Supplementary Materials

Supplementary Material-1

Table S1. Linear discriminant analysis and results

The classification equation of the linear discriminant function							Degree of explanation
LD1	LD1 = 27.049 *x1* - 39.537 *x2* + 66.831 *x3* - 8.367 *x4* - 118.613 *x5* + 26.587 *x6* + 18.712 *x7* + 0.144 *x8* + 35.394 *x9* - 8.548 *x10* + 29.476 *x11* - 40.691 *x12* + 34.143 *x13* + 9.004 *x14* + 45.476 *x15* - 68.170 *x16* - 0.606 *x17* + 4.914 *x18* + 19.979 *x19* - 14.396 *x20* + 29.677 *x21* - 9.084 *x22*						0.879
LD2	LD2 = 1.448 *x1* -232.679 *x2* + 67.518 *x3* - 3.720 *x4* + 56.630 *x5* -113.703 *x6* - 2.101 *x7* + 9.419*x8* - 50.809 *x9* + 4.603 *x10* - 4.705 *x11* - 15.784 *x12* + 14.573 *x13* - 39.202 *x14* - 10.842 *x15* - 68.509 *x16* + 89.0136 *x17* + 13.027 *x18* -8.129 *x19* + 5.0831 *x20* + 21.059 *x21* + 0.501 *x22*						0.121
The results of discriminant classification derived from the linear discriminant function							
Groups	Actual group			Total	Accuracy of discrimination (%)			Comprehensive discrimination rate (%)
	R	P	G		P_1	P_2	P_3	
R	30	0	0	30	100.00	0	0	100%
P	0	30	0	30	0	100.00	0	
G	0	0	30	30	0	0	100.00	

Supplementary Material-2

Table S2. The AAS, CS and EAAI in the muscle of *P.sinensis* from three culture modes

Score mode	Amino acid	R	P	G	C_{AAO}	$C_{AA\ (Egg)}$
AAS	Thr	1.000##	1.074##	1.025	250	/
	Val	0.820#	1.019#	0.888##	310	/
	Ile	1.068	1.110	1.096	250	/
	Leu	1.005	1.082	1.030	440	/
	Lys	1.557	1.616	1.514	340	/
	Met + Cys	1.231	1.229	0.801#	220	/
	Phe + Tyr	1.084	1.162	1.035	380	/
CS	Thr	0.856	0.920	0.877	/	292
	Val	0.620#	0.671#	0.770	/	410
	Ile	0.807	0.838	0.828	/	331
	Leu	0.828	0.892	0.849	/	534
	Lys	1.201	1.246	1.167	/	441
	Met + Cys	0.702##	0.701##	0.457#	/	386
	Phe + Tyr	0.729	0.782	0.696##	/	565
EAAI	/	80.417	84.791	78.020	/	/

C_{AAO} represented the content of the same amino acid in the FAO scoring model, $C_{AA\ (Egg)}$ represented the content of the same amino acid in the egg protein evaluation model. AAS represents the amino acid score, CS represents the chemical score, and EAAI represents the essential amino acid Index. marked # in the table was the first limiting amino acid, and marked # in the table was the second limiting amino acid.