-of-dead-birds>

THE BASICS: HEALTH

Why have my hens stopped laying?

- × **Nutrition**

- + Completely balanced diet
- + Out of feed or water

- × **Disease**



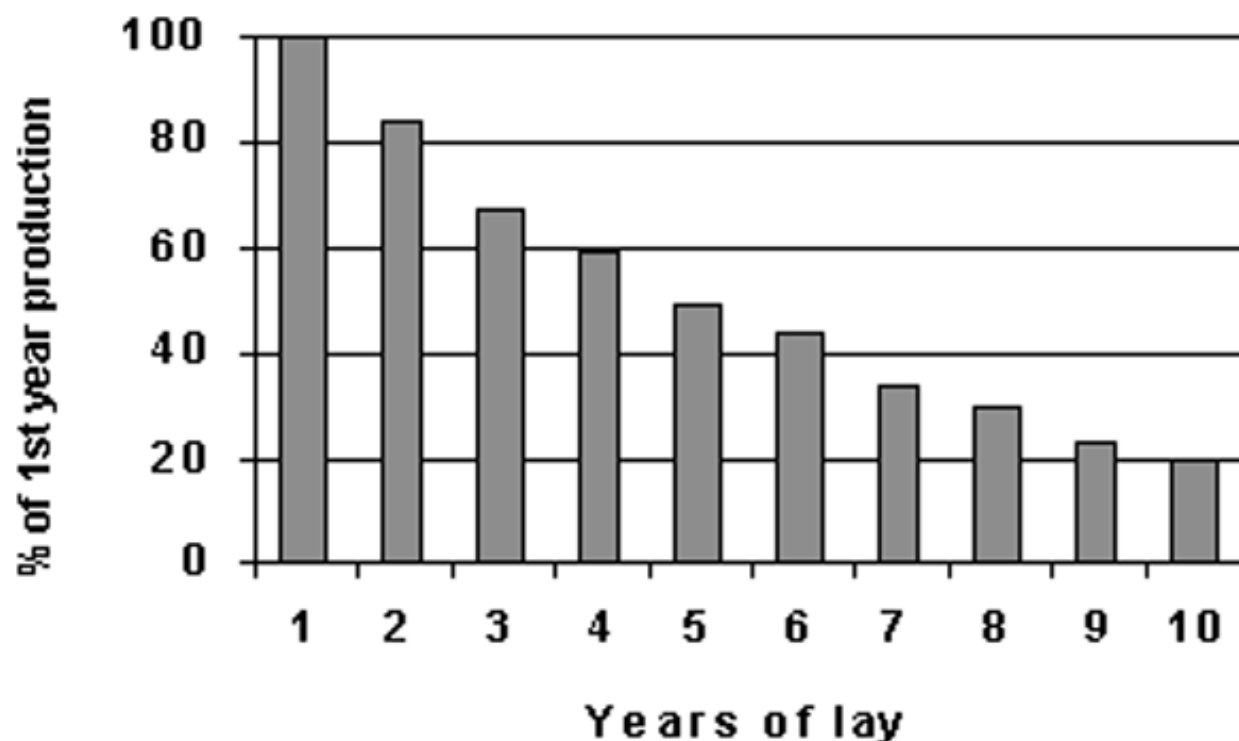
- × **Age**

- × **Management**

- + Heat
- + Overcrowding
- + Light

THE BASICS: HEALTH

Why have my hens stopped laying?



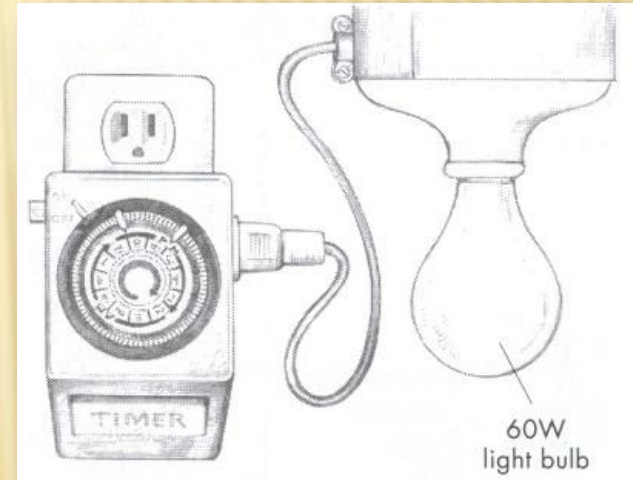
250 eggs per year = 1st year of production

THE BASICS: HEALTH

Why have my hens stopped laying?

Management – Light Example:

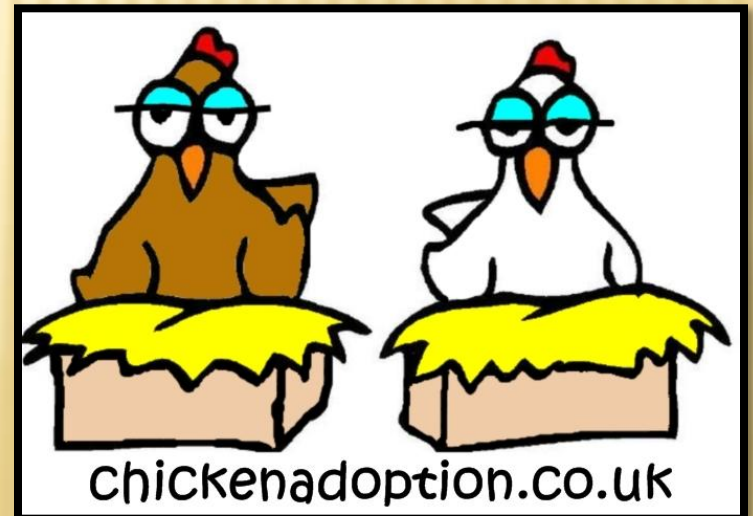
- × Hens in lay should never be exposed to decreasing day length
- × Use artificial lights to maintain 14-16 hr day length
- × Orange and red lights (incandescent) are best
- × Laying pullets exposed at 16 to 23 weeks of age.



THE BASICS: HEALTH

Laying Behavior

- ✗ A layer will produce an egg every 1-2 days
- ✗ Pullets start laying when they reach 20-24 weeks
- ✗ First eggs will be small and on the floor
- ✗ Light hours (have a program)
 - + Decrease light hours for growing pullets
 - + Increase hours after they start laying



THE BASICS: HEALTH

Managing Layers for Safe, Home-produced Eggs

- ✘ Eggs will stay cleaner if the coop area is kept clean and dry. Thoroughly clean and disinfect the coop at least twice a year.
- ✘ Allow one nest for every three to four chickens and large enough for your hens. To protect eggs, pad nests with straw or wood chips. Clean out nest boxes once a week to remove dirty litter and manure and replace with clean nesting material.
- ✘ Provide a perch above the floor over a dropping box away from the nests. Chickens will roost on the perch to sleep and defecate into the wire-mesh covered dropping box.

THE BASICS: HEALTH

Safe Handling of Eggs

- ✘ Collect eggs at least twice daily, preferably before noon, to reduce soiling of eggs by hens.
- ✘ Discard eggs with broken or cracked shells.
- ✘ If eggs need to be washed, the temperature of the water should be at least 20°F warmer than the egg. This will prevent the egg contents from contracting and producing a vacuum. It will also prevent microscopic bacteria from being pulled by vacuum through the pores of the egg.
- ✘ A mild, non-foaming, unscented detergent (e.g., a dishwashing liquid) can be used to wash eggs.

THE BASICS: HEALTH

Safe Handling of Eggs

- ✘ Eggs can be sanitized by dipping in a solution of 1 tablespoon household bleach to 1 gallon of water before storage.
- ✘ Dry eggs before storing because moisture may enter the shell pores as eggs cool on refrigeration.
- ✘ Store eggs in the main section of the refrigerator at 35°F to 40°F
- ✘ If collected and stored properly, eggs can have a safe shelf life of greater than three weeks.

CHICKENS 101: THE BASICS

BIOSECURITY

THE BASICS: BIOSECURITY

What is Biosecurity?

- “Bio” = life
- “security” = protection
- “Biosecurity = doing everything you can to keep diseases out of your flock, either accidentally or on purpose
- Key to keeping your poultry healthy

THE BASICS: BIOSECURITY

Commercial flocks and small flocks:

- Use **same techniques** to prevent disease
- **Same diseases** threaten both

THE BASICS: BIOSECURITY

6 Ways to Disease Prevention:

- 1) Keep your distance
- 2) **Keep it clean**
- 3) Don't haul disease home
- 4) **Don't borrow disease from your neighbor**
- 5) Know the warning signs of infectious bird diseases
- 6) **Report sick birds**

THE BASICS: BIOSECURITY

Steps to Effective Disease Prevention:

1) **Keep your distance**

- ✓ Restrict access to your property & birds
- ✓ Keep clean boots for visitors to use
- ✓ Have a rodent control program

2) **Keep it clean**

- ✓ Keep separate shoes/clothes to wear
- ✓ Wash hands with soap before handling birds
- ✓ Clean cages, feeders on a daily basis

THE BASICS: BIOSECURITY

Steps to Effective Disease Prevention:

- 3) **Don't haul disease home**
 - ✓ Disinfect all items from other bird areas
 - ✓ Separate new birds for 30 days
- 4) **Don't borrow disease from your neighbor**
 - ✓ Don't share birds, equipment or supplies
 - ✓ Disinfect all borrowed equipment

THE BASICS: BIOSECURITY

Steps to Effective Disease Prevention:

5) Know the warning signs of infectious bird diseases

- ✓ Sudden increase in bird deaths
- ✓ Drop in egg production

6) Report sick birds

- ✓ Agricultural Extension agent
- ✓ USDA/APHIS office

THE BASICS: BIOSECURITY

FDACS Bureau of Animal Disease Control¹

- Responsible for administering Florida's animal disease control and eradication programs
- **National Poultry Improvement Plan (NPIP)**
 - a national, voluntary, free program
 - **disease control and prevention strategies are used to improve the poultry and poultry products produced by the participants**

¹ http://www.freshfromflorida.com/ai/adc/adc_main.shtml

THE BASICS: BIOSECURITY

FDACS Bureau of Animal Disease Control 1

District 5 Office

1502 N. Brevard Avenue

Arcadia, FL 34266

(941) 321-3299

ATTN: Wynona (Nona) DeSear

- Provides free consultation on flock health problems

1 http://www.freshfromflorida.com/ai/adc/adc_main.shtml

INFORMATION RESOURCES

- × **UF/IFAS Extension Sarasota County Extension**

<http://sarasota.ifas.ufl.edu/>

- × **UF/IFAS Solutions for Your Life - Poultry**

<http://solutionsforyourlife.ufl.edu/agriculture/livestock/poultry.html>

ACKNOWLEDGEMENTS

- Burbaugh, B. Pasture Poultry Systems. UF/IFAS Duval County Extension.
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- Clark, F.D. Range Production and Bird Health. University of Arkansas Extension Service
- Clifford, J. 2006. Biosecurity Guide for Poultry and Bird Owners. USDA APHIS
- Damron, B. & D. Sloan. Small Poultry Flock Nutrition.
- Jacob, J. and T. Pescatore. Selecting the right chicken breed. Kentucky Cooperative Extension Service.

ACKNOWLEDGEMENTS

- Miles, R. Small scale production and egg production. Animal Science Department. University of Florida.
- Wiggins, L. Chicken Embryology. 4H School Enrichment Program. UF/IFAS Taylor County Extension.
- UF/IFAS Alachua County Extension. Small Scale Poultry Production.

ONLINE RESOURCES¹

- American Livestock Breeds Conservancy - <http://albc-usa.org/>
- Backyard Chickens - <http://www.backyardchickens.com/>
- Bio Pod - <http://thebiopod.com/index.html>
- Build A Chicken Coop Easy: How to Build a Chicken Coop - <http://www.buildachickencoopeasy.com/>
- 4 H Virtual Farm – Poultry - <http://www.sites.ext.vt.edu/virtualfarm/poultry/poultry.html>
- Heritage Poultry Conservancy - <http://www.heritagepoultry.org/>
- The City Chicken.com – <http://home.centurytel.net/thecitychicken/index.html>
-