

The "Bracco Italiano" Genetic and Genealogical Study (BIGGS).

F. Cecchi¹, R. Ciampolini¹, S. Presciuttini¹, F. Casetti²

¹ Centro Interuniversitario di Ricerca e di Consulenza sulla Genetica del Cane, Università di Pisa, Viale delle Piagge 2, 56124 Pisa, Italy

² Società Amatori Bracco Italiano (SABI), Via Dosso 7, 26856 Mirabello di Senna Lodigiana, Italy.



INTRODUCTION and MATERIALS AND METHODS. The Italian Bracco is one of the oldest pointing dog breed that has been used for hunting since the Renaissance period. Paintings of the 14th century show hunting scenes depicting dogs similar to the present day's Bracco. The breed has officially registered by the ENCI (the Italian Cynological Club) in 1949, when the definitive standard was established. The SABI (Società Amatori Bracco Italiano) is financing a research project aimed at investigating the demographic, genetic and genealogical structure of the breed. In the first phase of the project the complete electronic database of the breed was obtained. The genealogical informations were used to determine several demographic and genetic parameters, including whole population inbreeding level, mean average relatedness coefficient. All calculations were performed using the program CFC vers. 1.0 (Sargolzaei et al., 2006).

Figure 1 - Number of individuals registered by the ENCI by year.

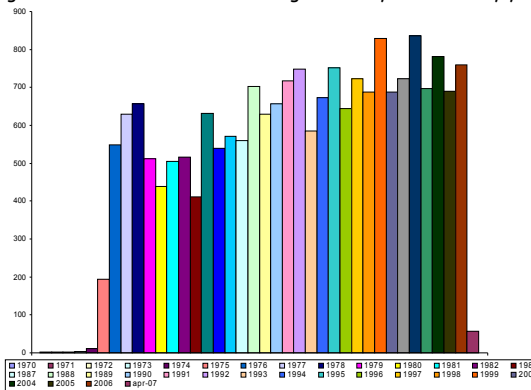


Table 3 - Distribution of inbreeding coefficients.

Inbreeding Coefficient Range	Subjects n°
0.00 < F < 0.05	8103
0.05 < F < 0.10	2880
0.10 < F < 0.15	1438
0.15 < F < 0.20	382
0.20 < F < 0.25	231
0.25 < F < 0.30	217
0.30 < F < 0.35	27
0.35 < F < 0.40	12

Table 4 - Number of inbreds by 5 year period.

Years	Subjects n°	Number of inbreds	Inbreds %/Period	N° of individuals with both known parents	N° of individuals with no progeny
1970/1975	211	0	0	205	172
1976/1980	2782	68	2.44%	2709	2271
1981/1985	2603	516	19.82%	2603	2038
1986/1990	3118	1697	54.42%	3116	2496
1991/1995	3476	2871	82.59%	3476	2767
1996/2000	3569	3408	95.49%	3569	2880
2001/2005	3927	3915	99.69%	3927	3556
2006/2007	815	815	100%	815	815



RESULTS

Table 1 - Brief structure of the pedigree.

Individuals in total	21031
Inbreds in total	13290
- Males	6741
- Females	6549
Sires in total	2510
- Progeny	20420
Dams in total	1524
- Progeny	20499
Individuals with progeny	4034
Individuals with no progeny	16997
Founders	532
- Progeny	3027
- Sires	297
- Progeny	2210
- Dams	233
- Progeny	2610
- With no progeny	2
Full-sib group	3341
- Average family size	6.03
- Maximum	41
- Minimum	2

The total number of animals on record, born between 1970 and April 2007, was 20,499. The maximum number of traced generations was 14. Here, we show the main demographic parameters of this important breed, which highlights the trend of the inbreeding coefficient during this period.

Table 2 - Longest ancestral path (LAP)

Path Length	Subjects n°
0	532
1	1860
2	1737
3	1502
4	1562
5	1814
6	1738
7	1789
8	1738
9	1755
10	1952
11	1651
12	985
13	367
14	49



We wish to thank the President and the Board of Directors of the SABI for having actively promoted the present project among the Society's members.

Table 5- Average inbreeding coefficients and average numerator relationship by 5 year period.

Years	Average inbreeding coefficients	Average inbreeding coefficient in the inbreds	Maximum of inbreeding coefficient	Minimum of inbreeding coefficient	Average numerator relationships (Reciprocal + self-relationships)	Average numerator relationships (Self-relat. are excluded)
1970/1975	0.000	0.000	0.000	0.000	0.020	0.015
1976/1980	0.004	0.180	0.250	0.031	0.007	0.006
1981/1985	0.019	0.095	0.281	0.004	0.018	0.018
1986/1990	0.032	0.058	0.391	0.004	0.032	0.032
1991/1995	0.037	0.045	0.375	0.0001	0.043	0.043
1996/2000	0.054	0.057	0.312	0.0002	0.058	0.058
2001/2005	0.061	0.061	0.396	0.002	0.078	0.078
2006/2007	0.055	0.055	0.344	0.004	0.094	0.093
Total	0.036	0.057	0.396	0.0001	0.0299	0.0299