

Small Poultry Enterprise Management

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Updated – 2019 by Michael Pennington-Martel
(CPA Secretary, cpa@ctpoultry.org)

Mention Dr. Darre and his legacy, and slightly updated by me. Mention www.ctpoultry.org. Mention the difference between Dr. Darre and myself, an old school chicken guy vs a newer backyard type chicken person.

Poultry Pages

UConn | COLLEGE OF AGRICULTURE,
HEALTH AND NATURAL RESOURCES

ANIMAL SCIENCE

Southern New England 4-H Poultry Show and Showmanship Contest

Saturday, April 1, 2017

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Small Flock Info

[Penn State Poultry Extension Resource Page](#)
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[Small Flock Fact Sheets \(CT and NH\)](#)

[Chicken Coop Designs](#)
(www.backyardchickens.com)

[Lighting Poultry 2012 Presentation](#)

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Poultry Resources

[ATTRA - Appropriate Technology Transfer for Rural Areas.](#)

[Buyers Guide. Where to Buy Poultry, Eggs, etc](#)

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[UConn 4-H Poultry Website](#)

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[Northeast Regional Poultry Research Project \(NE-127\)](#)
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[Online World of Poultry](#)
(www.backyards.com)

Poultry Health Issues

[<Avian Influenza Seminar Sept 9 2015](#)

[Farm Plan for Highly Pathogenic Avian Influenza - Pennsylvania](#)

[Poultry Biology](#)

[Small Flock Poultry Health](#)
(http://www.agf.gov.bc.ca/abc/poultry/small_flock_manual.pdf)

[Poultry Diseases & Medications For Small Flocks](#)

[The Merck Veterinary Manual](#)
(www.merckvetmanual.com)

[Diseases of Poultry](#)
(www.mastate.edu)

[Respiratory Infections in Domestic Poultry Flocks](#)
(www.arsphd.usd.edu)

[Poultry Necropsy Manual](#)

<http://web.uconn.edu/poultry/poulttypages/>

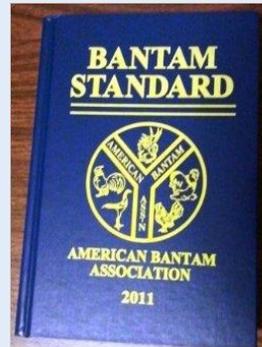
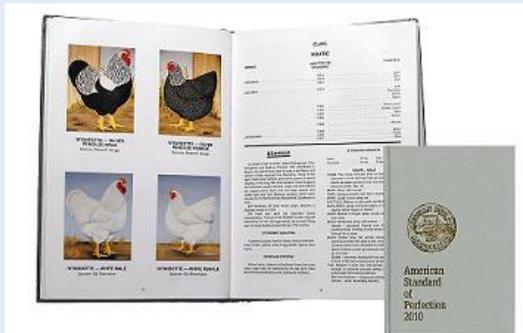
Some links may be broken now that Dr. Darre has left, but many still work. If they have any issues, let me know. Some things are now on the www.ctpoultry.org page.

What does rearing a small poultry flock involve?

Physiology
Nutrition
Genetics
Health
Food Safety - HACCP
Engineering
Economics
Behavior
Management
Other . . .

Just some of the subjects we will also be studying. How many folks already have chickens? Anyone over 50 birds?

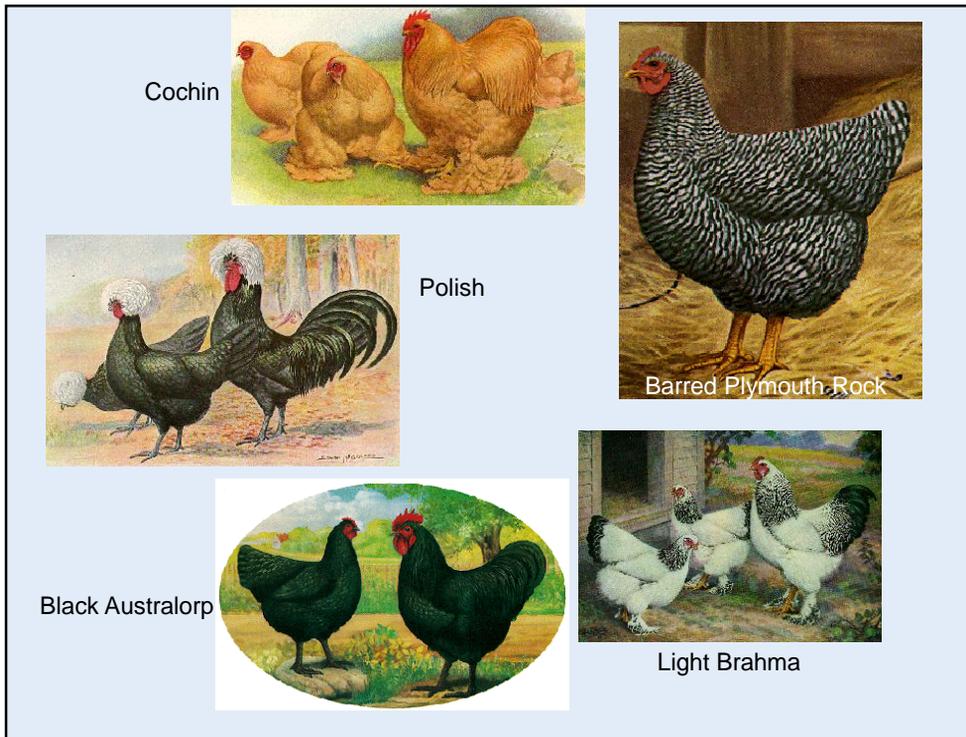
Choosing a breed



If getting birds for New England, look for cold hearty birds. Many of the birds I'm going to show are available here.

Some Examples of breeds for Pastured Laying Hens





More breeds.

Clockwise:

Top left, buff cochin, originated from China

Top right, Barred Plymouth Rock (from MA)

Bottom right, Columbian Wyandotte

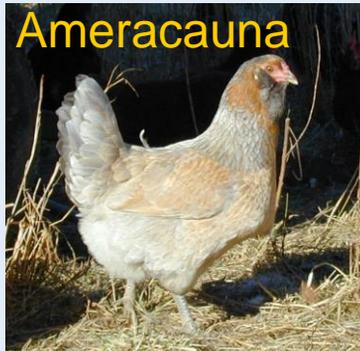
Bottom Middle, Black Australorp

Next up. White Crested Black Polish

ARAUCAUNA



Black Australorp



Different colored eggs, blue, green, easter egger, brown, white, etc

Partridge Wyandotte



Red Sex-linked



Buff Orpington



Rhode Island Red



Barred Plymouth Rock



Brown Egg Layers		Specialty Breeds & White Egg Layer	
<p>Rhode Island Red</p> <p>Through the years this breed has maintained their reputation as a dual purpose bird. It is a truly American breed known for their outstanding egg production of large, brown eggs and their ability to withstand our harsh New England winters.</p> 		 <p>Araucana/Ameraucana (The "Easter Egg Chickens")</p> <p>A special cross known for their ability to lay colored eggs of shades varying from turquoise to deep olive to shades of brown. Beautiful birds, the adults are of medium size and exhibit a combination of colors and patterns. A unique breed and great fun when the eggs start coming!</p>	
 <p>Black Australorp</p> <p>One of the best layers of large, light brown eggs of all the heavy breeds. They are extra-large birds of a quiet & gentle nature and stand confinement well. Pullets will mature early & will start laying at about 5 months of age. Excellent cold tolerance.</p>		<p>Red Star (Sex-Link Variety)</p> <p>One of the best x-large, dark brown egg layers that continue to lay right through hot or cold weather. A large, early maturing bird with an excellent disposition. They bear confinement well and are extremely winter hardy. A sex-link chick is one that can be sexed by their color at the time of hatch so there is 100% sexing accuracy!</p> 	
<p>Barred Rock</p> <p>One of the all-time favorite dual-purpose breeds in this country. They are prolific layers of large, brown eggs and very tolerant of our cold New England winters. Their solid plumpness and yellow skin make a beautiful, heavy roasting fowl. A large bird of good disposition.</p> 		 <p>White Cochon</p> <p>One of the oldest Cochon varieties. A feather footed breed that are like giant "snowballs" with masses of soft, white downy plumage. They are beautiful birds of a quiet disposition and an outstanding breed for exhibition. Medium, brown egg layers.</p>	
 <p>Buff Orpington</p> <p>Extra-large, stately birds of a quiet disposition. They are an excellent dual-purpose breed. Their heavy, full plumage make them outstanding winter layers of large eggs. These "Golden Beauties" are one of the most popular breeds around. They are also excellent setters and mothers.</p>		<p>Light Brahma</p> <p>A very old feather footed breed originating from Asia. An extra-large bird that is exceptionally quiet, gentle and easy to handle. Their small pea comb, great size and heavy plumage make them almost immune to cold weather. Good producers of large eggs, especially in winter, and will also set.</p> 	
<p>Silver Laced Wyandotte</p> <p>A large, colorful, hardy, productive breed. The close-fitting rose comb and good body size are valuable assets for winter laying. Cold weather doesn't seem to bother them at all as their hardiness and vigor keep them laying large brown eggs straight through the winter.</p> 		 <p>Pearl White Leg Horn</p> <p>One of the best white egg layers of all time. Only 4lbs. at maturity, they start laying at 4 1/2 - 5 months and continue laying right through our hot summers and cold winters. They require less space and feed compared to other larger breeds so they are one of the more economical breeds</p>	

Chicks you can get from Agway! We could talk breeds for hours!

Of about 300 breeds listed in the
American Standard of Perfection -
only about 20 are of commercial importance.

For Egg Laying Birds
White Eggs - Single Comb White Leghorns



White eggs are the predominant egg consumed by people in the United States and other parts of the world. The white leghorn, a Mediterranean breed, is the most common of the white egg laying breeds for commercial egg production.

Brown Egg Layers

Usually use a Sex-Link - a cross between the Rhode Island Red male and Barred Plymouth Rock Female



Z Z
b b

X



Z W
B -

=



Z Z
B b



Z W
b -

People in Northern New England seem to prefer the brown egg. Since both the Rhode Island Red and the Barred Plymouth Rock are fairly large birds, but hearty good layers., the cross between them makes a Sex Link, chicken that can be sexed at hatching by a white spot on the head of the males. The Sex link is a bit smaller than either of these birds. RIR, Barred rocks and New Hampshire reds are all known as Dual Purpose Birds, since they can be used for both eggs and meat. The Sex Link is a good brown egg layer. And is used in New England, and parts of California and Texas for brown eggs.

Dark-brown-egg layers

Barnevelders, Marans, and Welsummers all lay a very dark brown, almost chocolate-colored egg.

White-egg layers

Babcock B33V*, Hyline White*, Hubbard White Leghorn*, and Pearl Leghorn* are company creations and are generally strain crosses within the Leghorn breed. You can also buy pure strains of White Leghorns from many hatcheries but egg production will not equal that of the strain crosses.

Other white egg layers include California White, California Gray, Ancona, and Brown Leghorn.

Tinted-egg layers

The *Austra-White** is one of the few hatchery breed crosses laying tinted or light-brown-colored eggs.

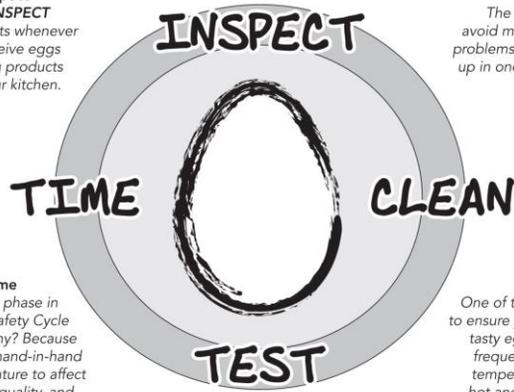
Another popular layer of tinted eggs is the Ameraucana (sometimes called the Easter Egg chicken), which will produce eggs in shades of brown, green, and blue.

The Egg Safety Cycle

One memorable way to think about egg safety is as an ongoing cycle consisting of four key parts.

Inspect
The **INSPECT** phase starts whenever you receive eggs and egg products into your kitchen.

Clean
The best way to avoid many food safety problems can be summed up in one word: **CLEAN**.



Time
The final phase in the Egg Safety Cycle is **TIME**. Why? Because time works hand-in-hand with temperature to affect the safety, quality, and taste of every egg dish.

Test
One of the easiest ways to ensure your guests' safe, tasty egg dishes is to frequently **TEST** the temperature of both hot and cold entrées.

Age of eggs in fridge.

Safe Egg Handling

For large numbers of eggs

1. Wash eggs with water at least 20 °F (11.1 °C) warmer than the internal temperature of the eggs and at a minimum of 90 °F (32.2 °C).
2. Select a detergent or detergent sanitizer that is compatible with the wash water and one that will not give off foreign odors that may be imparted to the egg.
3. Use only potable water with an iron content of less than 2 parts per million (p/m) for washing and keep wash water as clean as possible.
4. Rinse by spraying with water slightly warmer than the wash water.
5. Use an approved sanitizer in the spray rinse. The strength of the sanitizing spray should be no less than 50 ppm nor more than 200 ppm of available chlorine or its equivalent.
6. Dry the eggs to remove any excess moisture prior to packaging.
7. Store eggs large end up at a temp of < 45°F

Why large end up? Keeps air pocket up and away from yolk, if it was down it could float up through yolk. Yolk is much more susceptible to bacteria. The white part of the egg (albumen) has bacteria-killing enzymes. Keeping it large end up will make it last longer and stay fresher.

For small numbers of eggs you can use disinfecting wipes.



Try to find unscented if you can

I've found most people want to buy cleaned/refrigerated eggs.

Choosing Meat Breeds



Unlike with layers, there are limited options...

- Cornish X
- Other hybrid varieties (Barred Silvers.etc)
- Dual purpose varieties (Bufs, Barred Rocks)

Meat type birds:

Usually a cross between White Cornish and White Rock
With a few other breeds thrown in for egg production
and other factors.



X



=



Modern meat birds were developed from a cross of White Plymouth Rocks and White Cornish. Look at the meatiness of the breast!



*Baby Chicks
Broilers
Egg Layers
Pullets*

266 E. Paletown Rd. Quakertown, PA. 18951
Phone: 215-536-3155 • Fax: 215-536-8034

Office hours:
Mon - Fri 8am-5pm



Moyer's Broiler/Roaster chicks (sometimes nicknamed Cornish Giants) can be grown to a live weight of over 4 lbs. by 6 weeks of age Or, to a roaster weight of 8-10 lbs. Live weights of 4-5 lbs. can be achieved on close to 2 lbs. of feed per pound of meat. They have excellent conformation, plump, tender breast meat and good skin texture.



Moyer's K-22 Red Broilers (Cockerels Only) is a hearty meat bird that has resistant genetics providing good textured, flavorful meat for the discriminating consumer. They are perfect for the pastured poultry producer. The K-22 is a slower growing bird than the cornish giant with the males growing to a live weight of 5 pounds at around 8 weeks.



Cornish Cross Broilers (fast growth).
Cornish Cross (also called Cornish Rock) is an extremely fast growing chicken that is processed between six and eight weeks.



Colored Feathered Birds – becoming more popular

Freedom ranger

J.M. Hatchery

178 Lowry Road, New Holland, PA 17557

(717)336-4878

Red Broilers:

The *Label Rouge (France)* birds grow to 2.25 kg in 12 weeks, while the *fast-growing broilers* (Cornish cross) reach the same weight in 6 weeks. The carcass is generally more elongated and has a smaller breast and larger legs than conventional carcasses. In addition, slower-growing breeds are more suitable to outdoor production than fast-growing broilers.



Kosher King (Silver Cross)

Myers Poultry Farm
966 Ragers Hill Road
South Fork, PA 15956
USA
(814) 539-7026
MyersPF@juno.com
www.myerspoultry.com



Developed for markets desiring a heavier
meat yielding colored bird with stamina.
Very popular with ethnic markets &
growers for color & tasty meat qualities.
Feathering resembles a Barred Rock, large
body size yellow feet

Basic Needs

Fresh Feed

Fresh Water

Fresh Air

Light

Darkness

Thermal Environment

Protection

Space





I prefer the hanging round gravity feeders to the trough. Must keep lip of feeder even with back of bird as it grows. Same with waterer.



Galvanized waterers, but I prefer nipple system. See buckets fitted with nipple. You can put up to 5 nipples per 5 gal bucket. Mention ACV, not in metal. Not during heat of summer. Vitamins, minerals, and trace elements good for hens. Need the "mother". Reduces PH in the crop. Reduces







IF you want a heat lamp, chain, ceramic base, proper height, don't really need it, and NO water. Dry and draft free is fine. If you lose power and birds are used to heat, they won't be able to acclimate quick enough.



<https://www.brinsea.com/p-390-chicken-brooder-enclosure.aspx>

H
O
U
S
I
N
G

Protection

elements
predators



Dry and Draft Free

flexible

Doesn't have to be fancy, can be done with scrap wood and parts you have around. Or can be a luxurious coop. Electricity is not necessarily needed, sometimes makes things easier though. IE, water heaters. But you can just replace water daily if needed.

H O U S I N G



Make sure the coop and/or run is predator proof! I like to keep a light on during the evening towards the chicken pen. Solar lights work great, especially if no electricity. As long as it's still dark inside the coop, the light will not bother the chickens. Other tips for securing your coop/run:

- 1 - ¼" hardware cloth for the chicken run, if you must use chicken wire, just double it up.
- 2 – Animals such as foxes can dig under, so it's best to secure the perimeter of the run by digging about 12" down and filling it with gravel or just bury some hardware cloth as well, then fill it back in with dirt.
- 3 – Need something up top, poultry netting is popular. An actual roof is idle, some people use tarps, etc. Most animals won't climb up the ¼" cloth, but raccoons have been known to and can get over and into the run if not careful.
- 4 – No food or water in the coop, only run. Moisture will cause issues, like frostbite in the winter. Bring food in at night or secure it as it will attract predators.
- 5 – Do daily/weekly checks around for any digging, scratching, footprints (easy to see in winter), etc. Make sure no holes are present, patch them asap.

Housing For Pasture Birds



What is wrong with this photo? Black tarp over movable pen. Very hot, use white or silver. Not tall enough for humans to work in.



Old hay wagon trailer, second-hand nest boxes



With a lot of range birds one can use a movable nesting/roosting area.

Roosts of small diameter (1 1/2 inch) tree branches or closet poles work well



Hens concentrate
around feeders and
waterers



Wire mesh ramp, sloped
corrugated metal roof

Another example of movable roosting/nesting area



Not a good idea!
Rain water off roof
contains all the
contaminates on the
roof in what I call
"Poop Soup"

Chicken Tractor?



Do I Look
Like John
Deere?



Must move very slow so you don't run over birds. Must move once or twice a day.
Hard for human to work in.



This building is ok, but the run is dirt and will turn to mud in the rain. Use double wire mesh on polls, inside and out to help keep varmints from grabbing birds.



Set up one next box for each 4-5 hens.



Again, branches for roosts.





Nice small set up for 5-6 hens



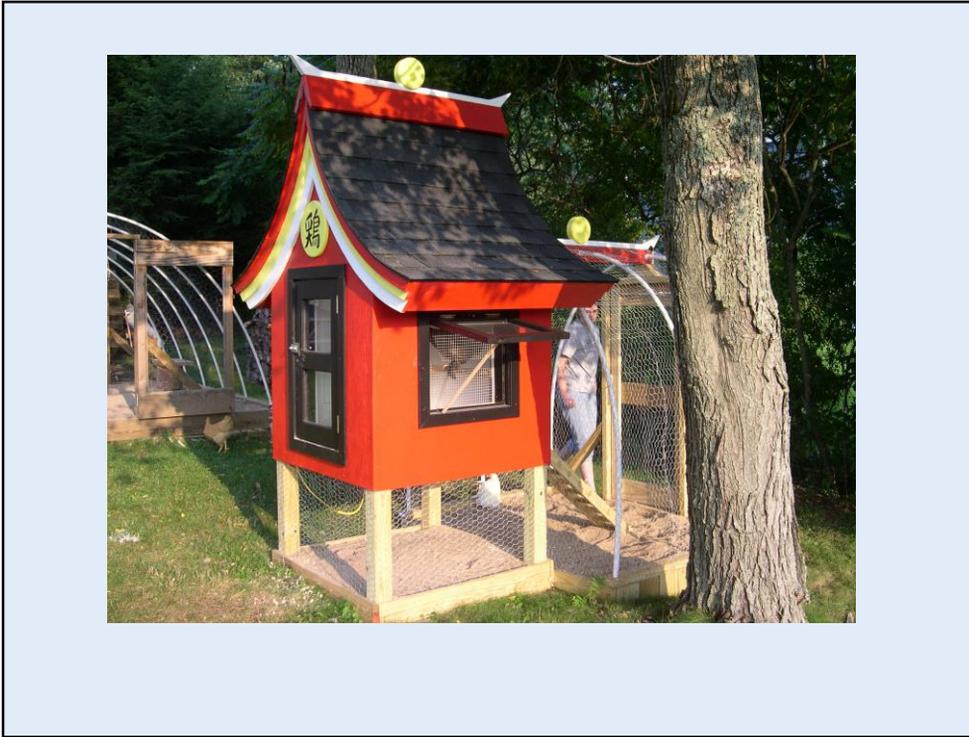


Very expensive commercial housing.









Or you can go real fancy!











Minimum Space Requirements		
Type of Bird	Sq ft/bird inside	Sq ft/bird outside runs
Bantam Chickens	1	4
Laying Hens	1.5	8
Large Chickens	2	10
Quail	1	4
Pheasant	5	25
Ducks	3	15
Geese	6	18

This is especially key in winter time when they will spend a lot more time inside their coop. Make sure they have plenty of space and some “winter boredom busters”. Like a mirror, xylophone, hanging toy with treats in it, suet feeder, your old Christmas tree (as long as no pesticides or tinsel), etc.

Bottom Line:

**Keep birds in a DRY and DRAFT FREE
Environment!!**

SMALL POULTRY FLOCK OWNER CHECKLIST

Selecting the bird:

- Type of poultry: Layer, meat type or show (ornamental)
- Purchase disease free stock (from NPIP source and AI free)
- Plan for all-in-all-out flocks (Not feasible for backyard poultry folks)

Before the birds arrive:

- Draft free coop or housing, cleaned and disinfected
- Heat plate or heat lamp (red bulb type, if needed) set to 95°F for first week.
- Dry litter, (pine shavings preferred), 3-4 inches on clean floor.
- Roosts (use clean tree branches)
- Nest boxes (if needed) 1 for every 4-5 hens
- Feeders and Waterers, cleaned and disinfected
- Fresh Feed, appropriate for age and type of bird

Type of birds, most folks will be layers only. Checklist of what should be ready before birds arrive. Old birds picking on new birds and bio-security. Dog Kennel, separate fence.

When the birds arrive:

- Check for symptoms such as coughing, sneezing, watery eyes, labored breathing, diarrhea, or pasty butt. Check for external parasites
- Provide water for first couple of hours, then add feed. (if birds have been shipped overnight, then make a 5% sugar water solution for first day or you can buy electrolytes and other additives)
- Check waters, feeders, heat source, eliminate drafts, etc.
- Wild bird and rodent proof coop, set bait stations, traps, etc., as needed.
- Biosecurity - foot dips, clean shoes or boots, limit visitors and traffic, set up a quarantine area.

General Management:

- Check birds daily for signs of disease.
- If disease is suspected get a reliable diagnosis and treat as necessary.
- Cull very sick or injured birds, use proper disposal (burn or bury deep)
- Establish a regular de-worming program (my opinion only deworm if symptoms)
- Keep litter clean and dry, replace wet litter. Do thorough clean out every six months including disinfection.
- Proper disposal of manure such as composting.

More checklists for when the birds get there and general management. Double chicken wire or ¼" hardware cloth.

General Biosecurity/Sanitation Program for Poultry

- Do not expose your flock to birds from other flocks.
- Buy chicks from known sources.
- Keep young chicks away from older birds.
- Burn or bury dead birds.
- Allow no contaminated equipment to be brought on your premises.
- Keep visitors away from your poultry houses or ranges.
- Keep chickens that have left the premises from getting back into the flock.
- Dispose of sick chickens.
- Should disease appear, seek authoritative advice promptly.

- Use preventative and control medications with extreme caution.
- Treat droppings as potential disease spreaders.
- Try to eliminate rats, lice, and other pests.
- Keep different species of fowl segregated.
- Do not sell birds known to be diseased.
- Clean poultry buildings carefully and thoroughly.
- Enforce a strict program of sanitation and quarantine.
- Medicated Feed for coccidiosis

Ducks vs Chickens

Feeding your birds

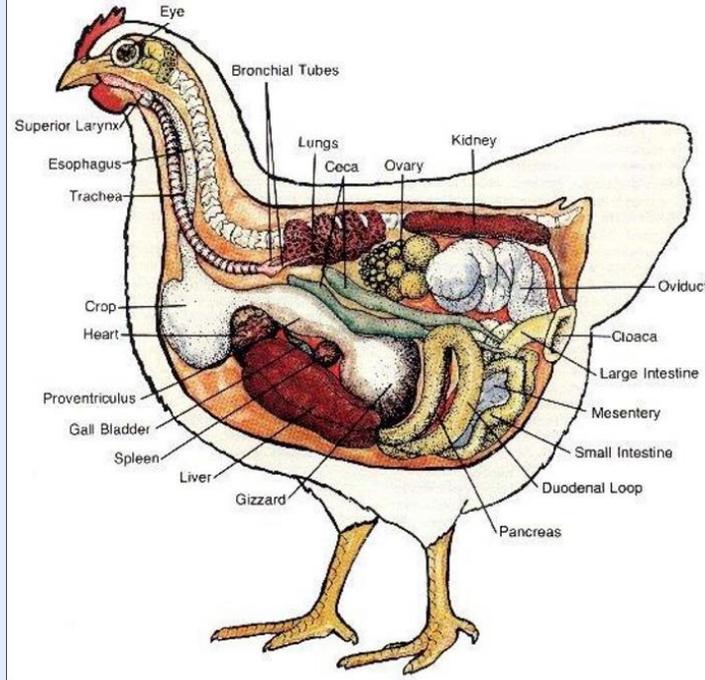
It is the most practical for small flock owners to purchase **bagged** feed from your local feed supply store.

In general use the following guides:

Layers: Medicated 20-21% CP Starter feed – 6-8 weeks
16-18% CP grower feed till first egg
14-16% CP layer feed during lay.

Broilers: 22-24% CP Starter feed (medicated if they have
it.) 3-4 weeks
20 % CP Grower or Grower Finisher from 5 weeks
till processing.

Figure 1. Model showing the internal organs of the female chicken



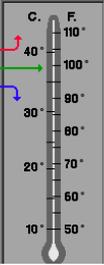
Health Risks

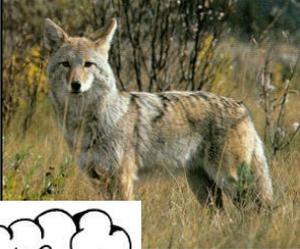


Air Flow (Wind)



Factors






Beware of hawks, especially in fall and winter time if you free range.

Basic Poultry Health

1. Salmonella free, from hatchery (NPIP)
2. Marek's disease – in-ovo or just after hatch
3. Avian Influenza (AI) free
4. Coccivac? (If using medicated feed, no need)
5. Most other vaccines you must boost, so not for backyard flocks.

Health Problems may arise due to many different factors, including:

- *Nutritional*
- *Metabolic*
- *Genetic, hereditary*
- *Congenital*
- *Degenerative*
- *Toxicity*
- *Non-specific (management)*
- *Neoplastic (cancers)*
- *Infectious agents*

What are the “common” health concerns for laying hens?

1. Neoplastic Diseases
 - a. Marek's Disease (herpes virus, cancer like)
 - b. Lymphoid Leucosis (retro virus)*
2. Respiratory Diseases
 - a. Chronic Respiratory Disease (CRD) (Mg and *E.coli* involved)
 - b. Coryza (Viral, *H. paragallinarum*)*
 - c. Aspergillosis (*Aspergillus fumigatus*) Fungal Pneumonia*
 - d. Newcastle Disease (ND) (viral)(big issue in California)
 - e. Infectious Bronchitis (IB) (corona virus)
 - f. Infectious Laryngotracheitis (ILT) (herpes group virus)
 - g. Avian Influenza (myxovirus)
3. Other Viral Diseases
 - a. Fowl Pox
 - b. Avian Encephalomyelitis (AE), Epidemic Tremor)
 - c. Infectious Bursal Disease (IBD, Gumboro Disease)
4. Other Bacterial Diseases
 - a. Infectious Synovitis (*Mycoplasma synoviae* (Ms))
 - b. Fowl Cholera (Pasteurellosis, *P. multocida*)
 - c. Pullorum (*Salmonella pullorum*)
 - d. Fowl Typhoid (*Salmonella gallinarum*)

Leave viral diseases for Willow.

5. Parasitic Diseases

a. Protozoan

- i) Coccidiosis
- ii) Blackhead (*Histomonas meleagridis*, from *Heterakis gallinarum* cecal worm)

b. Endoparasites

- i) Worms
 1. Roundworms (Ascarids)
 2. Hairworms (*Capillaria*)
 3. Cecal Worms (*Heterakis*)
 4. Tapeworms

c. Ectoparasites

- i) Lice
 1. Chicken body louse (*Menacanthus stramineus*)
 2. Shaft or Feather louse (*menapon gallinae*)
- ii) Mites
 1. Chicken mite (red poultrymite, *Dermanyssus gallinae*)
 2. Northern fowl mite (*Ornithonyssus sylviarum*)
 3. Scaly leg mite (*Knemidocoptes mutans*)

Inspect very closely, VERY TINY. Cock-cidiosis (parasite that damages the gut wall)

Disease Risks

Internal Parasites

Nematodes - earthworm, cockroach, grasshoppers,
possibly ducks and geese.

Cestodes (tapeworms) - earthworms, ants, beetles, grasshopper.

Trematodes (flukes) - snails (from ponds), dragonfly larvae.

Coccidiosis – (protozoa) wet soil or litter, outside conditions.

Roundworms



ROUNDWORMS

1. Very common. *Ascaridi galli* is most common.
2. Live in central portions of small intestine
3. Symptoms: droopiness, emaciation and diarrhea.
4. Prevention: Adequate levels of vitamin A and B- complex in diet. Sanitize
5. **Treatment:** Piperazine 17, (~~Wazine 17~~) 1.5-2 oz /gal of water
——— for 12-24 hrs then repeat 14-21 days later.
——— ~~do this in spring and fall and as necessary.~~
6. Hygromycin B – feed additive VFD controlled

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Antibiotics and dewormers are not over the counter anymore, except corrid. Corrid really isn't used for worming, mainly coccidiosis. DE (diatomaceous earth, food grade), natural like cucumbers. Other backyard remedies you can look up. Wazine is available via a vet still, roundworm only. Withdrawal period of 14 days. Poop tests.

External Parasites of Poultry:

Lice, Mites, Ticks and Chiggers.

Northern Fowl Mite

Chicken Mite

Depluming Mite (feather mite)

The most effective treatment for all mite species is a regular inspection and spraying program of both the birds and their premises. An appropriate solution of permethrin, or spinosad when sprayed on the birds, will eliminate all mites that infest the bird. The spraying of all facilities will ensure that any mites hiding in cracks and crevices will be destroyed. The treatment should be repeated on a one to two month schedule or whenever populations of the mites are detected.

<http://pest.ca.uky.edu/EXT/Recs/ENT28-Poultry.pdf>

Scaly Leg Mites



Micahel J. Darre – UConn Animal Science

DE (dio

Scaly Leg Mites

For cases of scaly leg mites, I recommend dipping the legs in gasoline for about 45 seconds, then air dry and apply A&D ointment. On the second day just apply the A&D ointment and then do a second gasoline dip on the third day. Keep applying the A&D till the scales appear normal. Catch this early for best results.



Northern Fowl Mite

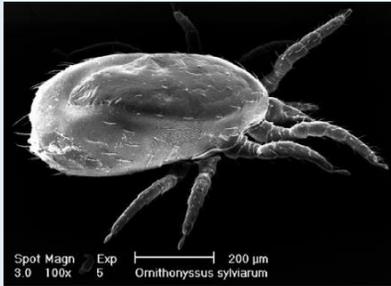


Figure 3. Scanning electron micrograph (SEM) of a northern fowl mite. The scale shows this unfed mite to be slightly less than 1 mm long. Photo by Jeb Owen, UC Riverside.



Figure 4. Northern fowl mites feeding on poultry. Photo by Brad Mullens, UC Riverside.

Treat external parasites
with Sevin (Carbaryl)
or pyrethrin or permethrin
or Spinosad

Chicken Louse →



Chicken Mite



Feeds at night, jumps off Bird during the day. Use pesticide sprays in the chicken coop, both on the bedding and the building structure. These sprays kill any of the chicken mites that are hiding within the coop.





Depluming Feather Mites



Treat external parasites
with Sevin (Carbaryl)
or pyrethrin or permethrin

Other problems

- a. Bumble foot
- b. Cannibalism
- c. Egg Bound
- d. Prolapse
- e. Internal layer
- f. Molting
- g. Sour crop



www.backyardchickens.com

Go more in depth for Molting, feather fixer, adding more protein, BOSS, mealworms, etc.

Why Lights for Chickens

1. to facilitate sight,
2. to stimulate internal cycles due to day-length changes, and
3. to initiate hormone release

DURATION

Meat Birds

Day 1 - 3 use 20-23 hrs

Day 4 - Processing
use 18 - 20 hrs

DURATION

Laying Hens

Day 1 - 3 use 20-23 hrs

Day 4 - 13 weeks
use 8 - 10 hrs

Production 16 hrs

Supplemental light if needed, choice. 8 hours of NO LIGHT. Only need enough light to read by.

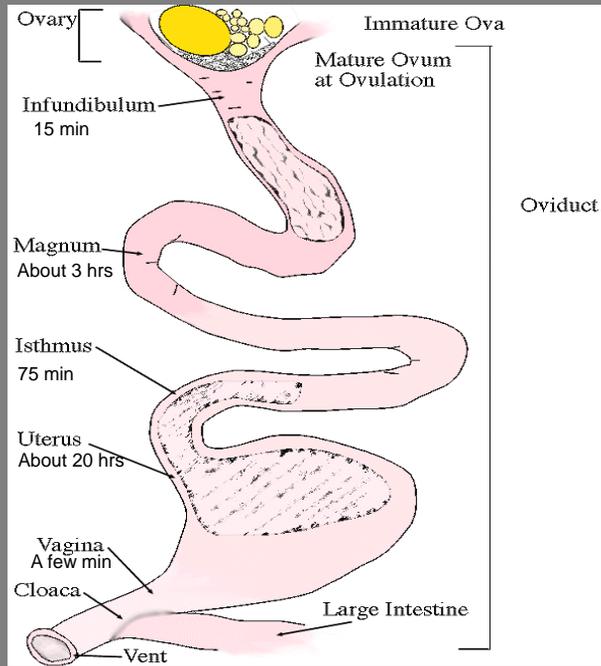
DURATION

1. **NEVER INCREASE** the duration or intensity of light during the growing period.
2. **NEVER DECREASE** the duration or intensity of light during the production period.

Reproduction and Culling your birds



No one likes talking about culling, but be prepared or prepare yourself to have someone else do it ☺. As for reproduction (or laying eggs), there are some signs you can watch for. Most birds will lay their first egg around 6 months, some breeds sooner and some breeds later. You could check the cloaca and depending on the size of the opening, but no one wants to do that. So I normally go by other signs. Submissive squatting (hens will sit on the ground when you approach, thinking you are their rooster). Also the comb tends to get nice and red and big and bold. These are a couple tell-tell signs they are about to lay!



Characteristics for culling layers:

<u>Character</u>	<u>Layer</u>	<u>Non-Layer</u>
Comb & Wattles	Large, brightred, glossy	Small, dull, shriveled
Head	Neat, refined	Beefy, weak
Eye	Bright, prominent	Dull, sunken
Eye ring	Bleached	Yellow tinted
Beak	Bleached	Yellow
Abdomen	Deep, soft, pliable	Shallow, tough, tight
Pubic bones	Flexible, wide apart	Stiff, close together
Vent	Large, moist, bleached	Small, dry, puckered, yellow



The.... ! Well you know!!

www.ctpoultry.org!