

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



Breed data sheet

MERICANEL DELLA BRIANZA

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 of Mericanel della Brianza conserved at the University of Milan (UniMI).

Latest update: November 25th, 2024



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Breed origin and development

Name of the breed	Mericanel della Brianza
Synonyms or local names	-
Geographic origin	Lombardy, in the area of Brianza
Geographic distribution	Lombardy
Estimated total population size	160 (Castillo et al., 2021; ANCI, 2022)
Extinction risk status (FAO, 1998)	Threatened conserved
Any other specific information	Bantam breed

Historical origin

Mericanel della Brianza breed has probably originated from crossbreeding of local breeds with Asian bantam breeds introduced to Northern Italy in the 1600s up to last century. In those years, trades were frequent also in agriculture and breeding; trading with merchants from Venice, facilitated by closeness, was probably the way that brought Asian bantam chickens to Northern Italy, thus leading to the diffusion of small-sized breeds such as Pepoi in Veneto and Mericanel della Brianza in Lombardy.

The breed is named after its geographical area of origin, Brianza, an hilly region lying north-east of Milan, and including the provinces of Monza-Brianza, Lecco, Como, and a small part of the province of Milan. It is supposed that the name “Mericanel” comes from a Brianza dialect word for “american”, thinking by mistake that the breed originated in America, or from the Brianza name “mericanel”, used for particularly lively children.

At the beginning of the XX century, MB chicken were present in small rural farms as free-range chickens. In the XIX and XX centuries, Brianza was a rural land, where people’s sustenance used to come from sharecropping; in such a context, poultry was not foraged, apart from capons only, intended for the bourgeoisie. Mericanel della Brianza chickens, therefore, used to live free around the farms, without either any care about their food or about livery selection.

Mericanel della Brianza chickens are well proportioned, round-shaped, and elegant, but have also a strong temperament. It is a rural breed, that prefers to stay in the open; it is very lively, not demanding, and able to find food (insects, fruit, and other plants) in the wild to satisfy its nutritional needs; it has a wild nature and a good flying ability that allows chickens to reach

the higher branches of the trees, up to 12-15 meters from the ground. Hens have an excellent brooding aptitude and are excellent mothers, exemplary in defending and leading the offspring.

The breed has never been selected on the basis of liveries, but rather based on other properties such as rusticity, small size, and yellow skin shanks.

Mericanel della Brianza belongs to dwarf or bantam breeds, frequently categorised in the past as “fancy birds”. The small size of birds and eggs made them unsuitable as food, so they were reared mainly for decorative purposes. At the beginning of the 1900, some authors claimed that bantam chicken breeds shouldn't even be included into poultry management books, being used only for fancy, not productive, purposes. However, their high brooding aptitude, also towards eggs belonging to other species (i.e. game birds), the ease of breeding, and their strong scratching activity, helpful for the house keeping of the courtyard in the villas, guaranteed their survival.

Qualitative and quantitative morphological traits in adult breeders

Discrete or qualitative traits

Feather morphology	Normal
Feather distribution	Normal
Plumage structure	Stiff, abundant with wide feathers
Plumage colour	Most prevalent colours: White, Black mottled, Gold (<i>Collo oro</i>) Other colours: Black, White gold (<i>Collo oro bianco</i>), Silver (<i>Collo argento</i>)
Colour features	Single color, without sexual dimorphism: White, Black Bi-colour, without sexual dimorphism: Black mottled Bi-colour, with sexual dimorphism: Gold, Silver, White gold
Chick plumage colour	Yellow, grey, reddish, depending on the colour
Comb type	Simple comb , upright, red, fine-textured, narrow at the base, with the blade carried backwards, away from the neck; in the female it can fall to one side without covering the eye, but it is often upright.
Comb spikes	Five spikes
Ear-lobe colour	Red
Beak colour	Yellow to horn
Iris colour	Orange
Muffs	Absent
Beard	Absent
Tuft	Absent
Skin colour	Yellow
Shank colour	Saffron yellow
Shank feathering	Free from feathers
Skeletal variants	-
Other specific and distinct visible traits	-

Colour pattern
<p>White: Pure white, more brilliant in the male. White down.</p> <p>Black: Intense black, with strong brilliant green sheen in the male. Grey to black down, even lighter in the male.</p> <p>Black mottled: Brilliant black plumage with green sheen. Several feathers have white spots at the tips, preferably V-shaped. Mottling must be as uniform as possible. Spots at the tips of flights, sickles and hackle feathers have to be considered a merit. In the male, the pattern is less marked than in the female, thus it appears to be darker; one to four white primaries are permitted. Thin blackish streaks on the shanks permitted. Down ash-grey to grey.</p> <p>Gold: In the male, head intense gold-yellow, neck hackle golden yellow, slightly lighter at the end, with black striping with green sheen. Back, shoulders, and flight coverts brilliant dark</p>

red. Saddle hackles golden-yellow, with black striping with green sheen. Main wing coverts black with metallic blue/green sheen. Primaries black, with narrow brown edging on the outer web. Secondaries inner colour and tips black, outer colour brown forming wing bay. Breast black with green sheen, free from traces of brown. Belly and legs black. Tail black with strong green sheen. Down greyish. In the **female**, head golden-yellow; neck hackle golden-yellow with black striping with green sheen. Primaries black with narrow outer edging with brown peppering. Secondaries inner colour black and outer colour brown with peppering. Remainder of the plumage brown gold with fine and even black peppering, shafts can be lighter. Breast salmon, darker in the upper part. Belly and legs grey/brown. Tail black, main tail coverts marked like rest of the plumage.

White gold: In the **male**, plumage mainly cream white. Head red/orange, neck hackle light golden-yellow, darker, with cream white striping, towards the end. Back, shoulders, and wing coverts dark carmine-red; the colour of the back is lighter towards the saddle. Saddle hackles orange to light orange with thin barely visible cream white striping. Main wing coverts cream white. Primaries cream white, thin light brown edging permitted. Secondaries inner colour and tips cream white, outer colour reddish-brown forming wing bay. Tail cream white, in intensely coloured birds slight black sprinkles permitted both on sickles and on main tail feathers. In adults, slight light red edging on breast and on tail coverts permitted. In the **female**, plumage cream white. Head light golden-yellow. Neck hackle light golden-yellow with cream white striping. Breast and front of neck uniform and intense salmon.

Silver gold: In the **male**, head golden white. Neck hackle with black striping with green sheen. Back, shoulders, and wing coverts white. Saddle hackles silver white with black striping with green sheen. Main wing coverts black with metallic green/blue sheen. Primaries black with narrow white edging on the outer web. Secondaries inner colour and tips black, outer colour white forming pure white wing bay. Breast black with green sheen free from traces of white. Belly and legs black. Tail black with strong green sheen. Greyish down. In the **female**, head silver white. Neck hackle silver with black striping with green sheen. Overall silver white plumage with fine and even black peppering, white shaft permitted. Primaries black with narrow silver white edging with peppering. Secondaries inner colour black and outer colour peppered silver. Breast salmon, darker in the upper part. Belly and legs grey. Tail black, main tail coverts marked like the rest of the plumage.

Quantitative traits

Parameters	Male		Female	
	Average	Min-max	Average	Min-max
Body weight (g)	1023	870-1350	748	475-1110
Body length (cm)	29	25-32	26	23-30
Chest circumference (cm)	27	24-32	25	21-30
Shank length (cm)	5.82	4.50-7.00	5.14	3.50-6.00
Shank diameter (cm)	1.03	0.87-1.20	0.88	0.69-1.00
Wing span (cm)	29	25-34	27	20-33

Reproductive and productive quantitative traits

Oviposition, brooding and incubation data

Age at sexual maturity of hens (weeks)	24
Length of first oviposition cycle (weeks)	51
Average annual egg production per hen (min-max)*	72 (53-93)
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)	34.5	20.0-49.0	37.2	28.0-46.0
Shell colour	Cream to brown			

* Total n. of measured eggs: 3614; ** Total n. of measured eggs: 2312

Parameters (sample measurement)	Average	Min-max
Egg weight (g)	35.6	32.04-43.09
Shell weight (g)	3.1	2.29-3.91
Albumen weight (g)	19.7	16.57-24.75
Yolk weight (g)	12.7	11.12-15.27
Egg Shape Index*	76.9	70.00-83.30

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

Reproductive traits

Incubation parameters	First oviposition cycle	
	Average	Min-max*
Fertility (% produced eggs)	58.6	42-95
Hatchability (% fertile eggs)	78.5	50-100
Hatchability (% produced eggs)	46.5	31-84

*Per family line

Body weight and growth data

Age (weeks)	Male weight (g)		Female weight (g)	
	Average	SD*	Average	SD*
0 (hatching)	20.9	2.29	19.7	2.36
8	311.7	49.7	263.7	41.9
12	532.1	89.0	414.4	65.4
18	749.6	98.2	550.0	93.4
26	831.3	41.8	619.8	105.0
30	909.0	109.3	673.1	102.4
34	973.6	132.5	707.0	105.7

*SD: standard deviation

Mortality

Age (weeks)	Average (%)	
	Male	Female*
0-1	7.2	3.8-14.3
1-4	6.6	0-12.3
4-8	2.8	0-6.9
8-20	0.6	0-2.4
20-34	0	0

*different hatchings in the same reproductive season

Rearing traits

Breed type	Rustic, lively
Growth speed (precocious vs tardive)	Tardive
Feathering speed (precocious vs tardive)	Precocious
Broodiness	Yes, high, also towards eggs belonging to other breeds
Parental care attitude	Yes
Ease of breeding	Yes
Male:female ratio for breeding	1:10
Tolerance or resistance to diseases and parasites	Not available information
Tolerance to extremes of temperature	Not available information
Reported uses (meat, eggs)	Not available information

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	0.282	0.232	0.261	0.368
	SD*		0.268	0.180	0.186	0.127

*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	99	3.000	1.858	0.627	0.357	0.360	0.005	0.696
	SE*		0.503	0.246	0.129	0.072	0.069	0.066	0.006
2023	Mean	81	3.04	2.10	0.78	0.516	0.46	-0.14	0.65
	SE*		0.26	0.14	0.07	0.045	0.04	0.05	0.00

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

Mericanel della Brianza male and female

White



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Black mottled



Avian Center for the Conservation of Local Genetic Resources, UniMI



Avian Center for the Conservation of Local Genetic Resources, UniMI

Gold



Avian Center for the Conservation
of Local Genetic Resources, UniMI



Avian Center for the Conservation
of Local Genetic Resources, UniMI

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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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