

STSM Coordinator and Scientific Committee

REPORT FOR THE STSM VISIT AT “FISH HEALTH AND REPRODUCTIVE BIOLOGY RESEARCH GROUP” AT THE DEPARTMENT OF ZOOLOGY, THE UNIVERSITY OF JOHANNESBURG, SOUTH AFRICA

STSM Applicant: Dr. P. Pantazis, Faculty of Veterinary Medicine, University of Thessaly, Greece, ppantazis@vet.uth.gr

Prof Panos Pantazis visited the research facilities of the Department of Zoology at the University of Johannesburg to establish research collaboration. Prof Pantazis visited us during the preparation phases for the experiment on the “Toxicity and toxicokinetics of DDT in a multitoxicant exposure of adult *Oreochromis mossambicus*. The aim of the study is to determine the acute sub-lethal toxicity and toxicokinetics of DDT in the presence and absence of chlordane, zinc and nitrate in water using histopathology as a biomarker. DDT is known to affect the reproductive potential of vertebrates and especially fish. During previous field studies, water quality results showed that DDT usually are present together with other chemicals and the effect of these mixtures on the reproductive potential is not known. The following objectives were set to achieve the study aim: (a) Measure the physical water parameters of all treatment media, (b) Measure the DDT plasma concentration in blood in all treatment groups, (c) Carry out a qualitative and semi-quantitative histological assessment of the liver and gonads of all fish groups. The duration of the acute exposure was 96 hours. Prof Pantazis was interested in the quantification protocol for the assessment of histological results. Below are photos at the end of the first phase of the acute exposure after which the fish were measured, weighed and sacrificed, blood were drawn and liver and gonads were sampled for histological analysis and bio-accumulation of the toxicants. Below are photos of the aquarium set-up as well as the water quality results and the blood result.

Prof Pantazis presented a guest lecture on Friday 21 October 2016 at 12:00 in D2 Lab 122 on “*Perspectives of freshwater crayfish culture in the Thessaly County, Greece*”

I confirm that Dr. P.Pantazis has realized the abovementioned visit

I represent South Africa as an International Partner Country (IPC) on the AQUAGAMETE COST action (FA1205) (<http://aquagamete.webs.upv.es/ipc-south-africa/>) and would like to thank the STSM Coordinator and Committee for the opportunity to host a member of the COST ACTION Aquagamete Research group. Research collaboration are supported by the University of Johannesburg and the National Research Foundation (Grant Number 86056) who financially support my research and enabled me to host Prof Pantazis during his research visit.

AQUAGAMETE
Ina Wagenaar

Prof Ina Wagenaar

Vice-Dean Teaching and Learning: Faculty of Science

Annexure: Photos



	FTS-1	FTS-2	FTS-3	FTS-4
	Temperature (° C)			
1	26.1	26.1	26.1	26.1
2	27.5	27.5	27.5	27.5
3	27.3	27.4	27.5	27.9
4	28	28	28.3	28.2
5	28.2	28.2	28.4	28.5
6	28.4	28	28.5	28.4
7	26	26	26	26
Mean	27.3	27.3	27.5	27.5
	FTS-1	FTS-2	FTS-3	FTS-4
	pH			
1	7.7	7.7	7.7	7.7
2	7.7	7.7	7.7	7.7
3	7.6	7.7	7.8	7.9
4	7.7	7.7	7.7	7.7
5	7.7	7.7	7.8	7.8
6	7.5	7.5	7.7	7.7
7	7.7	7.6	7.6	7.7
Mean	7.7	7.7	7.7	7.7
	FTS-1	FTS-2	FTS-3	FTS-4
	Conductivity (µS/m)			
1	230	230	230	230
2	230	230	230	230
3	230	230	230	220
4	230	230	240	230
5	230	230	240	230
6	230	230	240	230
7	240	230	240	230
Mean	231	230	236	229
	FTS-1	FTS-2	FTS-3	FTS-4
	TDS (mg/L)			
1	110	110	110	110
2	110	110	110	110
3	100	110	110	100
4	110	110	110	110
5	110	110	120	110
6	110	110	110	110
7	110	110	110	110
Mean	109	110	111	109

BLOOD DATASHEET**Species:** *Oreochromis mossambicus* Exposure: Blank Control

Fish no.	RBC (mm)	WBC (mm)	Total Volume (mm)	Haematocrit (%)	Leukocrit (%)	Haemoglobin (g/dL)
1	16	1	56	28.6	1.8	8.5
2	18	0.5	51	35.3	1.0	10.2
3	11	0.5	48	22.9	1.0	7.9
4	15	0.5	44	34.1	1.1	8.7
5	12	1	54	22.2	1.9	6.9
6	14	0.5	46	30.4	1.1	9.4
7	9	0.5	59	15.3	0.8	4.1
8	2	0.5	47	4.3	1.1	6.2