

TRENDS IN BROILER MANAGEMENT

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Broiler was a nonentity in India till 1970 but is recognized as delicious meat now. It used to be costlier than mutton. It is now considered to be the cheapest and the best protein source through out the world.

Statistics Per capita consumption of chicken is 1.5kg in India. Parent stock placement in India is 120 lacs and the total broiler chicks placed are 1600 million. The parent stock in Andhra Pradesh is 20 lacks and A.P places nearly 180 lac chicks every month. With an annual growth rate of 10 to 12%, these figures are likely to be doubled in next 6years. By 2010 India may be housing 200 lakh parents and 3000 million broiler commercials. 70% of these birds are in south India. Andhra Pradesh with its enterprising former community is likely to keep up with the national growth. Such a miraculous growth of broiler production has been possible through

1. Genetic improvement: - The improvements in weight gain, feed conversion, leg strength and more meat at desired parts.
2. Shorter duration: - The slaughter age of broiler has been coming down by one day every year for the same weight. Present duration is 40-42days.
3. Organized production Unlike other meats, chicken farming in confined houses is well planned and there is constant improvement in other inputs like housing, feed, disease control etc.
4. Integrated production has increased the consistency further.

EVOLUTION OF BROILER FARMING

Cyclical farming

The broiler farmers used to buy the chicks from the hatchery. To cover the gaps in business, they used to house one batch every week at the same farm or even in the same poultry house. The subsequent batches do not perform well because of infections. Multi age farming led to poor performance and high mortality.

All in all out farming

The farmers quickly realized that more number of batches on farms is the cause of the poor performance. The number of batches on the farm is reduced by housing one batch in a house. Later one batch in the whole farm premises. This system of all in all out farming has several advantages. The growth is better and uniform. The overall mortality is low and the feed conversion efficiency is better.

Year round farming

The price fluctuation of live broilers is very high. The broilers keep eating feed and it becomes uneconomical to maintain them beyond a particular limit. When there are more broilers in the market, the prices fall. There are seasons where the consumption falls and the prices get low. Single batch farming cannot withstand price fluctuations. If the prices are low when the batch is ready the farmer loses money. He cannot get the benefit of immediate raise in the price in the subsequent batches when he has only one batch. To have a continuous sale the farmer has more production units under his control and operating each unit on all in all out basis.

Upward integration

The broiler production has gone up in volumes and the average prices started getting low. The producer has no say on the market price. The profitability can be improved only by economizing on the inputs. The main inputs in broiler farming are chicks amounting to 25% of the production cost and feed amounting to 65%. Producing their own chicks by having hatchery and parent stock reduces the chick cost. Production of feed at his own end reduces the feed cost.

Chicks The quality, regular availability and price are important factors in broiler production. Though the quantities could be ensured, quality and price are left to some body else, when chicks are purchased. Hence the farmers above 7000 chicks placement per week started looking for setting up of their own hatcheries. Some started their own parent farms to produce their own chicks. Generally the incubator machines available are of 27000 eggs capacity where in we set 9000 eggs every week. To produce 9000 eggs in seven days we need 1300 eggs per day and about 2000 parents to produce them.

Total integration

All the small farmers could not move up as described above. Some breeding companies started working downwards. They buy parent stock, have hatcheries and produce chicks. They either take farms on lease or pay a sum as growing charges for rearing the birds with feed, which is also provided by them. These companies expand fast depending on the financial capacity because they do not create large infrastructure at the broiler production level. The bigger companies started with grand parents to produce their own parents.

Feed

Feed contributes to 65% of the production cost. So the broiler production virtually became a business of converting the vegetable feed in to valuable chicken meat. Besides the genetic capability of the bird, the feed composition (formula), quality of ingredients, processing and feeding practices influence the production efficiency.

Feed formulae

The feed formulations are ever improving to achieve better FCRs. Lot of research is being undertaken to assess the needs of the fast growing broilers. The major components are Protein, Energy, Lysine, Methionine and Phosphorus. Consistent research in these areas had led to devising different formulations for short periods. We now have three feed formulae namely pre starter, starter and finisher. Some use withdrawal feed also for the last 5-7 days before marketing. Levels and relationships between the nutrients also are looked in to. Vitamins and mineral levels are constantly updated. Use of Additives like enzymes and probiotics is constantly studied.

Quality of raw materials

Quality of feed ingredients is very important besides the cost. The fast growing bird cannot take toxins. There is hardly any time in 40days cycle to recover if the batch suffers. So the producer has to take all the care to see that there is no toxin or harmful material in the feed.

Feed processing

We once were bothered about the particle size only in the feed manufacturing. Today we look in to the digestibility, Safety, and uniformity of each particle of feed consumed by the bird. Addition of performance enhancers is being experimented like enzymes and gut stabilizers.

Feeding management

Facilitating the broiler to eat all the feed in stipulated time without wastage is the key to achieve feed efficiency. The broiler bird grows by 40 to 50 Gms a day on an average. The quantity of feed, the size of the feed particles, homogeneity and the type of feeders given at various stages are important. The processed feed is getting costlier day by day and prevention of wastage is the major area in achieving the feed efficiency. Intermittent lighting to enhance the consumption and limited feeding to achieve the best FCRs are being constantly tried.

Farm size

- 1) **Small** Contracting small farms managed by the owner himself on incentive basis is good for live trading. Small groups of 2000 to 5000 batches can be effectively monitored for performance on daily basis and amazing results can be obtained. The movement of the people and bio security are of great concern in this system. Providing infrastructure facilities like water and electricity is painful as it involves too many places.
- 2) **Medium** Farm sizes between 10,000 to 50,000 can be managed on all in all out basis with stationary supervisors and farm laborers. This size has low overheads and the bio security is better than small farms.
- 3) **Large** Organized producers with facilities for processing and export need to have huge flocks of uniform size in one lot. Producing 20,000 birds in one house requires automatic feeding and drinking equipment. Strict bio security protocols can be enforced on such farms. Starting with less number of workers, with shower facilities for personal hygiene can be enforced.

Brooding The broilers grow very fast. The initial growth depends on how fast the chicks start taking feed. The chicks should be comfortable to eat. The brooding temperatures for the first two days and subsequent 10 days are critical especially in winter. Gas brooders with various capacities are available to achieve this.

Disease prevention and control

There is no time for the broiler birds to suffer and recover. There should be a comprehensive program to prevent the diseases.

Vertical transmission

Prevention of diseases for broilers starts at parent level. The parents should be free from vertically transmitted diseases and also should have good maternal antibodies to protect the chick in the initial stages. Clean hatchery helps to break any possible surface contamination of egg going to chicks.

Clean farm

Care should be taken so that there is no residual infection in the farm before the chicks arrive. Proper cleaning and disinfection of the houses and resting before placement of fresh lot of chicks can achieve this. Giving gaps of at least 15 days from final disinfection to placement is safe. Concrete washable floors, washable side curtains and movable plastic equipment are essential. All poultry houses should be self-contained. Do not move equipment in the last minute before brooding.

Vaccination

Have a good vaccination program designed by the local veterinarian depending on the necessity. Follow

the program strictly by using good quality vaccine and by following the stipulated routine. As the volumes increase, producers are resorting to vaccination at hatchery like the one for ND. The broiler birds nearly get blank between 25 to 35 days between live vaccines and killed vaccines work. Giving live vaccines in that period triggers respiratory problems. Vaccinations are done to protect from Newcastle (RD) and Gumboro diseases. Killed vaccines to protect against ND and maternal vaccination for Gumboro are important. Vaccinations against IB and IBH (Leechi) are also practiced at some places depending on the necessity.

Water borne diseases

Water borne infections like E Coli also affect the performance of the broilers. Checking and prevention of water born bacteria and treating the water is essential. Continuous decontamination of water is necessary. Usage of antibiotics is being viewed seriously under food safety regulations. Comprehensive health programs are being designed to see that the flock finishes without the need for antibiotics.

Seasonal variations

Summer management If we take the performance of the broilers in a yearly cycle, there is a tremendous seasonal variation. The production performance is generally excellent during moderate months like August to October. Lot of care in brooding is required during the winter months. The summer is dangerous for broilers. Giving more floor space, avoiding daytime feeding, using foggers and totally environment-controlled houses are different steps to counter the summer.

BROILER PRODUCTION IN FUTURE

Chicken used to be a delicacy in the earlier days. Now it is a food item. Broiler is safe and economical food item to all age groups of people everywhere. There are lots of regulations to protect the human health from food born problems. A food item should be fresh and not spoiled. If preserved, should be packed specifically for the purpose. The date of packing and expiry should be specified. The nutrient composition also need be specified.

A food item should not have germs causing illness to people who eat. A food item should not have residues, which will have long term effect on human health like antibiotic residues, chemical residues etc. These things can become important while we produce huge quantities of broiler meat.

Breeding farm should be isolated and well maintained so that they do not pass on any diseases to the progeny like salmonella, E.coli or mycoplasma. The breeder flocks should be well vaccinated to protect the breeder flocks and also the commercial broilers. There should be a constant monitoring of the flocks for the stipulated health status. Maintain strict vigilance on suspicious flocks.

The hatcheries and the hatching process should be designed in such a way that the contamination from breeder house to the chicks can be broken. The broiler farms should be located away from other farms at least by a kilometer. The farm should be fenced and should be protected from migratory birds and animals. There should be one entry point for staff and vehicles and all entries should be monitored for possible carriage of diseases. There should be a decontamination zone to decontaminate the vehicles.

All persons should enter through a bathing facility. The persons should wear fresh farm clothes after the bath.

The farm should have less number of working people for effective decontamination. That means automation in routine procedures like feeding, watering and brooding.

Pan feeding with Winching system is preferable for broilers.

Nipple drinking system with winching is ideal for broilers.

Self contained brooding facility with gas in position.

Test the water facility and decontaminate the water accordingly. Necessary facilities for settlement of impurities, reducing minerals by softening, reducing contamination by chlorine or chlorine dioxide, Ultra violet light treatment etc should be placed.

Provide necessary overhead tank at farm level, shed level and bird level so that there should be no need for human contact with water. Nipple drinkers serve this purpose the best.

The total capacity of the farm should be housed in one week and sale in one week.

Plan to leave at least 15 days gap before re housing after the cleaning and disinfection is over. Do not rush the batches. A problem in a big batch results in huge losses.

Dispose of manure out of the farm and get fresh litter from a good source.

Test the disinfection protocol by monitoring the infection levels before re housing.

See that the feed has no mycotoxins, which interfere with development of immunity. All nutrients should be adequate. Probiotic feeding from day one and monitoring the gut flora can prevent harmful bacteria.

Gut acidifiers can keep the harmful bacterial at low level and improve feed utilization. Rotating coccidiostats can reduce the gut damage.

Use steamed feed pelleted or crumbled, packed in new bags or bulk carriers.

Bulk carriers avoid manual handling again. Have a feed transfer system from the truck parked outside and feed pumped to the silo.

Keep the height of the feeder so that the litter does not contaminate the feed.

Keep brooding arrangements adequate so that the chick's take off fast and the growth is as expected. A well-grown disease free bird develops competent immune system and responds better for vaccines.

Plan the vaccines well and avoid many outside people like vaccination crew getting in to the poultry house. Give killed vaccines in the hatchery, wherever it is possible. Monitor the flock depletion and weekly growth with good records. Constantly update the health program. When such flocks are raised closed environment control system with winch able curtains, cooling pads and exhaust fans to control the temperature and air movement would be very essential to keep the birds comfortable in all seasons.