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Using nuclear microsatellite data to trace the gene flow and population structure in Czech horses

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Supplementary Online Material (SOM)

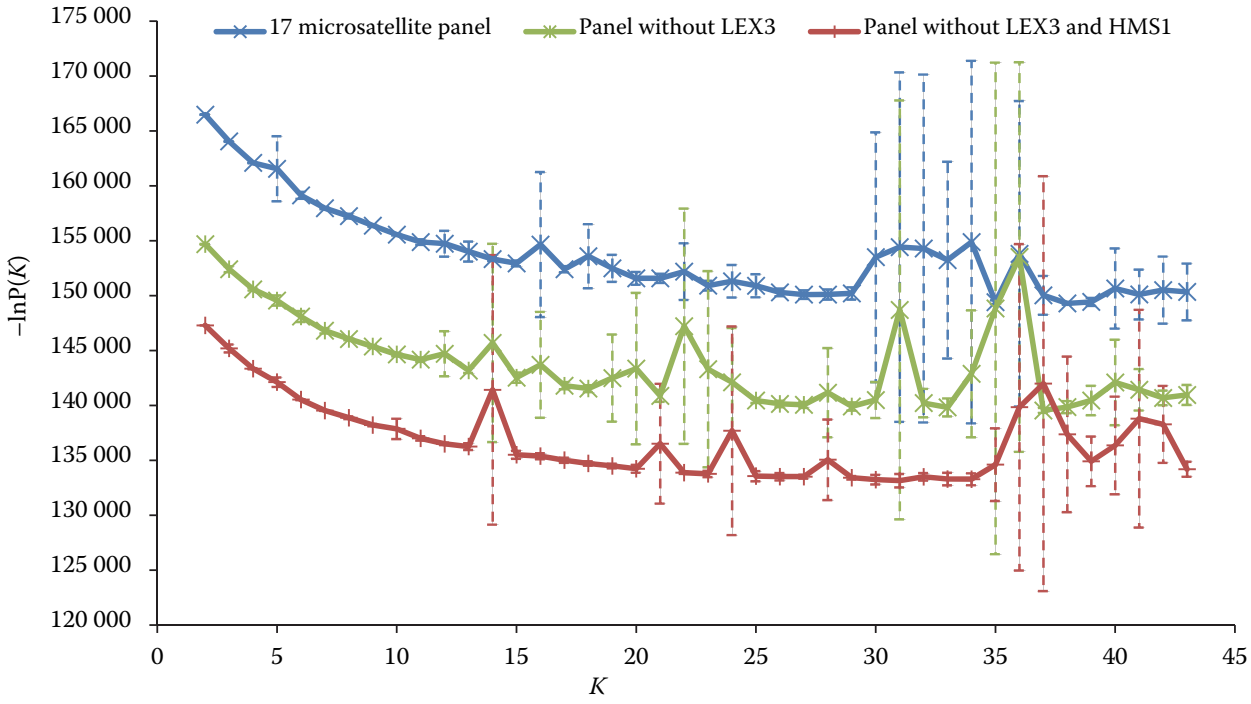

Figure S1. Evolution of the mean ln of likelihood (lnP(*K*)) according to *K* based on the 10 runs of the 50 000 burn-ins and 150 000 MCMCs (standard deviations indicated) ~ 17 microsatellites panel, panel without *LEX3*, and panel without *LEX3* and *HMS1*

17 microsatellite markers (*AHT4*, *AHT5*, *ASB2*, *ASB17*, *ASB23*, *CA425*, *HMS1*, *HMS2*, *HMS3*, *HMS6*, *HMS7*, *HTG4*, *HTG6*, *HTG7*, *HTG10*, *LEX3*, and *VHL20*) recommended by the ISAG (International Society for Animal Genetics); the 15 microsatellite markers (*AHT4*, *AHT5*, *ASB2*, *ASB17*, *ASB23*, *CA425*, *HMS2*, *HMS3*, *HMS6*, *HMS7*, *HTG4*, *HTG6*, *HTG7*, *HTG10*, and *VHL20*) recommended by the FAO (Food and Agriculture Organisation of the United Nations)

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Table S1. Observed heterozygosity rates for each microsatellite locus in the 43 populations (n = 2879)

Locus	PRZ	FRI	FJO	MER	MIN	MAPP	ICE	WPC	WPB	SHP	HUC	HAF	CSP	APP	BEL	SF	OLD	MOW	TRA	BAV	AND	KLA	SHA	MUR	LIP	KWPN	STA	KIN	HOL	FUR	HAN	CZW	SLW	CAM	ARAB	QH	PH	AKT	THO	CMB	SNOR	NOR	IRI
ATH4	0.769	0.160	0.829	0.643	0.792	0.800	0.750	0.776	0.816	0.705	0.900	0.790	0.865	0.790	0.818	0.750	0.714	0.639	0.742	0.667	0.867	0.830	0.850	0.784	0.900	0.718	0.720	0.697	0.768	0.727	0.804	0.680	0.720	0.770	0.830	0.760	0.717	0.670	0.670	0.840	0.780	0.831	0.837
ATH5	0.538	0.768	0.622	0.733	0.708	0.600	0.713	0.778	0.828	0.745	0.840	0.750	0.819	0.740	0.727	0.667	0.714	0.861	0.625	0.750	0.600	0.790	0.760	0.804	0.889	0.744	0.747	0.840	0.875	0.818	0.796	0.830	0.820	0.820	0.660	0.730	0.747	0.810	0.820	0.820	0.687	0.768	0.860
HMS1	0.538	0.520	0.805	0.500	0.833	0.933	0.595	0.672	0.701	0.632	0.610	0.630	0.716	0.530	0.545	0.583	0.762	0.528	0.656	0.292	0.733	0.520	0.700	0.580	0.500	0.590	0.750	0.660	0.605	0.591	0.679	0.540	0.580	0.610	0.550	0.590	0.596	0.580	0.610	0.430	0.660	0.642	0.595
HMS2	0.692	0.475	0.630	1.000	0.917	0.867	0.679	0.586	0.744	0.723	0.770	0.770	0.878	0.838	0.455	0.667	0.900	0.639	0.563	0.875	0.769	0.770	0.790	0.792	0.400	0.718	0.596	0.768	0.768	0.864	0.768	0.780	0.700	0.760	0.670	0.760	0.808	0.750	0.660	0.710	0.758	0.815	0.767
HMS3	0.889	0.552	0.766	0.818	0.857	0.769	0.902	0.756	0.895	0.773	0.899	0.770	0.790	0.947	0.375	0.800	0.889	0.742	1.000	0.913	0.818	0.840	0.690	1.000	0.778	0.886	0.989	0.789	0.846	0.857	0.837	0.850	0.850	0.940	0.757	0.860	0.848	0.750	0.850	0.761	0.788	0.899	0.789
HMS6	0.692	0.530	0.756	0.867	0.792	0.733	0.663	0.621	0.713	0.758	0.740	0.690	0.753	0.690	0.545	0.667	0.619	0.639	0.688	0.750	0.867	0.750	0.670	0.725	0.800	0.769	0.740	0.620	0.756	0.727	0.768	0.720	0.650	0.640	0.653	0.790	0.657	0.640	0.540	0.720	0.730	0.675	0.744
HMS7	0.692	0.270	0.610	0.867	0.750	0.667	0.650	0.707	0.816	0.579	0.610	0.590	0.838	0.790	0.636	0.583	0.714	0.778	0.844	0.917	0.667	0.600	0.720	0.627	1.000	0.821	0.620	0.780	0.768	0.773	0.804	0.840	0.760	0.680	0.710	0.800	0.788	0.750	0.860	0.680	0.808	0.759	0.714
HTG4	0.538	0.430	0.732	0.500	0.417	0.600	0.722	0.690	0.651	0.415	0.760	0.680	0.630	0.660	0.818	0.750	0.762	0.694	0.500	0.542	0.667	0.640	0.590	0.706	0.800	0.769	0.750	0.670	0.561	0.591	0.643	0.650	0.610	0.740	0.646	0.620	0.737	0.360	0.525	0.750	0.626	0.663	0.535
HTG6	0.692	0.170	0.098	0.714	0.625	0.786	0.425	0.702	0.713	0.642	0.600	0.130	0.608	0.750	0.636	0.333	0.714	0.714	0.613	0.708	0.400	0.480	0.640	0.667	0.700	0.615	0.580	0.770	0.691	0.636	0.714	0.680	0.700	0.620	0.680	0.670	0.737	0.670	0.710	0.430	0.490	0.566	0.651
HTG7	0.615	0.303	0.512	0.786	0.333	0.533	0.432	0.737	0.605	0.468	0.616	0.560	0.708	0.619	0.727	0.667	0.579	0.588	0.645	0.875	0.733	0.510	0.280	0.784	0.700	0.622	0.440	0.648	0.741	0.818	0.643	0.610	0.660	0.530	0.460	0.720	0.616	0.430	0.610	0.726	0.719	0.711	0.683
HTG10	0.769	0.560	0.790	0.929	0.913	0.583	0.879	0.849	0.797	0.824	0.700	0.760	0.861	0.821	0.727	0.917	0.810	0.844	0.862	0.833	0.733	0.650	0.650	0.880	0.667	0.865	0.730	0.838	0.766	0.714	0.824	0.840	0.900	0.750	0.723	0.880	0.848	0.667	0.790	0.838	0.678	0.733	0.775
VHL20	0.462	0.410	0.695	0.600	0.917	0.867	0.838	0.828	0.782	0.745	0.830	0.810	0.797	0.830	0.727	0.833	0.905	0.806	0.844	0.750	0.800	0.810	0.800	0.843	0.600	0.744	0.820	0.810	0.805	0.818	0.732	0.800	0.750	0.750	0.707	0.810	0.848	0.830	0.730	0.810	0.790	0.795	0.884
ASB2	0.769	0.590	0.775	0.786	0.625	0.867	0.873	0.821	0.812	0.839	0.808	0.790	0.809	0.838	0.818	0.727	0.900	0.861	0.897	0.917	0.800	0.800	0.780	0.780	0.800	0.789	0.790	0.719	0.725	0.950	0.782	0.820	0.830	0.810	0.632	0.820	0.869	0.840	0.870	0.566	0.848	0.878	0.814
ASB17	0.769	0.770	0.854	0.643	0.875	0.800	0.788	0.877	0.920	0.638	0.750	0.800	0.877	0.796	0.636	0.750	0.714	0.806	0.742	0.826	0.867	0.760	0.760	0.863	0.700	0.846	0.710	0.889	0.780	0.818	0.875	0.880	0.800	0.830	0.755	0.780	0.808	0.920	0.790	0.900	0.850	0.928	0.884
ASB23	0.615	0.828	0.880	1.000	0.875	0.846	0.904	0.879	0.914	0.828	0.920	0.808	0.841	0.886	0.818	0.917	0.632	0.765	0.875	0.773	0.923	0.840	0.640	0.730	1.000	0.811	0.876	0.830	0.838	0.864	0.865	0.830	0.840	0.830	0.744	0.930	0.960	0.810	0.860	0.778	0.835	0.785	0.821
CA425	0.462	0.240	0.732	0.357	0.750	0.867	0.738	0.690	0.674	0.817	0.870	0.780	0.730	0.690	0.545	0.500	0.737	0.611	0.875	0.542	0.462	0.630	0.630	0.604	0.556	0.795	0.720	0.590	0.580	0.727	0.582	0.710	0.680	0.700	0.576	0.700	0.636	0.700	0.580	0.710	0.727	0.675	0.651
LEX3	0.462	0.210	0.519	0.286	0.333	0.400	0.250	0.276	0.425	0.337	0.485	0.610	0.653	0.350	0.545	0.250	0.381	0.528	0.313	0.542	0.400	0.440	0.530	0.260	0.400	0.410	0.470	0.440	0.354	0.364	0.339	0.610	0.540	0.280	0.404	0.420	0.525	0.400	0.610	0.330	0.576	0.646	0.419

Table S2. Expected heterozygosity rates for each microsatellite locus in the 43 populations (n = 2879)

Locus	PRZ	FRI	FJO	MER	MIN	MAPP	ICE	WPC	WPB	SHP	HUC	HAF	CSP	APP	BEL	SF	OLD	MOW	TRA	BAV	AND	KLA	SHA	MUR	LIP	KWPN	STA	KIN	HOL	FUR	HAN	CZW	SLW	CAM	ARAB	QH	PH	AKT	THO	CMB	SNOR	NOR	IRI
ATH4	0.689	0.165	0.795	0.664	0.780	0.784	0.791	0.795	0.820	0.712	0.867	0.765	0.794	0.749	0.749	0.775	0.678	0.726	0.642	0.736	0.784	0.809	0.810	0.730	0.784	0.727	0.713	0.706	0.700	0.706	0.748	0.736	0.715	0.784	0.785	0.741	0.745	0.612	0.711	0.823	0.783	0.817	0.812
ATH5	0.643	0.762	0.682	0.740	0.725	0.791	0.728	0.802	0.807	0.757	0.794	0.721	0.822	0.774	0.797	0.783	0.814	0.779	0.788	0.775	0.832	0.767	0.698	0.763	0.739	0.777	0.741	0.783	0.800	0.798	0.804	0.804	0.782	0.845	0.725	0.717	0.709	0.721	0.756	0.758	0.710	0.781	0.772
HMS1	0.538	0.537	0.799	0.474	0.702	0.775	0.656	0.665	0.716	0.712	0.630	0.550	0.676	0.594	0.671	0.670	0.713	0.601	0.554	0.611	0.508	0.530	0.724	0.648	0.511	0.678	0.754	0.607	0.584	0.540	0.660	0.594	0.640	0.620	0.626	0.558	0.634	0.583	0.629	0.378	0.641	0.643	0.587
HMS2	0.588	0.533	0.708	0.778	0.820	0.772	0.661	0.625	0.799	0.723	0.771	0.723	0.843	0.774	0.766	0.786	0.763	0.654	0.632	0.745	0.711	0.756	0.825	0.798	0.537	0.771	0.624	0.695	0.781	0.794	0.773	0.769	0.755	0.810	0.693	0.762	0.754	0.804	0.626	0.664	0.708	0.771	0.763
HMS3	0.778	0.500	0.704	0.610	0.748	0.686	0.788	0.761	0.760	0.667	0.827	0.730	0.771	0.828	0.725	0.789	0.824	0.733	0.796	0.821	0.892	0.754	0.716	0.758	0.797	0.801	0.779	0.801	0.802	0.774	0.795	0.801	0.813	0.846	0.746	0.791	0.814	0.767	0.696	0.727	0.659	0.736	0.740
HMS6	0.538	0.523	0.744	0.701	0.773	0.768	0.685	0.646	0.730	0.725	0.679	0.694	0.773	0.637	0.515	0.688	0.672	0.649	0.716	0.674	0.791	0.685	0.692	0.731	0.711	0.696	0.743	0.660	0.732	0.652	0.743	0.699	0.726	0.678	0.691	0.694	0.631	0.622	0.634	0.661	0.670	0.697	0.772
HMS7	0.569	0.263	0.656	0.703	0.804	0.717	0.600	0.778	0.811	0.666	0.621	0.713	0.768	0.748	0.788	0.739	0.718	0.775	0.811	0.821	0.579	0.677	0.725	0.685	0.805	0.783	0.617	0.800	0.749	0.779	0.757	0.803	0.785	0.777	0.792	0.775	0.805	0.762	0.804	0.735	0.791	0.804	0.659
HTG4	0.652	0.443	0.698	0.458	0.421	0.490	0.702	0.650	0.699	0.434	0.734	0.646	0.636	0.687	0.749	0.605	0.695	0.727	0.604	0.606	0.630	0.725	0.571	0.761	0.784	0.656	0.768	0.623	0.619	0.630	0.621	0.619	0.626	0.710	0.634	0.632	0.687	0.347	0.537	0.745	0.662	0.681	0.611
HTG6	0.754	0.161	0.106	0.648	0.630	0.659	0.434	0.662	0.691	0.618	0.604	0.125	0.622	0.698	0.693	0.572	0.722	0.585	0.712	0.693	0.625	0.460	0.682	0.639	0.574	0.719	0.638	0.753	0.726	0.697	0.714	0.722	0.761	0.707	0.652	0.694	0.705	0.619	0.688	0.403	0.459	0.537	0.694
HTG7	0.640	0.342	0.519	0.728	0.396	0.563	0.476	0.700	0.647	0.510	0.603	0.558	0.581	0.676	0.723	0.728	0.684	0.614	0.656	0.709	0.614	0.607	0.302	0.708	0.668	0.695	0.456	0.624	0.696	0.650	0.589	0.681	0.683	0.510	0.460	0.711	0.635	0.440	0.664	0.716	0.676	0.702	0.711
HTG10	0.729	0.521	0.773	0.788	0.800	0.692	0.795	0.783	0.797	0.769	0.700	0.733	0.845	0.834	0.810	0.837	0.841	0.834	0.840	0.847	0.809	0.676	0.670	0.827	0.636	0.832	0.710	0.795	0.779	0.879	0.819	0.844	0.828	0.789	0.744	0.827	0.810	0.680	0.804	0.806	0.655	0.697	0.776
VHL20	0.563	0.436	0.688	0.641	0.842	0.809	0.809	0.790	0.818	0.733	0.836	0.831	0.815	0.818	0.753	0.837	0.841	0.815	0.762	0.829	0.818	0.836	0.811	0.805	0.558	0.819	0.777	0.783	0.797	0.815	0.805	0.797	0.788	0.845	0.770	0.798	0.837	0.786	0.749	0.760	0.794	0.770	0.775
ASB2	0.618	0.586	0.811	0.794	0.794	0.800	0.883	0.767	0.840	0.793	0.784	0.759	0.848	0.807	0.779	0.887	0.823	0.837	0.805	0.817	0.818	0.813	0.759	0.799	0.700	0.787	0.808	0.778	0.723	0.860	0.815	0.822	0.823	0.841	0.636	0.820	0.847	0.825	0.837	0.574	0.752	0.763	0.716
ASB17	0.748	0.769	0.804	0.698	0.790	0.782	0.772	0.869	0.869	0.707	0.830	0.788	0.848	0.831	0.749	0.851	0.851	0.773	0.793	0.783	0.885	0.779	0.723	0.849	0.721	0.780	0.790	0.853	0.794	0.790	0.784	0.799	0.810	0.870	0.756	0.775	0.826	0.806	0.754	0.872	0.841	0.837	0.794
ASB23	0.505	0.770	0.798	0.762	0.833	0.778	0.812	0.831	0.822	0.799	0.820	0.756	0.820	0.809	0.844	0.801	0.818	0.792	0.837	0.848	0.785	0.770	0.676	0.819	0.784	0.818	0.762	0.786	0.788	0.801	0.840	0.826	0.819	0.832	0.738	0.822	0.819	0.730	0.789	0.731	0.771	0.752	0.813
CA425	0.455	0.244	0.645	0.323	0.730	0.821	0.774	0.745	0.697	0.832	0.815	0.722	0.679	0.680	0.779	0.641	0.661	0.702	0.710	0.691	0.452	0.617	0.656	0.573	0.595	0.688	0.775	0.616	0.553	0.692	0.630	0.694	0.707	0.737	0.558	0.677	0.637	0.720	0.607	0.708	0.665	0.704	0.713
LEX3	0.760	0.251	0.815	0.653	0.790	0.825	0.844	0.851	0.859	0.718	0.792	0.832	0.856	0.808	0.853	0.884	0.812	0.801	0.820	0.851	0.823	0.648	0.774	0.836	0.505	0.835	0.690	0.783	0.832	0.798	0.801	0.837	0.836	0.832	0.806	0.866	0.863	0.809	0.794	0.856	0.859	0.870	0.855

Explanation for Table S1 and S2: AKT = Akhal-Teke, AND = Andalusian, APP = Appaloosa, ARAB = Arabian, BAV = Bavarian Warmblood, BEL = Belgian Warmblood, CAM = Camargue, CMB = Czech-Moravian Belgian Horse, CSP = Czech Sport Pony, CZW = Czech Warmblood, KWPN = Dutch Warmblood, FJO = Fjord, FRI = Friesian, FUR = Furioso, HAF = Haflinger, HAN = Hannoverian, HOL = Holsteiner, HUC = Hucul, ICE = Icelandic Horse, IRI = Irish Cob, KIN = Kinsky Horse, LIP = Lipizzan, MER = Merens, MIN = Miniature Horse, MAPP = Mini Appaloosa, MOW = Moravian Warmblood, MUR = Murgese, NOR = Noriker, OLD = Oldenburg Horse, KLA = Old Kladruber Horse, PH = Paint Horse, PRZ = Przewalski´s Horse, QH = Quarter Horse, SF = Selle Français, SHA = Shagya, SHP = Shetland Pony, SNOR = Silesian Noriker, SLW = Slovak Warmblood, STA = Standardbred, THO = Thoroughbred, TRA = Trakehner, WPB = Welsh Part Bred, WPC = Welsh Pony and Cob

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Table S3. Polymorphic information content for each microsatellite locus in the 43 populations (n = 2879)

Locus	PRZ	FRI	FJO	MER	MIN	MAPP	ICE	WPC	WPB	SHP	HUC	HAF	CSP	APP	BEL	SF	OLD	MOW	TRA	BAV	AND	KLA	SHA	MUR	LIP	KWPN	STA	KIN	HOL	FUR	HAN	CZW	SLW	CAM	ARAB	QH	PH	AKT	THO	CMB	SNOR	NOR	IRI
ATH4	0.604	0.150	0.762	0.574	0.727	0.720	0.759	0.761	0.793	0.661	0.848	0.722	0.764	0.707	0.679	0.703	0.614	0.665	0.582	0.667	0.723	0.779	0.779	0.680	0.704	0.665	0.679	0.648	0.646	0.632	0.696	0.685	0.660	0.750	0.748	0.694	0.695	0.555	0.656	0.795	0.747	0.786	0.775
ATH5	0.550	0.722	0.620	0.669	0.680	0.731	0.678	0.763	0.773	0.723	0.760	0.678	0.790	0.737	0.724	0.712	0.764	0.731	0.739	0.722	0.776	0.726	0.642	0.716	0.649	0.728	0.700	0.743	0.766	0.744	0.769	0.769	0.744	0.821	0.683	0.672	0.665	0.668	0.711	0.717	0.668	0.746	0.735
HMS1	0.418	0.478	0.763	0.380	0.646	0.708	0.589	0.607	0.666	0.662	0.588	0.444	0.620	0.535	0.572	0.584	0.642	0.526	0.473	0.519	0.371	0.446	0.670	0.572	0.406	0.611	0.711	0.525	0.510	0.471	0.592	0.509	0.565	0.551	0.552	0.500	0.580	0.532	0.550	0.338	0.569	0.567	0.532
HMS2	0.471	0.475	0.653	0.715	0.777	0.711	0.621	0.582	0.772	0.676	0.727	0.677	0.817	0.737	0.687	0.717	0.703	0.615	0.581	0.686	0.633	0.709	0.799	0.757	0.452	0.725	0.595	0.647	0.740	0.744	0.733	0.732	0.712	0.781	0.643	0.724	0.716	0.773	0.590	0.624	0.655	0.735	0.722
HMS3	0.693	0.374	0.653	0.494	0.683	0.597	0.749	0.722	0.722	0.602	0.799	0.688	0.733	0.798	0.641	0.717	0.772	0.670	0.748	0.777	0.833	0.719	0.661	0.706	0.712	0.760	0.739	0.766	0.767	0.713	0.755	0.768	0.782	0.822	0.696	0.754	0.783	0.728	0.647	0.692	0.617	0.695	0.691
HMS6	0.418	0.462	0.701	0.618	0.717	0.700	0.644	0.583	0.686	0.681	0.637	0.633	0.733	0.570	0.451	0.601	0.615	0.586	0.661	0.620	0.730	0.627	0.629	0.681	0.612	0.647	0.696	0.610	0.687	0.569	0.694	0.653	0.685	0.643	0.633	0.644	0.583	0.564	0.568	0.610	0.603	0.641	0.723
HMS7	0.489	0.228	0.591	0.623	0.755	0.663	0.530	0.737	0.780	0.608	0.552	0.654	0.734	0.706	0.712	0.670	0.658	0.727	0.768	0.780	0.499	0.634	0.691	0.623	0.729	0.736	0.551	0.766	0.709	0.722	0.713	0.772	0.750	0.738	0.755	0.737	0.772	0.728	0.769	0.684	0.757	0.771	0.607
HTG4	0.576	0.392	0.640	0.392	0.384	0.437	0.653	0.616	0.653	0.409	0.682	0.579	0.593	0.649	0.663	0.502	0.626	0.671	0.530	0.512	0.537	0.681	0.501	0.722	0.704	0.583	0.725	0.543	0.543	0.553	0.540	0.542	0.549	0.666	0.566	0.588	0.631	0.327	0.446	0.694	0.594	0.621	0.562
HTG6	0.677	0.155	0.103	0.558	0.561	0.572	0.403	0.606	0.645	0.548	0.560	0.121	0.581	0.637	0.587	0.500	0.664	0.540	0.647	0.623	0.521	0.433	0.618	0.589	0.441	0.659	0.561	0.709	0.674	0.635	0.657	0.672	0.718	0.658	0.581	0.633	0.648	0.556	0.625	0.359	0.404	0.473	0.634
HTG7	0.544	0.292	0.459	0.646	0.367	0.500	0.439	0.645	0.594	0.473	0.517	0.503	0.515	0.626	0.633	0.641	0.599	0.535	0.583	0.641	0.536	0.549	0.263	0.646	0.559	0.628	0.423	0.574	0.628	0.560	0.527	0.623	0.621	0.462	0.384	0.657	0.574	0.379	0.592	0.663	0.617	0.645	0.646
HTG10	0.653	0.450	0.731	0.729	0.751	0.606	0.759	0.749	0.771	0.732	0.670	0.687	0.820	0.807	0.742	0.774	0.798	0.798	0.802	0.807	0.748	0.645	0.620	0.795	0.530	0.796	0.677	0.763	0.738	0.842	0.784	0.820	0.801	0.762	0.698	0.799	0.778	0.634	0.771	0.779	0.619	0.655	0.733
VHL20	0.456	0.406	0.633	0.551	0.803	0.749	0.776	0.752	0.789	0.682	0.811	0.803	0.784	0.787	0.666	0.777	0.798	0.773	0.708	0.786	0.760	0.810	0.780	0.768	0.489	0.780	0.738	0.745	0.764	0.768	0.770	0.765	0.753	0.821	0.730	0.765	0.813	0.751	0.700	0.730	0.766	0.742	0.734
ASB2	0.515	0.494	0.783	0.727	0.743	0.742	0.864	0.732	0.815	0.756	0.751	0.715	0.822	0.776	0.701	0.828	0.774	0.802	0.759	0.770	0.767	0.780	0.716	0.766	0.603	0.744	0.779	0.744	0.678	0.820	0.782	0.795	0.796	0.817	0.614	0.792	0.824	0.797	0.812	0.533	0.710	0.724	0.665
ASB17	0.678	0.728	0.773	0.650	0.745	0.718	0.735	0.846	0.850	0.657	0.808	0.759	0.825	0.806	0.672	0.791	0.809	0.725	0.747	0.737	0.839	0.751	0.687	0.823	0.623	0.735	0.760	0.832	0.761	0.749	0.746	0.769	0.782	0.852	0.716	0.745	0.802	0.775	0.713	0.855	0.816	0.813	0.754
ASB23	0.451	0.732	0.762	0.685	0.789	0.705	0.778	0.802	0.790	0.765	0.791	0.717	0.788	0.777	0.778	0.731	0.766	0.750	0.800	0.806	0.714	0.731	0.629	0.780	0.703	0.780	0.724	0.748	0.749	0.751	0.809	0.797	0.790	0.803	0.696	0.792	0.789	0.684	0.753	0.678	0.728	0.710	0.774
CA425	0.407	0.230	0.574	0.292	0.671	0.765	0.742	0.704	0.668	0.808	0.787	0.670	0.643	0.651	0.709	0.583	0.611	0.642	0.672	0.638	0.401	0.573	0.606	0.533	0.512	0.654	0.740	0.584	0.506	0.637	0.562	0.652	0.665	0.705	0.521	0.633	0.599	0.663	0.566	0.666	0.606	0.650	0.660
LEX3	0.681	0.221	0.785	0.601	0.748	0.765	0.820	0.824	0.837	0.684	0.764	0.805	0.832	0.780	0.792	0.829	0.761	0.765	0.782	0.815	0.767	0.583	0.737	0.805	0.365	0.802	0.651	0.746	0.804	0.755	0.769	0.812	0.812	0.808	0.774	0.847	0.843	0.782	0.758	0.835	0.838	0.852	0.826

AKT = Akhal-Teke, AND = Andalusian, APP = Appaloosa, ARAB = Arabian, BAV = Bavarian Warmblood, BEL = Belgian Warmblood, CAM = Camargue, CMB = Czech-Moravian Belgian Horse, CSP = Czech Sport Pony, CZW = Czech Warmblood, KWPN = Dutch Warmblood, FJO = Fjord, FRI = Friesian, FUR = Furioso, HAF = Haflinger, HAN = Hannoverian, HOL = Holsteiner, HUC = Hucul, ICE = Icelandic Horse, IRI = Irish Cob, KIN = Kinsky Horse, LIP = Lipizzan, MER = Merens, MIN = Miniature Horse, MAPP = Mini Appaloosa, MOW = Moravian Warmblood, MUR = Murgese, NOR = Noriker, OLD = Oldenburg Horse, KLA = Old Kladruber Horse, PH = Paint Horse, PRZ = Przewalski´s Horse, QH = Quarter Horse, SF = Selle Français, SHA = Shagya, SHP = Shetland Pony, SNOR = Silesian Noriker, SLW = Slovak Warmblood, STA = Standardbred, THO = Thoroughbred, TRA = Trakehner, WPB = Welsh Part Bred, WPC = Welsh Pony and Cob

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Table S4. Gene flow (Nm, below the diagonal) and paired F_{ST} values (above the diagonal) between the 43 breeds estimated from the 17 microsatellite loci (n = 2879)

	AKT	AND	APP	ARAB	BAV	BEL	CAM	CMB	CSP	CZW	FJO	FRI	FUR	HAF	HAN	HOL	HUC	ICE	IRI	KIN	KLA	KWPN	LIP	MAPP	MER	MIN	MOW	MUR	NOR	OLD	PH	PRZ	QH	SF	SHA	SHP	SLW	SNOR	STA	THO	TRA	WPB	WPC
AKT		0.0917	0.0763	0.0939	0.0775	0.0865	0.0603	0.1288	0.0634	0.0720	0.1438	0.3107	0.0910	0.1326	0.0681	0.0888	0.1240	0.1347	0.1098	0.0718	0.1077	0.0813	0.1175	0.0967	0.1407	0.0937	0.0889	0.0906	0.1138	0.0935	0.0725	0.2275	0.0689	0.1017	0.0844	0.1056	0.0714	0.1322	0.1009	0.1086	0.0669	0.0643	0.0898
AND	2.4763		0.0403	0.0849	0.0415	0.0475	0.0214	0.0853	0.0384	0.0390	0.1049	0.2887	0.0637	0.0928	0.0476	0.0514	0.0825	0.1088	0.0849	0.0377	0.0498	0.0462	0.0994	0.0745	0.1008	0.0718	0.0777	0.0553	0.0732	0.0524	0.0381	0.2243	0.0511	0.0409	0.0995	0.1080	0.0386	0.0859	0.0960	0.0694	0.0518	0.0345	0.0633
APP	3.0265	5.9535		0.0613	0.0189	0.0196	0.0177	0.0573	0.0297	0.0154	0.0882	0.2677	0.0381	0.0846	0.0210	0.0303	0.0577	0.0889	0.0565	0.0231	0.0709	0.0212	0.0741	0.0674	0.0899	0.0713	0.0431	0.0467	0.0637	0.0318	0.0147	0.1999	0.0137	0.0255	0.0739	0.0963	0.0159	0.0758	0.0548	0.0417	0.0165	0.0265	0.0438
ARAB	2.4124	2.6946	3.8283		0.0607	0.0792	0.0527	0.1299	0.0542	0.0559	0.1435	0.2925	0.0684	0.1288	0.0537	0.0831	0.1038	0.1476	0.1082	0.0627	0.0797	0.0631	0.0862	0.1190	0.1383	0.1139	0.0704	0.0813	0.1076	0.0638	0.0572	0.2325	0.0665	0.0768	0.0500	0.1441	0.0588	0.1167	0.0938	0.0841	0.0551	0.0508	0.0989
BAV	2.9758	5.7741	12.9775	3.8686		0.0166	0.0237	0.0812	0.0336	-0.0023	0.1163	0.3001	0.0372	0.1115	0.0060	0.0132	0.0796	0.1078	0.0666	0.0145	0.0675	0.0011	0.0870	0.0777	0.0966	0.0801	0.0343	0.0471	0.0713	0.0011	0.0193	0.1930	0.0171	0.0105	0.0836	0.1031	0.0003	0.0858	0.0593	0.0176	0.0088	0.0299	0.0563
BEL	2.6402	5.0132	12.5051	2.9066	14.8102		0.0196	0.0428	0.0349	0.0139	0.0858	0.2968	0.0381	0.0800	0.0289	0.0213	0.0597	0.0982	0.0607	0.0294	0.0709	0.0159	0.0779	0.0642	0.0877	0.0631	0.0427	0.0425	0.0464	0.0235	0.0271	0.2204	0.0316	0.0125	0.0907	0.0936	0.0132	0.0567	0.0691	0.0431	0.0170	0.0274	0.0379
CAM	3.8959	11.4322	13.8743	4.4938	10.2985	12.5051		0.0575	0.0177	0.0191	0.0865	0.2491	0.0412	0.0695	0.0239	0.0355	0.0632	0.0851	0.0543	0.0221	0.0511	0.0249	0.0734	0.0585	0.0809	0.0654	0.0454	0.0465	0.0606	0.0329	0.0198	0.1856	0.0281	0.0303	0.0666	0.0880	0.0189	0.0761	0.0614	0.0477	0.0268	0.0171	0.0410
CMB	1.6910	2.6808	4.1130	1.6746	2.8288	5.5911	4.0978		0.0716	0.0780	0.1006	0.2219	0.1151	0.0615	0.0795	0.0774	0.0946	0.1107	0.0711	0.0904	0.0939	0.0770	0.1385	0.1058	0.1221	0.0947	0.1233	0.0689	0.0567	0.0862	0.0725	0.2178	0.0794	0.0926	0.1388	0.1294	0.0774	0.0646	0.1275	0.1241	0.0848	0.0640	0.0708
CSP	3.6932	6.2604	8.1675	4.3625	7.1905	6.9133	13.8743	3.2416		0.0297	0.0627	0.2644	0.0522	0.0732	0.0283	0.0430	0.0505	0.0661	0.0473	0.0398	0.0597	0.0363	0.0698	0.0415	0.0806	0.0505	0.0592	0.0405	0.0550	0.0388	0.0277	0.1870	0.0340	0.0491	0.0590	0.0705	0.0281	0.0671	0.0761	0.0606	0.0397	0.0080	0.0328
CZW	3.2222	6.1603	15.9838	4.2223	-108.95	17.7356	12.8390	2.9551	8.1675		0.1017	0.2703	0.0296	0.1010	0.0071	0.0145	0.0727	0.1041	0.0604	0.0087	0.0668	0.0026	0.0812	0.0708	0.0912	0.0761	0.0288	0.0460	0.0693	0.0084	0.0191	0.1988	0.0197	0.0062	0.0735	0.0973	-0.0010	0.0836	0.0562	0.0160	0.0059	0.0254	0.0490
FJO	1.4885	2.1332	2.5845	1.4922	1.8996	2.6638	2.6402	2.2351	3.7372	2.2082		0.2945	0.1254	0.1080	0.1084	0.1051	0.0791	0.0754	0.1081	0.1095	0.1212	0.1063	0.1547	0.0788	0.1441	0.0787	0.1340	0.1037	0.0970	0.1117	0.0918	0.2352	0.0982	0.1321	0.1495	0.1011	0.0992	0.1076	0.1480	0.1279	0.1104	0.0761	0.0806
FRI	0.5546	0.6160	0.6839	0.6047	0.5831	0.5923	0.7536	0.8766	0.6955	0.6749	0.5989		0.3398	0.2125	0.2827	0.2967	0.2546	0.2873	0.2458	0.2805	0.2147	0.2913	0.3539	0.3019	0.3262	0.2920	0.3443	0.2571	0.2130	0.2972	0.2698	0.3701	0.2701	0.3175	0.2983	0.2977	0.2686	0.2185	0.3089	0.3280	0.3163	0.2409	0.2510
FUR	2.4973	3.6746	6.3117	3.4050	6.4704	6.3117	5.8180	1.9220	4.5393	8.1959	1.7436	0.4857		0.1070	0.0447	0.0550	0.0737	0.1158	0.0894	0.0346	0.0959	0.0375	0.0887	0.0856	0.1141	0.0937	0.0063	0.0712	0.0832	0.0450	0.0444	0.2291	0.0452	0.0323	0.0753	0.1165	0.0288	0.0960	0.0688	0.0482	0.0358	0.0440	0.0624
HAF	1.6354	2.4440	2.7051	1.6910	1.9922	2.8750	3.3471	3.8150	3.1653	2.2252	2.0648	0.9265	2.0864		0.1020	0.1134	0.0918	0.1257	0.0910	0.1099	0.0847	0.1088	0.1337	0.1120	0.1259	0.1164	0.1219	0.0823	0.0586	0.1157	0.0913	0.2251	0.1028	0.1139	0.1258	0.1434	0.0979	0.0627	0.1336	0.1438	0.1128	0.0681	0.0801
HAN	3.4211	5.0021	11.6548	4.4055	41.4167	8.4005	10.2103	2.8947	8.5839	34.9613	2.0563	0.6343	5.3428	2.2010		0.0197	0.0723	0.1048	0.0592	0.0180	0.0742	0.0108	0.0681	0.0730	0.1025	0.0806	0.0398	0.0470	0.0771	0.0100	0.0269	0.2051	0.0247	0.0227	0.0720	0.1028	0.0058	0.0926	0.0611	0.0321	0.0188	0.0290	0.0573
HOL	2.5653	4.6138	8.0008	2.7584	18.6894	11.4871	6.7923	2.9800	5.5640	16.9914	2.1287	0.5926	4.2955	1.9546	12.4404		0.0910	0.1084	0.0621	0.0312	0.0874	0.0105	0.1006	0.0812	0.0973	0.0813	0.0590	0.0612	0.0750	0.0144	0.0398	0.2093	0.0354	0.0252	0.0996	0.1066	0.0134	0.0856	0.0785	0.0371	0.0226	0.0419	0.0585
HUC	1.7661	2.7803	4.0828	2.1585	2.8907	3.9376	3.7057	2.3927	4.7005	3.1888	2.9106	0.7319	3.1421	2.4733	3.2078	2.4973		0.0877	0.0938	0.0778	0.0998	0.0740	0.0956	0.0749	0.1275	0.0914	0.0859	0.0820	0.0807	0.0764	0.0671	0.2193	0.0698	0.0770	0.0954	0.1068	0.0666	0.0908	0.0892	0.1004	0.0832	0.0516	0.0645
ICE	1.6060	2.0478	2.5621	1.4438	2.0691	2.2958	2.6877	2.0084	3.5321	2.1515	3.0656	0.6202	1.9089	1.7389	2.1355	2.0563	2.6006		0.0935	0.1188	0.1275	0.1110	0.1399	0.0562	0.1537	0.0557	0.1296	0.1035	0.0905	0.1115	0.0951	0.1968	0.0949	0.1285	0.1513	0.0729	0.1005	0.1099	0.1456	0.1419	0.1147	0.0820	0.0823
IRI	2.0269	2.6946	4.1748	2.0605	3.5038	3.8686	4.3541	3.2662	5.0354	3.8891	2.0627	0.7671	2.5464	2.4973	3.9730	3.7758	2.4152	2.4238		0.0809	0.0982	0.0576	0.1160	0.0579	0.1100	0.0698	0.1021	0.0610	0.0570	0.0620	0.0726	0.1894	0.0639	0.0664	0.1043	0.0970	0.0610	0.0720	0.1139	0.1074	0.0769	0.0454	0.0433
KIN	3.2319	6.3813	10.5725	3.7372	16.9914	8.2534	11.0622	2.5155	6.0314	28.4856	2.0331	0.6413	6.9754	2.0248	13.6389	7.7628	2.9634	1.8544	2.8402		0.0737	0.0177	0.0844	0.0863	0.0973	0.0932	0.0283	0.0580	0.0853	0.0203	0.0221	0.2188	0.0271	0.0210	0.0780	0.1117	0.0084	0.0975	0.0573	0.0211	0.0121	0.0326	0.0585
KLA	2.0713	4.7701	3.2761	2.8868	3.4537	3.2761	4.6424	2.4124	3.9376	3.4925	1.8127	0.9144	2.3569	2.7016	3.1193	2.6104	2.2550	1.7108	2.2958	3.1421		0.0748	0.1073	0.0895	0.1044	0.0933	0.1075	0.0690	0.0804	0.0787	0.0668	0.2201	0.0789	0.0724	0.1003	0.1276	0.0677	0.0911	0.1097	0.1052	0.0754	0.0386	0.0659
KWPN	2.8250	5.1613	11.5425	3.7120	227.023	15.4733	9.7902	2.9968	6.6371	95.9038	2.1018	0.6082	6.4167	2.0478	22.8981	23.5595	3.1284	2.0023	4.0903	13.8743	3.0922		0.0799	0.0770	0.0958	0.0790	0.0410	0.0512	0.0697	0.0020	0.0241	0.2025	0.0245	0.0042	0.0806	0.1048	0.0033	0.0821	0.0664	0.0202	0.0124	0.0293	0.0510
LIP	1.8777	2.2651	3.1238	2.6502	2.6236	2.9592	3.1560	1.5551	3.3317	2.8288	1.3660	0.4564	2.5685	1.6199	3.4211	2.2351	2.3651	1.5370	1.9052	2.7121	2.0799	2.8789		0.1054	0.1530	0.1289	0.0854	0.0801	0.1017	0.0810	0.0743	0.2635	0.0797	0.0872	0.1106	0.1395	0.0763	0.1117	0.1004	0.1028	0.0731	0.0765	0.1018
MAPP	2.3353	3.1057	3.4592	1.8508	2.9675	3.6441	4.0235	2.1129	5.7741	3.2811	2.9226	0.5781	2.6706	1.9821	3.1747	2.8288	3.0878	4.1984	4.0678	2.6469	2.5433	2.9968	2.1219		0.1318	0.0057	0.1066	0.0750	0.0804	0.0779	0.0770	0.1965	0.0759	0.0815	0.1116	0.0138	0.0685	0.0983	0.1199	0.1239	0.0882	0.0443	0.0476
MER	1.5268	2.2302	2.5309	1.5577	2.3380	2.6006	2.8402	1.7975	2.8517	2.4912	1.4849	0.5164	1.9411	1.7357	2.1890	2.3194	1.7108	1.3765	2.0227	2.3194	2.1446	2.3596	1.3840	1.6468		0.1167	0.1260	0.0816	0.0776	0.1019	0.0989	0.2651	0.0903	0.0946	0.1469	0.1464	0.0891	0.0895	0.1529	0.1191	0.0968	0.0775	0.0907
MIN	2.4181	3.2319	3.2563	1.9449	2.8711	3.7120	3.5726	2.3899	4.7005	3.0352	2.9266	0.6062	2.4181	1.8978	2.8517	2.8250	2.4852	4.2383	3.3317	2.4324	2.4295	2.9146	1.6895	43.6096	1.8922		0.1110	0.0697	0.0671	0.0846	0.0739	0.1943	0.0724	0.0895	0.1199	0.0157	0.0739	0.0862	0.1380	0.1225	0.0881	0.0520	0.0545
MOW	2.5621	2.9675	5.5505	3.3011	7.0386	5.6048	5.2566	1.7776	3.9730	8.4306	1.6157	0.4761	39.4325	1.8009	6.0314	3.9873	2.6604	1.6790	2.1986	8.5839	2.0756	5.8476	2.6774	2.0952	1.7341	2.0023		0.0770	0.0938	0.0432	0.0395	0.2364	0.0414	0.0332	0.0841	0.1237	0.0269	0.1107	0.0544	0.0332	0.0302	0.0557	0.0834
MUR	2.5094	4.2708	5.1033	2.8250	5.0579	5.6324	5.1263	3.3784	5.9228	5.1848	2.1608	0.7224	3.2612	2.7877	5.0691	3.8350	2.7988	2.1655	3.8484	4.0603	3.3732	4.6328	2.8711	3.0833	2.8137	3.3368	2.9968		0.0567	0.0594	0.0532	0.1960	0.0529	0.0447	0.1060	0.1022	0.0472	0.0699	0.0941	0.0804	0.0547	0.0336	0.0485
NOR	1.9468	3.1653	3.6746	2.0734	3.2563	5.1379	3.8754	4.1592	4.2955	3.3575	2.3273	0.9237	2.7548	4.0162	2.9925	3.0833	2.8479	2.5124	4.1360	2.6808	2.8595	3.3368	2.2082	2.8595	2.9716	3.4758	2.4152	4.1592		0.0690	0.0696	0.1873	0.0638	0.0739	0.1131	0.1019	0.0642	0.0053	0.1137	0.1080	0.0735	0.0541	0.0587
OLD	2.4238	4.5210	7.6116	3.6685	227.023	10.3883	7.3488	2.6502	6.1933	29.5119	1.9881	0.5912	5.3056	1.9108	24.7500	17.1111	3.0223	1.9922	3.7823	12.0653	2.9266	124.750	2.8364	2.9592	2.2034	2.7051	5.5370	3.9588	3.3732		0.0325	0.2111	0.0320	0.0162	0.0852	0.1062	0.0098	0.0795	0.0743	0.0334	0.0216	0.0347	0.0589
PH	3.1983	6.3117	16.7568	4.1206	12.7034	8.9751	12.3763	3.1983	8.7753	12.8390	2.4733	0.6766	5.3806	2.4882	9.0437	6.0314	3.4758	2.3788	3.1935	11.0622	3.4925	10.1234	3.1147	2.9968	2.2778	3.1329	6.0791	4.4492	3.3420	7.4423		0.2081	0.0112	0.0300	0.0642	0.0985	0.0188	0.0801	0.0604	0.0332	0.0175	0.0261	0.0501
PRZ	0.8489	0.8646	1.0006	0.8253	1.0453	0.8843	1.0970	0.8978	1.0869	1.0075	0.8129	0.4255	0.8412	0.8606	0.9689	0.9445	0.8900	1.0203	1.0700	0.8926	0.8858	0.9846	0.6988	1.0223	0.6930	1.0367	0.8075	1.0255	1.0848	0.9343	0.9513		0.2006	0.2346	0.2411	0.2197	0.1960	0.2109	0.2337	0.2456	0.2155	0.1824	0.1933
QH	3.3784	4.6424	17.9982	3.5094	14.3699	7.6614	8.6468	2.8986	7.1029	12.4404	2.2958	0.6756	5.2810	2.1819	9.8715	6.8121	3.3317	2.3844	3.6624	8.9751	2.9186	9.9541	2.8868	3.0438	2.5185	3.2030	5.7886	4.4759	3.6685	7.5625	22.0714	0.9963		0.0359	0.0755	0.0919	0.0181	0.0786	0.0598	0.0377	0.0146	0.0308	0.0460
SF	2.2082	5.8625	9.5539	3.0052	23.5595	19.7500	8.0008	2.4498	4.8416	40.0726	1.6425	0.5374	7.4899	1.9449	10.7632	9.6706	2.9968	1.6955	3.5151	11.6548	3.2030	59.2738	2.6170	2.8175	2.3927	2.5433	7.2801	5.3428	3.1329	15.1821	8.0833	8.8156	6.7138		0.0982	0.1204	0.0091	0.0873	0.0578	0.0147	0.0271	0.0353	0.0590
SHA	2.7121	2.2626	3.1329	4.7500	2.7404	2.5063	3.5038	1.5512	3.9873	3.1514	1.4222	0.5881	3.0701	1.7373	3.2222	2.2600	2.3705	1.4023	2.1469	2.9551	2.2425	2.8517	2.0104	1.9901	1.4518	1.8351	2.7227	2.1085	1.9604	2.6843	3.6441	0.7869	3.0613	2.2958		0.1374	0.0733	0.1250	0.0941	0.1080	0.0726	0.0602	0.1011
SHP	2.1174	2.0648	2.3461	1.4849	2.1748	2.4209	2.5909	1.6820	3.2961	2.3194	2.2228	0.5898	1.8959	1.4934	2.1819	2.0952	2.0908	3.1794	2.3273	1.9881	1.7092	2.1355	1.5421	17.8659	1.4577	15.6736	1.7710	2.1962	2.2034	2.1040	2.2881	0.8879	2.4703	1.8264	1.5695		0.0948	0.1214	0.1511	0.1391	0.1112	0.0806	0.0870
SLW	3.2514	6.2267	15.4733	4.0017	833.083	18.6894	12.9775	2.9800	8.6468	-250.25	2.2702	0.6808	8.4306	2.3036	42.8534	18.4067	3.5038	2.2376	3.8484	29.5119	3.4428	75.5076	3.0265	3.3996	2.5558	3.1329	9.0437	5.0466	3.6441	25.2602	13.0479	1.0255	13.5622	27.2225	3.1606	2.3871		0.0781	0.0524	0.0159	0.0069	0.0257	0.0476
SNOR	1.6411	2.6604	3.0482	1.8922	2.6638	4.1592	3.0352	3.6200	3.4758	2.7404	2.0734	0.8942	2.3542	3.7372	2.4498	2.6706	2.5033	2.0248	3.2222	2.3141	2.4942	2.7951	1.9881	2.2932	2.5433	2.6502	2.0084	3.3265	46.9198	2.8947	2.8711	0.9354	2.9307	2.6137	1.7500	1.8093	2.9510		0.1265	0.1213	0.0886	0.0636	0.0666
STA	2.2277	2.3542	4.3120	2.4152	3.9659	3.3679	3.8217	1.7108	3.0352	4.1984	1.4392	0.5593	3.3837	1.6213	3.8417	2.9347	2.5527	1.4670	1.9449	4.1130	2.0289	3.5151	2.2400	1.8351	1.3851	1.5616	4.3456	2.4067	1.9488	3.1147	3.8891	0.8197	3.9306	4.0753	2.4067	1.4045	4.5210	1.7263		0.0699	0.0503	0.0726	0.1101
THO	2.0520	3.3523	5.7452	2.7227	13.9545	5.5505	4.9911	1.7645	3.8754	15.3750	1.7047	0.5122	4.9367	1.4885	7.5382	6.4885	2.2400	1.5118	2.0777	11.5983	2.1264	12.1262	2.1819	1.7678	1.8491	1.7908	7.2801	2.8595	2.0648	7.2350	7.2801	0.7679	6.3813	16.7568	2.0648	1.5473	15.4733	1.8110	3.3265		0.0216	0.0605	0.0921
TRA	3.4869	4.5763	14.9015	4.2872	28.1591	14.4559	9.0784	2.6981	6.0472	42.1229	2.0145	0.5404	6.7332	1.9663	13.0479	10.8119	2.7548	1.9296	3.0010	20.4112	3.0656	19.9113	3.1700	2.5845	2.3326	2.5877	8.0281	4.3204	3.1514	11.3241	14.0357	0.9101	16.8733	8.9751	3.1935	1.9982	35.9819	2.5717	4.7202	11.3241		0.0337	0.0603
WPB	3.6380	6.9964	9.1840	4.6713	8.1112	8.8741	14.3699	3.6563	31.0000	9.5925	3.0352	0.7878	5.4318	3.4211	8.3707	5.7166	4.5950	2.7988	5.2566	7.4187	6.2267	8.2824	3.0180	5.3933	2.9758	4.5577	4.2383	7.1905	4.3711	6.9546	9.3285	1.1206	7.8669	6.8322	3.9028	2.8517	9.4776	3.6808	3.1935	3.8822	7.1684		0.0166
WPC	2.5340	3.6994	5.4578	2.2778	4.1905	6.3463	5.8476	3.2811	7.3720	4.8520	2.8517	0.7460	3.7564	2.8711	4.1130	4.0235	3.6260	2.7877	5.5237	4.0235	3.5436	4.6520	2.2058	5.0021	2.5063	4.3372	2.7476	4.9046	4.0089	3.9945	4.7400	1.0433	5.1848	3.9873	2.2228	2.6236	5.0021	3.5038	2.0207	2.4644	3.8959	14.8102	

The negative F_{ST} and Nm values equal to zero and ∞, respectively

AKT = Akhal-Teke, AND = Andalusian, APP = Appaloosa, ARAB = Arabian, BAV = Bavarian Warmblood, BEL = Belgian Warmblood, CAM = Camargue, CMB = Czech-Moravian Belgian Horse, CSP = Czech Sport Pony, CZW = Czech Warmblood, KWPN = Dutch Warmblood, FJO = Fjord, FRI = Friesian, FUR = Furioso, HAF = Haflinger, HAN = Hannoverian, HOL = Holsteiner, HUC = Hucul, ICE = Icelandic Horse, IRI = Irish Cob, KIN = Kinsky Horse, LIP = Lipizzan, MER = Merens, MIN = Miniature Horse, MAPP = Mini Appaloosa, MOW = Moravian Warmblood, MUR = Murgese, NOR = Noriker, OLD = Oldenburg Horse, KLA = Old Kladruber Horse, PH = Paint Horse, PRZ = Przewalski´s Horse, QH = Quarter Horse, SF = Selle Français, SHA = Shagya, SHP = Shetland Pony, SNOR = Silesian Noriker, SLW = Slovak Warmblood, STA = Standardbred, THO = Thoroughbred, TRA = Trakehner, WPB = Welsh Part Bred, WPC = Welsh Pony and Cob

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Table S5. The proportion of assignment to each K = 7 cluster as determined via STRUCTURE

Population	Structure cluster (K = 7)						
	1	2	3	4	5	6	7
PRZ	0.0074	0.0060	0.0170	**0.9278**	0.0060	0.0251	0.0107
FRI	0.0050	0.0060	**0.9653**	0.0050	0.0050	0.0060	0.0077
FJO	0.0169	0.0301	0.0084	**0.8240**	0.0275	0.0519	0.0412
MER	0.0240	0.0331	0.0517	0.0230	0.0470	**0.6033**	0.2178
MIN	0.0243	0.0198	0.0229	**0.7501**	0.0467	0.0856	0.0506
MAPP	0.0186	0.0245	0.0311	**0.8183**	0.0181	0.0677	0.0217
ICE	0.0130	0.0212	0.0080	**0.9164**	0.0114	0.0160	0.0140
WPC	0.0418	0.0807	0.0350	0.1178	0.0536	**0.5854**	0.0857
WPB	0.1079	0.0797	0.0180	0.0650	0.1076	**0.5725**	0.0493
SHP	0.0186	0.0330	0.0120	**0.8733**	0.0260	0.0181	0.0190
HUC	0.0271	**0.7810**	0.0182	0.0628	0.0160	0.0368	0.0581
HAF	0.0107	0.0130	0.0220	0.0169	0.0130	0.0231	**0.9014**
CSP	0.1750	0.1087	0.0130	0.1960	0.1178	***0.3251***	0.0643
APP	0.0700	0.2608	0.0130	0.0388	***0.3880***	0.1605	0.0690
BEL	0.0271	0.0953	0.0210	0.0549	***0.3899***	0.1027	***0.3090***
SF	0.0192	0.1122	0.0292	0.0100	**0.6874**	0.0514	0.0905
OLD	0.1249	0.0317	0.0188	0.0250	**0.6027**	0.1447	0.0522
MOW	0.0920	0.1926	0.0070	0.0190	**0.6141**	0.0523	0.0230
TRA	0.0756	0.1009	0.0130	0.0140	**0.6968**	0.0570	0.0428
BAV	0.0459	0.0335	0.0140	0.0189	**0.7223**	0.1375	0.0279
AND	0.0335	0.0610	0.0210	0.0331	0.1431	**0.6472**	0.0612
KLA	0.0910	0.0305	0.0495	0.0130	0.0244	**0.7625**	0.0290
SHA	**0.9151**	0.0217	0.0090	0.0081	0.0245	0.0126	0.0090
MUR	0.0478	0.0454	0.0309	0.0594	0.0645	**0.5553**	0.1967
LIP	***0.3181***	***0.3564***	0.0255	0.0242	0.0583	0.1474	0.0700
KWPN	0.0851	0.0652	0.0180	0.0135	**0.6953**	0.0857	0.0372
STA	0.0667	**0.8204**	0.0060	0.0090	0.0550	0.0306	0.0124
KIN	0.0865	0.0720	0.0120	0.0141	**0.7323**	0.0609	0.0221
HOL	0.0359	0.0439	0.0070	0.0285	**0.6857**	0.1550	0.0440
FUR	0.1732	***0.3058***	0.0070	0.0273	***0.3405***	0.1147	0.0314
HAN	0.1261	0.0601	0.0170	0.0309	**0.5495**	0.1874	0.0290
CZW	0.0860	0.0719	0.0160	0.0252	**0.6836**	0.0955	0.0218
SLW	0.0604	0.0937	0.0165	0.0210	**0.6719**	0.1045	0.0319
CAM	0.0921	0.1032	0.0190	0.0417	0.1951	***0.4552***	0.0937
ARAB	**0.8744**	0.0322	0.0080	0.0080	0.0424	0.0251	0.0099
QH	0.1104	0.2446	0.0150	0.0413	***0.4388***	0.1179	0.0319
PH	0.1400	0.1923	0.0130	0.0517	***0.4378***	0.1261	0.0390
AKT	**0.7282**	0.0365	0.0070	0.0409	0.0754	0.0771	0.0350
THO	0.0263	0.0350	0.0040	0.0101	**0.9056**	0.0120	0.0070
CMB	0.0120	0.0420	0.0350	0.0250	0.0244	0.0698	**0.7919**
SNOR	0.0272	0.0141	0.0150	0.0190	0.0233	0.0625	**0.8389**
NOR	0.0250	0.0393	0.0240	0.0321	0.0218	0.0775	**0.7803**
IRI	0.0335	0.0488	0.0501	0.1086	0.0473	***0.3772***	***0.3345***

The largest proportion of assignment for each population is outlined and shown in bold; the rates of between 30 and 50% are in italics

AKT = Akhal-Teke, AND = Andalusian, APP = Appaloosa, ARAB = Arabian, BAV = Bavarian Warmblood, BEL = Belgian Warmblood, CAM = Camargue, CMB = Czech-Moravian Belgian Horse, CSP = Czech Sport Pony, CZW = Czech Warmblood, KWPN = Dutch Warmblood, FJO = Fjord, FRI = Friesian, FUR = Furioso, HAF = Haflinger, HAN = Hannoverian, HOL = Holsteiner, HUC = Hucul, ICE = Icelandic Horse, IRI = Irish Cob, KIN = Kinsky Horse, LIP = Lipizzan, MER = Merens, MIN = Miniature Horse, MAPP = Mini Appaloosa, MOW = Moravian Warmblood, MUR = Murgese, NOR = Noriker, OLD = Oldenburg Horse, KLA = Old Kladruber Horse, PH = Paint Horse, PRZ = Przewalski´s Horse, QH = Quarter Horse, SF = Selle Français, SHA = Shagya, SHP = Shetland Pony, SNOR = Silesian Noriker, SLW = Slovak Warmblood, STA = Standardbred, THO = Thoroughbred, TRA = Trakehner, WPB = Welsh Part Bred, WPC = Welsh Pony and Cob

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Table S6. Proportion of assignment to each cluster resulting from the STRUCTURE-based analysis at K = 17 for the 43 breeds

Population	Population with > 30% assignment to the Structure cluster (K = 17)																
	HAF, CMB	MER	MOW, FUR	SNOR, NOR	SHA, ARAB	QH, PH	STA	THO	IRI, WPC, MUR	KLA	FJO, HUC	OLD, HOL	AKT	PRZ, ICE, SHP, MAPP, MIN	KLA	HUC	FRI
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
PRZ	0.0119	0.0104	0.0051	0.0197	0.0060	0.0055	0.0052	0.0040	0.0294	0.0106	0.0911	0.0069	0.0063	**0.7583**	0.0084	0.0067	0.0144
FRI	0.0050	0.0040	0.0030	0.0040	0.0030	0.0040	0.0040	0.0030	0.0042	0.0041	0.0036	0.0033	0.0030	0.0030	0.0048	0.0041	**0.9399**
FJO	0.0150	0.0186	0.0081	0.0103	0.0062	0.0090	0.0051	0.0079	0.0104	0.0104	**0.8131**	0.0095	0.0075	0.0407	0.0101	0.0102	0.0077
MER	0.0526	***0.4561***	0.0290	0.1258	0.0090	0.0250	0.0061	0.0104	0.0349	0.0814	0.0087	0.0264	0.0216	0.0127	0.0529	0.0148	0.0324
MIN	0.0293	0.0251	0.0163	0.0286	0.0160	0.0217	0.0075	0.0134	0.0646	0.0181	0.0219	0.0355	0.0251	**0.6177**	0.0243	0.0185	0.0162
MAPP	0.0152	0.0266	0.0078	0.0096	0.0090	0.0122	0.0218	0.0117	0.0948	0.0158	0.0265	0.0111	0.0147	**0.6700**	0.0176	0.0128	0.0227
ICE	0.0152	0.0211	0.0128	0.0136	0.0090	0.0159	0.0138	0.0098	0.0287	0.0146	0.1206	0.0094	0.0092	**0.6750**	0.0092	0.0140	0.0081
WPC	0.0255	0.1086	0.0187	0.0169	0.0199	0.0593	0.0125	0.0126	***0.4786***	0.0252	0.0395	0.0238	0.0188	0.0457	0.0306	0.0384	0.0255
WPB	0.0350	0.1031	0.0438	0.0244	0.0671	0.0633	0.0190	0.0581	0.2588	0.0668	0.0309	0.0400	0.0350	0.0413	0.0500	0.0454	0.0179
SHP	0.0110	0.0157	0.0130	0.0120	0.0128	0.0148	0.0099	0.0109	0.0119	0.0082	0.0117	0.0107	0.0165	**0.8155**	0.0079	0.0101	0.0074
HUC	0.0367	0.0277	0.0233	0.0188	0.0288	0.0159	0.0330	0.0134	0.0203	0.0270	***0.3644***	0.0178	0.0116	0.0165	0.0156	***0.3152***	0.0139
HAF	**0.8348**	0.0156	0.0088	0.0194	0.0069	0.0080	0.0060	0.0063	0.0140	0.0106	0.0120	0.0071	0.0063	0.0086	0.0114	0.0084	0.0157
CSP	0.0387	0.1535	0.0349	0.0285	0.0825	0.0935	0.0164	0.0403	0.1339	0.0575	0.0795	0.0544	0.0389	0.0684	0.0229	0.0458	0.0102
APP	0.0361	0.0843	0.1103	0.0362	0.0261	0.2365	0.0382	0.0837	0.0561	0.0348	0.0292	0.0623	0.0237	0.0169	0.0283	0.0864	0.0109
BEL	0.1746	0.0624	0.0621	0.0598	0.0170	0.0369	0.0212	0.1307	0.0728	0.0313	0.0145	0.1569	0.0306	0.0334	0.0286	0.0543	0.0129
SF	0.0743	0.0861	0.1768	0.0343	0.0105	0.0247	0.0381	0.2108	0.0355	0.0200	0.0059	0.1588	0.0089	0.0090	0.0254	0.0701	0.0108
OLD	0.0145	0.0449	0.0379	0.0240	0.0187	0.0402	0.0094	0.0963	0.0241	0.0412	0.0119	***0.4003***	0.0163	0.0204	0.0488	0.1372	0.0140
MOW	0.0073	0.0119	**0.5799**	0.0114	0.0338	0.0289	0.0438	0.1627	0.0101	0.0143	0.0135	0.0242	0.0162	0.0092	0.0104	0.0173	0.0050
TRA	0.0079	0.0339	0.1702	0.0308	0.0470	0.1032	0.0289	0.1401	0.0141	0.0354	0.0122	0.1793	0.0255	0.0082	0.0362	0.1150	0.0124
BAV	0.0148	0.0381	0.0877	0.0157	0.0225	0.1003	0.0186	0.1657	0.0246	0.0460	0.0069	0.2345	0.0204	0.0207	0.0528	0.1204	0.0102
AND	0.0506	0.1084	0.0480	0.0392	0.0130	0.2403	0.0164	0.0269	0.0447	0.1460	0.0204	0.0428	0.0228	0.0220	0.0981	0.0396	0.0210
KLA	0.0070	0.0525	0.0070	0.0060	0.0100	0.0080	0.0060	0.0064	0.0069	***0.3915***	0.0062	0.0080	0.0109	0.0066	***0.4036***	0.0513	0.0121
SHA	0.0071	0.0123	0.0180	0.0080	**0.7744**	0.0152	0.0103	0.0127	0.0090	0.0177	0.0092	0.0132	0.0566	0.0088	0.0089	0.0124	0.0061
MUR	0.0767	0.0863	0.0246	0.0437	0.0210	0.0517	0.0210	0.0186	***0.4118***	0.0406	0.0189	0.0320	0.0227	0.0361	0.0412	0.0324	0.0209
LIP	0.0183	0.1280	0.0308	0.0450	0.0774	0.0465	0.0674	0.0196	0.0618	0.1102	0.0535	0.0795	0.0490	0.0174	0.0725	0.1126	0.0105
KWPN	0.0134	0.0453	0.0818	0.0147	0.0416	0.0740	0.0165	0.1623	0.0339	0.0254	0.0128	0.2972	0.0157	0.0082	0.0347	0.1101	0.0123
STA	0.0090	0.0138	0.0290	0.0110	0.0549	0.0190	**0.7265**	0.0250	0.0168	0.0130	0.0100	0.0167	0.0110	0.0091	0.0133	0.0160	0.0060
KIN	0.0107	0.0378	0.1204	0.0114	0.0302	0.0570	0.0212	0.2854	0.0180	0.0333	0.0144	0.0864	0.0405	0.0108	0.0489	0.1648	0.0088
HOL	0.0127	0.0365	0.0416	0.0134	0.0115	0.0246	0.0188	0.0719	0.0251	0.0228	0.0119	**0.5825**	0.0136	0.0087	0.0269	0.0726	0.0050
FUR	0.0126	0.0148	**0.5964**	0.0262	0.0612	0.0282	0.0337	0.0650	0.0200	0.0247	0.0166	0.0202	0.0154	0.0110	0.0184	0.0296	0.0060
HAN	0.0162	0.0621	0.0781	0.0104	0.0398	0.0820	0.0266	0.0833	0.0355	0.0367	0.0157	0.2492	0.0498	0.0137	0.0497	0.1394	0.0119
CZW	0.0168	0.0328	0.1305	0.0130	0.0367	0.0719	0.0328	0.1815	0.0325	0.0329	0.0141	0.2232	0.0247	0.0180	0.0391	0.0877	0.0119
SLW	0.0178	0.0370	0.1500	0.0193	0.0222	0.0957	0.0276	0.1563	0.0237	0.0317	0.0139	0.2219	0.0250	0.0146	0.0364	0.0936	0.0131
CAM	0.0461	0.2785	0.0625	0.0174	0.0324	0.1146	0.0258	0.0544	0.0580	0.0982	0.0191	0.0450	0.0419	0.0227	0.0349	0.0340	0.0145
ARAB	0.0070	0.0158	0.0368	0.0090	**0.7279**	0.0255	0.0163	0.0195	0.0108	0.0228	0.0090	0.0195	0.0308	0.0092	0.0149	0.0190	0.0064
QH	0.0138	0.0295	0.1086	0.0199	0.0244	***0.3655***	0.0434	0.1281	0.0284	0.0264	0.0262	0.0402	0.0342	0.0207	0.0244	0.0539	0.0127
PH	0.0228	0.0607	0.0750	0.0231	0.0443	***0.3400***	0.0323	0.1583	0.0209	0.0300	0.0275	0.0343	0.0328	0.0257	0.0209	0.0422	0.0090
AKT	0.0081	0.0119	0.0139	0.0081	0.0155	0.0150	0.0098	0.0114	0.0133	0.0167	0.0082	0.0163	**0.8095**	0.0102	0.0098	0.0174	0.0050
THO	0.0050	0.0106	0.1231	0.0060	0.0104	0.0476	0.0177	**0.6157**	0.0060	0.0136	0.0094	0.0723	0.0120	0.0052	0.0120	0.0304	0.0030
CMB	**0.5792**	0.0371	0.0135	0.0385	0.0069	0.0305	0.0124	0.0115	0.1404	0.0159	0.0156	0.0158	0.0122	0.0106	0.0124	0.0200	0.0275
SNOR	0.0459	0.0253	0.0080	**0.7600**	0.0111	0.0112	0.0073	0.0080	0.0198	0.0144	0.0110	0.0128	0.0110	0.0108	0.0199	0.0107	0.0129
NOR	0.0771	0.0446	0.0133	**0.5973**	0.0127	0.0153	0.0150	0.0110	0.0509	0.0277	0.0198	0.0141	0.0159	0.0253	0.0165	0.0172	0.0265
IRI	0.0366	0.1377	0.0139	0.0418	0.0126	0.0273	0.0108	0.0121	**0.5627**	0.0178	0.0119	0.0346	0.0110	0.0223	0.0101	0.0108	0.0259

The largest proportion of assignment for each population is outlined and shown in bold; the rates of between 30 and 50% are in italics

AKT = Akhal-Teke, AND = Andalusian, APP = Appaloosa, ARAB = Arabian, BAV = Bavarian Warmblood, BEL = Belgian Warmblood, CAM = Camargue, CMB = Czech-Moravian Belgian Horse, CSP = Czech Sport Pony, CZW = Czech Warmblood, KWPN = Dutch Warmblood, FJO = Fjord, FRI = Friesian, FUR = Furioso, HAF = Haflinger, HAN = Hannoverian, HOL = Holsteiner, HUC = Hucul, ICE = Icelandic Horse, IRI = Irish Cob, KIN = Kinsky Horse, LIP = Lipizzan, MER = Merens, MIN = Miniature Horse, MAPP = Mini Appaloosa, MOW = Moravian Warmblood, MUR = Murgese, NOR = Noriker, OLD = Oldenburg Horse, KLA = Old Kladruber Horse, PH = Paint Horse, PRZ = Przewalski's Horse, QH = Quarter Horse, SF = Selle Français, SHA = Shagya, SHP = Shetland Pony, SNOR = Silesian Noriker, SLW = Slovak Warmblood, STA = Standardbred, THO = Thoroughbred, TRA = Trakehner, WPB = Welsh Part Bred, WPC = Welsh Pony and Cob