

ALTERNATIVE ENTERPRISES; SMALL SCALE POULTRY PRODUCTION



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Starting out

1. Incubate and hatch eggs
2. Obtain day-old chicks

- Local farm stores
- Chicken Hatcheries
 - Country Hatchery – Wewoka, OK - www.countryhatchery.net
 - Cackle Hatchery – Missouri - <https://www.cacklehatchery.com/>
 - Murray McMurray's - Iowa - www.mcmurrayhatchery.com

3. Adult Chickens



Country and Cackle Hatcheries – more conventional breeds

Murray McMurray's – rare breeds

Adult Chickens – purchase from a reputable neighbor –

Adoption: you can often run across chickens that are in shelters because they owners were not able to care for them

Goals when Starting a Flock

- 1) Obtain chicks from hatcheries operating under NPIP
- 2) Flocks should be Pullorum-Typhoid Clean
- 3) Vaccinations are a plus
 - Exotic Newcastle disease, bronchitis and Marek's disease
- 4) Buy from a reputable source



NPIP – National poultry improvement plan

Plan established in early 1930's to provide a cooperative industry, state, and federal program to originally eliminate Pullorum Disease. Since then the program has been expanded to include testing and monitoring for salmonella typhoid, salmonella enteritidis, mycoplasma gallisepticum, mycoplasma synoviae, and avian influenza. NPIP currently includes commercial poultry, turkeys, waterfowl, exhibition poultry, backyard poultry, and game birds. So any facility operating under NPIP is tested and monitored for these diseases and would be a reputable entity to source poultry from.

Fowl typhoid – caused by the bacterium *Salmonella gallinarum*. Incidence of fowl typhoid in the U.S. and Canada is relatively low, it is high in other countries

- Fowl typhoid can be introduced into a flock by wild birds, mammals, and flies.

- Within a flock, fowl typhoid is spread by bird to bird contact as well as through cannibalism of infected carcasses, wound contamination, and fecal contamination of feed, water, and litter.

Marek's Disease – highly contagious caused by herpes virus

- mortality rates are very high
- treatments are not effective but vaccines are available
- Bacteria can spread to chicks in the egg, as eggs that come from a contaminated hatchery
- Affects growing or mature birds
- Treatment is not feasible as recovered birds become carriers – flock must be depopulated (euthanized)

Will get them factsheets if necessary

Newcastle disease – highly contagious - virus

- Affects birds of all ages
- Virus attacks the internal organs
- Transmitted through air
- Can be transmitted to egg
- Biosecurity the best form of control

Bronchitis - virus – very contagious

- affects all ages of chickens
- affects hens reproductive system – shells of the hen's eggs can become rough and misshapen

Caring for Newly Hatched Chicks

- Chicks require:
- Protection from environment
- Protection from predators
- Heat
- Feed
- Water



Brooder

- Materials needed:
- Box / plastic tub / container
- Newspaper
- Wood shavings/ straw
- Thermometer
- Heat lamp
- Feeder
- Waterer



First things first!

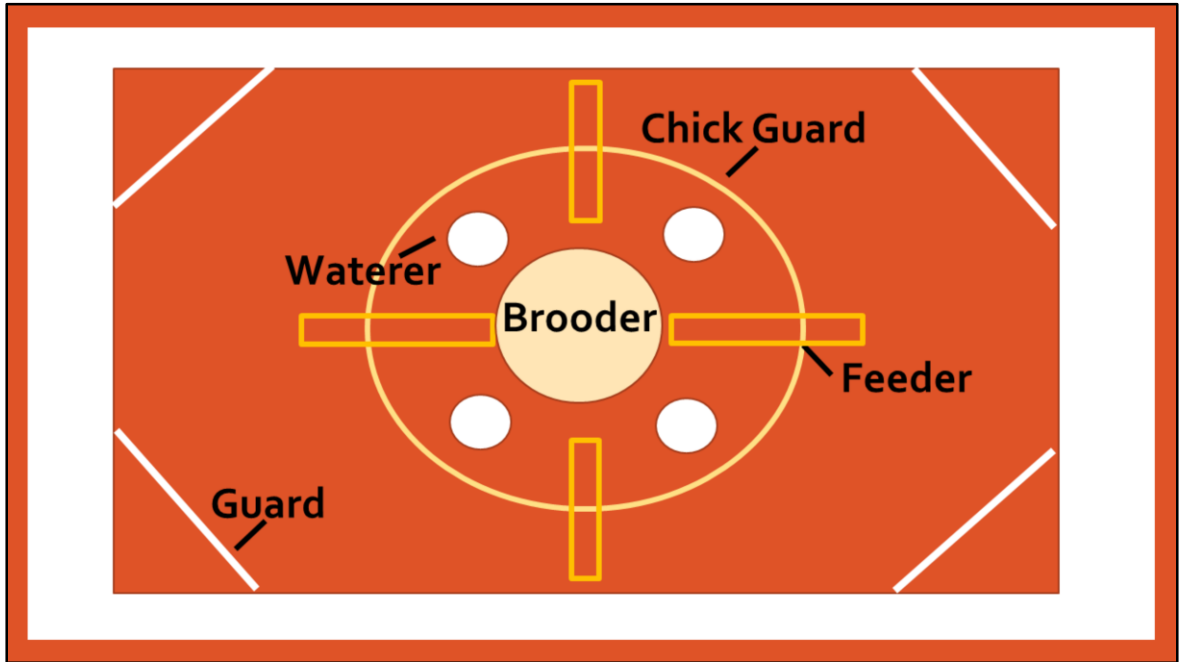
½ - 1 sq. foot of space/ chick

A large plastic tub would house how many chicks? – 3-5

Line bottom of container with newspaper and top with shavings or straw – keeping chicks dry is of utmost importance. Utilize a material that will soak up moisture.

Keep in mind predators when fixing a brooder – a baby chick is perfect snack for a hungry cat!

Also protection from drafts, cold rain, hot sun.



To start, a chick guard will be needed when chicks are first introduced into the brooder
Place food and water close enough so chicks don't move too far from heat source

Bedding

Recommended:

- Pine shavings
- Rice hulls
- Peanut hulls

Not Recommended:

- Newspaper clippings
- Cedar mulch



Slick surfaces like flat cardboard or newspaper can lead to leg problems. Cedar may give off toxic fumes.

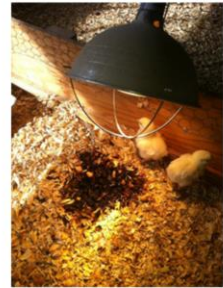
Temperature

- Electric, oil or gas brooder
- For 25-75 chicks, heat lamp is fine
- Place lamp 18" from litter
- Week 1: 90-95 F
Week 2: 85-90 F
Week 3: 80-85 F
Week 4: 75-80 F
Week 5: 70-75 F
Week 6: 70 F
- After week 6, you shouldn't need additional heat, unless extremely cold.

Heat lamp correctly placed



Heat lamp placed too close



1 heat lamp for up to 75 chicks

Feeding Chicks



- 1) Start by feeding on small squares of cardboard or clean egg flats in brooder for first 3 days
- 2) Introduce proper feeders to chicks
- 3) After 3 days, remove messy cardboard once you are sure chicks have learned to eat from feeders
- 4) Graduate to feeders elevated off the ground – minimize standing on/in feeders



Backyard Poultry Nutrition

Nutrients of Concern

- Protein
 - Amino Acids
- Energy
- Vitamins
- Minerals
- Grains are low in minerals so vitamin/mineral supplements are needed

Other Feed Options:

- Scratch
 - Combination of whole or rolled corn, milo, oats, wheat
- Kitchen Waste
 - Vegetable and fruit peelings/scrap
 - Bread
 - Some exceptions
- Plant waste
 - Lawn clippings
 - Pesticide/herbicide free



(This is a better Nutrition slide)

% Crude protein – Most feed tags will list the % of crude protein but they often do not list the actual quality of protein –

Quality? – high quality protein provides a variety of essential amino acids

Amino Acids

Methionine and Lysine - First limiting amino acids for poultry are Methionine and Lysine

Most commercial poultry products will typically included methionine and lysine supplements

Main protein sources are: soybean meal, canola meal, corn gluten meal, etc

Vegetables/legumes to not feed to chickens:

Raw or undercooked beans

Raw green potato peels – toxin in 'green' part

Citrus

Avocado skin and pit

More detailed nutrition information can be viewed on the University of Georgia website by Dr. Justin C. Fowler

The Right Diet for the Right Bird

	Protein %	Calcium %	Phosphorus %	Fat %	Fiber %
Broilers					
Starter 1 to 3 wks.	22	0.9	0.6	6.0	2.5
Finisher 4 to 7 wks.	19	0.8	0.5	7.0	2.5
Pullets					
Starter 1 – 6 wks.	20	0.9	0.5	4.0	3.0
Grower 7 - 18 wks.	17	0.8	0.5	3.5	4.0
Laying Hens					
> 19 wks.	16-18	3.3-4.0	0.5	3.5	3.5

For more detailed nutrition information visit: <http://extension.uga.edu/publications/detail.cfm?number=C954>

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How much will they eat?



How much will a young chick eat?

Hatching – Laying age:

- ~0.10 lb./day
- /or 13 – 15 lbs.

How much will a laying hen eat?

- ~0.25 lb./hd./day
- Consumption will increase in winter and decrease in summer



Chickens are omnivores – eat a variety of things including grains, fruits, and vegetables as well as insects

They love fruit/vegetable and bread scraps from kitchen but this should account for no more than 10% of their diet
Scratch is good for chicken however it should not make up a majority of their diet as it is not balance for vitamins and minerals

Mistakes in Feeding

1. Wrong Feed

- Do not give young birds a layer ration
- Do not give chicks a layer ration
- Do not mix scratch grain in a complete commercial ration
 - Dilutes the necessary nutrients
 - Scratch and kitchen scraps should account for no more than 10% of total diet
- Birds will not grow or produce to their full potential

2. Not Feeding Enough Feed

- Provide feed to birds ad-libitum or free choice at all times



Wrong feed: Each feed is specially balanced to target the nutrient needs of a specific age of chicken

Water

The Most Important Ingredient

- Makes up ~70% of total body wt. and 65% total wt. of eggs
- Dry feed
- Chickens have no sweat glands
- Cooled by water intake and rapid respiration in air sacs in lungs



Water Requirement

- Drinkers should be filled 2x's/day
 - Warm weather
- Laying hen will drink 25% of daily water need in last 2 hrs. of day
- Rule of thumb: chicks and adults will drink ~ twice as much water as feed they eat



Water is often overlooked but is one of the most important nutrients. An animal can live without food longer than it can live without water. – In a laying flock, shortage of water for just a few hours can result in reduced egg production

Water intake controlled by many variables: age, body condition, diet, temperature, water quality, and humidity

No Rooster Necessary!

When will they begin laying?

- 18 – 20 weeks of age (5-6 mo)
- Can continue for 5-10 yrs.
- Peak production first two years



How does light affect my hens laying ability?

- Light is critical for egg laying
- Need to have around 14-16 hrs. of day length to be most efficient
- Laying will slow down when day length is less than 12 hrs.
- An incandescent 40 watt or LED 9-13 watt bulb can be utilized to 'increase' day length



Molting

- Occurs when daylight hours decrease
- Hens will lose their feathers and replace with new at each molt
- Egg production will drop and may even cease
- Occurs 1-2 times/year and lasts 4-12 weeks (7 - 8 weeks)
- Head – neck – breast – body – wings & tail



- Molting is a loss of feathers as part of the natural process of feather renewal
- Full grown feathers can become brittle and can sustain damage and therefore need to be replaced periodically
- Molting is biological process, regardless with how good condition the chickens are in.

Other things that cause molting:

- exhaustion
- Stress – overhandling, moving coops, new environment, illness
- Dehydration – winter or summer

Timing of molting:

1st: 1-6 weeks

2nd: 7-9 weeks

3rd: 12-13 weeks

1st adult molt: 20-22 weeks

Annual molt 1-2 times/year

Eggs

- Make sure there are enough suitable nest boxes
 - 1 nest/5 hens
- Fill nests with clean bedding
 - Reduce breakage/keeps eggs clean
- Collect eggs **at least** 1 time/day
 - Eggs stay cleaner
 - Less breakage

Roosts

- Provide roosts that are higher than nest boxes
 - Do not place perches directly over nests
 - Are not essential

Josh will talk a little more about the construction/layout of roosting boxes

To Wash or Not to Wash

- A big debate
- Wash eggs gently in water that is of similar temperature or slightly warmer than the egg
- Do not use cleaning agents!
- Sandpaper for small soiled spots
- Do not attempt to clean excessively dirty eggs

Refrigeration

- Store eggs at 45°F ASAP
- Use clean cartons on the refrigerator shelf rather than door
- Store eggs large end up
- Use within 4 – 5 weeks of laying



Store eggs large end up – air sac on large end – when developing, chicks head is here. when storing with the small end up, the yolk can get stuck and then break when the egg is cracked open

Sources for Health/Treatment Information

- Local Veterinarian

Coccidiosis: <http://articles.extension.org/pages/66917/use-of-anticoccidial-medications-and-vaccines-in-poultry-production#.VPm77ko5CvE>

Parasite Control: <http://articles.extension.org/pages/66279/internal-parasites-of-poultry#.VPm-tUo5CvE>

<http://articles.extension.org/pages/66149/external-parasites-of-poultry#.VP2w5ko5CvE>

Small Flock Biosecurity for Prevention of Avian Influenza

<http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-9990/ANSI-8301web.pdf>

New Veterinary Feed Directive Guidelines for Antibiotics in Livestock Feed

<https://learn.extension.org/events/2855>

New factsheet from OSU explaining the importance of Biosecurity for prevention of Avian Influenza and other serious diseases

New VFD Guidelines – great video to explain the ins and outs of this new rule

Housing Requirements

- Vents – allow circulation
 - Winter - Ammonia
 - Summer – Heat
- Size of House
 - Inside house – 1.5-2 sq. ft./ bird
 - 4x4 house – 6 laying hens
 - Run
 - 8-10 sq. ft./bird



Backyard Flock Production ANSI-8202

<http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-10303/ANSI-8202web2016.pdf>



For a great overview of this presentation look up the OSU factsheet titled Backyard Flock Production