

The following supplement accompanies the article

Risk factors for development of internal neoplasms in koi carp *Cyprinus carpio koi*

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Supplement.

Table S1: The statistically evaluated results of part 1 of the questionnaire: the overall p values denoted with a * are statistically significant ($p < 0.05$)

Questions	Variable	Categories	Number of valid answers	Result scale	Value for cases	Value for controls	Overall p value
Pond structure and maintenance							
	Location of pond?	outside	330	proportions	0.306	0.694	0.023*
	Location of pond?	outside and indoor, indoor	20		0.55	0.45	
	Pond size in m ³ ?		344	median	35 m ³ (95% CI)	27 m ³ (95% CI)	0.047*
	Medium depth of pond in m?		346	median	1.5 m (95% CI)	1.4 m (95% CI)	0.076
	Maximum depth of pond in m?		347		1.9 m (95% CI)	1.8 m (95% CI)	0.076
	Indoor pond average water temperature?		22	median	18°C (95% CI)	20°C (95% CI)	0.866
	Outdoor pond: the water temperature is	according to seasons	192	proportions	0.297	0.703	0.137
	Outdoor pond:	pond is heated	17		0.529	0.471	
	Outdoor pond:	pond is heated only in winter	131		30.5	69.5	
	Location outdoor pond: sunny?	yes	187	proportions	0.31	0.69	0.642
		no	165		0.333	0.667	
	Location outdoor pond: half shade?	yes	177	proportions	0.322	0.678	0.967
		no	175		0.32	0.68	
	Location outdoor pond: shade?	yes	9	proportions	0.111	0.889	0.171
		no	343		0.327	0.673	

Questions	Variable	Categories	Number of valid answers	Result scale	Value for cases	Value for controls	Overall p value
	Altitude of the pond (meter above sea level) (MASL)?	200-500 MASL	211	proportions	0.351	0.649	0.236
		501-700 MASL	103		0.291	0.709	
		701-1500 MASL	17		0.176	0.824	
	Sunlight protection: solar panel	yes	102	proportions	0.333	0.667	0.752
	Sunlight protection: solar panel	no	250		0.316	0.684	
	Sunlight protection: plants	yes	114	proportions	0.307	0.693	0.696
	Sunlight protection: plants	no	238		0.328	0.672	
	Sunlight protection: humic acids	yes	10	proportions	0.4	0.6	0.587
	Sunlight protection: humic acids	no	342		0.319	0.681	
	Sunlight protection: none	yes	98	proportions	0.347	0.653	0.517
		no	254		0.311	0.689	
	Is the pond	clear	318	proportions	0.336	0.664	0.0554
		turbid	26		0.154	0.846	
	Filter system	drum / vlies filter	133	proportions	0.338	0.662	0.587
		other	219		0.311	0.689	
	Frequency of water changes	weekly	96	proportions	0.365	0.635	0.0216*
		monthly	97		0.392	0.608	
		less	136		0.235	0.765	
	Source of water for water change: tap water	yes	316	proportions	0.332	0.668	0.18
	Source of water for water change: tap water	no	36		0.222	0.778	
	Source of water for water change: rainwater	yes	82	proportions	0.256	0.744	0.15
	Source of water for water change: rainwater	no	270		0.341	0.659	
	Source of water for water change: rainwater collected from roof	yes	41	proportions	0.317	0.683	0.954
	Source of water for water change: rainwater collected from roof	no	311		0.322	0.678	
Origin of koi							
	Origin of koi: Japan	yes	299	proportions	0.341	0.659	0.054
		no	53		0.208	0.792	
	Origin of koi: Europe	yes	50	proportions	0.36	0.64	0.523

Questions	Variable	Categories	Number of valid answers	Result scale	Value for cases	Value for controls	Overall p value
		no	302		0.315	0.685	
	Origin of koi: Switzerland	yes	167	proportions	0.341	0.659	0.438
		no	185		0.303	0.697	
	From which breeder / dealer did you purchase the koi?	Breeder A	67	proportions	0.478	0.522	0.008*
		Breeder A and others	64		0.313	0.688	
		Others	194		0.273	0.727	
Husbandry							
	How many koi are in your pond?	1 to 20	173	proportions	0.225	0.775	0.000094*
		21 to 250	173		0.422	0.578	
					0.375	0.625	
	Are there other species of fish in the pond?	yes	175	proportions	0.291	0.709	0.235
		no	169		0.351	0.649	
	If yes	goldfish	33	proportions	0.273	0.727	0.744
		others	146		0.301	0.699	
	Did the koi usually spawn naturally?	never	48	proportions	0.229	0.771	0.201
		rarely	112		0.348	0.652	
		regularly	121		0.38	0.62	
		don't know	62		0.274	0.726	
Medication							
	What treatment against flukes was used in pond over the last 5 years?						
	Praziquantel	yes	171	proportions	0.398	0.602	0.002*
		no	181		0.249	0.751	
	What treatment against flukes was used in pond over the last 5 years?						
	Nitroscanat	yes	159	proportions	0.302	0.698	0.603
		no	192		0.339	0.661	
	What treatment against flukes was used in pond over the last 5 years? None	yes	63	proportions	0.27	0.73	0.336
		no	289		0.332	0.668	
	Which disinfectants were used in the pond over the last 5 years? Formalin / Malachite green	yes	154	proportions	0.39	0.61	0.015*
		no	198		0.268	0.732	

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	Which disinfectants were used in the pond over the last 5 years? Dye	yes	68	proportions	0.338	0.662	0.735																																																																																																				
		no	284		0.317	0.683			Which disinfectants were used in the pond over the last 5 years? Potassium permanganate	yes	83	proportions	0.482	0.518	0.0003*	no	269	0.271	0.729		Which disinfectants were used in the pond over the last 5 years? None	yes	85	proportions	0.247	0.753	0.093	no	267	0.345	0.655		Was there any specific treatment on an individual koi over the last 5 years? Injection more than 5 /year	yes	30	proportions	0.467	0.533	0.074	no	322	0.307	0.693		Was there any specific treatment on an individual koi over the last 5 years? Injection less than 5 /year	yes	209	proportions	0.335	0.665	0.499	no	143	0.301	0.699		Was there any specific treatment on an individual koi over the last 5 years? Dip treatment more than 5 /year	yes	18	proportions	0.444	0.556	0.249	no	334	0.314	0.686		Was there any specific treatment on an individual koi over the last 5 years? Dip treatment less than 5 /year	yes	127	proportions	0.299	0.701	0.51	no	225	0.333	0.667		Was there any specific treatment on an individual koi over the last 5 years? None	yes	78	proportions	0.231	0.769	0.052	no	274	0.347	0.653		Which anti algae products did you use over the last 5 years? Sodium percarbonate	yes	118	proportions	0.322	0.678	0.976	no	234	0.321	0.679		Which anti algae products did you use over the last 5 years? Terbutryn	yes	111
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Questions	Variable	Categories	Number of valid answers	Result scale	Value for cases	Value for controls	Overall p value
		no	241		0.357	0.643	
	Which anti algae products did you use over the last 5 years? Copper	yes	12	proportions	0.5	0.5	0.176
		no	340		0.315	0.685	
	Which anti algae products did you use over the last 5 years? None	yes	94	proportions	0.372	0.628	
		no	258		0.302	0.698	
	Which anti algae products did you use over the last 5 years? Other	HCL/ pH	4	proportions	0.25	0.75	0.044
		Microorganisms	30		0.433	0.567	
		Salt	8		0.75	0.25	
		Other	30		0.233	0.767	