Supplementary Materials:

Supplementary Table S1: Genetic diversity estimated by 12 microsatellite loci for three populations wild of the *A. gigas* and four farmed.

Population	Loci												
	Agig13519	Agig50571	Agig58115	Agig08356	Agig67103	Agig93614	Agig33291	Agig90836	Agig05001	Agig70664	Agig08912	Agig06409	Average
Mamiráua (118)													
NA	8	11	4	5	7	5	9	13	6	7	4	6	7.083
AR	5.907	9.646	3.984	4.219	4.81	4.956	8.518	9.716	4.546	5.344	3.314	5.392	5.863
HO	0.66102	0.79661	0.55556	0.37288	0.5339	**0.51724**	0.80342	0.74359	0.25424	0.64103	0.38462	**0.26724**	0.544
HE	0.67923	0.84702	0.56608	0.41028	0.54583	0.68783	0.84927	0.85063	0.24158	0.73292	0.50941	0.47529	0.616
PIC	0.623	0.826	0.518	0.383	0.493	0.644	0.828	0.829	0.233	0.684	0.413	0.446	0.577
Santarém (30)													
NA	9	10	5	5	5	6	8	10	2	4	4	5	6.083
AR	8.7	9.833	4.865	4.998	4.732	5.867	7.998	9.949	1.998	4	3.983	4.984	5.992
HO	0.66667	0.66667	0.5	0.6	0.63333	0.7	0.86667	0.83333	0.1	0.5	0.5	0.53333	0.592
HE	0.78192	0.84859	0.48588	0.5887	0.56271	0.69774	0.84237	0.85424	0.09661	0.65028	0.58475	0.6548	0.637
PIC	0.736	0.815	0.446	0.547	0.472	0.651	0.808	0.822	0.09	0.58	0.484	0.6	0.588
Mexiana (30)													
NA	5	3	6	4	5	6	4	5	5	5	5	3	4.667
AR	5	3	5.999	3.733	5	5.925	3.867	4.866	4.984	4.849	4.853	3	4.590
HO	**0.4**	**0.16667**	0.72414	0.43333	0.81481	**0.2963**	0.73333	**0.7**	0.63333	**0.3**	**0.46429**	**0.37037**	0.503
HE	0.71582	0.27062	0.77495	0.44576	0.73375	0.51852	0.54124	0.63898	0.72712	0.53277	0.53571	0.4689	0.575
PIC	0.654	0.25	0.731	0.368	0.673	0.467	0.465	0.557	0.667	0.463	0.448	0.415	0.513
Tucumã (26)													
NA	5	5	4	6	4	5	7	7	5	4	4	4	5
AR	5	5	4	6	4	5	7	7	5	4	4	4	5
HO	**0.462**	0.577	**0.423**	**0.962**	**0.615**	0.731	0.962	**0.846**	0.577	**0.577**	0.423	0.538	0.641
HE	0.807	0.719	0.624	0.771	0.612	0.744	0.706	0.857	0.621	0.729	0.413	0.688	0.691
PIC	0.758	0.662	0.560	0.725	0.554	0.684	0.661	0.820	0.536	0.666	0.367	0.613	0.634
Pentecostes (46)													
NA	4	6	5	5	6	5	7	6	5	5	3	4	5.083
AR	3.567	5.719	3.980	4.914	5.796	4.506	5.682	5.378	4.781	4.614	2.995	3.800	4.644
HO	0.405	0.565	0.489	0.444	**0.911**	**0.556**	0.761	0.587	0.761	0.478	0.326	0.326	0.551
HE	0.386	0.544	0.417	0.432	0.777	0.655	0.596	0.546	0.664	0.415	0.350	0.324	0.509

PIC	0.338	0.506	0.358	0.407	0.730	0.579	0.550	0.510	0.597	0.380	0.316	0.300	0.464
Imperatriz (35)													
NA	3	3	2	4	3	3	3	2	4	2	2	3	2.833
AR	3	3	2	3.999	3	3	2.743	2	4	2	2	2.743	2.790
HO	0.629	**0.800**	0.657	0.429	0.886	0.829	**1.000**	0.257	**0.943**	0.514	**0.971**	0.629	0.712
HE	0.623	0.666	0.448	0.381	0.666	0.655	0.521	0.227	0.653	0.388	0.507	0.498	0.519
PIC	0.543	0.582	0.344	0.555	0.582	0.569	0.396	0.199	0.597	0.309	0.375	0.384	0.453
Moju (83)													
NA	5	8	5	7	7	3	9	7	6	5	3	5	5.833
AR	3.843	5.181	3.630	5.373	4.469	2.985	6.477	5.104	5.237	4.907	2.997	3.755	4.497
HO	**0.663**	**0.277**	**0.122**	**0.892**	**0.470**	**0.205**	**0.951**	**0.084**	**0.854**	**0.284**	**0.325**	0.512	0.470
HE	0.664	0.462	0.213	0.699	0.622	0.287	0.709	0.509	0.675	0.460	0.456	0.542	0.525
PIC	0.590	0.432	0.203	0.636	0.550	0.266	0.656	0.469	0.612	0.435	0.403	0.443	0.475

N_A - number of alleles; A_R - allelic richness; H_E - expected heterozygosity; H_O - observed heterozygosity. Wild population: MAM - Mamirauá; SAN - Santarém; MEX Mexiana. Farmed population: TUC – Tucumã; PEN – Pentecostes; IMP – Imperatriz; MOJ – Moju. *Values in bold font – populations presenting markers that are not in Hardy-Weinberg Equilibrium

Supplementary Figure S1. Delta K values for STRUCTURE analysis of seven populations of the *Arapaima gigas*—Delta K, calculated according to Evanno et al. [12], is plotted against the number of modeled gene pools (K).

