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

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

TUTELA BIODIVERSITÀ
AVICOLA ITALIANA

Breed data sheet

POLVERARA

Gallus gallus domesticus Sp.

Origin and morphological, genetic, reproductive, and productive traits

Rearing traits

Breed type	Rustic
Growth speed (precocious *vs* tardive)	Precocious
Feathering speed (precocious *vs* tardive)	Precocious
Broodiness	No
Parental care attitude	Yes
Ease of breeding	Yes
Male:female ratio for breeding	1:10-12
Tolerance or resistance to diseases and parasites	No
Tolerance to extremes of temperature	No
Reported uses (meat, eggs)	Primary: eggs Secondary: meat

The presented data were collectively registered in the nucleus populations
of White and Black Polverara breed conserved
at the "Sasse Rami" Experimental Farm, in Ceregnano (Rovigo).
The data are presented by breed and, for some traits, by colour.

Last update: October 14th, 2023

Reproductive and productive quantitative traits

Oviposition, brooding and incubation data

Age at sexual maturity of hens (weeks)	27-36
Length of first oviposition cycle (weeks)	N.a.**
Annual egg production per hen (min-max)*	120-130
Average clutch size (min-max)	20
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 (sample measurement)	Average	Min-max
Egg weight (g)	50.2	46.1-54.1
Shell weight (g)	5.18	4.56-5.84
Albumen weight (g)	28.4	25.9-31.3
Yolk weight (g)	16.6	14.6-18.1
Egg Shape Index*	0.75	0.71-0.79
Shell colour	White	

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

Reproductive traits

Incubation parameters	First oviposition cycle	
	Average	Min-max*
Fertility (% produced eggs)	92	87-98
Hatchability (% fertile eggs)	84	78-86
Hatchability (% produced eggs)	77	68-84

*Per family line

Polverara

Gallus gallus domesticus Sp.

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

Breed origin and development

Name of the breed	Polverara
Synonyms or local names	Schiata or s-ciàta
Geographic origin	Veneto (Padua)
Geographic distribution	Veneto, Friuli-Venezia Giulia
Estimated total population size	1093 (Castillo et al., 2021)
Extinction risk status (FAO, 1998)	Not at risk
Any other specific information	Presence of a tuft, less developed than in the Padovana breed

Historical origin

Historical breed. The origin of the Polverara breed seems to date back to the XIV century, when the marquise Giovanni Dondi Dell'Orologio came back from a journey in Poland with chickens with an unusual appearance. Over time, he cross-breeded them, producing new chickens which showed good adaptation to the territory and the Polverara birds were among them. This breed is of medium/light size, with elegant bearing. The meat is dark, endowed with sapidity and firmness, suitable for many culinary preparations, also coming from ancient popular traditions, such as the stuffed hen (*gallina con il pien*). The Polverara is suitable for the valorization of the typical productions of the Veneto region. It is included in the National Plan of Biodiversity in Agriculture and in the Atlas of Traditional Agri-food Products (*Atlante dei Prodotti Agroalimentari Tradizionali*) of the Veneto region.

Qualitative and quantitative morphological traits in adult breeders

Discrete or qualitative traits

Feather morphology	Normal
Feather distribution	Normal
Plumage structure	Soft
Plumage colours	White, Black
Colour features	Single-colour, with sexual dimorphism
Chick plumage colour	Straw yellow down with grey nuances
Comb type	Absent, replaced in the **male** by small V-shaped hornets, that are barely visible in the **female**
Comb spikes	-
Ear-lobe colour	Pure white
Beak colour	Pink yellow in the White Dark horn with black stripes in the Black
Iris colour	Red-orange to brown
Muffs	Present
Beard	Present
Tuft	Present, upright on the head and leaning forward
Skin colour	White
Shank colour	Willow green in the White Slate with greenish shades in the Black
Shank feathering	Free from feathers
Skeletal variants	-
Other specific and distinct visible traits	Rudimentary red wattles, in part covered by the beard

Colour pattern
White: Brilliant white plumage, white down
Black: Brilliant intense black, with strong green lustre, black down

Quantitative traits

Parameters	Male		Female	
	Average	Min-max	Average	Min-max
Body weight (g)	2250	1680-2570	1675	1440-2090
Body length (cm)	39	37-42	35	32-37
Chest circumference (cm)	34	29-36	30	26-32
Shank length (cm)	10	9-10	8	7-9
Shank diameter (cm)	5	4-5	4	4-5
Wing span (cm)	44	41-48	37	34-40

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 heterozygosis He: expected heterozygosis F_{HOM}: inbreeding coefficient

White						
Year		N**	MAF	Ho	He	F_{HOM}
2019	Mean	24	0.260	0.216	0.248	0.411
	SD*		0.261	0.179	0.187	0.052

Black						
Year		N**	MAF	Ho	He	F_{HOM}
2019	Mean	24	0.257	0.201	0.213	0.454
	SD*		0.290	0.193	0.194	0.062

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

Characterisation of nucleus populations with microsatellites

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 heterozygosis (average H-Ind) He: expected heterozygosis F: fixation index P: average kinship index

Year		N**	Na	Ne	I	Ho	He	F	P
2020	Mean	17	3.357	2.505	0.885	0.382	0.484	0.203	0.55
	SE*		0.452	0.315	0.151	0.068	0.077	0.057	

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