

Supplementary Material

Redefinition of the Mora Romagnola Pig Breed Herd Book Standard Based on DNA Markers Useful to Authenticate Its “Mono-Breed” Products: An Example of Sustainable Conservation of a Livestock Genetic Resource

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Figure S1. Geographic distribution of Mora Romagnola farms in the different administrative units (Provinces) of the North of Italy, Emilia Romagna Region: red dots indicate the geographic localization of the farms in which pigs were phenotyped and sampled in the years 2017-2019.



Table S1. Number of Mora Romagnola Herd Book registered farms, boars, sows and young pigs per year (from 2001 to 2019; [25]).

Years	Farms	Boars	Sows	Young pigs¹
2001	17	24	41	155
2002	29	33	68	233
2003	43	52	103	411
2004	47	54	113	501
2005	47	67	129	684
2006	44	64	144	803
2007	48	77	177	989
2008	44	77	218	924
2009	42	82	218	660
2010	41	69	225	654
2011	44	69	234	675
2012	44	74	218	754
2013	44	66	234	658
2014	32	68	259	829
2015	34	68	277	1000
2016	33	77	320	1151
2017	34	64	275	1393
2018	33	70	314	1596
2019	33	66	311	1410

¹ Males that had less than 8 months of age or females until the first farrow.

Table S2. Number of Mora Romagnola pigs that were phenotyped in the years 2017-2019, distributed in different farms and provinces. The breeding animals were also genotyped.

Province ¹	Farms ²	Pigs per province	Breeding animals ³	Young pigs ⁴
Reggio Emilia	3	25	25 (9 + 16)	0
Modena	2	74	19 (4 + 15)	55
Bologna	3	25	16 (6 + 10)	9
Ravenna	12	530	222 (71 + 151)	308
Forlì Cesena	2	19	18 (3 + 15)	1
Rimini	5	153	57 (17 + 40)	96
Totals	27	826	357 (110 +247)	469

¹Geographic distribution of the farms in the administrative units referred as provinces. Provinces are listed from west to east (see also Fig. S1). ²Number of farms where pigs were phenotyped and sampled. ³Total number of breeding pigs that were phenotyped and sampled for the subsequent genotyping. The first and second number in parenthesis indicates the boars and the sows. ⁴Pigs with less than 6 months of age that were only phenotyped.

Table S3. Number of Mora Romagnola pigs having different phenotypes for three recorded exterior traits (coat colour, ear position and “*Linea sparta*”).

Province ¹	No. of farms	Pigs per province	Coat colour ²			Ears position ⁴			<i>Linea sparta</i> ⁵	
			Standard	Red ³	Other	Hanging	Half-hanging	Raised	Present	Absent
Reggio Emilia	3	25	25	0	0	25	0	0	25	0
Modena	2	74	55	19	0	73	0	1	70	4
Bologna	3	25	24	1	0	24	1	0	23	2
Ravenna	12	530	507	22	1	483	17	30	501	29
Forlì	2	19	19	0	0	19	0	0	19	0
Cesena	5	153	116	37 (1)	0	151	2	0	146	7
Totals	27	826	746	79	1	775	20	31	784	42

¹ Geographic distribution of the farms in the administrative units referred as provinces. Provinces are listed from west to east (see also Fig. S1). ² Recorded coat colour: Standard (black and tan in both adult and young pigs); Red (dark red over the whole body in adult or young pigs); Other coat colours in adult or young pigs (e.g. spotted patterns). ³ Red is considered a standard colour in the young pigs that have less than 6 months of age, according to the Herd Book of the breed; the red coat colour in the young pigs usually change to the black and tan colour in the adult age; the number of adult pigs out of all indicated pigs that still showed a red coat colour is reported within brackets (not considered the standard of the breed; adult animals with red coat colour are excluded from the Herd Book). ⁴ Hanging ears, ears that are bent forward and parallel to the muzzle constitute the standard of the breed; half-hanging and raised define other positions of the ears (half-hanging is intermediate between hanging and raised) that, in this study, have been observed only in young pigs. In adult animals, ears usually become hanging. If not, animals are excluded from the Herd Book of the breed. ⁵ In this study, the absence of “*Linea sparta*” was observed only in young pigs. Only pigs having this trait can be registered to the Herd Book of the breed.