

CHICKEN BREEDS OF INDIA

Ankleshwar



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Ankleshwar breed of chicken is quite hardy and adapted to its environment and have been intricately associated with culture of the tribal (Vanvasi) which maintain them. As other indigenous chicken breeds Ankleshwar is also normally referred as Desi chicken and are facing threat owing to poor egg production, slow growth, late sexual maturity, broodiness, small egg and body size. These characteristics make these native birds vulnerable to economic forces. The indigenous poultry is facing threat from introduction of poultry strains of broiler and layers which are scientifically managed on economic considerations while most of the poultry populations in India are predominantly backyard poultry. Ankleshwar birds are maintained in backyard system and provide a good source of animal protein for the tribals. No information is available in literature on the characteristics of this breed except that they are found in Gujarat. A detailed survey was conducted in the breeding tract under Network Project on Animal Genetic Resources by Anand Agricultural University, Anand to record information on morphometric characters, management practices and production attributes. The Genetic architecture using microsatellite loci was established at NBAGR, Karnal.

Distribution

Ankleshwar birds are distributed in Bharuch and Narmada districts of Gujarat. In Bharuch these birds are mainly found in Ankleshwar, Jambusar, Zagadia, Bharuch, Hansot and Valia talukas, whereas in Narmada these are mainly found in Dediapada, Rajpipla, Tilakwada and Nadod talukas. This breed might have been named after the name of the area i.e. Ankleshwar in Bharuch district where these birds are found. However, in the breeding tract, the birds are known not by the name Ankleshwar but as 'desi/gowrani/gamthi'.



Utility

Ankleshwar birds are mainly kept for meat purpose and egg production.

Management Practices

The birds are reared in free range backyard system and only small shelters adjoining the house are provided to save the birds from predators. The flock size ranges from 5 to 10. Scavenging with supplementation of grains/kitchen waste is the most common feeding system. The birds are fed 30 to 40 g of cereal grains like Jwar, rice, bajra, wheat etc. There is no supplementary feeding of vitamins and minerals. Incubation and hatching is carried out by broody hens throughout the year. Birds are not vaccinated against any disease however Ranikhet, Fowl pox are prevalent in the region.



Morphological Characteristics

Plumage colour ranges widely, a combination of white and light grey to brown and golden are most prevalent. Plumage pattern is generally stripped or spotted with golden yellow feathers having black tips. Golden yellow plumage is predominant in cocks while Black golden is more common in hens.



Comb is red and is of single or rose type. Beak is small and yellow in colour. Skin is yellow or pinkish in colour. Earlobe is white in color, and is large in cocks and small in hens. Shank is yellow in color. Eyes are black with yellow reddish ring. Feathered



legs, cap feather and bearded feathers are also observed in some of the birds.

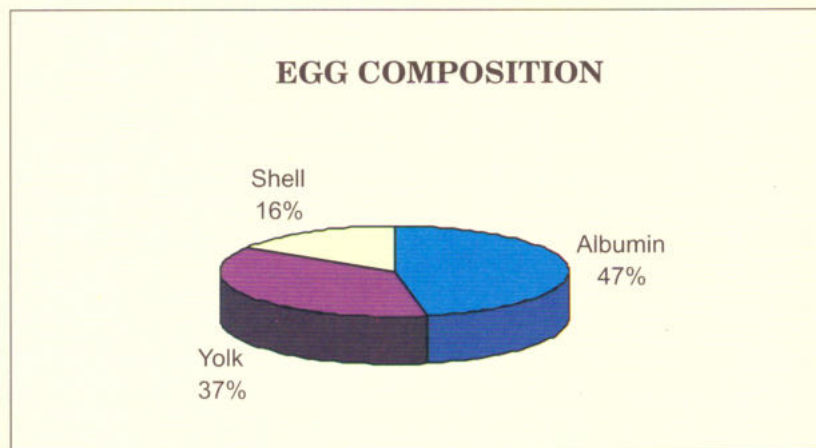
Performance

The average weight at hatching is 28.95 ± 0.96 g. The average weight of males and females is 551.12 ± 2.57 and 458.58 ± 2.30 g

respectively at 8 weeks, and 829.57 ± 4.26 and 750.49 ± 4.28 g respectively at 12 weeks of age. Average weight of cocks and hens at slaughter is 1.76 ± 0.007 and 1.49 ± 0.006 kg (72 weeks) respectively. Average age at first egg is 179.95 ± 0.24 days. The birds



have an average annual egg production of 79.35 ± 0.29 . Hatchability on total egg basis is 84.4 percent. The mean egg weight is 35.09 ± 0.14 g. Egg shell colour varies from cream brown to white. The shell is strong and has mean thickness of 30.5μ . Albumin is thick. Egg yolk is yellow in colour. Albumin index, yolk index and Haugh units are 0.088 ± 0.006 , 0.36 ± 0.001 and 83.68 ± 0.02 respectively.



The dressing percentage is 62.44 percent. Neck, wings, back, breast, drumstick, thigh, heart, gizzard and liver contributed 6.69, 9.54, 20.94, 22.76, 16.59, 16.31, 1.12, 3.14 and 2.91 percent, respectively, to the dressed weight.

Genetic Architecture

The mean number of alleles observed was 9.88 using 25 dinucleotide microsatellite loci. The number of alleles with frequency greater than 5% was 5.4. The effective number of alleles was found to be 4.56. Three alleles in Ankaleshwar breed were private i.e. not available in any other indigenous chicken. The private alleles belonged to loci LEI 155, LEI 174 and HUI003. The allele frequency of the three private alleles were 0.013, 0.038 and 0.013 respectively. The mean observed heterozygosity was

found to be 0.62 while the expected heterozygosity was 0.74 which is significantly less pointing towards existence of population structure. The F_{IS} value was found to be 0.162 and 4 loci exhibited negative values. This also enforces the existence of population structure.

The test for deviation from HW equilibrium revealed 10 loci to be significantly deviating from HWP ($P \leq 0.001$) while 11 loci were in HWP. The non random mating among the individuals is the possible reason for



deviation. The qualitative as well as quantitative tests for mutation drift equilibrium did not exhibit any recent genetic bottleneck or any other recent founding event.

Parameter		Average
Body weight (kg)	Cock	1.759±0.007
	Hen	1.487±0.006
Age at first egg (days)		179.95±0.24
Annual Egg production		79.35±0.29
Hatchability (%)	Fertile eggs	92.41
	total eggs	84.41
Egg wt. (g)		35.09±0.14
Shell wt. (g)		5.64
Yolk wt. (g)		12.99
Albumin wt. (g)		16.46
Shell Thickness (μ)		30.53±0.10
Shell Colour (%)	Cream	65.5
	Brown	33.4
	White	1.1
Albumin Index		0.088±0.006
Yolk Index		0.36±0.001
Haugh units		83.68±0.02

