

UF/IFAS Extension

The Journey to Sustainability Begins with Education



CHICKENS 101 INTRODUCTORY COURSE



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INTRODUCTION

× Objectives of this Workshop

- + Information and resources for backyard chicken husbandry in urban & rural settings
- + Science-based information on chicken biosecurity
- + Support for sustainable, local foods production
- + Information on local zoning regulations about backyard chickens

WORKSHOP OUTLINE ¹

- ✓ **Overview of the Basics**
- ✓ **Local Regulations**
- ✓ **Biology**
 - Anatomy / Breeds / Development**
- ✓ **Nutrition and Health**
- ✓ **Housing and Predator Control**
- ✓ **Biosecurity**
- ✓ **Owner Health Guidelines (Egg Food Safety and Handling Hygiene)**

OVERVIEW: BENEFITS OF CHICKENS

- Nutritious food for family consumption
- Sustainable local foodsheds
- Pet therapy
- Entertaining to watch
- Fertilizer production
- Bug terminator
- Agrobiodiversity conservation
- Biology & food education
- Promote friendly neighbors w/ egg share
- Bridge urban and rural communities

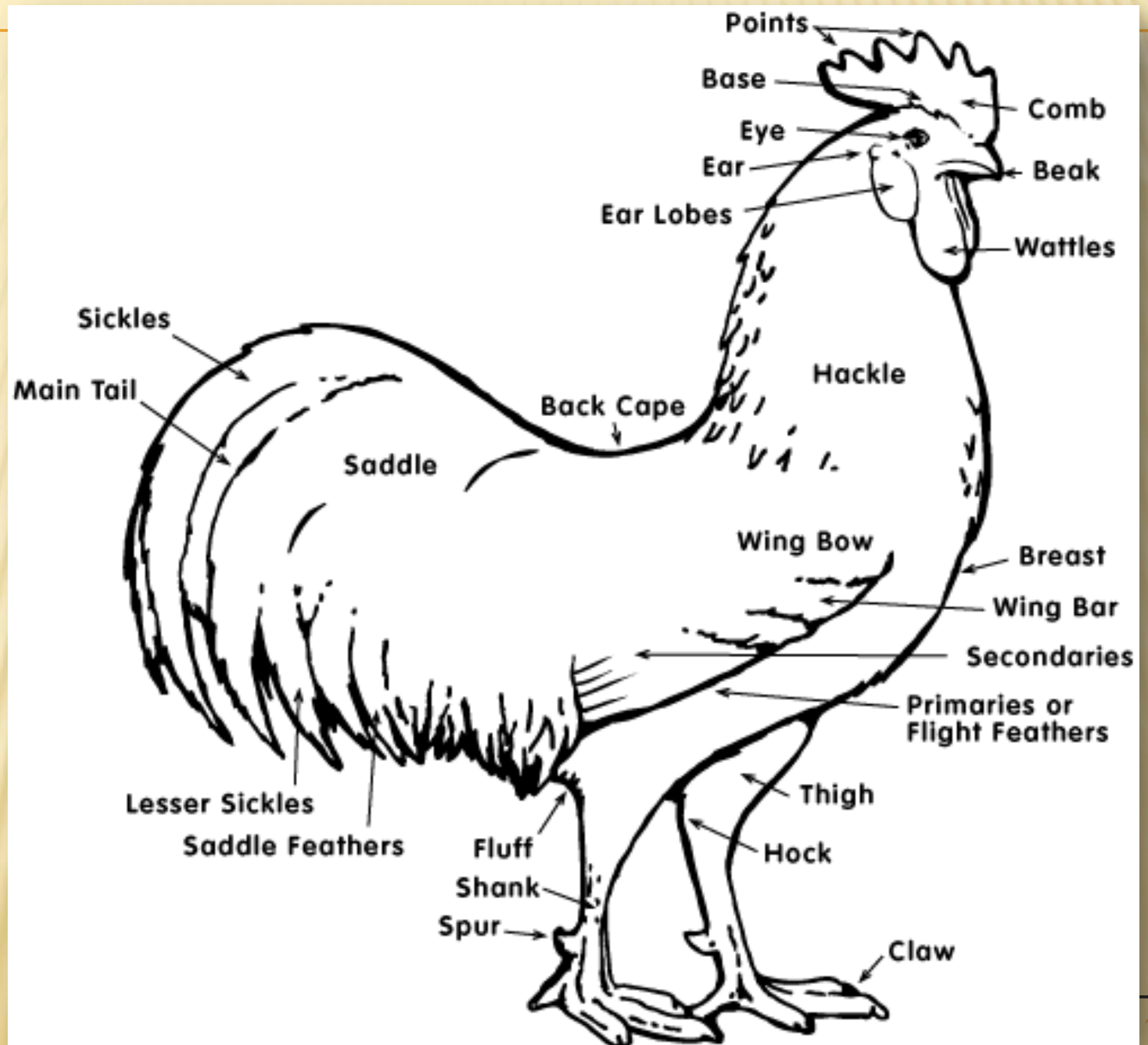


OVERVIEW: BREEDS ¹



OVERVIEW: ANATOMY¹

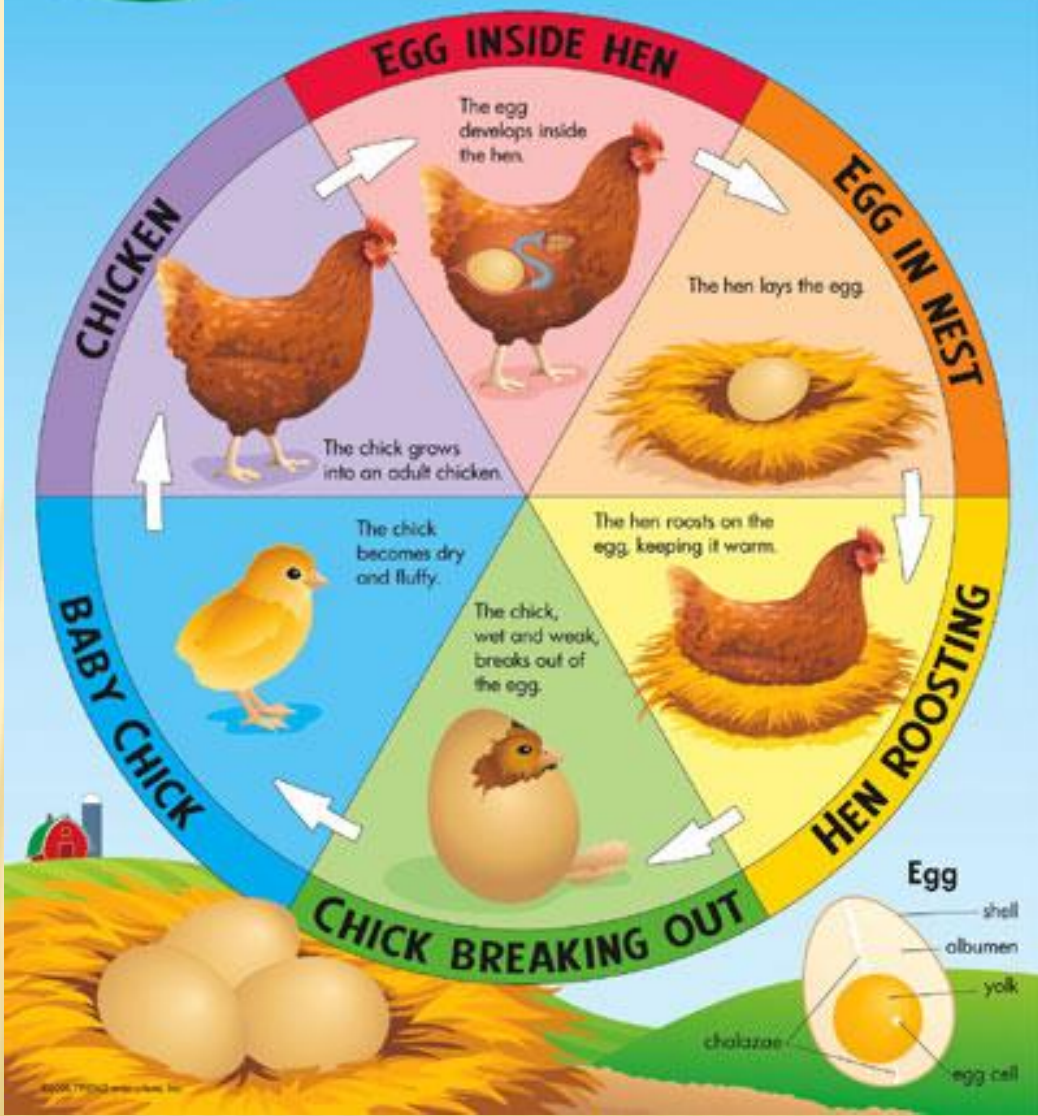
Chicken Terms



Life Cycle **CHICKEN**



OVERVIEW:
DEVELOPMENT



FOOD FOR THOUGHT SO WHICH CAME FIRST: THE CHICKEN OR THE EGG ?



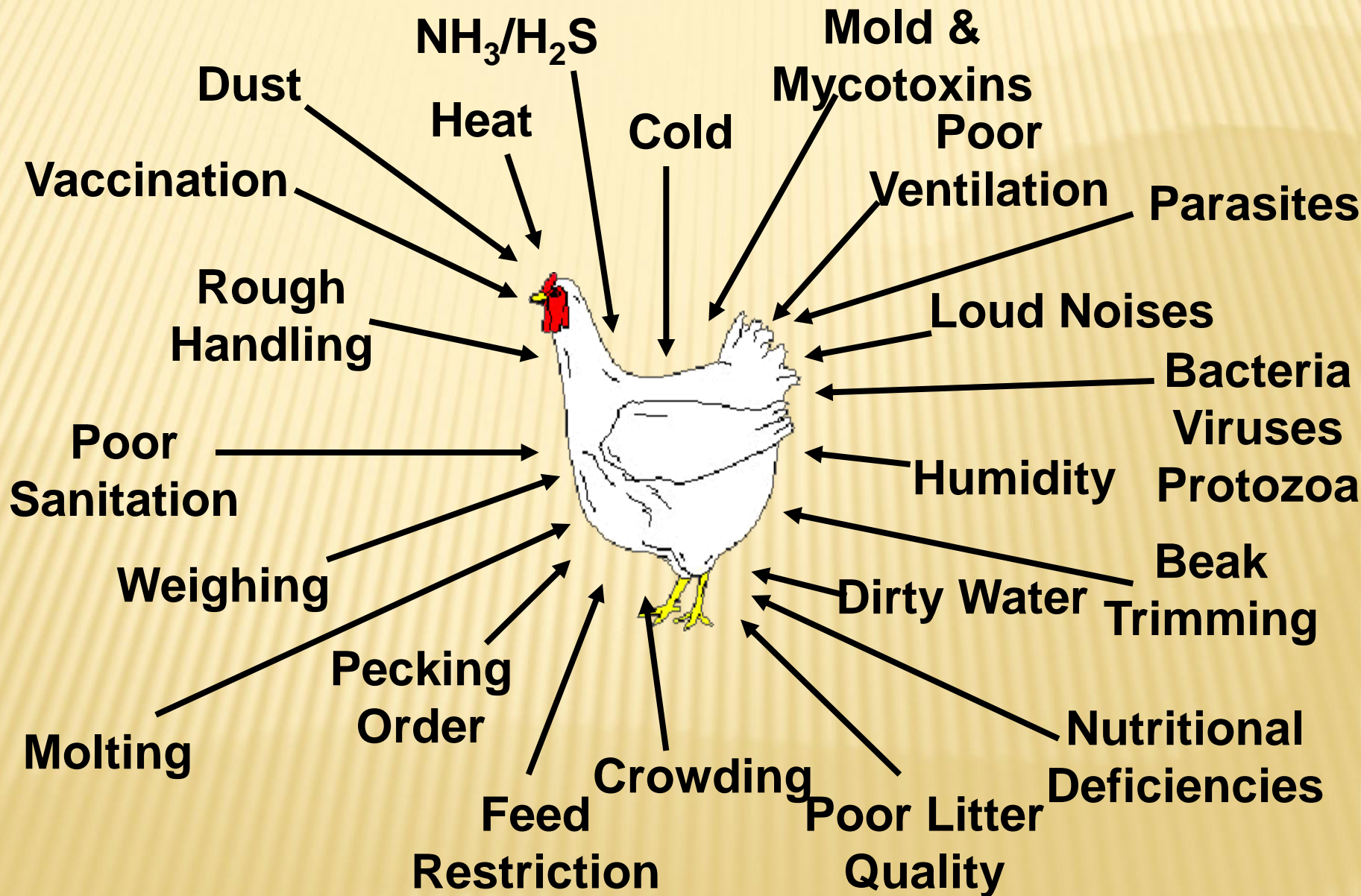
See the July 14, 2010 news report at

http://www.msnbc.msn.com/id/38238685/ns/technology_and_science-science/t/which-came-first-chicken-or-egg/





OVERVIEW: HEALTH FACTORS



OVERVIEW: BIOSECURITY



**Don't
Mess
With
Me !**

OVERVIEW: GETTING STARTED

- ✘ Can I have chickens where I live ?
- ✘ Where do I buy chickens and supplies ?
- ✘ Where do I get follow-up information ?



CHICKENS 101 INTRODUCTORY COURSE



Regulations

THE BASICS: GETTING STARTED

Laws and Regulations

- ✘ Be aware of your city ordinances before planning a backyard flock
- ✘ If chickens are legal, there may be restrictions and/or requirements that must be followed, such as
 - + number of hens
 - + rarely are roosters permitted due to noise
 - + size of coop
 - + distance of coop to residences

THE BASICS: LAWS AND REGULATIONS

Zoning Ordinances

- Zoning Ordinance information for any city
 - + Minicode Corporation website - free FL database access at <https://library.municode.com/fl>
- Zoning Ordinances in Sarasota County, FL
 - + County: permitted with limitations*
 - + Municipalities:
 - ❑ Cities of Sarasota and North Port - permitted w/ limitations*
 - ❑ City of Venice - permitted w/ only restriction of “chickens other domestic fowl are not allowed to run or be at large within city”
 - ❑ Town of Longboat Key - not permitted

* The rules in mandatory Home Owner Associations (HOA) take precedence over the County and Municipality rules and you are governed by them. See following slides for more details

SUMMARY: CODE OF SARASOTA COUNTY

- 1) Backyard chickens are allowed but there are different requirements depending on your zoning designation! Therefore, please, first look up your zoning district at the Sarasota Property Appraiser's website (<http://www.sc-pa.com/propertysearch/>)
- 2) Unincorporated Sarasota County Zones RSF, RE-2, RE-3, and RC. The keeping of chickens is allowed if the following standards are met:
 - No more than four (4) chickens may be kept, with roosters prohibited;
 - No person shall slaughter any chickens;
 - The chickens shall be provided with a movable covered enclosure (i.e. "hen house/coop") and must be kept in the covered enclosure or a fenced enclosure at all times. Chickens must be secured within the movable henhouse/coop during non-daylight hours;
 - The space per bird in the henhouse/coop shall not be less than four (4) square feet per bird;
 - No covered enclosure or fenced enclosure shall be located in the front yard or side yard, nor shall the henhouse/coop be closer than ten (10) feet to any property line of an adjacent property, nor within twenty-five (25) feet of any adjacent residential structure. Odors from chickens, chicken manure, or other chicken related substances shall not be detectable at the property boundaries;

SUMMARY: CODE OF SARASOTA COUNTY (CONT.)

- 2) Unincorporated Sarasota County Zones RSF, RE-2, RE-3, and RC. The keeping of chickens is allowed if the following standards are met:
 - All enclosures for the keeping of chickens shall be so constructed and maintained as to prevent rodents or other pests from being harbored underneath, within, or within the walls of the enclosure. The henhouse/coop must be impermeable to rodents, wild birds, and predators, including dogs and cats. Enclosures shall be kept in neat condition, including provision of clean, dry bedding materials and regular removal of waste materials. All manure not used for composting or fertilizing shall be removed promptly;
 - All feed and other items associated with the keeping of chickens that are likely to attract or to become infested with or infected by rodents or other pests shall be kept in secure containers or otherwise protected so as to prevent rodents and other pests from gaining access to or coming into contact with them;
 - The sale of eggs or any other chicken products generated is prohibited.
 - Nothing in this subsection shall affect any homeowner association declarations or restrictions.
 - Chickens that are no longer wanted by their owners shall not be taken to Animal Control, nor shall they be released. Unwanted chickens may be taken to Health & Human Services Mosquito Control Division for utilization in the Sentinel Chicken Program.

SUMMARY: CODE OF SARASOTA COUNTY (CONT.)

2) Unincorporated Sarasota County Zones RSF, RE-2, RE-3, and RC. The keeping of chickens is allowed if the following standards are met:

- These provisions shall sunset on January 1, 2019, unless reviewed and saved from repeal, through reenactment by the Board of County Commissioners. In the event that this ordinance sunsets, the keeping of any previously allowed chickens shall be considered a nonconforming use for five years thereafter.

3) County OUE Zoning

- If your property is zoned OUE, you will need to consider other requirements. You need to determine your neighbor's zoning. Return to the Property Appraiser's website, click on MAP to see your property's dimensions and your adjoining lots. As you click on surrounding lots a box will come up with some info, click on the Property Detail Page to see what your neighbors' zoning is and make a note.
- If you have an OUE parcel five (5) acres or greater:
 - no limit on the number of chickens; fifty (50) foot setback for the coop
- If OUE parcel is less than five (5) acres with adjoining other OUE properties:
 - fifty (50) foot setback for the coop
- If QUE parcel is less than five (5) acres with any adjoining residential properties (RE, RSF, RH, RMH):
 - hundred (100) foot setback for the coop and the birds when they are out of the coop

SUMMARY: CITY OF SARASOTA

1) Backyard chickens are allowed under these restrictions*:

- No more than four (4) chickens may be kept. Roosters are prohibited.
- Slaughtering chickens is prohibited.
- Chickens must have a movable, covered coop. Chickens are required to be kept within the coop or within a fenced yard, and must be secured in the coop at night.
- The coop must provide at least four (4) square feet of space per chicken.
- Coops must be kept in the backyard and must not be visible from the street. Coops must be at least ten (10) feet from the property line and twenty-five (25) feet from adjacent dwellings. Any odors from chickens must not be detectable at the property lines.
- Coops and runs must be securely constructed and must prevent access to rodents, pests, or predators. Coops and runs must be clean and neatly maintained. All manure must be promptly disposed of, unless being used for fertilizer or composting.
- Feed and other chicken care items must be kept in secure containers to prevent access or infestation by rodents or pests.
- Selling backyard chicken eggs or chicken products is prohibited.

* The ordinance contains no minimum property size requirement; however, multi-family properties such as duplexes, apartment complexes, and trailer parks are excluded from keeping chickens.

SUMMARY: CITY OF NORTH PORT

1) Backyard chickens are allowed but must follow the following restrictions according to your zoning district

2) RSF RESIDENTIAL SINGLE-FAMILY ZONING DISTRICT

- No more than four (4) hens on an 80'x 120' lot or six (6) hens on two (2) or more lots may be kept, with roosters prohibited.
- No person shall slaughter any hens.
- The hens shall be provided with a movable covered enclosure (i.e. "hen house/coop") and must be kept in the covered enclosure or a fenced enclosure at all times. Hens must be secured within the movable henhouse/coop during non-daylight hours.
- The space per fowl in the henhouse/coop shall not be less than four (4) square feet per fowl.
- No covered enclosure or fenced enclosure shall be located in the front yard, nor shall the henhouse/coop be closer than ten (10) feet to any property line of an adjacent property.
- Odors from hens, hen manure, or other hen related substances shall not be detectable at the property boundaries.

SUMMARY: CITY OF NORTH PORT (CONT.)

2) RSF RESIDENTIAL SINGLE-FAMILY ZONING DISTRICT

- All enclosures for the keeping of hens shall be so constructed and maintained as to prevent rodents or other pests from being harbored underneath, within, or within the walls of the enclosure. The henhouse/coop must be impermeable to rodents, wild birds, and predators, including dogs and cats. Enclosures shall be kept in neat condition, including provision of clean, dry bedding materials and regular removal of waste materials. All manure not used for composting or fertilizing shall be removed promptly.
- All feed and other items associated with the keeping of hens that are likely to attract or to become infested with or infected by rodents or other pests shall be kept in secure containers or otherwise protected so as to prevent rodents and other pests from gaining access to or coming into contact with them.
- The sale of eggs or any other hen products generated in a residential single-family district cannot be sold in residential single-family district.
- No dog or cat that kills a hen will, for that reason alone, be considered a dangerous or aggressive animal.
- This section applies to the keeping of hens only in a residential single-family district, and does not apply to any other animal or fowl.

SUMMARY: CITY OF NORTH PORT (CONT.)

2) RSF RESIDENTIAL SINGLE-FAMILY ZONING DISTRICT

- Chickens that are no longer wanted by their owners shall not be taken to Animal Control, nor shall they be released. Unwanted chickens may be taken to Health & Human Services Mosquito Control Division for utilization in the Sentinel Chicken Program.
- Nothing in this subsection shall affect any HOA association, declarations or restrictions.

3) “Estate” AG Zoning District

- Agricultural uses, such as farming, dairying, pasturage, agriculture, the keeping of domestic pets, horticulture, floriculture, aquaculture, silviculture, animal and poultry husbandry and necessary accessory structures and uses incidental to agricultural activity are permitted.
- No animals shall be allowed to be raised in AG Agricultural Districts without the provision of an on-site supply of water, and no animals shall be housed in structures that have inadequate ventilation and light.

THE BASICS: LAWS & REGULATIONS

- ✘ What are your options if your local zoning does not allow backyard chickens?
 - ✘ Be aware that citizen groups in cities across the U.S. (which you can join) have begun to promote keeping city flocks for the following reasons:
 - ✘ a step towards self-sufficiency through the backyard production of eggs
 - ✘ a compatible partner to a backyard garden through pest control and the production of fertilizer
 - ✘ a cut down on kitchen scraps by feeding to the flock
 - ✘ education for children on where food comes from
 - ✘ desire for some to enjoy aspects of "country living" despite their urban environment
-

THE BASICS: LAWS AND REGULATIONS

Local Citizen Groups for Backyard Chickens

- × **Sarasota C.L.U.C.K** (Citizens Lobbying for Urban Chicken Keeping) is advocating now for a measure allowing urban chickens in the unincorporated Sarasota County
 - + Take their 'Are You Ready for Backyard Chickens' test
 - + Contact Info: <http://sarasotacluck.blogspot.com/>
- × **Manatee C.L.U.C.K** (Citizens Lobbying for Urban Chicken Keeping) is advocating now for a measure allowing urban chickens in the City of Bradenton
 - + Contact Info: <https://www.facebook.com/pages/Manatee-Cluck/200716266632260>

THE BASICS: GETTING STARTED

Backyard Chicken Sources

✘ **Local Chicken Breeders**

- FL Poultry Breeders Directory

<http://floridapoultrybd.weebly.com/>

- American Livestock Breeds Conservancy

✘ **Mail Order Companies**

- e.g., Murray McMurray Hatchery

✘ **Local Supply Stores**

(Sarasota Co): e.g., Stockyard; WJ Distribution

(Manatee Co): e.g., Tractor Supply; Come See, Come Sav



THE BASICS: GETTING STARTED

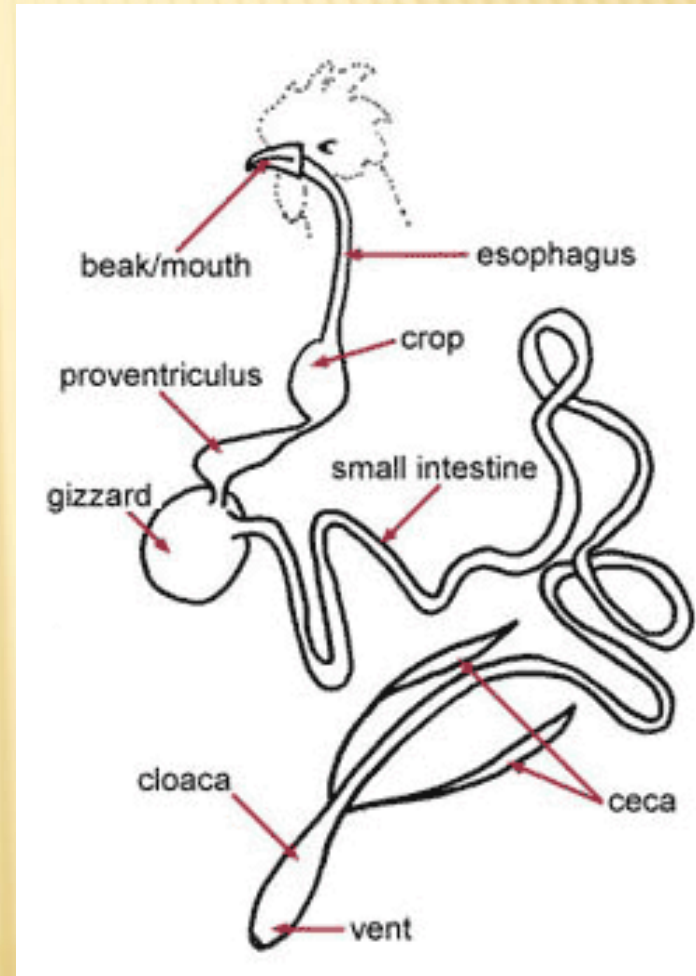
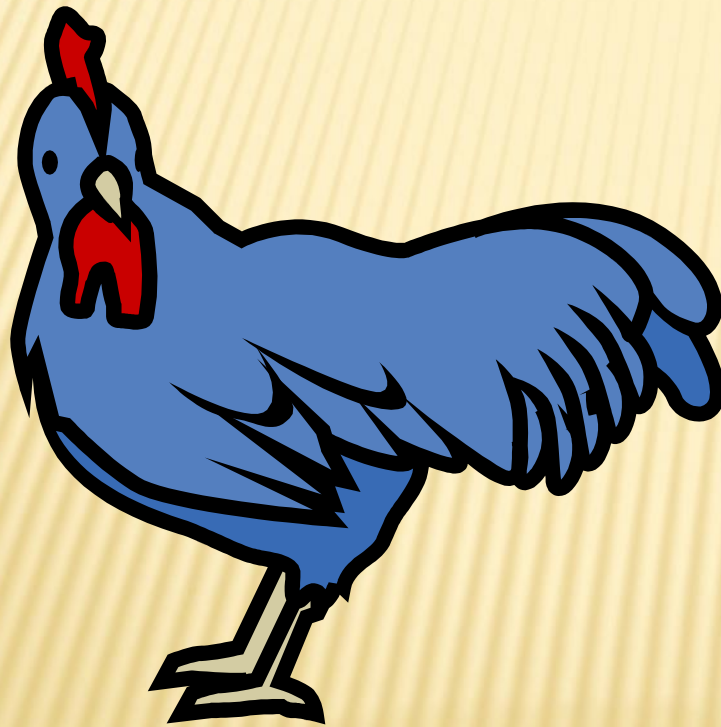
Backyard Chickens Supplies Stores

- ✘ Feed & Seed Stores
- ✘ Pet Supply Stores
- ✘ Country Supply Stores
- ✘ Craig's List



THE BASICS: NUTRITION

A Starting Point is to Learn How do Poultry Eat ??



CHICKENS 101 INTRODUCTORY COURSE



Nutrition

Health

THE BASICS: NUTRITION

Chicken Digestion Parts and Functions

- **Mouth/Beak** - gather and break down feed (no teeth)
- **Esophagus** - tube from mouth to stomach that is open at the mouth end
- **Crop** - feed storage and moistening
- **Proventriculus** - glandular stomach (HCl and gastric juices); enzymatic
- **Gizzard** - muscular stomach; mechanical breakdown; grit particles are essential

THE BASICS: NUTRITION

Chicken Digestion Parts and Functions

- **Small Intestine** - enzymatic digestion and absorption
 - Functions of the small intestine: digestion of proteins, carbohydrates, and fats; absorption of the end products of digestion
 - Enzymes in the small intestine
- **Ceca** - site of beneficial digestive microbes
- **Large Intestine**
 - bacterial activity
 - water absorption
 - waste storage
- **Cloaca** - common chamber for GI and urinary tracts
- **Vent** - common exit for GI and urinary tracts

THE BASICS: NUTRITION

What do Poultry Need ??

- × Water.....For temperature regulation & digestion
- × Protein.....11 of 20 amino acids
- × Carbohydrates
- × Fat..... 1 fatty acid
- × Vitamins.....13
- × Minerals.....27 known

Seventy percent of the cost of raising chickens goes for feed. This is an investment rather than an expense because the better the birds are fed, the more productive they will be.

http://www.caes.uga.edu/Publications/pubDetail.cfm?pk_id=6885&pg=np&ct=poultry&kt=&kid=&pid=#Fee

THE BASICS: FEEDING

Nutritional requirements to provide a balance diet depend on:

- × Maintenance
- × Growth
- × Production
- × Health of the birds

THE BASICS: NUTRITION

Rules

- Use the right feed



Starter



Grower



Finisher



Layer

- Do not feed layer feeds to broilers.
- Do not feed finely ground feed.
- Most commercial feeds are designed to meet all of the bird's requirements when fed as a sole source of nutrition.

THE BASICS: NUTRITION

Layer Nutrition Example



Stage (weeks)	% Crude protein required
Starter 1-6	20-23%
Pullets 6-14	15-19%
Pullets 14-22	12%
Layer/Breeder Hens	16%

THE BASICS: NUTRITION

Commercial Feeds

- + Nutritionists for the commercial poultry industry have developed formulations for complete nutrition of chickens according to growth stage.
- + Complete feeding diets need no additional supplements and may be purchased as mash, crumbles, or pellets. Avoid powdery feeds.
- + Calcium (e.g., crushed oyster shell) and hard, insoluble granite grit should be provide as supplemental feed on demand.
- + Do not mix scratch grain with a complete commercial ration. Cracked corn, for example, is low in protein. By mixing cracked corn with a complete commercial grower ration, you dilute (reduce) the protein level as well as the vitamin and mineral

THE BASICS: NUTRITION

Feed Additives (Optional)

- + Antioxidant: Prevents rancidity of the fat in the diet or to prevent nutrient loss.
- + Pellet binders: Used to improve texture and firmness of pelleted feeds.
- + Hormones are not added to any poultry feeds.
- + Coccidiostats: To prevent coccidia problems with young chickens. Mature chickens develop a resistance to coccidiosis if allowed to contract a mild infection of the disease. The medicated feed is then replaced with a nonmedicated feed.
- + Antibiotics: To stimulate growth rate and feed efficiency of young chickens.

Follow feeding directions and withdrawal times for feeds with coccidiostats and antibiotics.

THE BASICS: NUTRITION

- + Store feed in container with a tight-fitting lid & a cool, dry place. Never feed moldy feed.
- + Limit purchases to a 2-3 week supply.
- + Keep feed and cool, clean water available to birds at all times.
- + Ration-feeding of diets can result in reduced growth, egg production and eggshell strength.
- + Fill feeders at $\frac{3}{4}$ capacity to avoid excessive waste.

THE BASICS: NUTRITION

What Inhibits Water & Feed Intake?

- + Inadequate Water
- + Stale or rancid feed
- + Mold
- + Disease
- + Heat

THE BASICS: NUTRITION

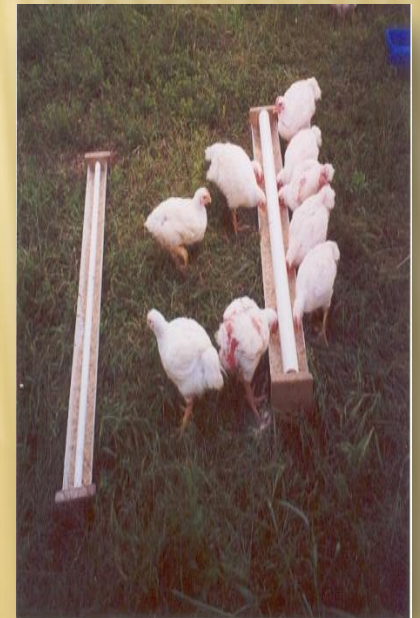
Feeders

- **Hanging System**

- Raise and lower to bird height
- Outer lip level with birds back
- Prevents spillage and spoilage

- **Trough Feeder Systems**

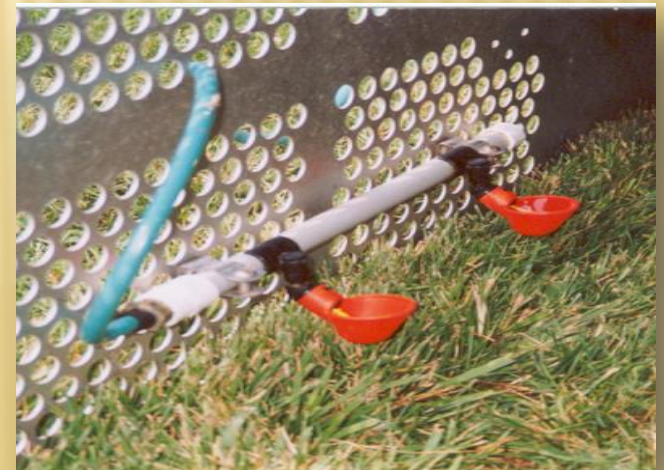
- Chickens more susceptible to disease
- Taken out of pen before moving
- More chickens can feed at once



THE BASICS: NUTRITION

Watering Systems

- Five-gallon bucket atop the pen will gravity feed a bell type
- Mesh screen across top
- Attach to pen
- Hoses are used on nipple type
- Daily water consumption at 90° F for chickens.... approx. 0.5 pint/bird
- Water intake can vary greatly



THE BASICS: NUTRITION

Alternative Feed Ingredients

Amaranth
Buckwheat
Canola meal
Earthworms
Oats
Potato protein
Quinoa
Rice bran
Rye
Seaweed

THE BASICS: NUTRITION

Acceptable Kitchen Scraps & Foods Examples

Food	Type	Comments
Apples	Raw & applesauce	Apple seeds contain cyanide, but not in sufficient quantities to kill.
Asparagus	Raw & cooked	Okay to feed, but not a favorite.
Bananas	Without peel	High in potassium, a good treat.
beans	Well cooked only	Also greenbeans
Berries	All kinds	A treat, especially strawberries.
Broccoli & Cauliflower		Tuck into a suet cage and they will pick at it all day.
Carrots	Raw & cooked	They like carrot foliage too.



THE BASICS: NUTRITION

Don't Feed the Following Kitchen Scraps & Foods

Food

Reason Why

- Raw green potato peels - Toxic substance called Solanine.
- Anything real salty - Can cause salt poisoning in small bodies such as chickens.
- Citrus .
- Dried or undercooked beans - Raw, or dry beans, contain a poison called hemagglutinin which is toxic to birds.
- Avocado skin & pit - Skin and pit have low levels of toxicity.
- Raw eggs - You don't want to introduce your chickens to the tastiness of eggs which may be waiting to be collected in the nestboxes.
- Candy, chocolate, sugar - Their teeth will rot ?!... No, it's just bad for their systems, and chocolate can be poisonous to most pets.



THE BASICS: NUTRITION

- grub larvae composter & grower
- Use grub larvae as food high in fats & protein



Black Soldier Fly

← Grub larvae

Adult →



THE BASICS: NUTRITION

- Chickens that can go outdoors can supplement their diet with greens and insects.
- It will not take them long to devour the forage within their enclosure.
- If free ranging is used to supplemental the diet then do not use chemical pesticides in foraging area

THE BASICS: BENEFITS OF BACKYARD CHICKENS & FORAGE FEEDING

- Eggs from pasture-raised compared to commercial, confinement industry hens have the following:

- 1/3 less cholesterol
- 1/4 less saturated fat
- 2/3 more vitamin A
- 2 times more omega-3 fatty acids
- 3 times more vitamin E
- 7 times more beta carotene ¹

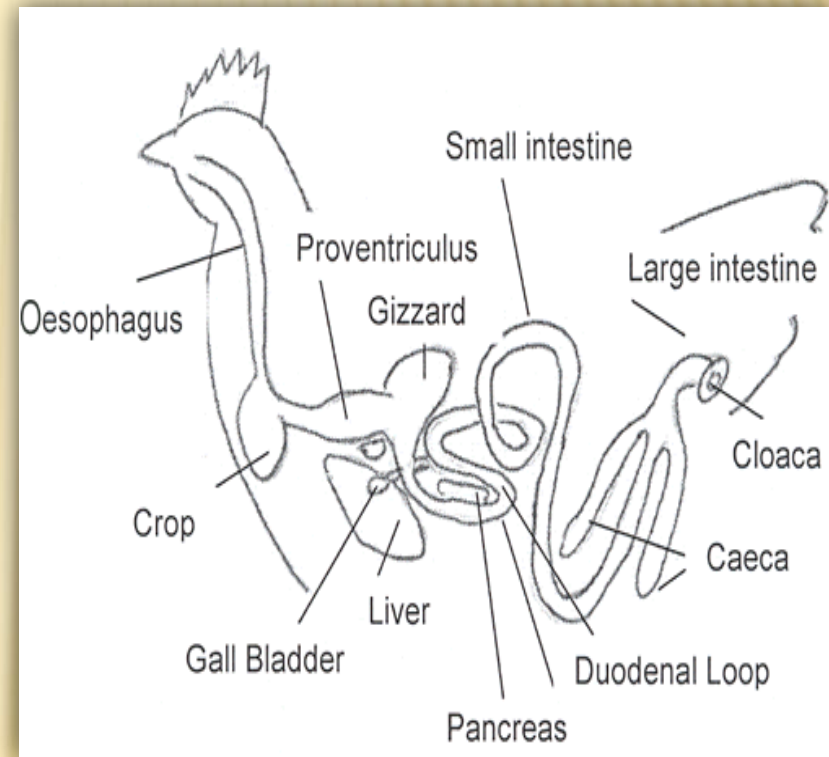


¹ <http://www.motherearthnews.com/eggs.aspx>

THE BASICS: NUTRITION

Foraging Feeding

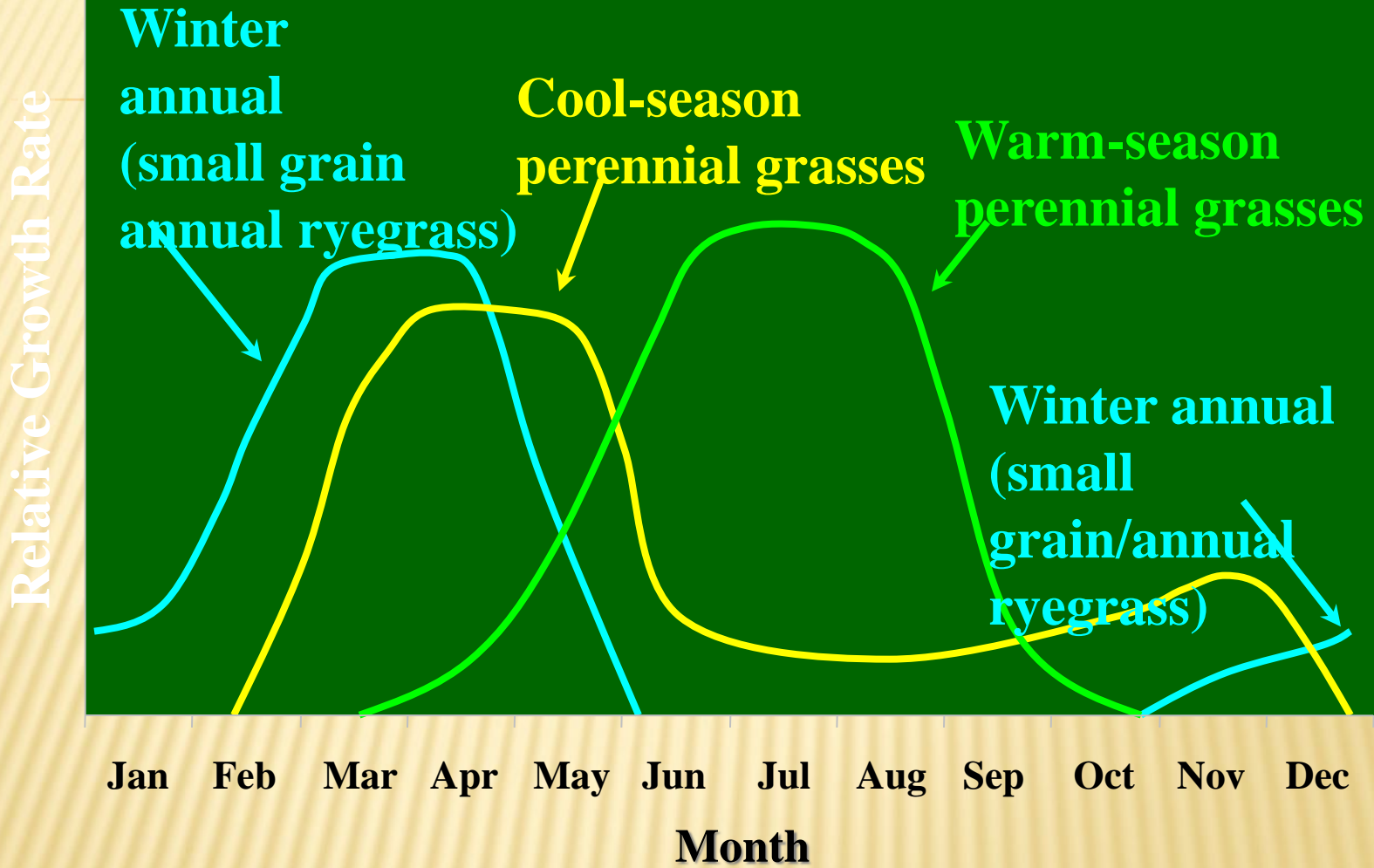
- Caeca develop microbes with the capacity to digest fiber and eat backyard forage
- Poultry are not ruminants and cannot digest cellulose in most plants very efficiently.
- Chickens will eat almost anything as long as it is not too tall or not too tough.



THE BASICS: NUTRITION

Managing Backyards for Forage

- Keep the yard vegetation young and productive.
- Poultry coops should be laid out so it is easy to move pens.
- Oats, clovers mixed with grasses are most palatable.
- But be cautious – some seed blends are not adapted to our area.



Growth curves for cool-season perennial grasses, warm season perennial grasses, and winter annuals.

SEASONALITY OF FORAGES

INSECT NUTRIENT COMPOSITION

Insect	Protein %	Fat %
Crickets	6.7	5.5
Termites	14.2	NA
Caterpillars	28.2	NA
Grasshopper	14.3	3.3
Water Bugs	19.8	8.3
Spider	63	10

THE BASICS: NUTRITION

Chicken Foraging Helpful Facts

- The amount of sun and the time of day has the most impact on foraging activity.
- Spend more time outside foraging during the early morning and late afternoon, compared to around noon.
- Foraging during overcast conditions is higher than during full sun.
- To maximize foraging, provide shade and remove feeders in the morning when birds are most likely to forage.
- On pastures, birds may eat enough nutrients to supplement 10 to 30% of diet.

THE BASICS: EGG PRODUCTION

Why have my hens stopped laying?

Identified Factors:

× **Nutrition**

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

× **Disease**

× **Age**

× **Management**

- + Heat
- + Overcrowding
- + Light



Let's Review

THE BASICS: NUTRITION & EGG LAYING

Nutrient Deficiency Effects

- ✘ **Salt** - feeding a salt-deficient diet will lead to increased feather pecking and a decline in egg production.
- ✘ **Calcium** - inadequate calcium consumption will result in decreased egg production and lower egg shell quality.
- ✘ **Vitamin D** - inadequate levels of vitamin D quickly results in decreased egg production
- ✘ **Protein** - if dietary protein is too low or the amino acid requirements are not met, poor egg production and hatchability will occur.

THE BASICS: NUTRITION & EGG LAYING

Nutrient Deficiency Effects

- ✘ **Fat** – impairment of the absorption of fat-soluble vitamins (A, D, E, and K) is the most serious consequence of a dietary deficiency of fat and will adversely affect egg production.
- ✘ **Water** - shortage of water for just a few hours can result in reduced egg production, so clean water should be available at all times.

THE BASICS: HEALTH

Chicken Health Key Concepts

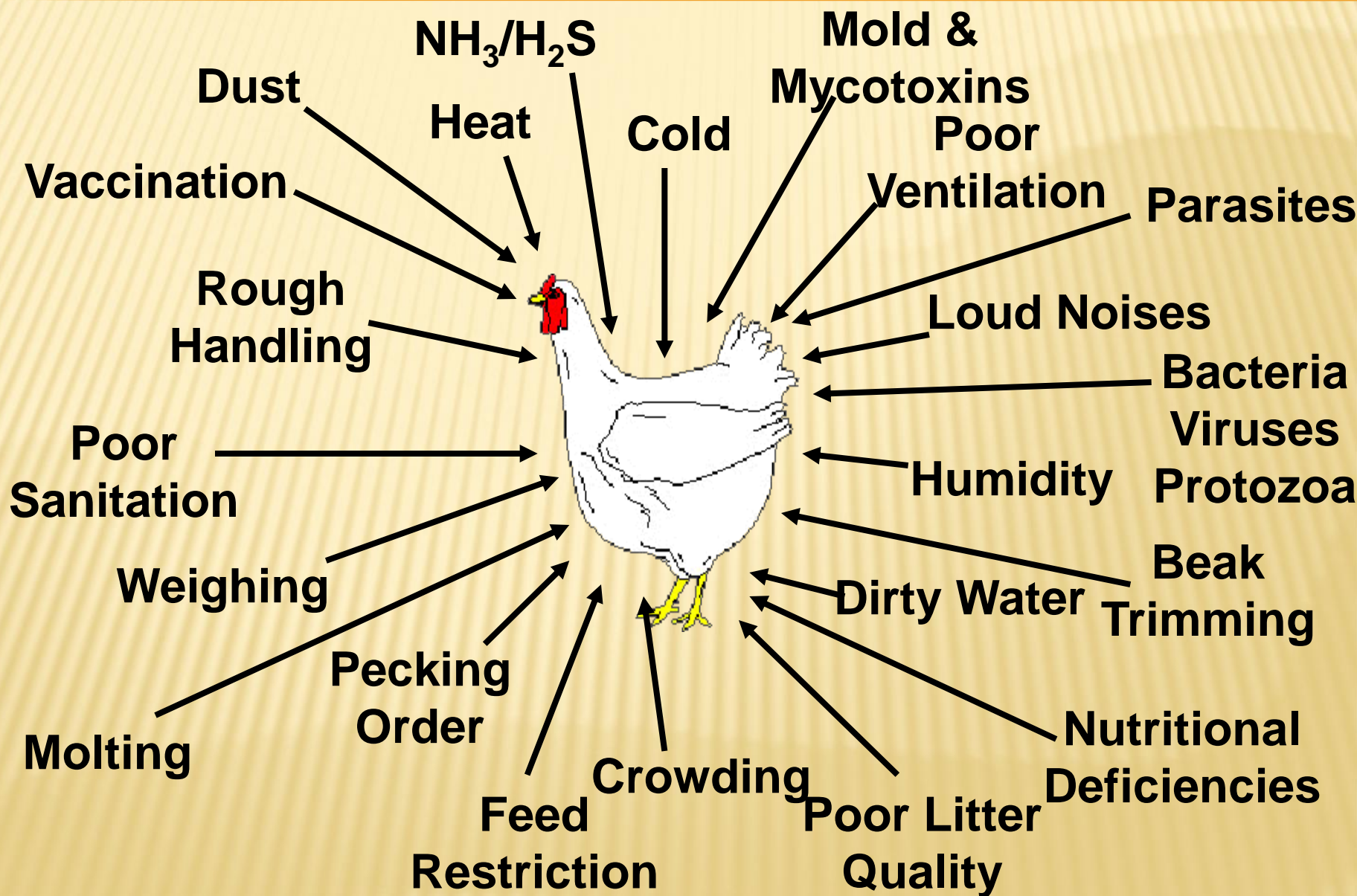
- + Disease
 - × any departure from the normal state of health
- + Observations – key to managing health
 - × Facilities
 - × Records
 - × Birds
- + Normal appearance and behavior
- + Many Diseases Produce Similar Signs

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 _____
Tongue _____
Masticatory Muscles _____
Chewing _____
Lateral Movement _____
Clicking/Ramping of Condyles _____
Vertical Osseous _____ Malocclusion (Functional Change) _____ Group Function _____
Work of Chewing _____ Functional Change _____ Asymmetry _____
Classification of Occlusion _____ Centric Relation _____
Extra Bone _____ Other _____

Soft Tissue Exam

Oral Cancer Exam _____
Sinus _____
Lips _____
Tongue Nodes _____
Palatal Tissue Health _____
Respiratory _____
Salivary Glands _____
Larynx _____
Nose _____
Head Trauma _____

Hard Tissues

Missing Teeth _____ Missing/Spacing _____
Fracture _____ Discoloration _____
Abnormal _____
Wax _____ Discoloration _____
Abnormal _____ Radiopaque Features _____

Radiographic Exam

Abnormal _____ Impaction _____
Periodontal Disease _____
Osteomyelitis _____
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			Maneuvering		
Plaque Index			Heavy Calcification		
Brushing			Flapping		
Microleakage			Other		

Personal Profile

Allot Concerns _____
Policies Requested The Following _____

Record Page

File Edit View Help

File No. 1 Name: JOHN A. CITIZEN Address: 22 SUCCESS AVENUE Page No. 1
Date of Birth: 01/01/1941 BERKLEY CA 94710

Page Created on: 06/23/01

This scrollable window is for writing case notes.

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).

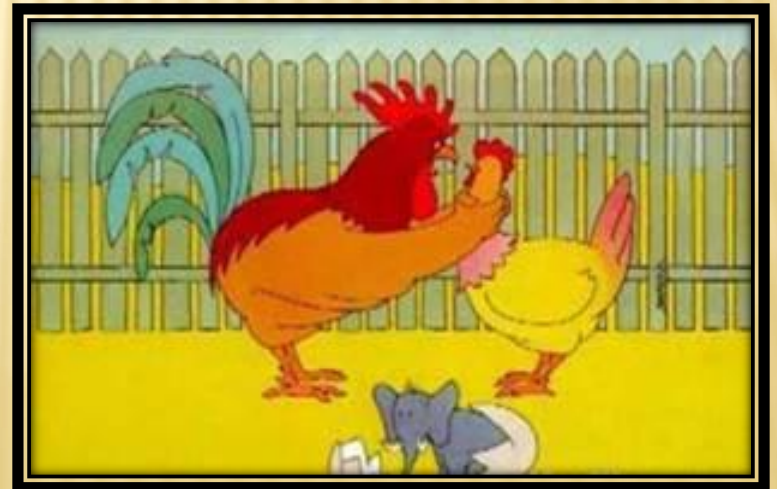
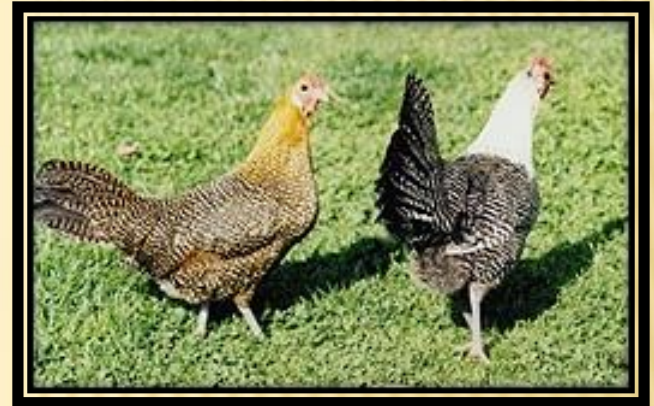
Monitor	Wt	BP	BSL	HbA1C	Chol	LDL	Demographics
02/12/02	120	140/90	7.0	6.5	5.5	3.2	12/09/02 ADT
12/09/02	130	150/90	8.0	7.5	7.0	4.0	03/01/99 Hep B 3
09/06/02	150	160/100	9.0	8.5	8.5	4.5	10/06/99 Hep B 2 06/05/99 Hep B 1

Scanned Documents:

Date	Description	Source
02/09/02	Full Blood Count	Selfwds-Pathology Service
02/01/02	Urea Chart	Selfwds-Radiology 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

Ectoparasites - organism that feeds on the exterior of the body of the host.

× 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

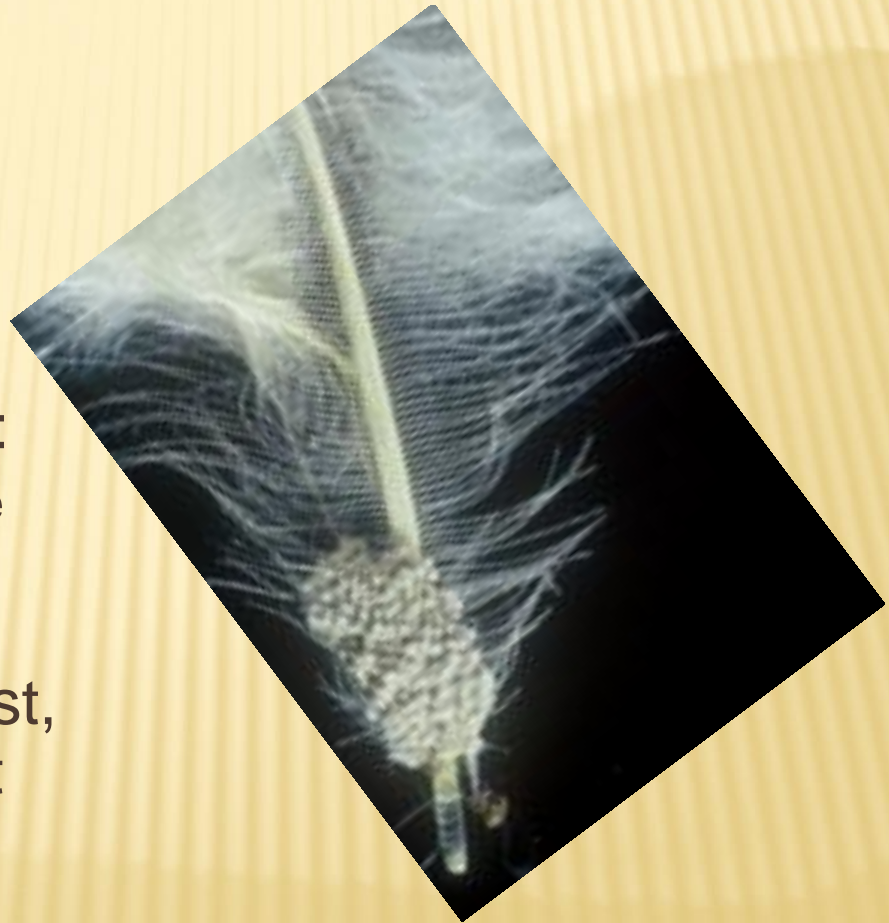
Size: 2-3 millimeters long

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.

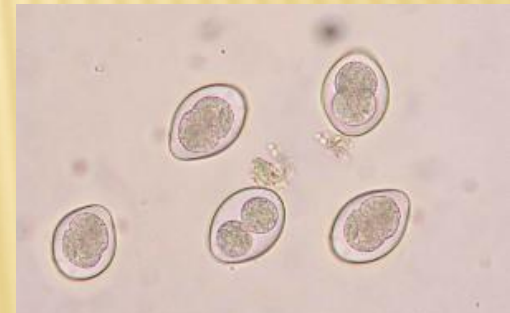


HEALTH: EXAMINATION EXAMPLE

- ✘ **Endoparasites** - a parasite that lives and feeds inside the host animal
 - **Nematodes** or roundworms, are elongated, cylindrical, unsegmented endoparasites. There are many species of roundworms, each tending to infect a specific area of the gastrointestinal tract.
 - **Tapeworms** (cestodes) are white or yellowish ribbon-like segmented flat worms. They vary in size from 0.17 to 12 inches in length. Although tapeworms do not produce extensive lesions or damage to the intestines, they are nutritional competitors.



Fecal roundworms



Fecal float test of coccidia

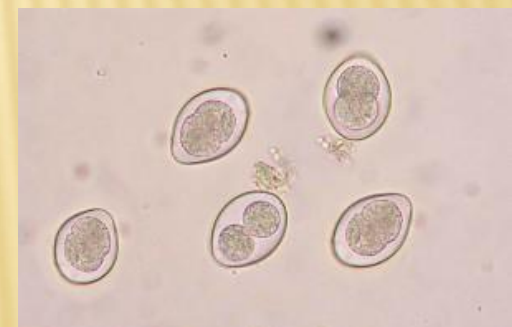
HEALTH: EXAMINATION EXAMPLE

✘ **Endoparasites** - a parasite that lives and feeds inside the host animal



Fecal roundworms

- 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 float test of coccidia

HEALTH: EXAMINATION EXAMPLE

× Endoparasites

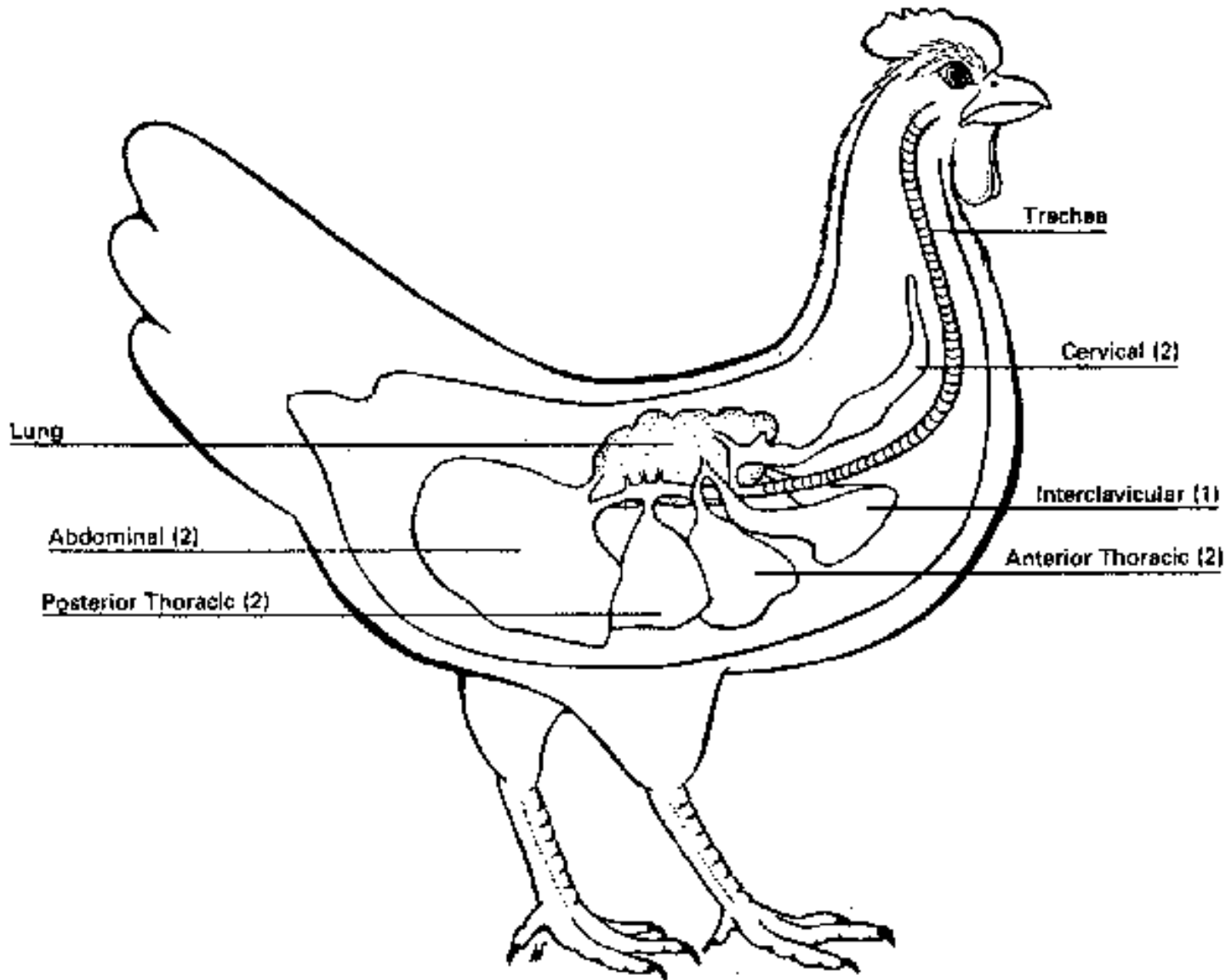
- A few internal parasites don't cause significant harm and may even be of value to the health of your flock.
- **With proper attention to housing, nutrition and insect control parasite infestation can be kept to a minimum.**
- Monitor your flock for signs of parasite infestation and identify the parasite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

THE BASICS: HEALTH

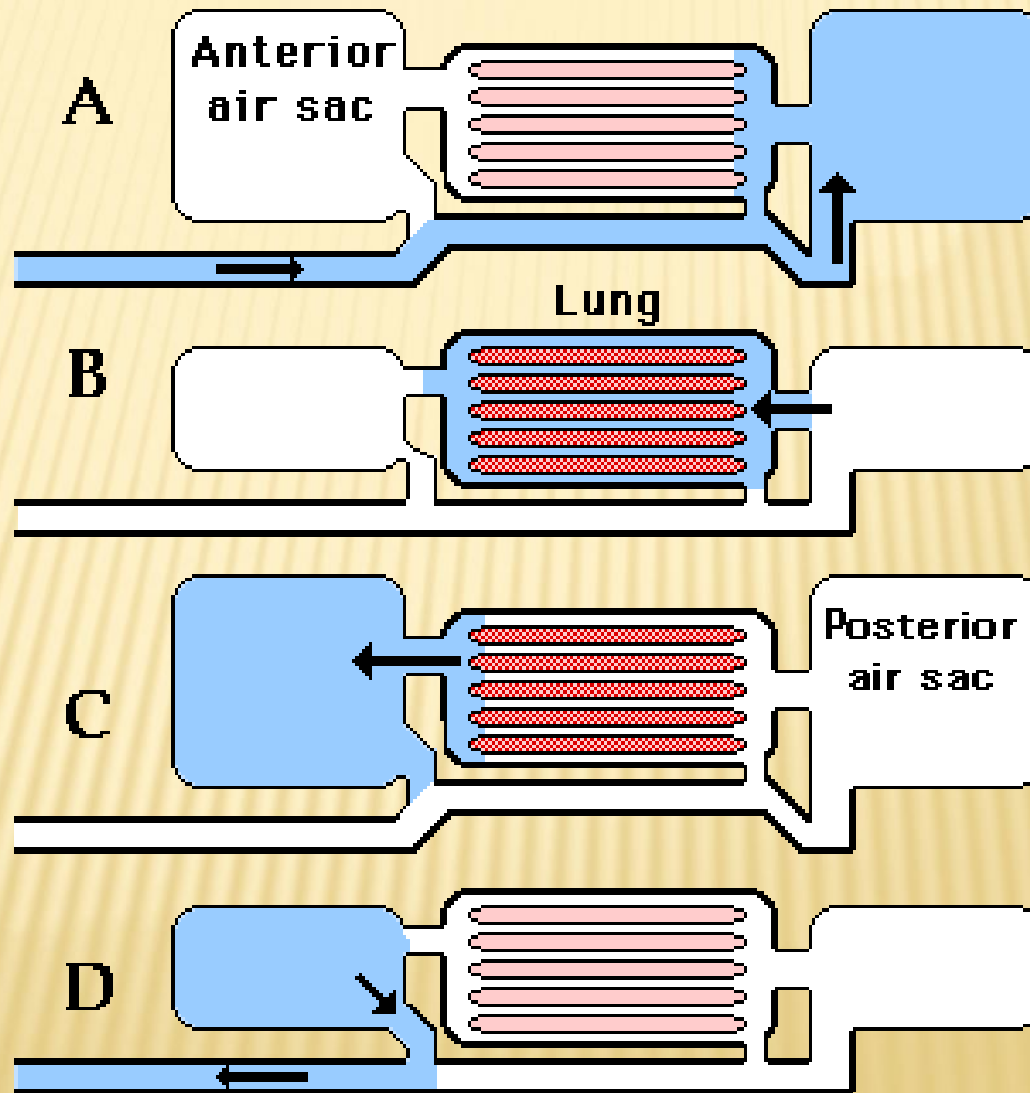
- At this time, a few words are appropriate about chicken mortality that is not disease related
- **For example, this situation could happen:**
 - **My kid was holding a chick and it just seemed to die in his/her hands. Is this normal? Were they stressed out? Were they sick?**
 - **The avian and mammalian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

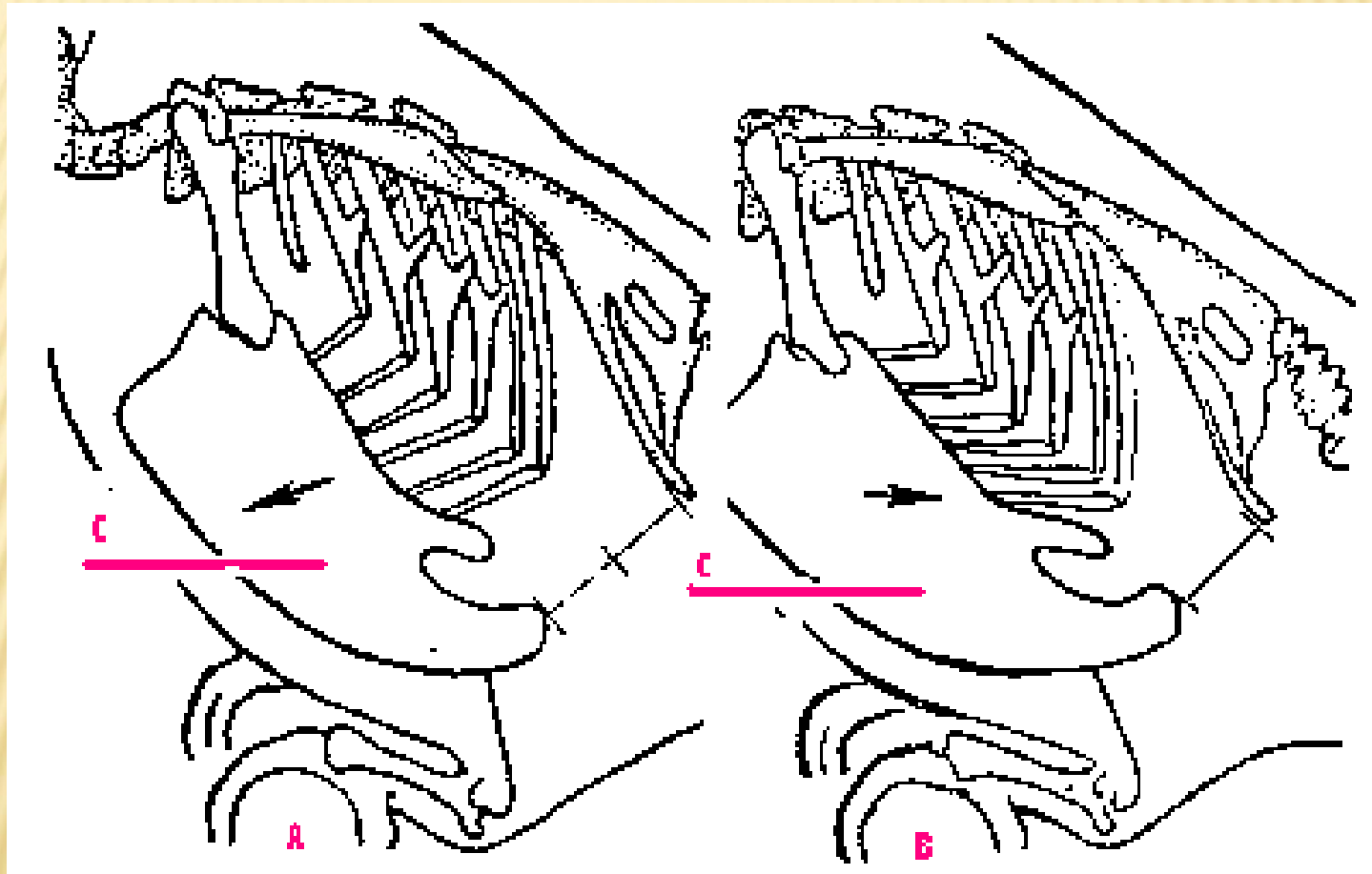
UNIQUE FEATURE OF BIRDS: AIR SACS



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

- Gumboro (Bursal Disease)
- Coccidiosis
- Fowl Cholera
- Infectious Coryza
- Avian Influenza
- Laringotracheitis
- Marek's Disease
- Newcastle
- Mycoplasmosis
- Salmonellosis
- Avian Tuberculosis

Life Span Reduction Impact

Months
Months
Weeks
Hours to days
Days to weeks
Days
Weeks
Days to weeks
Hours to days
Weeks
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

Disease Treatment/Preventions



- ✘ 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: VACCINATIONS

- Vaccination is no substitute for effective management of strict sanitation and biosecurity. It must be understood that vaccines may be effective in reducing clinical disease, but exposed birds, in most cases, still become infected and shed disease organisms.
- Commercial poultry are usually vaccinated to protect them against a variety of diseases. Vaccination, however, is seldom practiced by small flock owners. There may be several reasons for this, including:
 - Rarely have disease problems
 - Unaware that disease is present
 - Do not get the disease properly diagnosed
 - Do not know where to purchase vaccines
 - Too expensive because poultry vaccines usually come in 500 to 10,000 dose vials.

THE BASICS: VACCINATIONS

- Deciding whether or not to vaccinate against a disease depends on the likelihood that the birds in a flock may be exposed to that specific disease. If a flock is closed, such that new birds are never introduced and the birds that leave their premise are not permitted to return, the likelihood of many diseases is greatly reduced. In these cases, since the risk is small, the owner may decide not to vaccinate.
- Vaccination should be considered if the flock owner has experienced one or more of the following:
 - Takes birds to poultry shows
 - Buys birds from hatcheries, bird auctions, or other sources and adds them to an existing flock
 - Has had disease problems in the past

THE BASICS: EGG PRODUCTION

Why have my hens stopped laying?

Identified Factors:

- × **Nutrition**
 - + Completely balanced diet
 - + Out of feed or water
- × **Disease**
- × **Age**
- × **Management**
 - + Heat
 - + Overcrowding
 - + Light



Let's Review

THE BASICS: HEALTH & EGG LAYING

Ectoparasite Effects

Ectoparasites - organism that feeds on the exterior of the body of the host.

Northern fowl mite

The northern fowl mite (*Ornithonyssus sylviarum*) is the most common of the poultry mites. Refer to the publication PS-10, ("Common Continuous External Parasites of Poultry"), for information on identification and control of Northern fowl mites.

Northern fowl mites are blood suckers and are irritating to poultry. Anemia occurs in heavily parasitized birds, reducing feed efficiency, egg production, and ability to withstand and overcome diseases.

<http://edis.ifas.ufl.edu/ps029>

THE BASICS: HEALTH & EGG LAYING

Ectoparasite Effects

- ❖ **Mites** – they are blood suckers and are irritating to poultry. Anemia occurs in heavily parasitized birds, reducing feed efficiency, egg production, and ability to withstand and overcome diseases.
- ❖ **Lice** - they feed on dry scales, feathers, or scabs on the skin. As lice crawl over the bird, their mouth parts and sharp claws scratch the skin. The constant irritation causes the bird to become nervous and behave abnormally, causing a general unthriftiness and unkempt appearance in the bird. Egg production in infested flocks may drop as much as 10%, although some heavy infestations have caused egg production to fall as much as 20%.

THE BASICS: HEALTH & EGG LAYING

Endoparasite Effects

❖ Heavy infestations of endoparasites can cause unthriftiness, poor feed efficiency, poor growth, reduced egg production, and mortality in severe infestations. Infected birds may also be more susceptible to various diseases and stresses.

❖ **Examples**

❖ **Nematodes**

❖ **Tapeworms**

THE BASICS: HEALTH & EGG LAYING

Disease Effects

- ❖ **Fowl Pox** - will cause the chickens to have poor growth, poor feed conversion and a precipitous fall in egg production
- ❖ **Coccidiosis** – symptom (e.g., bloody droppings, general droopiness, emaciation, a marked drop in feed consumption, diarrhea) - cause a drop in egg production
- ❖ **Infectious Bronchitis** – symptoms (coughing, sneezing, and rales) - egg production drops markedly (by as much as 50%). - soft-shelled or misshapen eggs - watery egg white - poor pigmentation of brown-shelled eggs

THE BASICS: HEALTH & EGG LAYING

Disease Effects

❖ **Newcastle Disease** – symptoms (depression, loss of appetite, decreased water consumption) cause a dramatic decline in egg production to zero. Runs its course in 10 to 14 days, but full recovery takes 5 to 6 weeks

❖ **Avian influenza** - infected flocks will be quarantined by the State. Quarantine is continued until the flock is depopulated. The course of the disease is 10 to 14 days, but recovered birds continue to shed the avian influenza virus in feces for 3 or 4 weeks. Eggs from layers are safe to eat, but the shell should be washed and sanitized. The poultry litter or manure should be composted before application to cultivated lands.

THE BASICS: HEALTH & EGG LAYING

Disease Effects

- ❖ **Avian Encephalomyelitis** - laying hens seldom show clinical signs when infection is going through the flock. However, good production records often reveal a slight drop in egg production (5 to 20%) lasting no more than two weeks. In breeding flocks, a corresponding decrease in hatchability is also noted.
- ❖ **Infectious Coryza** – symptoms (swelling and puffiness around the face and wattles, a thick sticky discharge with a characteristic offensive odor from the nostrils, labored breathing, and rales) cause a drop in feed and water consumption as well as egg production.

LOCAL CHICKEN HEALTH RESOURCE

Dr. Don Swerida

941-480-9707

Laurel Road Veterinary Clinic

URL: <http://laurelrdvetclinic.com/>

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>
- ❖ **Feathered Facts Newsletter – UF/IFAS Extension Baker County -**
<http://union.ifas.ufl.edu/FeatheredFactsNewsletters.shtml>

ACKNOWLEDGEMENTS

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- Chisholm, T., D. Zivnuska, J. Cox, & M. Seipel. Pasture poultry research, Truman State University Ag Science
- 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>
-

THANK YOU

