

TuBAvi (2017-20)
TuBAvi-2 (2021-24)

Collective projects within the poultry sector funded with the support of the **European Agricultural Fund for Rural Development (EAFRD)**

https://ec.europa.eu/agriculture/rural-development-2014-2020_en

Ministry of agriculture, food sovereignty and forestry –
National Rural Development Programme 2014/2022 – Measure 10.2 –
Conservation, use and sustainable development of genetic resources
in agriculture



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CONSERVATION OF BIODIVERSITY IN ITALIAN POULTRY BREEDS:
deepening and monitoring
TuBAvi-2



Breed data sheet

BIANCA DI SALUZZO
Gallus gallus domesticus Sp.

**Origin and morphological,
genetic, reproductive,
and productive traits**



**FONDO EUROPEO AGRICOLO PER LO SVILUPPO
RURALE: l'Europa investe nelle zone rurali**



**MINISTERO DELL'AGRICOLTURA
DELLA SOVRANITÀ ALIMENTARE
E DELLE FORESTE**





The presented data were registered in nucleus populations conserved at the University of Turin (UniTO).

Latest update: February 17th, 2023



Bianca di Saluzzo

Sp. Gallus gallus domesticus

Breed data sheet: origin and morphological, genetic, reproductive, and productive traits

Breed origin and development

Name of the breed	Bianca di Saluzzo
Synonyms or local names	Bianca di Cavour
Geographic origin	Piedmont, Marquisate of Saluzzo (Saluzzo and neighbouring villages)
Geographic distribution	Piedmont
Estimated total population size	874 (Castillo et al., 2021)
Extinction risk status (FAO, 1998)	Threatened conserved
Any other specific information	Medium-sized breed

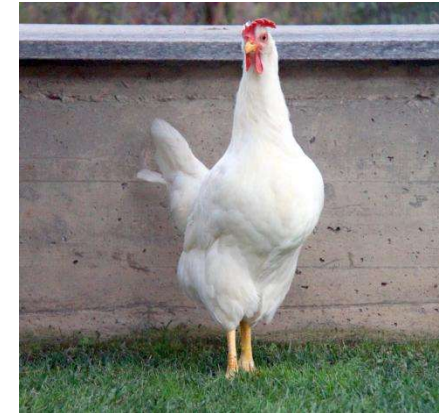
Historical origin
<p>News of this breed have been recorded since XIX century, when it was already known for the deliciousness of the meat and for the small size. It was widely distributed in the area of the ancient Marquisate of Saluzzo, in the surroundings of Turin. The town of Cavour, once home of an important poultry market, has especially safeguarded the presence of this breed in local farms, so much that Bianca di Saluzzo breed is sometimes referred to as Bianca di Cavour.</p> <p>In the 1800s, local farms could sell about half the reared chickens. Hens were reared for family sustenance, in addition to provide eggs and meat to be sold at local markets, in order to buy food that the farm could not produce, such as coffee, sugar, salt and oil.</p> <p>Up to the half of the last century, Piedmont traditional breeds were quite famous, attracting merchants to local fairs from all over Italy.</p> <p>Around 1960, due to industrialisation and intensive agriculture, breeders decreased that reared Bianca di Saluzzo, that was replaced by fast growing breeds, with unsavoury meat and not suitable for rural free-range breeding.</p> <p>Bianca di Saluzzo breed recovery started in 1999, when Slow Food proposed to safeguard and promote endangered products endowed with exquisite organoleptic qualities. The selection and diffusion of this breed has thus begun, starting from residual animals found in the countryside (www.prodottitipici.provincia.cuneo.it).</p> <p>Bianca di Saluzzo has been a Slow Food presidium since 1999, when the Professional</p>

Institute for Agriculture and Environment of Verzuolo started a careful selection and recovery activity of this slow growing breed, that was close to extinction. Since 2014, the University of Turin has started a program of conservation and genetic improvement.

Bianca di Saluzzo male and female



Centre for the Conservation of Local Poultry Genetic Resources, UniTO



Centre for the Conservation of Local Poultry Genetic Resources, UniTO

Bibliography

Di Francesco G, Falciola R, Lazzaroni C, Moriano G, Regis E (2002) La Bionda, la Bianca e il Grigio. Vol. 1 - La Bionda e la Bianca. Ed. AsproAvic

Mortality

Age (weeks)	Average (%)	
	Male	Female
0-1	0.1	0.1
1-8	0.05	0.05
8-20	0.01	0.01
20-34	0.01	0.01

Slaughter data

Slaughter parameters	Average	
	Males (6 months)	Females (7 months)
Live weight (kg)	2.3	1.9
Carcass weight (eviscerated) (kg)	1.3	1
Carcass weight (eviscerated) yeald (%)	59.4	54.2

Rearing traits

Breed type	Rustic, rural, lively
Growth speed (precocious vs tardive)	Tardive
Feathering speed (precocious vs tardive)	Precocious
Broodiness	Low
Parental care attitude	Low
Ease of breeding	Easy
Male:female ratio for breeding	1:10
Tolerance or resistance to diseases and parasites	Good
Tolerance to extremes of temperature	Good
Reported uses (meat, eggs)	Primary: meat Secondary: eggs

Qualitative and quantitative morphological traits in adult breeders

Discrete or qualitative traits

Feather morphology	Normal
Feather distribution	Normal
Plumage structure	Thick and well adherent to the body, abundant cape
Plumage colours	White, with pearl/gold platinum lustre
Colour features	Single-colour, without sexual dimorphism
Chick plumage colour	Yellow
Comb type	Simple comb , red, upright in the male, in the female the rear part falls to one side
Comb spikes	Four to seven spikes
Ear-lobe colour	White-yellow (red is tolerated); well-developed in the male
Beak colour	Yellow
Iris colour	Orange
Muffs	Absent
Beard	Absent
Tuft	Absent
Skin colour	Yellow
Shank colour	Yellow
Shank feathering	Free from feathers
Skeletal variants	-
Other specific and distinct visible traits	Red, well-developed wattles

Colour pattern	Uniform white all over the body, the cape can show pearl/gold platinum lustre in the male.
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Quantitative traits

Parameters	Male		Female	
	Average±SD*	Min-max	Average±SD*	Min-max
Body weight (g)	2823±227	2504-3210	1964±154	1403-2362
Body length (cm)	45,4±1,3	43-47	36,8±1,6	35-40
Chest circumference (cm)	37,2±2,1	34-42	30,8±2,2	26-33
Shank length (cm)	9±0,4	8,5-49,5	7,6±0,3	7-8
Shank diameter (cm)	1,1±0,1	1,0-1,2	0,8±0,1	0,7-0,9
Wing span (cm)	45,3±3,2	42-51	35,5±1,2	33-37

*SD: standard deviation

Genetic traits

Characterisation of the breed with Single Nucleotide Polymorphisms (SNPs)

Molecular marker	Affymetrix Axiom 600K Chicken Genotyping Array
Laboratory that performed the analyses	Department of Agronomy, Food, Natural Resources, Animals and Environment (DAFNAE) University of Padua
Analysed parameters	MAF: minor allelic frequency Ho: observed heterozygosity He: expected heterozygosity F _{HOM} : inbreeding coefficient

Year		N**	MAF	Ho	He	F _{HOM}
2019	Mean	24	0.286	0.339	0.336	0.076
	SD*		0.190	0.172	0.151	0.059

*SD: standard deviation; **N: number of samples

Characterisation of nucleus populations with microsatellites and mating plans

Molecular marker	Microsatellites (26 markers)
Laboratory that performed the analyses	Laboratory of Animal Molecular Genetics Department of Veterinary Science (DSV) University of Turin
Analysed parameters	Ne: effective number of alleles Na: observed number of alleles I: Shannon diversity index H-Ind: individual variability index Ho: observed heterozygosity (average H-Ind) He: expected heterozygosity F: fixation index P: average kinship index
Indexes used to schedule mating plans	H-Ind P

Year		N**	Na	Ne	I	Ho	He	F	P
2020	Mean	59	6.714	3.563	1.388	0.687	0.676	-0.026	0.46
	SE*		0.624	0.414	0.104	0.031	0.031	0.034	
2022	Mean	34	2.38	3.02	0.89	0.63	0.52	-0.22	0.50
	SE*		0.08	0.10	0.03	0.02	0.02	0.02	0.01

*SE: standard error; **N: number of samples

Reproductive and productive quantitative traits

Oviposition, brooding and incubation data

Age at sexual maturity of hens (weeks)	24-28
Length of first oviposition cycle (weeks)	45
Annual egg production per hen (min-max)*	115-150
Average clutch size (min-max)	N.a.**
Clutch interval (days)	N.a.**
Incubation length (days)	21

*As measured during the first year of age, min-max of family line

**N.a.: Not available information

Egg-quality traits

Parameters	First oviposition cycle*		Second oviposition cycle**	
	Average	Min-max	Average	Min-max
Egg weight (g)	53.4	39.5-67.4	56.7	43.6-69.8
Shell colour	Cream-pink			

* Total n. of measured eggs: 12610; ** Total n. of measured eggs: 5303

Parameters (sample measurement)	Average	Min-max
Egg weight (g)	60.2	52.6-68.4
Shell weight (g)	7.3	5.9-8.8
Albumen weight (g)	34.5	29.7-40.0
Yolk weight (g)	17.7	15.3-20.3
Egg Shape Index*	75.1	70.8-78.6

* Egg Shape Index (ESI) = short diameter/long diameter x 100

Body weight and growth data

Age (weeks)	Male weight (g)		Female weight (g)	
	Average	SD*	Average	SD*
0 (hatching)	39.85	2.70	38.178	3.35
8	673.65	123.24	595.15	86.84
12	1132.25	143.21	867.99	116.34
18	1651.96	208.23	1277.28	170.70
26	2369.74	234.82	1765.70	239.91
30	2535.97	253.67	1868.09	231.49
34	2571.93	259.65	1854.55	235.02

*SD: standard deviation