



Supplementary Material

Temporal Changes in Genetic Diversity of *Fenneropenaeus chinensis* Populations from Jinzhou Bay: Implications for Management

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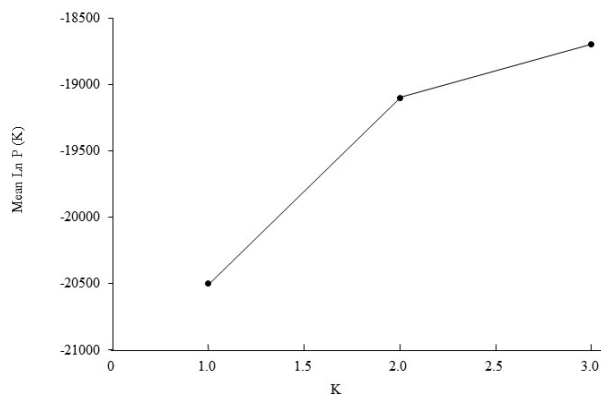


Fig. S1. Scatter plot of mean in-transformed probability of data P (K) based on the rate of change in the logarithm probability of the date between successive K values.

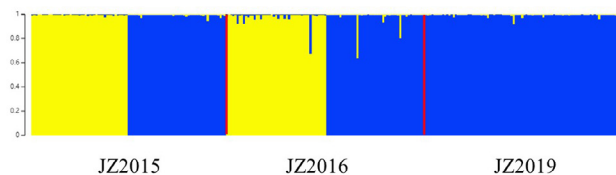


Fig. S2. Structure bar plots (K=2) of studied *F. chinensis* stocks distributed in Jinzhou bay.

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Supplementary Table SI. Microsatellite loci information.

Loci	Primer sequence 5'-3'	Size range	Annealing temperature	Fluorescent label	Accession no.	References
FC06	F: ACAACATAGCCAAGGAC R: TATTCCTGTTGCTATTTG	203-266	55	FAM	BM298570	Wang et al., 2005
FC22	F: TTGAACCTTCGTTAGTCC R: CGGGTGGAAATACAAATA	202-246	55	FAM	BM294448	Wang et al., 2005
FCKR007	F: CGAAATAAGTTAAATGAAAAA R: CAACATAAGACTCACGAGACAG	200-260	49	FAM	JQ650351	Wang et al., 2014
FCKR009	F: GCACGAAAACACATTAGTAGGA R: ATATCTGGAATGGCAAAGAGTC	182-220	52	FAM	JQ650352	Wang et al., 2014
RS0653	F: TTCAGTTGTTTCAGAATCGC R: ACACGGAGTAATGGAGACC	242-276	61	FAM	AY132779	Zhang et al., 2010
FC24	F: ATATGGAAGTTCCTTTTG R: CTATGCTTATGTATCTGTCA	191-247	55	HEX	BM296043	Wang et al., 2005
FCKR013	F: GCACATATAAGCACAAACGCTC R: CTCTCTCGCAATCTCTCCAAC	155-195	61	HEX	JQ650353	Wang et al., 2014
RS062	F: TGCTGAAAGTACACTACCTTCG R: TGATGAAACGCAAGCAAAGGC	420-460	66	HEX	AY132778	Zhang et al., 2010
RS0676	F: ACGATGCTTATTAGCTGCG R: TGTGGAGCTTGATGGTTGC	289-346	63	HEX	AF526880	Zhang et al., 2005
RS0871	F: AATGTAGATTGTTTCCTT R: AGTAGAAAAGTCTGGATGT	264-269	53	HEX	AY132793	Zhang et al., 2004
EN0033	F: CCTTGACACGGCATTGATTGG R: TACGTTGTGCAAACGCCAAGC	260-430	64	TAM	AY132813	Wang et al., 2014
FC18	F: TCACATTAACGAGACAA R: AAATGTTATCGTTAGGGA	154-198	54	TAM	BG902959	Wang et al., 2005
Hd3169	F: GGGAGGAGGGCATATTAGCG R: CAGTTGTTTGTGCGAATAAGATGG	158-180	66	TAM	—	Gao et al., 2009

Supplementary Table SII. Summary of genetic variability of studied *F. chinensis* stocks distributed in Jinzhou bay in 2015.

Loci	No. of different alleles (Na)	No. of effective alleles (ne)	Allelic richness (Ar)	Observed heterozygosity (Ho)	Expected heterozygosity (He)	Unbiased expected heterozygosity (uHe)	Wright's inbreeding coefficient (F_{IS})	Polymorphism information content (PIC)	Null allele frequency (Null)	Hardy weinberg equilibrium deviation test (HWE)
EN0033	57	31.667	51.877	0.681	0.968	0.974	0.301	0.968	0.175	***
FC06	26	9.635	23.947	0.879	0.896	0.901	0.024	0.888	0.009	**
FC18	34	17.694	32.333	0.923	0.943	0.949	0.027	0.941	0.012	*
FC22	5	3.325	4.968	0.573	0.699	0.703	0.186	0.648	0.102	ns
FC24	21	10.274	19.948	1	0.903	0.908	-0.102	0.895	-0.053	ns
FCKR007	50	28.654	46.147	0.923	0.965	0.97	0.05	0.964	0.022	***
FCKR009	33	15.699	31.283	0.791	0.936	0.941	0.16	0.933	0.083	***
FCKR013	37	18.993	35.455	0.978	0.947	0.953	-0.027	0.945	-0.017	ns
Hd3169	20	9.731	18.727	0.703	0.897	0.902	0.221	0.888	0.124	***
RS062	51	32.992	47.97	0.923	0.97	0.975	0.054	0.969	0.025	*
RS0653	22	9.794	21.077	0.912	0.898	0.903	-0.01	0.89	-0.009	ns
RS0676	28	14.918	27.27	0.595	0.933	0.939	0.367	0.929	0.221	***
RS0871	10	2.925	9.564	0.363	0.658	0.662	0.453	0.599	0.316	***

Significant levels of HWE deviation test are presented by asterisks as ns: conform to HWE, *, $P \leq 0.05$; **, $P \leq 0.01$; ***, $P \leq 0.001$.

Supplementary Table SIII. Summary of genetic variability of studied *F. chinensis* stocks distributed in Jinzhou bay in 2016.

Loci	No. of different alleles (Na)	No. of effective alleles (ne)	Allelic richness (Ar)	Observed heterozygosity (Ho)	Expected heterozygosity (He)	Unbiased expected heterozygosity (uHe)	Wright's inbreeding coefficient (Fis)	Polymorphism information content (PIC)	Null allele frequency (Null)	Hardy weinberg equilibrium deviation test (HWE)
EN0033	49	28.119	46.517	0.78	0.964	0.97	0.196	0.963	0.104	***
FC06	24	6.577	22.194	0.756	0.848	0.853	0.115	0.835	0.059	**
FC18	36	16.744	33.896	0.924	0.94	0.945	0.023	0.937	0.009	ns
FC22	5	3.544	4.995	0.449	0.718	0.722	0.379	0.667	0.224	***
FC24	27	10.658	24.868	0.989	0.906	0.911	-0.086	0.899	-0.047	ns
FCKR007	51	27.259	46.979	0.989	0.963	0.969	-0.021	0.962	-0.014	ns
FCKR009	40	17.092	37.261	0.802	0.941	0.947	0.153	0.939	0.081	***
FCKR013	37	14.543	34.226	0.924	0.931	0.936	0.013	0.928	0.005	ns
Hd3169	22	11.376	20.797	0.717	0.912	0.917	0.219	0.906	0.12	***
RS062	49	28.674	46.916	0.951	0.965	0.971	0.021	0.963	0.001	ns
RS0653	24	10.076	23.169	0.946	0.901	0.906	-0.044	0.894	-0.027	ns
RS0676	27	15.696	26.591	0.617	0.936	0.942	0.347	0.933	0.203	***
RS0871	14	3.199	13.147	0.467	0.687	0.691	0.325	0.638	0.212	***

Significant levels of HWE deviation test are presented by asterisks as ns: conform to HWE, *, $P \leq 0.05$; **, $P \leq 0.01$; ***, $P \leq 0.001$.

Supplementary Table SIV. Summary of genetic variability of studied *F. chinensis* stocks distributed in Jinzhou bay in 2019.

Loci	No. of different alleles (Na)	No. of effective alleles (ne)	Allelic richness (Ar)	Observed heterozygosity (Ho)	Expected heterozygosity (He)	Unbiased expected heterozygosity (uHe)	Wright's inbreeding coefficient (Fis)	Polymorphism information content (PIC)	Null allele frequency (Null)	Hardy-weinberg equilibrium deviation test (HWE)
EN0033	34	20.899	32.199	0.62	0.952	0.957	0.354	0.95	0.211	***
FC06	19	6.485	18.158	0.723	0.846	0.85	0.15	0.834	0.081	**
FC18	24	11.55	22.139	0.926	0.913	0.918	-0.008	0.907	-0.007	ns
FC22	5	3.42	4.794	0.533	0.708	0.711	0.252	0.652	0.137	**
FC24	22	8.62	20.487	0.968	0.884	0.889	-0.09	0.874	-0.05	***
FCKR007	31	17.092	29.999	0.901	0.941	0.947	0.048	0.939	0.022	***
FCKR009	26	12.445	24.429	0.787	0.92	0.925	0.149	0.914	0.075	***
FCKR013	21	13.398	20.303	0.915	0.925	0.93	0.017	0.92	0.005	ns
Hd3169	11	4.076	10.617	0.553	0.755	0.759	0.272	0.716	0.151	***
RS062	30	16.459	28.289	0.925	0.939	0.944	0.021	0.936	0.007	ns
RS0653	21	7.823	20.206	0.894	0.872	0.877	-0.019	0.864	-0.016	ns
RS0676	22	13.061	22	0.466	0.923	0.93	0.501	0.918	0.327	***
RS0871	6	1.547	5.766	0.383	0.354	0.355	-0.078	0.33	-0.056	ns

Significant levels of HWE deviation test are presented by asterisks as ns: conform to HWE, *, $P \leq 0.05$; **, $P \leq 0.01$; ***, $P \leq 0.001$.

Supplementary Table SV. Results of bottleneck test in studied *F. chinensis* stocks under TPM mutation model (two-phased model of mutation).

	TPM (Probability of heterozygote excess)		Mode-shift
	Sign test	Wilcoxon test	
JZ2015	0.3227	0.39343	L
JZ2016	0.16701	0.91614	L
JZ2019	0.41515	0.63232	L