

Topic: Breeds and strain of broiler and layers of chicken

Subject: Poultry Management

By: Yogita Dumbare

Introduction

- Chickens raised intensively for their meat are known as "broilers “.
- **Layers:**
- Layer poultry farming means raising egg laying poultry birds for the purpose of commercial egg production. Layer chickens are such a special species of hens,
- **Breeds:**
- Breed is a group of animals related by descent and similar in most characters like general appearance, features, size, configuration, etc., are said to belong to a breed.

Or

a particular variety/ species of an animal is called breed.

e.g Leghorn

- **Strain:**
- Strains are the products of one person or one organization's breeding program.
- Or sub classification of Breeds.
- A strain is the named of the person who has evolved them or it can also be name after the institution ehre it is developed

e.g meyer strain of white Leghorn

Breeds and strains of broilers and layers of chicken

- 4 types of breeds as follows

A] Desi breeds/ Indian breeds

B] American class of breeds

C] English class of breeds

D] Mediteranian class of breeds.

- These all breeds further contain variety of breeds are as follows .

Desi breeds/ Indian breeds

- It is an ideal **table bird** famous of its fighting quality.
- They are **distributed** all over India.
- These birds have plentiful of flesh with a nice flavor of taste. But these are poor egg laying and slow in growth.
- They have stout body built strong legs & beak, red black or spotted.
- Comb is small. Face is rather long & wattles are rudimentary.

It includes further types of breeds

1. Chittagong



- These birds are called **Malay** because they are native of the Malay peninsula, and Chittagong, because they are largely breed in Chittagong.
- They are also called **Deang Fowls**, as the best specimens are breed in Deang.
- They are large birds, the cocks reaching **two foot six inches** from beak to toe and weigh from 3 kg to 4 kg (8lbs - 10 lbs.)
- It have a small pea- comb, like a soft lump covered with small warts. The head and neck is long, the beak is yellow, wattles very small and red.
- They are selected to be better egg-layers **70 - 120 eggs** annually from a young hen, while 30- 55 eggs by older hens.

2. Ghagus



- Ghagus is a very good quality of bird both for **laying & broiler**.
- They are highly found & grow faster, weigh more than other birds.
- Generally red, brown, black or grey in color.
- Single comb, small wattles & shoot earlobes.
- They are mostly found in Kolar district and adjoining locations of Karnataka & Andhra Pradesh.
- The **color pattern** is usually patchy in males & spotted in the females.
- Shining **bluish black feathers** are found on the breast tail & thighs of cock.

- The **neck** is covered with golden feathers.
- Average body weight is 2.16 kg.
- **Annual egg** production is 45 - 60.

3. Brahma



- It is originated in the valley of Brahmaputra.
- This bird is a heavy bodied **dark & grey** colored, heavily feathered.
- **Beak** strong and stout, **neck** long, and **legs** strong.
- The good Brahmas are beautiful, **stately** birds.
- Their large size, gentle nature and color patterns makes them favourite for the country estate.

- Well feathered and **shank toes** enable them to stand cold temperatures very well.
- **Slow rate of growth** & long time required to reach maturity.
- It weights approximately about **5.5 kg**.
- It is a good **winter layer** with brown eggs weigh around 55- 60 gm.
- Wings of **dark brahma** is white and edged with black.
- **Buff Brahma** have a golden Buff base color instead of white.

4. Bursa



- Busra birds are found in the **Navapur taluka of Nandurbar** district of Maharashtra.
- **Plumage** is mostly white mixed with black feathers on the neck, back, tail & reddish brown feathers on shoulders & wings.
- **Comb** is red, single small to medium in size, stands erect.
- **Beak** is yellow & wattles are red , with a yellow shank.
- Standard weight of cocks vary from **0.85 to 1.25 kg** & of hens is **0.8 to 1.2 kg**.
- Annual **egg** production is 40- 55.
- Eggs **hatching** capacity is 60- 85%.
- Eggs are small weighing about 28-38 gm. with light brown color.
- The bird is preferred as a **meat bird**, since the egg laying capacity is poor.
- These are reared for **home consumption** as well as for sale of live birds & eggs.

American class of breeds

The American poultry breeds are very highly productive.

They are medium sized chickens. They have red coloured lobe. Raised for both egg and meat production. Egg shell brown in coloured.

4 American breeds are as follows:

1 Rhode Island Red

2. Plymouth Rock

3. Wyandotte

4. New Hampshire

1. Rhode Island Red



- Rhode Island Red breed originated in Rhode Island, New England.
- It has deep color, strong constitution, and very hard feathers.
- It is a dual-purpose breed, raised both for meat and egg.
- They require marginal diets & poor housing conditions.
- The female lays around 150 - 200 eggs per year.
- It is one of the best among all the breeds introduced in India.
- These birds can withstand a variety of extreme climatic conditions.

- They lay large brown eggs.
- These are generally red or brown in color and may have a black tail, red earlobes and eyes & yellow legs and shanks.

2. Plymouth Rock



- The Plymouth Rock is an American breed of domestic chicken.
- Dual-purpose breed, raised both for its meat & for its brown eggs.
- Its a good resistant to cold, easy to manage, and a good sitter.
- Good general farm chicken.
- They are docile, while showing some broodiness.

- They possess a long, broad back and moderately deep full breast.
- Single Comb of moderate size
- Generally they are not extremely aggressive and tame quite easily.
- Plumage varieties include Barred, Black, Buff, Columbian and white recognized by the Poultry Club of Great Britain.
- Egg lays about 200 eggs per year.

3. Wyandotte



- The Wyandotte breeds originated in the Eastern United States of America.
- Their weight is ranging from 3.17 kg to 4.08 kg.
- Found in Barred, Black, Blue lace, Gold lace in color.
- Popular breed of chicken being kept as a show bird as a back garden pet.
- Docile, medium sized breed with a rose comb & clean legs that produce up to 200 egg in their 1st season of laying & varieties easily available from poultry breeders in the UK.
- Their attraction 'curve' shape generally good disposition and many attractive color patterns make them a good choice for fanciers as well as farmers.

4. New Hampshire



- The New Hampshire, named after its place of origin, is in the New England region of USA.
- They are placid and good mothers which make the New Hampshire chicken a great breed.
- Its weight ranges from 2.9 kg – 3.9 kg.
- Some strains lay eggs of a dark brown shell color & about 120 eggs/yr.
- They possess a deep, broad body, grow feathers very rapidly, and are good layers.

- The color is a medium to light red & often fades in the sunshine.
- The comb is single & medium to large in size.
- Reared for dual purpose i.e. meat & eggs.

English Class of Breeds

The English class refers to a class of chickens originating from England.

These are big sized birds generally white in color and are the best table bird.

The common English class includes Cornish and Australorp.

These breeds have gained popularity in England as a broiler & egg layer.

Breeds are as follows:

1. Sussex
2. Orpington
3. Australorp
4. White Cornish

1. Sussex



- Sussex chickens are a heritage poultry breed known for its egg-laying abilities.
- This chicken breed turns a free-range diet into a heavy production of beautiful brown or tinted eggs.
- The origins of the Sussex fowl are found in southeast England.
- They forage well & are economical eaters that are friendly & easily handled.
- The “speckled” variety has plumage that gives them some camouflage from predators too.

- Sussex remains good table bird weighing 4.08 kg.
- Also one of the best dual purpose chicken laying 200 - 250 brown or tinted eggs year.
- Legs, beak & feathers are white, black ribs may occur on neck.

2. Orpington



- The Orpington originate from Great Britain.
- It is the bird of English breed but common in India. They have high fecundity and good quality of meat.

- Eggs are bigger in size may lay about 200 eggs per annum.
- It is a large fowl with soft feathering that masks the body & it allow the birds to resist cold environment.
- This fowl has a deep breast with a curved back, short legs with thigh covered by thick feathers.
- Has either a single or rose comb, red wattles of white earlobes.
- The weight is varies from 3 - 4.5 kg.
- It is considered a dual-purpose bird for eggs and table meat.

3. Australorp



- Bird of Australian origin but now very common & popular in India.
- They are excellent layers of light brown eggs.
- Australorp live to be approximately 6-10 years of age.
- Quite large weighing birds of 3-4 kg & have beautiful soft feathers.
- Their feathers when shining in sun contain few subtle hints of vibrant colors like purple, green etc.
- Dual purpose birds, as well as family pets. Productive egg layers and also have significant amount of meat.

4. White Cornish



- These are newly introduced English Varieties in India & are gaining momentum day by day.
- Particularly broiler type of breed & are ready in a few weeks only.
- Egg production is moderate to good, laying a firm shelled, medium sized egg.
- These are well muscled, with broad backs & breast.
- They produce tasty & flavored quality of flesh.
- These are only white skinned English breeds.

Mediterranean class of Breed

These are smaller than American or English breed. The ear lobes are white & these lay white egg. These are primarily used for egg laying. The fecundity is much higher, so these are considered to be the best for poultry purposes particularly for egg business. The white leghorn is the most common & well known species.

1. White leghorn



- One of the most popular egg laying breed almost all over world.
- They have high fecundity (average 280/yr. sometimes up to 320), eggs are large in sized, white & produced in large quantity.
- The egg laying days are much more than any other class of breeds introduced in India.

- They are suited in drier parts of India but in rainy/cloudy areas they are not much successful.
- The body weight is not much of are not good for table.
- They weight about 2-2.7 kg, white colored, small birds, legs are long.

2. **Black Minorca**



- Largest of all the Mediterranean breeds, found in black & sometimes in white colors.
- Though they are famous for their big & tasty eggs (120 eggs/yr.), but the fecundity is not much higher.

General aspects of breeding for better egg production and body weight gain.

- The laying cycle of a chicken flock is cyclical in nature, particularly in northern latitudes with its seasonally fluctuating hours of light and dark.
- Egg production normally begins when young birds reach maturity, rises sharply and reaches a peak about eight weeks after it starts, then gradually declines over about 12 total months of lay.
- For most spring hatched birds, the first adult molt occurs in their second fall at the end of their first laying cycle.
- The total number of eggs laid in that first laying cycle is the highest single year of production the hen will ever experience, as successive years will see a decrease in eggs laid of approximately 15%-20% annually.
- Many factors can adversely affect egg production during a hen's normal laying cycle.
- Egg production can be affected by the age/breed of chicken, feed consumption (quality and quantity), water intake, intensity and duration of light levels, parasite infestation, disease, and numerous management and environmental factors. A few of the most common are listed here.

- **Age of Hens**
- Pullets normally start to lay between 20-24 weeks of age, depending on breed and line. Some large, slow growing breeds can take up to seven months. However, these timelines are dependent on light levels being above 14 hours of daylight.
- For those like us who are in northern latitudes, this means that pullets hatched later in spring and summer may not begin to lay before the light levels decrease dramatically in autumn.
- In order to lay successfully through their first winter, birds may either need to be hatched early in the year to obtain maturity before light levels decrease, or to be maintained on supplemental lighting beginning in fall of their hatch year.
- If allowed to mature naturally, later-in-the-season hatched chicks may not begin to lay until after the winter solstice.
- The upside to this later beginning of laying is that hens have had longer to mature and may begin their lay cycle with larger eggs and omit the "pullet" egg stage.
- Chickens can live for many years and continue to lay eggs for many of these years.
- However, after two or three years many hens significantly decline in productivity.

- This varies greatly from bird to bird, within lines of the same breed and between various breeds.
- ☉ Good heritage layers will lay consistently for 3-5 years, high production hatchery hybrids may lay almost daily for only a year or two.
- ☉ Poorer layers and older hens will lay less consistently. If consistent egg production is critical, then a yearly addition of pullets should be scheduled to occur.
- ☉ If hatched in the early spring, they will normally begin laying by fall and continue (sometimes at less than maximum levels) through winter.
- ☉ If hatched in the late summer/early fall they will be ready to begin laying by spring.

- **Lighting Conditions**
- Light triggers a hen's pineal gland, located behind her eye and under the bones of her skull, to initiate the process of egg laying. Regular egg laying requires 14-16 hours of light and decreased daylight hours in fall and winter can cause egg production to decline or stop completely.
- Supplemental lights can be added to the coop to encourage egg laying, while recognizing that additional factors also influence egg production.
- It will not force them to lay. Adding lights in the fall, as light levels begin to drop, is best done by adding 20-30 minutes a week in the mornings until 15 hours of light is reached.
- A sunrise/sunset chart for your latitude can be found online and is helpful. A timer is needed to keep the light consistent and the light itself only needs to be bright enough to "read a newspaper by" as the old flock masters described it.
- One caution, there is some evidence that adding supplemental lighting before pullets are fully mature in size can lead to perpetually smaller eggs and lower than expected production.
- Nature may know best when pullets are ready.
- **Molting Molting**
- is the natural process of feather shedding and re-growth. Hens divert protein and energy away from egg production to grow a new set of feathers every fall.
- Feathers in good condition are crucial for a bird's protection from the elements, and the shiny new feathers they sport are a sharp contrast to the dull, often bleached feathers that they shed at the end of summer.
- The molt is also a time to replenish bone stores and vitamin levels, as well as gain muscle lost during egg production.

- **Broodiness**

- During spring and summer, some hens will show a tendency to go broody.
- This is the inclination to "set" on the nest and hatch chicks. If a hen is hunched and growling in the nest box, her neck hackles flaring when you reach for her, she is feeling the hormonal urge to reproduce.
- While broody, a hen will not lay eggs. And the very presence of a broody hen will encourage the other hens of her flock to become broody too so that it can become a cascading behavior.
- Broodies should either be allowed to hatch chicks, away from the other birds, or broken of their broodiness as soon as possible so that egg production will resume.

- **Nutrition**

- In order to be productive egg layers, hens must receive adequate nutrition and have full time access to clean water, granite grit and calcium.
- Nutrition starts at hatch (actually before, with breeder rations for the parents) and chicks should receive balanced rations appropriate for each stage of growth (starter, grower, layer). Feed should always be offered in a manner that allows all birds to eat at once, or more dominant birds may keep more submissive birds from eating their ration.
- the correct level of protein for your flock, while also rationing their feed to prevent overeating, is a cornerstone for good egg production.
- Each adult bird should be provided with one ounce of complete feed per pound of body weight per day.
- Most standard bred and heritage breeds do best on feeds that contain a protein level of 18%. Any treats or other feed additives should be limited to no more than 5% of all food consumed, as higher levels will reduce the protein needed for good egg production.
- Too many treats can also add fat to the birds, and the combination of too much fat and too little protein is cause for low rates of lay in many backyard flocks.
- Additionally, too much vegetable matter can lead to the formation of runny egg whites.
- Conversely, too much protein can lead to increased egg size.
- This can be a health challenge for hens who are more likely to prolapse when trying to lay an extra large egg.

- Water
- Eggs contain a large amount of liquid, so hens need a constant source of clean, fresh water. They will drink twice as much water a day as they eat food. If water is allowed to become too warm in summer, they will drink less than needed for good egg production.
- **Parasites and Illness**
- Hens not in optimal health will show a decreased rate of lay. A drop in egg production can indicate that birds are infected with parasites such as mites, lice and worms. If a new bird has been introduced into the flock, it may have introduced an illness or parasites and all of the birds should be investigated for signs.
- **Stress (predators, social, environmental)**
- Hens are sensitive to change and disturbances in their environment. Introduction of new flock mates, change of living situation, new feed, predators, loud activity outside their yard, hot weather, sudden weather changes, and loud dogs are all factors that can lead to a decrease in egg production.