Genetic diversity of the Greek Black Pig using microsatellite markers

Sus scrofa – SSR genotype data

1. Description of samples and genetic markers

The dataset contains the genetic characterisation of Greek Black Pig samples from 13 farms, using 11 microsatellite markers (Simple Sequence Repeats, SSRs): S0226, S0355, SWR1941, SW122, SW295, SW632, SW2008, SW742, SW787, SW902 and SW911. Some of these markers belong to the panel recommended by FAO and the International Society for Animal Genetics (ISAG) for the genetic characterisation of pigs.

For comparison, the analysis also included samples from four widespread international breeds (Duroc, Landrace, Large White/Yorkshire and Piétrain), as well as wild boar samples. All 11 microsatellite loci are dinucleotide repeats, with 10–16 alleles detected per locus. This allows a detailed investigation of genetic diversity and population structure.

Species	*Sus scrofa*
Samples	102 (93 Greek Black Pig from 13 farms; 2 wild boar; 7 commercial breed animals)
Markers	11 SSR loci (dinucleotide repeats)
Data	Allele sizes (bp) at each locus for each sample

2. Applications and use of the genetic data

Analysis of the genetic data helps to assess the genetic diversity and investigate the population structure of the Greek Black Pig. In particular, it allows the estimation of genetic diversity parameters and inbreeding levels, and the evaluation of genetic differentiation or relatedness among the farm populations.

The comparison with international pig breeds and wild boar is particularly important. It makes it possible to examine how genetically differentiated the Greek Black Pig is and whether it has a distinct genetic identity. It can also help to detect signs of genetic admixture or introgression from other breeds, providing information on the genetic integrity and evolutionary history of the breed.

The data provide an important scientific basis for recording, documenting and preserving the genetic identity of the Greek Black Pig. They can also support the design of breeding management programmes and the establishment of breeding nuclei, so that genetic diversity is maintained and the loss of valuable genetic resources is avoided. In this way, they contribute to the sustainable conservation and use of the Greek Black Pig.

3. SSR markers

Table 1. SSR loci, number of alleles and allele size range

Locus	No. of alleles	Size range (bp)	Samples with missing data
S0226	16	165–205	8
S0355	10	241–269	18
SWR1941	12	201–223	4
SW122	11	112–132	0
SW295	12	111–143	13
SW632	11	149–177	1
SW2008	14	87–115	15
SW742	16	189–227	2
SW787	10	149–169	22
SW902	12	186–212	4
SW911	10	148–168	2

4. SSR genotypes

Table 2. Allele sizes (bp) of 102 pigs at 11 SSR loci

Sample	S0226	S0355	SWR1941	SW122	SW295	SW632	SW2008	SW742	SW787	SW902	SW911
Greek Black Pig (n = 93, 13 farms)											
Farm 1 (n = 5)											
Farm1.1	195/197	243	213	126/132	121/133	159/169	101	209/221	155/161	188/196	158/164
Farm1.2	177/195	247	213	126/132	121/133	167/169	101	209/221	151	190/202	158/164
Farm1.3	177/185	241	213/217	128/132	121/133	159/169	91/101	203/209	151/161	198	148/154
Farm1.4	177/195	241	213/217	124	121/133	159/169	91/103	221/223	153/161	188/198	158/160
Farm1.5	179/185	241/243	213/215	118/124	121/133	167/169	93/101	205/221	151/161	196/198	154/162
Farm 2 (n = 6)											
Farm2.1	177	241	209/221	126	117	169/175	101/103	223	153/155	202	152
Farm2.2	179/197	241	209/221	118/126	117/129	175/177	87/99	217/223	153/157	202	158/162
Farm2.3	177	241	217/221	118/126	117/133	163/169	99/103	217/221	151/155	198	158/162
Farm2.4	177/179	241	215	126	129	161/169	99/101	223	153	198/202	152/158
Farm2.5	177	241/253	215/217	118/126	129/133	163/175	99	217/223	153/157	198/202	158/162
Farm2.6	177/179	241	209/217	126	117/129	167/175	99	213/223	153/157	198/202	154/158
Farm 3 (n = 6)											
Farm3.1	177/179	241/245	213/215	124	121/133	169	93/101	205/209	153/155	188/200	154/168
Farm3.2	177/191	241	213/217	124	121/133	169	99/101	205/221	151/157	198/202	154/158
Farm3.3	177/191	241	207/217	122/124	121/133	159/167	101/105	205/223	153/157	198/202	164
Farm3.4	177/191	241	201/217	118/124	121/135	159/161	101/103	211/221	153/157	198	154/164
Farm3.5	177/189	241/245	201/217	118/124	117/133	157/159	103	211	153/157	198	152/158
Farm3.6	177/191	241/263	201/217	118/122	121/133	159/161	103	203/205	153/159	200/202	154/164
Farm 4 (n = 6)											
Farm4.1	179/181	241	209/215	120/126	129/133	169	99	211/221	153	198/200	154
Farm4.2	177	241	203	124	129/133	159/177	97/99	203/209	155	204	164
Farm4.3	179/191	241/255	203/209	120/122	111/133	161	97	203/221	155/169	202	158
Farm4.4	179/189	241/255	203/209	120/122	133	161	97/99	203/221	155	202	158
Farm4.5	177/179	241/245	215	112/126	133/135	165/169	99/105	223	153	202	158/162
Farm4.6	177/191	241/253	215	120/130	121	161/165	99/101	209/221	151/153	188/206	154/162
Farm 5 (n = 2)											
Farm5.1	177	241	217	118/120	121/133	167	95	203	153/159	202/206	160/164
Farm5.2	177/181	241/269	217	114/118	121	167	101/105	203/227	153	198/206	160/164
Farm 6 (n = 4)											
Farm6.1	177/191	243	213/215	112/116	121/133	161	101/109	203/223	153/159	198/200	152
Farm6.2	179/191	241	209/213	116/126	121/133	161/171	103	203/211	153	196/208	154/158
Farm6.3	191	241	213	118	121/133	159/167	103/109	203/211	153	200	154/158
Farm6.4	191	241	215	120/130	133	161/167	101/109	205/223	153	200	152/154
Farm 7 (n = 4)											
Farm7.1	177/179	241/245	203/213	118/124	129/133	165/167	101	209/219	153/157	196/200	154/158
Farm7.2	177/179	241	213/217	120/122	121/131	159/167	101/103	205	153/157	188/200	154/162
Farm7.3	177/191	241/245	203/213	118/122	121/131	157/167	101/103	203	153/159	188/200	154/162
Farm7.4	177/191	241	207/215	120/124	121/131	159/167	101	189/199	153/159	200/202	164/168
Farm 8 (n = 18)											
Farm8.1	–	–	213/217	118	–	161/163	101	217/219	–	–	154/158
Farm8.2	–	241	203/213	114/120	135	167	101	203/209	153	188/204	154/164
Farm8.3	179/197	243	209/221	114/120	133/135	169	99/107	217/225	153/155	200/204	154/162

Sample	S0226	S0355	SWR1941	SW122	SW295	SW632	SW2008	SW742	SW787	SW902	SW911
Farm8.4	–	255	213/215	120/126	133/135	161/171	101/103	223/227	155	202	154/164
Farm8.5	177	243	217	114/118	133/135	161/169	101/107	225	153/155	186/202	–
Farm8.6	–	243/261	201/217	118/128	–	169	95/99	203/223	157/161	200/202	158
Farm8.7	173/185	243	217	118/120	119/133	161/169	99/103	217/221	155/159	200	–
Farm8.8	177/181	241	215/217	114/118	–	161/169	101	223/227	155	200/212	154/164
Farm8.9	179	241/247	209/211	114/118	133/135	159/169	–	211/215	151	200/202	158
Farm8.10	191/195	243	217	118/122	133	161/169	–	221	–	200/204	154
Farm8.11	179/191	243/247	211/215	114/122	133	159/161	101/105	215/223	–	198/200	154/158
Farm8.12	179	243/247	201/217	118/126	117/135	159	101/103	211/221	–	202/206	154/158
Farm8.13	185/197	243	223	112/122	133/135	161/169	–	219/221	155/161	202/206	154/162
Farm8.14	177/191	243	217/223	112/118	133/135	159	101	215/219	–	202/206	154/158
Farm8.15	177	243/247	223	112/122	119/135	161/169	101/103	215/225	161/163	198/200	154/158
Farm8.16	185/197	243/247	215/221	118/124	129/133	161	101	207/225	–	196/208	154/158
Farm8.17	185/195	243	217/219	114/126	129/131	161/167	101	207/225	–	198/208	158
Farm8.18	179/195	241/255	217/223	118/122	117/135	159/161	101/105	203/221	–	198/202	154/158
Farm 9 (n = 6)											
Farm9.1	187/191	241	215/217	112	133	165/171	99/101	217/221	153/155	200/202	162
Farm9.2	177/185	–	209/217	120/126	121/133	165/169	99	217/221	151/159	200/202	154/158
Farm9.3	177/185	241/257	209/217	126	121/133	165/169	101	211/217	151/159	200	154/158
Farm9.4	177	243/247	213/217	116/124	123/133	163/169	101/103	203/227	149/157	200/202	154/158
Farm9.5	–	243	217	118/124	–	161/171	101	203/221	153/159	200/204	154/158
Farm9.6	177/185	241/245	209/217	118/124	121	167/175	99/103	203	153/159	200/202	160/162
Farm 10 (n = 15)											
Farm10.1	177	243	213/217	124	133/135	167	99/101	207/223	151/153	196/202	158
Farm10.2	179/185	–	215	126	133/135	159/167	–	203	151/159	196/200	158
Farm10.3	–	–	–	120/122	121/135	161/169	105	–	–	196/200	158
Farm10.4	181/191	241/245	217/219	120/122	135	169	103/105	203	–	196/200	158
Farm10.5	181/185	–	–	126	121/133	–	101	203/221	–	196/200	158
Farm10.6	181/187	–	217/219	122/126	121/135	161/169	101	–	–	198/200	158
Farm10.7	177/179	243	217	120/126	133/135	167	95/105	203/223	–	196/200	158/162
Farm10.8	177/179	247	–	116/126	121/135	161/167	101	205/223	–	196	158/162
Farm10.9	177	247	217/219	126	–	159/167	103/105	207/223	151	196/198	160/164
Farm10.10	185	247	203/221	118/124	133	159/167	99/101	203/225	–	198/200	158
Farm10.11	177/179	243/245	203/217	124	133	159	–	203/223	151/165	196/198	158/162
Farm10.12	183	247	203/219	118/124	131	159/167	99/101	203/225	151/161	198/200	158
Farm10.13	179/183	–	209/215	116/120	–	161/167	101	205/225	153/157	200/208	158
Farm10.14	185	243	203/219	120/124	133/135	159/167	–	203	151	196/200	158/162
Farm10.15	177/185	243	203/221	118/124	–	159/167	–	203/207	–	196	158/162
Farm 11 (n = 5)											
Farm11.1	179/197	–	–	116/118	121/133	161/177	101/103	203	157/161	198/202	154/158
Farm11.2	179/197	241	219/223	116/118	121/133	167/177	101/103	203	157/161	198/200	158/162
Farm11.3	179	241/243	205/219	120/122	133/137	161	101/113	203	–	196/200	158/164
Farm11.4	177/179	–	211/219	116/118	121/133	161/177	101/103	203/221	–	198/200	154/158
Farm11.5	177/179	243	219	116/120	121/133	149/161	101/103	203/225	157/161	196/200	156
Farm 12 (n = 10)											
Farm12.1	177/205	243	219/223	116/120	–	159/169	–	207/225	153/163	196/198	156/162
Farm12.2	179	–	215/219	114/122	121/133	161/167	101	207/225	151/155	204	154/162
Farm12.3	179/201	243	215/219	124	119/121	161/167	–	203	153/165	198/206	154/164
Farm12.4	179/205	–	217/219	122/124	–	159/167	–	209/225	159/161	204/206	156/158

Sample	S0226	S0355	SWR1941	SW122	SW295	SW632	SW2008	SW742	SW787	SW902	SW911
Farm12.5	179/205	–	215/217	122/124	121/133	159/169	–	203/211	153/163	204/206	156/158
Farm12.6	177/205	243	213/223	116/122	119/133	167/169	101	203	153/163	–	158/162
Farm12.7	177/179	–	215/219	116/122	–	161/167	–	207/225	–	–	154/162
Farm12.8	175/179	243/257	219	118/124	117/133	161/167	101	203	149/151	–	154
Farm12.9	177/179	–	215/219	122	–	161/167	–	201/223	151/155	204	154
Farm12.10	177/179	243	215/217	114/118	133/143	159/175	–	201/223	151/155	196/202	152/158
Farm 13 (n = 6)											
Farm13.1	189/193	243/261	219	124/128	121/135	161/167	101/103	201/215	153	196/208	158/162
Farm13.2	189/193	–	219	116/124	131/135	159/161	101	203/225	153/155	196/208	154/158
Farm13.3	179/193	–	213/219	116/124	121/129	161/177	101/115	201	–	198/200	154/158
Farm13.4	193	243	217	116/124	129/131	161/175	101/105	201/221	–	196	154
Farm13.5	189/193	–	219	116/124	–	159/167	–	201	–	196	154/158
Farm13.7	189/193	243	219	114/124	125/133	161/167	101/107	201/203	151/153	198/202	154/158
Wild boar (n = 2)											
Wildboar1	165/177	243/255	215/217	118/126	129/133	163/177	101	217/223	153/157	198/204	158/162
Wildboar2	177	241	209/213	120/124	129/135	159/167	103	209/219	153/155	194/204	158
Commercial breeds (n = 7)											
Duroc	177/191	241/255	217/221	124	117/133	169	99/111	209	153	198	152/158
Landrace	177/195	243/245	213/217	122/126	121	159/169	99/101	203/217	153/159	204/212	154/158
Large white1	–	255	217	118/124	121	169	103	217	157	200/204	154/158
Large white2	173/191	245	209/215	124	117/133	169	97/101	203/205	153	202	154
Large white3	191/193	241	203/207	124/126	121/133	169/177	99/101	205/227	151/153	188/200	158
Pietrain (Titan)	–	–	219/223	114/124	–	177	103/105	205	153/155	202/204	150/154
Yorkshire	179/197	245	215	118/126	117/121	169	105	203/217	153	202	154

One value = one allele detected (homozygous); two values (e.g. 177/195) = two alleles. – = no amplification.