

Poultry Management



Learning Objectives

- Understand the role of poultry in a farm system, with an emphasis on chickens
- Learn how to care for adults & chicks
- Learn how to produce eggs, meat, and other products
- Learn about pasture-based production models
- Slaughtering basics

Terminology

- Hen – mature female chicken (> 1 year old)
- Pullet – immature female chicken (< 1 year old)
- Cockerel – immature male (< 1 year old)
- Rooster – male chicken (> 1 year old)
- Molt – natural process of shedding feathers
- Brood – hen that sits to lay egg or cover chick; the action of caring for a chick
- Crop – pouch where chicken digests food
- Vent – opening through which hens lay eggs

Why Raise Poultry?

- Entertainment
 - Growing poultry for competitions
 - Geese and Turkey for Hunting
 - Chicken and Egg Festivals



- Education
 - birds are relatively small animals so younger children can work with them easily



Why Raise Poultry?

- Eggs

Poultry eggs are a regular source of protein and other nutrients that contribute to a healthy diet. The eggs you collect can be used for sale, your own diet, and the shells can be ground up & recycled into the feed as grit. Grit is needed to allow the gizzard to grind hard seeds in the bird's diet.



Poultry Feed mixed with Shell Grit

Why Raise Poultry?

Fertilizer

The manure of poultry is rich in the elements nitrogen, potassium, and phosphorous. These are essential for any garden or crop work. Remember to let the manure cure over time in your compost pile, this prevents nitrogen burning.

Meat

Poultry meat is often one of the main choices of meat sources for human consumption. Broilers & young roosters can be used for roasting, old hens for soup . Excess cockerels can also be used as food for snakes and other carnivores.

Why Raise Poultry?

- Bug and Weed Control

- Poultry are exceptionally good at eating the unwanted weeds and pests that could harm your desired plants. They must be [placed in targeted areas in gardens & fields](#) to avoid harming crops.

- Breeding Stock

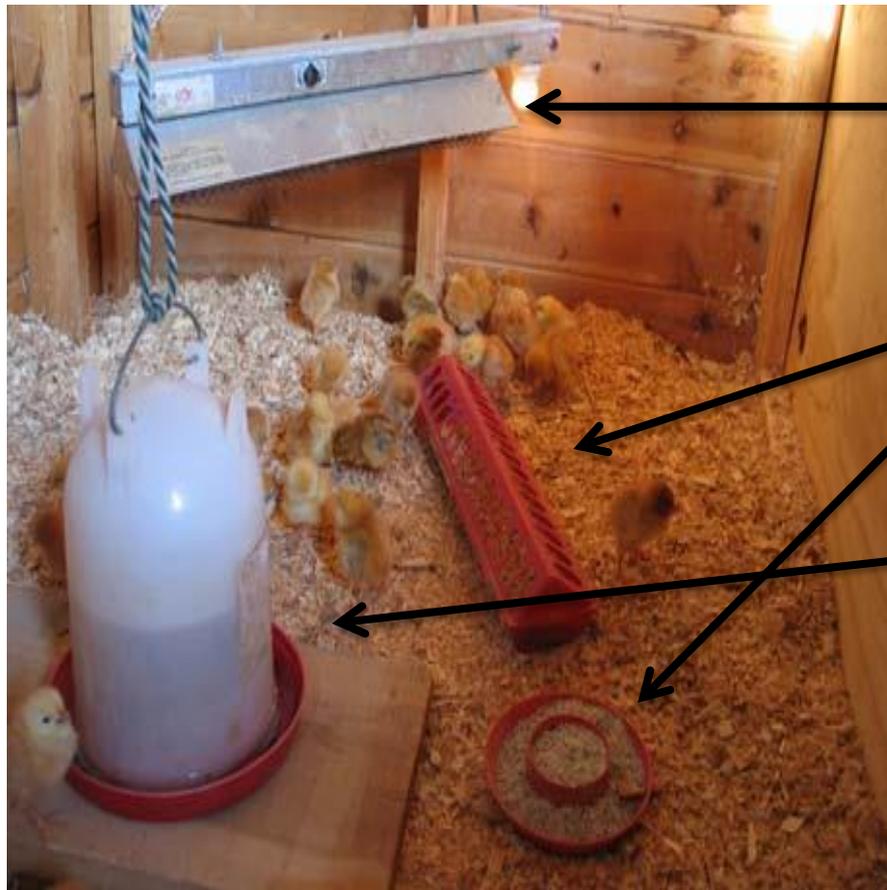
Some Poultry are kept for the sole purpose of breeding in order to increase your stock and productivity. Most breeders select a specific set of characteristics (i.e. rate of egg laying, meat quality) and breed poultry that have said traits.

Facilities & Supplies

- Feeders
 - trays for chicks and hanging feeders for older birds
- Waterers
 - Similar to the feeders; must be sturdy to prevent being knocked over and should be easily refillable. Put stones in chick waterer to avoid drowning
- Nutrition
 - Provide grit, small size for chicks and larger for older birds. Stream sand provides mineral content as well as physical action in the gizzard. Oyster shell is good source of calcium.
 - Adding hay chaff seeds as well as fresh green vegetable matter is especially important to meet the higher nutritional demand of chicks & laying hens.
 - Consider sprouted grains that you grow yourself; or purchased chick starter for chicks.
- Temperature
 - Chicks require a source of heat. Often heat lamps and heat pads are used to serve this purpose. Heat lamps can be attached inside a brooder for large numbers of chicks <http://www.youtube.com/watch?v=cFirvTFcAoY> . You can repurpose a leaky livestock water tank in the same way.

Brooding

This image gives us an example of how to set up a brooding area for chicks.



Heat Lamp

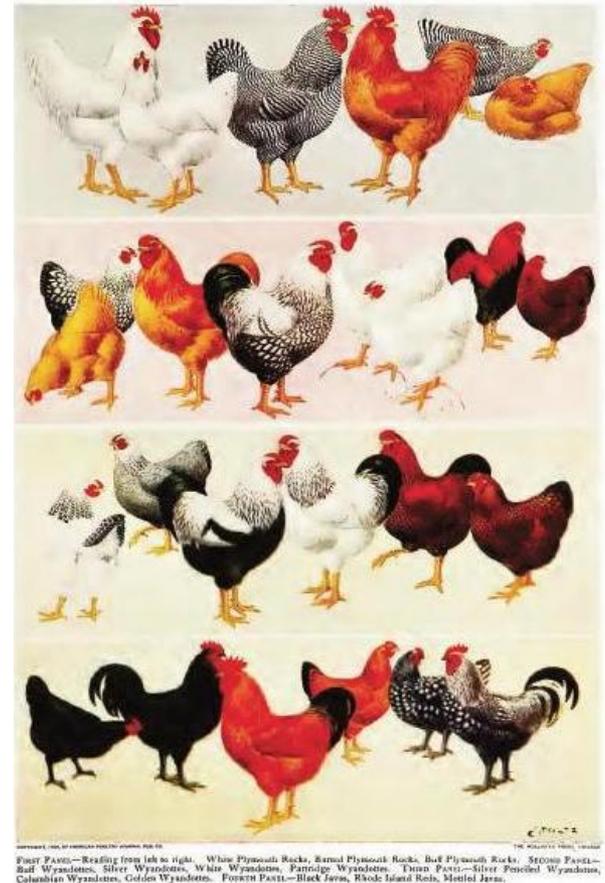
Feed Tray and Bowl

Water Source

Chicken Breeds

There are a number of breeds of chickens organized into two groups depending on their type and level of production.

- Meat Production (not limited to)
 - Cornish/Rock cross broilers
 - Jersey Giant
 - Dark Cornish
 - Brahma
- Egg Layers (not limited to)
 - Leghorn
 - Rhode Island Red
 - Buff Orpington
 - Plymouth Rock



Egg Production

- A layer's production often depends on the breed but will normally range from 250-280 eggs/year for chickens.
- Egg color is also dependant on breed
 - White – Leghorns
 - Brown – Barred Rock, Rhode Island Red, Buff Orpington, Black Australorp, New Hampshire Red
 - Brown egg layers range from 150-200 eggs/year.
- Yolk Color
 - This depends on the pigments in the feed. Green plants & food scraps will make the yolks orange while corn & soy feeding results in light yellow yolks.
- Hens start laying at 5-6 months of age.
 - Production rates will decrease as the hen grows older.
 - To maintain profit, replace hens every 2-3 years.

Winter Production

Egg production will decline in the fall and may even cease during the winter months. However by controlling the amount of light the hen receives, laying can continue. Below are two examples of light usage in order to maintain production during the winter.

- 40-60 watt bulb turned on for 16 hours a day: this can be controlled manually or by timer if available.
- 15 watt bulb 24 hours/day: this option does not require a timer or for you to manually track the time of light exposure.



Egg Processing



Once you have collected your eggs from the hen they must be properly cleaned & stored

- Cleaning
 - eggs have a natural antibacterial coating on them called the *bloom*, maintains egg quality in storage
 - If possible, *dry clean* your eggs to preserve bloom. Use a clean abrasive cleaning pad without soap.
 - If needed wash eggs in warm running water, do not soak
 - Keep nest boxes clean to avoid egg washing
- Storage
 - 1 month or more at refrigerator temperature
 - 2-3 months at below 55 degrees at 75% humidity
 - Keep in mind that egg quality can diminish in storage

Meat Bird Slaughtering

Home slaughter of just a few birds



Use upward thrust of tool handle to sever head; or can hang upside down & sever carotid artery with knife



Remove entrails with sharp knife being careful not to nick gall bladder



Pluck feathers or simply peel off the skin



Wash & refrigerate dressed bird and edible organ meats

Also see these videos

<http://www.youtube.com/playlist?list=PLsiHfXnYmayiPvVLNZbMPfo23TDXPJOFa>

Larger number of birds: use mobile or stationary slaughtering equipment including plucker

http://www.youtube.com/watch?v=jf2ByM_NByI

Chicken Coop Design

There are a number of things that need to be considered when designing a chicken coop.

- Protection from weather such as wind, heat and cold
- Requires adequate ventilation
- Feeders should have 5-6 inches per bird as a general rule while water sources are 1-2 inches per bird
- Roosts should be provide 8-12 inches of roost space per adult and should be separated by at least a foot (12-15 inches)
- Nest boxes are usually a 12 inch x 12 inch structure that is around 2 feet off the ground. 1 box per 5 hens.

Coop Styles



- Mobile (free range pastured poultry)
 - Can be adjusted to change locations to access fresh vegetation
 - Birds need to be trained to go inside at night in new locations
 - Need to protect birds from predators
- Stationary
 - Creates a permanent home for birds with an unchanging location
 - Often more durable
 - Easy to train birds to roost at night
 - Birds will kill surrounding vegetation

Disease Prevention

- Sanitation – cleaning up coops, roosts, and nests on a regular basis in order to prevent contamination of the eggs and illness for the poultry.
- Adequate Space – provide enough space for birds to roam and be isolated if need be. This decreases the chances of a disease from spreading from bird to bird.
- Fresh air and ventilation – utilize air and gas exchange to remove excess heat, dust particles, moisture (products of normal activity), as well as any harmful gases and disease-causing organisms that may be present. Oxygen-rich air promotes optimal production.

Disease Prevention

- Proper Nutrition
 - What you feed and how much will influence your production results. Be sure to have a balanced diet that includes all types of nutrients. See <http://www.ag.auburn.edu/~chibale/an12poultryfeeding.pdf> for a more in depth description of poultry feeding.
- Culling
 - Culling means to eliminate birds with undesirable characteristics; or those which have passed prime laying age. Cockerels should be culled young for best eating.

Geese have few problems with disease or predators and are great on pasture



Toulouse goose

Protect from Predators & Pests

- Provide your poultry with a coop that is inaccessible to predators such as raccoons, hawks, weasels, and coyotes. Use electric fencing.
- Remember to protect against pests such as lice, ticks, worms, and mites. Turkeys are susceptible to blackhead disease http://www.michigan.gov/dnr/0,4570,7-153-10370_12150_12220-26481--_00.html if raised on ground that has had chickens. Black Spanish heritage turkeys are more resistant.



Black Spanish tom

Pastured Poultry Production

- Feed requirements drop anywhere from 30-50% if your poultry are given the opportunity to roam pasture.
- Housing options:
 - Eggmobile (henabago)
 - Hoop Houses
 - Variation on chicken tractors
- Ensure coop is moved at frequency to allow vegetation to regrow
 - can use electric fencing to contain poultry & discourage predators
- Keep vegetation height low enough to avoid trampling by the poultry
- Rotation can be done along with other livestock



[Pastured Egg Production](#)



Pastured Poultry Processing

- Requirements for Federal Inspection
 - FSIS oversees and licenses facilities
 - Inspects birds themselves
- Exemption from Federal Inspection
 - Under 1000 birds per year
 - All poultry must be raised on producer's own farm
 - Producer may not buy or sell offsite birds
 - No poultry is distributed outside state
- Check State Laws
 - Some states limit open-air slaughter of poultry for sale
 - Usually exempt from state laws if customers buy directly from farm

Marketing



- Meat – Thanksgiving turkeys increasing in demand. C breeds.
- Eggs: Direct vs. Retail
 - Designations: certified organic, free-range, free-nested, cage free
 - Must obtain egg license in most states to sell at farmer’s markets



Spotlight on Permaculture

> Hatch your own chicks rather than ordering from a hatchery



--Certain breeds such as Silkies are good setters & will hatch eggs readily
--Provide properly sized & designed nest boxes

> Use chickens in a managed way to cultivate garden areas



> Vermiculture --Construct worm bins inside greenhouse, fill with manure and other compostables --rotate poultry through bins

<http://www.themodernhomestead.us/article/chickens+in+greenhouse.html>

Assessment Review

- What role can chickens play in an agricultural ecosystem?
- What are the benefits of pastured poultry production models?
- List important considerations for care of chicks.
- What are the basic feed requirements of chicks?
Chickens?



References

- ATTRA (Appropriate Technology Transfer for Rural Areas)
<http://attra.ncat.org/>
- The Chicken Health Handbook. Damerow, G. 1994, Storey Books, North Adams, MA. 344 pp.
- Pastured Poultry Profits. Salatin, J. 1993, Polyface, Inc, Swoope, Va. 371 pp.

Sources for Chicks

- Phinney Hatchery, 1331 Dell Ave., Walla Walla, WA
- Murray McMurray, Webster City, IA