Additional file 5: Impact of inbreeding depression in the models

Genomic dissection of maternal, additive and non-additive genetic effects for growth and carcass traits in Nile tilapia

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Both the models with HWE and NOIA approaches were fitted without individual homozygosity as the covariate to account for the impact of the inbreeding depression in the models. The summaries of the variance parameters are presented in the tables below, which are different than the variance parameters presented in Table 3.

Table S5.1: Heritabilities, ratio and phenotypic variance, for the models of best fit for different traits. The relationship matrices were constructed with HWE approach. Models were not fitted with individual homozygosity as the covariate.

HWE approach - Without individual homozygosity											
Traits	**Model**	**h^2**	**se**	**e_{aa}^2**	**se**	**H^2**	**se**	**m^2**	**se**	**σ_P^2**	**se**
BD	AME	0.17	0.05	0.19	0.11	0.36	0.10	0.08	0.05	0.58	0.04
BWH	AME	0.11	0.04	0.22	0.11	0.33	0.10	0.08	0.05	7540	548
BL	AM	0.10	0.03					0.08	0.05	3.41	0.22
FW	AM	0.11	0.04					0.08	0.05	1252	82
BT	A	0.20	0.04							9.96	0.50
FY	A	0.21	0.04							9.45	0.47

Table S5.2: Heritabilities, ratio and phenotypic variance, for the models of best fit for different traits. The relationship matrices were constructed with NOIA approach. Models were not fitted with individual homozygosity as the covariate.

NOIA approach - Without individual homozygosity											
Traits	**Model**	**h^2**	**se**	**e_{aa}^2**	**se**	**H^2**	**se**	**m^2**	**se**	**σ_P^2**	**se**
BD	AME	0.16	0.04	0.16	0.09	0.32	0.09	0.08	0.05	0.54	0.04
BWH	AME	0.10	0.04	0.19	0.10	0.29	0.09	0.09	0.05	7110	499
BL	AM	0.09	0.03					0.08	0.05	3.38	0.22
FW	AM	0.10	0.03					0.08	0.05	1236	80
BT	A	0.18	0.04							9.74	0.46
FY	A	0.19	0.04							9.23	0.44

Table S5.3: Literature review for inbreeding depression in some species of aquaculture. The inbreeding depression is expressed as the percentage decrease in the trait value per 10% increase in the inbreeding coefficient.

Species	Trait	Inbreeding depression
Atlantic salmon [1]	BW	-0.6 to -2.6%
Rainbow trout [2]	BW	-2.3%
Rainbow trout [3]	BWH	-1.6 to -5.0%
Coho salmon [4]	BWH	-1.5% to -1.7%

BW- Body Weight, BWH- Body Weight at Harvest

Literature cited

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