

Supplementary Materials

Table S1: Selected Hyperparameters for the Standard NN for Each of the Three Responses

Optimal Hyperparameters for Each of the Three Responses				
		Adjusted Weight	Adjusted Gonad Weight	Adjusted Liver Weight
Layer 1	Units	37	118	124
	ℓ_1 Penalty	0.012	0.382	0.215
	ℓ_2 Penalty	0.013	0.845	0.594
Layer 2	Units	30	44	63
	ℓ_1 Penalty	0.010	0.641	0.182
	ℓ_2 Penalty	0.063	0.312	0.214
Layer 3	Units	12	28	32
	Epochs	225	118	358
	Batch Size	19	44	63
	Patience	10	10	10
	Optimizer	RMSProp	SGD	RMSProp

Table S2: Selected Hyperparameters for the Hybrid NN for Each of the Three Responses

Optimal Hyperparameters for Each of the Three Responses				
		Adjusted Weight	Adjusted Gonad Weight	Adjusted Liver Weight
Layer 1	Units	73	118	124
	ℓ_1 Penalty	0.133	0.382	0.215
	ℓ_2 Penalty	0.133	0.845	0.594
Layer 2	Units	30	44	63
	ℓ_1 Penalty	0.057	0.641	0.182
	ℓ_2 Penalty	0.051	0.312	0.214
Layer 3	Units	29	28	32
	Epochs	311	118	358
	Batch Size	14	44	63
	Patience	36	28	32
	Optimizer	RMSPProp	SGD	RMSPProp