07 POULTRY INDUSTRY AND PRACTICES IN HARYANA

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The poultry industry in India has undergone a major shift in structure and operation during the last two decades. It has transformed from a mere backyard activity into a major commercial activity with growing presence of large integrated players and successful implementation of contract poultry farming on a large scale.

According to the ICRA (a renowned investment information and credit rating agency) report of 2014, the Indian poultry sector has been growing at around 8-10 percent annually over the last decade. For 2013, with a growth rate of eight percent over 2012, the total poultry market size (including broilers and layers) is estimated at Rs. 58,000 crore.[1] Specifically, the domestic poultry meat production (broiler - carcass weight) is estimated at 3.5 million tonnes which is known to be growing at over 10 percent for several years. As per the Animal Husbandry Statistics 2013, in value terms this is about half the market size of all meat in India.[2] While the market for processed chicken is growing, over 90 percent of domestic purchases are still through wet market due to traditional consumer preferences for getting meat dressed in front. The processed chicken market is expected to grow over 25 percent in the long-term.[3]

Andhra Pradesh is the biggest producer of poultry meat and Haryana has been growing at the highest rate of over 12 percent over the last five years (see Table 1).

Table 1: Top 5 states – estimates of meat production from poultry (in 1000 tonnes)

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	CAGR
Andhra Pradesh	309	334	363	400	446	499.2	10.07%
Maharashtra	275	280	309	334	346	378.8	6.61%
Tamil Nadu	334	356	397	362	350	334.4	0.02%
Haryana	**185**	**220**	**230**	**306**	**324**	**333.7**	**12.52%**
West Bengal	231	232	252	273	301	328.5	7.30%

Source: *Basic Animal Husbandry Statistics, Dept. of Animal Husbandry, Dairying and Fisheries; CAGR is Compounded Annual Growth Rate.*

Farm poultry is dominant in Haryana. The main hubs of broiler production are Jind, Panipat, Hisar, Fatehabad, Sirsa, Karnal, Kaithal and Yamunanagar. The state government records of 2007 mention about 1200 broiler farms[4] while the current estimates from those at the ground suggest that this number could be as high as 10,000. The Department of Animal Husbandry and Dairying, Haryana is responsible for the promotion of poultry farming. There are four government poultry farms in the state, one each in Ambala, Rohtak, Bhiwani and Hisar. As of 2012-13, the number of government veterinary institutions, including hospitals and dispensaries are over 2700[5] which has not changed much since 2006-07.

POULTRY PRACTICE IN HARYANA (BASED ON RESPONSES FROM STAKEHOLDERS IN HARYANA POULTRY PRACTICE)

Antibiotic administration starts well before the life-cycle of a broiler chicken. While preventive doses are given to day-old-chicks (DOCs) at broiler farms, parent stocks of broilers are routinely exposed to antibiotics at parent breeder farms. Non-therapeutic exposure to grandparent stocks is not ruled out either.

Big integrated players such as Skylark Hatcheries, Jind, Haryana have their own hatcheries. Typically, small and medium sized farms source DOCs from such bigger farms. Irrespective of any signs of disease, antibiotics are said to be administered to DOCs for few days to combat the transportation stress or prevent a likely infection of the gut, which could be through the incubator at the hatchery. Enrofloxacin is the commonly used antibiotic. Cephalosporins are also used by few. The broiler parent

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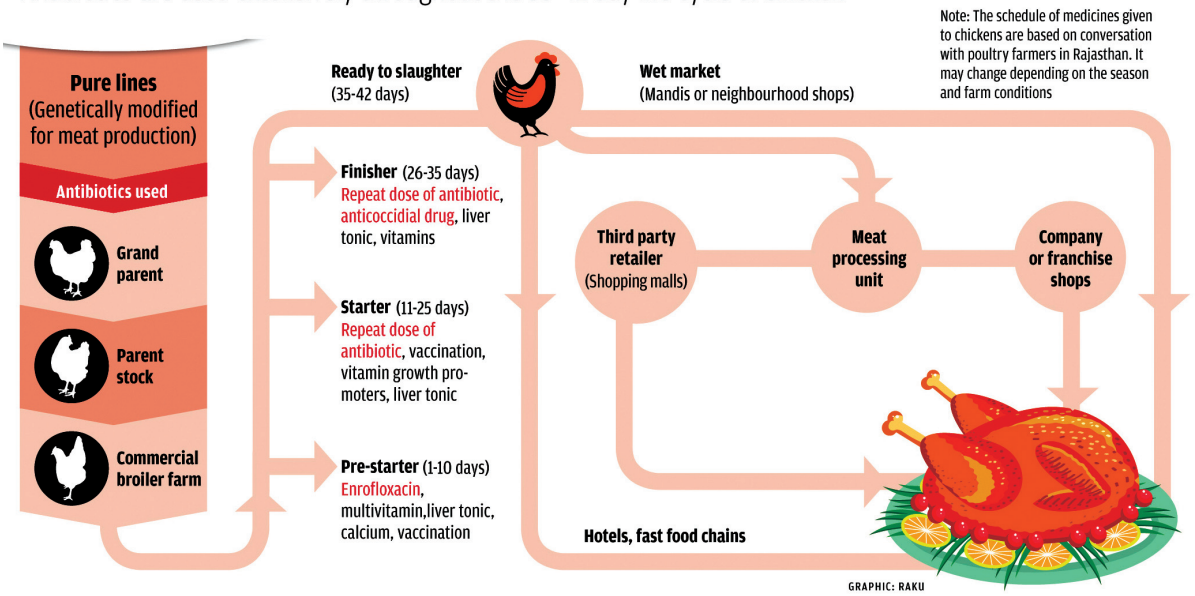
Fig. 1: From farm to plate

Antibiotics are used extensively throughout the 35-42 day life cycle of chicken



stock is also exposed to non-therapeutic antibiotics to make the parent stock disease free and prevent vertical transmission of certain diseases to commercial broilers. While antibiotic exposure to parent stocks is a near-common practice, the exposure of grandparent stocks to antibiotics cannot be ruled out, a practice increasingly being reported in some parts of the world *(see Fig. 1: From farm to plate)*.

Use of antibiotic growth promoters (AGPs) is an integral part of the broiler farming. Broilers are fed with antibiotic laden feed through-out their life-cycle. Feed with different AGPs is easily available and feed mills do not prefer making it without AGPs.

Broilers are raised to attain the average slaughter size weight of two kgs in 35-42 days. Their life-cycle is categorised into pre-starter (1-10 days), starter (11-25 days) and finisher (26 day onwards). They are fed with antibiotics laden feed throughout the life-cycle, a practice which is an integral part the commercial farming in the state including the government owned Central Poultry Production Testing Centre (CPPTC), Gurgaon, Haryana. AGP use is known to increase utilisation of feed to gain maximum weight in minimum feed, which is measured as feed conversion ratio (FCR). However, it is also used on the pretext of prevention of diseases. Commonly used AGPs include oxytetracycline, chlortetracycline, bacitracin and furazolidone (see Table 2). Skylark is using enramycin. Some farmers periodically change AGPs in feed to prevent onset of resistance and maintain the effectiveness of AGPs.

With high growth of broiler industry, the feed industry is also growing in Haryana. Feed mixed with AGPs is available from feed mills which could also be customised. Feed supplement comprising one or more pre-mixed antibiotics is also sold for on-site use by farmers. Driven by demand, feed manufacturers do not prefer making feed without AGPs. The choice of an AGP is based on factors such as the farm conditions, experience of the farmer, nature of diseases prevalent in the area and AGPs used earlier.

Table 2: Examples of commonly used antibiotics and AGP premix

Common Name	Antibiotic	Class of Antibiotic	Dosage
V-Max 500	Virginiamycin	Streptogramin	20-40g/Tonne
Furavet	Furazolidone	Nitrofuran	250g/Tonne
Aurofac 150 A	Chlortetracycline	Tetracycline	334g/Tonne
BMD, Albac	Bacitracin	Polypeptide	40-50g/Tonne
Bremulin 10%	Tiamulin hydrogen fumarate	Pleuromutilin	100-300g/Tonne
Neftin 200	Tylosin Phosphate	Macrolide	250g/Tonne
TM 200	Oxytetracycline	Tetracycline	125g/Tonne
Tonate Forte	Tylosin Tartarate	Macrolide	1.5g/2 L
Enradin	Enramycin	Polypeptide	63-125g/Tonne

Source: *Respective websites of Zydus, Zoetis, Vetline India, Poulvet and MSD Animal Health*

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Routine preventive administration of antibiotics is a common practice. It involves periodic administration of sub-therapeutic doses to the entire flock in the absence of any sign or symptom of a disease. Easy availability of unlicensed antibiotics is also known to influence this practice. Withdrawal periods are not followed in general.

Bacterial diseases such as necrotic enteritis caused by *Clostridium*, chronic respiratory disease caused by *Mycoplasma* and those due to *Salmonella* and *E. coli* are known to cause high mortality in the broiler farms of Haryana. Typically, antibiotics are given to prevent these. The selection, schedule and frequency of antibiotic is linked with farm hygiene, sanitation and infrastructure; veterinary advice and experience of the farmer. It starts with the DOC for about three days and is typically repeated at three weeks of age for about three-seven days. Enrofloxacin, cephalosporins, ciprofloxacin and tylosin are among the commonly used antibiotics. Due to low cost to the farmer, many a times, ciprofloxacin, which is not prepared for animal use in India, is used instead of enrofloxacin. Its unlicensed version is easily available without any labels at the veterinary medicine outlets in Haryana. These are imported versions from China. Reportedly, certain small and medium size Indian drug companies also sell ciprofloxacin which is made for humans. Veterinary medicine suppliers in Haryana are also known to source this ciprofloxacin from bulk drug markets in Delhi.

Coccidiosis, a protozoal disease which affects the intestine of the young bird is also a big cause of mortality at the broiler farms of Haryana. Preventive treatment by ionophores or antibiotics is commonly adopted due to high cost of vaccine against it. Vaccination is typically used to prevent viral diseases such as Ranikhet Disease (New Castle Disease) and Gomboru disease (Infectious Bursal Disease), however many a times farmers give additional doses of antibiotics in case of viral diseases.

The withdrawal periods are not followed in general. The veterinarians however are known to suggest in case of therapeutic doses. If the need of antibiotics arises during the last few days, some farm managers prefer to kill the bird to avoid giving preventive doses to all, while others sell it despite the disease.

Veterinarians have a limited role in non-therapeutic antibiotic administration. They are considered liberal with prescribing antibiotics which is believed to be influenced by incentives from pharmaceutical companies.

Veterinarians have practically no role in the use of AGPs. No prescription is required to buy feed mixed with AGPs as well as feed premix with antibiotics. They have limited day-to-day involvement in routine preventive doses that are set already, known and given by farm managers at almost all times. Their services are sought in case of a high mortality that requires pathological diagnosis and therapeutic doses.

Most of the big farms employ veterinarians as poultry consultants while small and medium farmers call them on need basis such as high mortality or a major drop in the FCR. Instead of focusing on infection prevention measures and judicious use of antibiotics, veterinarians are known to be liberal in prescribing antibiotics. A practice believed to be linked with commercial incentives from veterinary pharmaceutical suppliers. Besides, it is believed that a large number of those who are prescribing antibiotics are not trained veterinarians. They are known to have a strong influence on antibiotic use at smaller farms.

At best, non-antibiotic growth promoters such as herbal supplements are used to complement antibiotics. These are considered less effective than antibiotics and are cost prohibitive.

Probiotics, prebiotics and herbal antioxidants are increasingly being used along with the antibiotics in the feed. These are considered less effective than antibiotics and are not used as a replacement. These are also more expensive than antibiotics and are cost prohibitive for smaller farms. It is believed that the input cost of AGPs is much less than non-antibiotic growth promoters and the overall cost of production with AGPs could be lower by up to 20 percent. Skylark is the only known big farm in the region which claims to have raised broilers without non-therapeutic antibiotic use for about five years until 2013. It was using an antibiotic-free preparation (HYMU and Delcox) for about five years, when it decided to use enramycin as an AGP from January 2014.

Bigger farmers, despite being more aware and resourceful than smaller farmers, are far from practicing good farm management measures. In order to attain the favourable FCR, small and

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medium farms heavily rely on antibiotics. Use of antibiotics is considered an easy and most economical solution for high profitability.

Bigger farmers are aware about the importance of bio-security measures such as those linked with prevention of infection and reducing stress among the broilers. They are capable to have much needed infrastructure and resources such as computerized ventilation systems and closed sheds for better temperature and humidity control; better waste and dead bird disposal systems; testing toxins in feed and restricting access to broilers. Additionally, the integrated farmers may also have control on the quality of parents and chicks through limiting vertical transmission of diseases. However, it is believed that no farm in Haryana invests and adopts practices to the extent of substituting antibiotics. Besides cost and labour involved, lack of incentives for producing an antibiotic-free chicken is believed to be the reason.

Small and medium farmers on the other hand heavily depend on non-therapeutic use of antibiotics to prevent disease and attain favourable FCR. Antibiotics are used as a substitute of hygiene and sanitation. Also, vaccination for bacterial diseases in broilers involves high cost. It is usually done by bigger farmers at the parent stock level. Antibiotic use is considered an easy and most economical solution, specifically among small and medium size farmers.

Huge Incentive to use AGPs: Economics of producing broiler chicken with or without AGPs

The exact cost of production varies and depends upon the cost of a DOC and fluctuating feed prices. In case of an FCR of 2 it would be Rs 140 for a chicken of 2 kg. The break-up involves:

- Cost of a DOC at Rs 25
- Cost of feed at Rs 100 (a chicken of 2 kg considering an FCR of 2 – assuming without AGPs – would consume about 4 kg of feed, which is about Rs 25 per kg)
- Operational expenses at Rs 15 per chicken (including labour, electricity, etc.)

FCR is the key economic indicator for a poultry farm which is primarily affected by the amount of feed consumed. Since feed involves the highest cost and use of AGPs directly affects the amount of feed consumed, AGPs are the single most important factor to lower the FCR and increase profitability.

Well managed bigger farms have an FCR of 1.5. A back-of-the-envelope calculation shows that at an FCR of 1.5, attained through use of AGPs, a chicken would eat about 3 Kg of feed to reach to the ideal ready-to-slaughter weight of 2 kg. Assuming the cost of feed at Rs 25, a chicken would eat worth Rs 75. This would mean a saving of Rs 25 per chicken. For a farm of 100,000 birds, and an average seven rearing cycles per year, low FCR translates into a saving of Rs 1.75 crore per year. Given the cost of antibiotics in AGP at Rs 100 per tonne, the additional expense would be of about Rs 2.1 lakh per year only. The savings are a huge incentive for the farmers to use AGPs.

The scale of additional margins by using AGPs is linked to the capacity of the farm. Notably, a farm like Skylark has a capacity of about 2.5 million broilers per month.

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