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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

MILLEFIORI DI LONIGO

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**



Millefiori di Lonigo male and female



The presented data were registered in nucleus populations conserved at the “Sasse Rami” Experimental Farm, in Ceregnano (Rovigo).

Latest update: October 14th, 2023

Reproductive and productive quantitative traits

Oviposition, brooding and incubation data

Age at sexual maturity of hens (weeks)	23-32
Length of first oviposition cycle (weeks)	N.a.**
Annual egg production per hen (min-max)*	150-160
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

Reproductive traits

Incubation parameters	First oviposition cycle	
	Average	Min-max*
Fertility (% produced eggs)	87	86-91
Hatchability (% fertile eggs)	66	53-73
Hatchability (% produced eggs)	57	46-66

*Per family line

Rearing traits

Breed type	Rustic, good grazer
Growth speed (precocious vs tardive)	Precocious
Feathering speed (precocious vs tardive)	Precocious
Broodiness	Yes
Parental care attitude	Yes
Ease of breeding	Yes
Male:female ratio for breeding	1:8
Tolerance or resistance to diseases and parasites	No
Tolerance to extremes of temperature	No
Reported uses (meat, eggs)	Primary: meat Secondary: eggs



Millefiori di Lonigo

Gallus gallus domesticus Sp.

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

Breed origin and development

Name of the breed	Millefiori di Lonigo
Synonyms or local names	-
Geographic origin	Veneto (Lonigo, Vicenza)
Geographic distribution	Veneto
Estimated total population size	755 (Castillo et al., 2021)
Extinction risk status (FAO, 1998)	Threatened conserved
Any other specific information	-

Historical origin
<p>Selected by the Itinerant School of Agriculture of Lonigo (established with legal decree in 1926), the Millefiori di Lonigo breed is a local genetic resource with <i>Mille Fleur</i> ("a thousand flowers") plumage, always reared in the province of Vicenza and in the Veneto region. This genetic resource was defined during the 1920s, as it was previously considered as a type of the <i>Italiana locale comune</i> (common local Italian) chicken breed. The history of the Millefiori di Lonigo is linked to the history of Italian poultry, and it dates back to the time of ancient Rome.</p> <p>The first group of Millefiori di Lonigo chickens arrived to <i>La Decima</i>, a farm managed by the Administration of Vicenza province, in 2007, recovering chickens from the Liguria and Emilia Romagna regions. After a first period of acclimatisation and breeding, <i>La Decima</i> started spreading chicks among several farms of the territory. These farms have thus become the "keeper farms" of the breed, by spreading on their turn the products of their breeding. The Millefiori di Lonigo is also reared by amateur farmers. For this reason, the Millefiori di Lonigo chickens are also reared in other Italian regions.</p>

Qualitative and quantitative morphological traits in adult breeders

Discrete or qualitative traits

Feather morphology	Normal
Feather distribution	Normal
Plumage structure	Abundant, well developed and adherent to the body; well developed down, especially in the female
Plumage colours	<i>Mille Fleur</i>
Colour features	Bi-colour, with sexual dimorphism
Chick plumage colour	Spotted tawny
Comb type	Simple comb , upright in the male, falling to one side in the female
Comb spikes	Five spikes
Ear-lobe colour	White
Beak colour	Yellow
Iris colour	Red-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	-

Colour pattern
Plumage scattered with spots (most frequently light-coloured or black) on a ground colour, that is mainly red or dark orange (<i>Mille Fleur</i>).

Quantitative traits

Parameters	Male		Female	
	Average	Min-max	Average	Min-max
Body weight (g)	2820	2170-3350	1990	1900-2090
Body length (cm)	43	40-46	37	36-40
Chest circumference (cm)	37	35-41	32	31-34
Shank length (cm)	11	10-11	9	8-9
Shank diameter (cm)	5	5-6	4	3-6
Wing span (cm)	50	48-53	44	41-46

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 _{DOM} : inbreeding coefficient

Year		N**	MAF	Ho	He	F _{DOM}
2019	Mean	23	0.281	0.293	0.291	0.202
	SD*		0.238	0.199	0.178	0.080

*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 heterozygosis (average H-Ind) He: expected heterozygosis 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	19	3.286	2.345	0.939	0.530	0.547	0.022	0.33
	SE*		0.221	0.160	0.060	0.043	0.032	0.063	

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