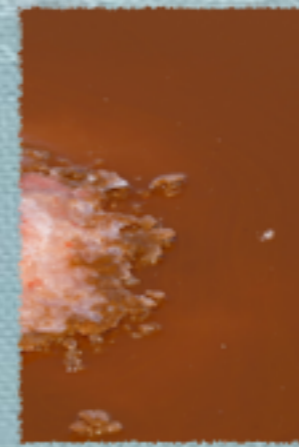




Dunaliella sp.

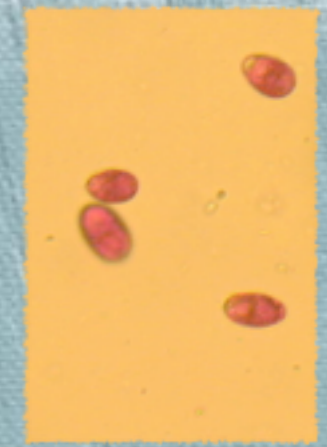
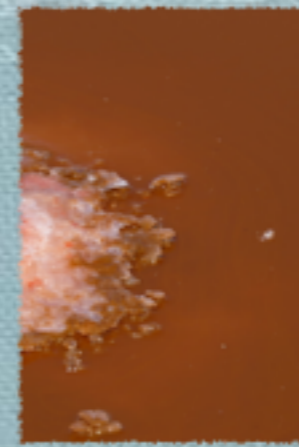
Case study - Glycal Namibia

Case study



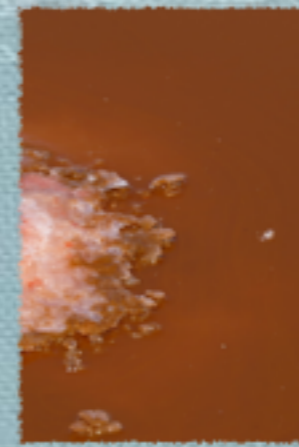
- ◆ Glycal Namibia
- ◆ Swakopmund Salt Pans survey
- ◆ Laboratory
- ◆ Preliminary data
- ◆ Future research

Glycal Namibia



- ◆ Registered in April 2013;
- ◆ Two namibian shareholders;
- ◆ Identify the technology for Namibia;
- ◆ Timeline of the project.

Glycal Namibia Timeline

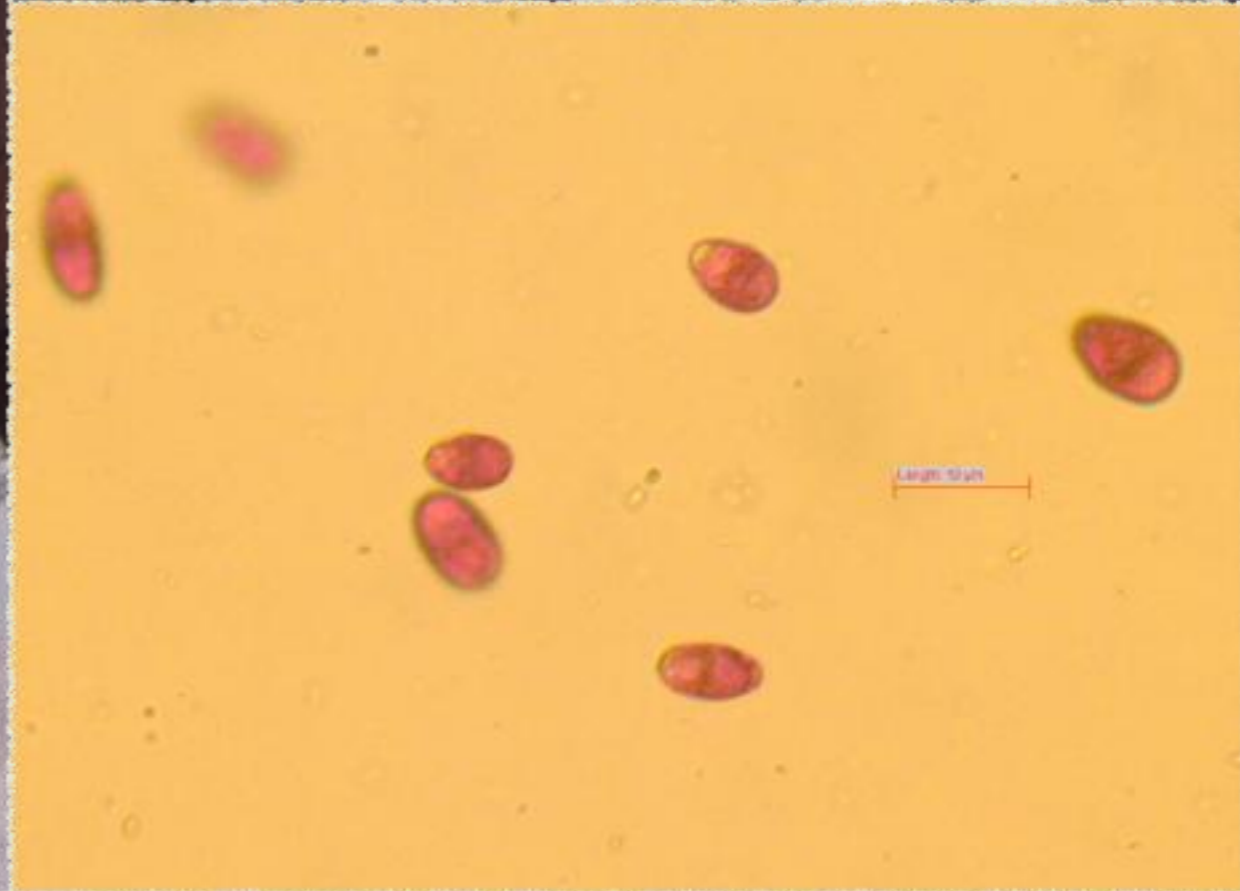
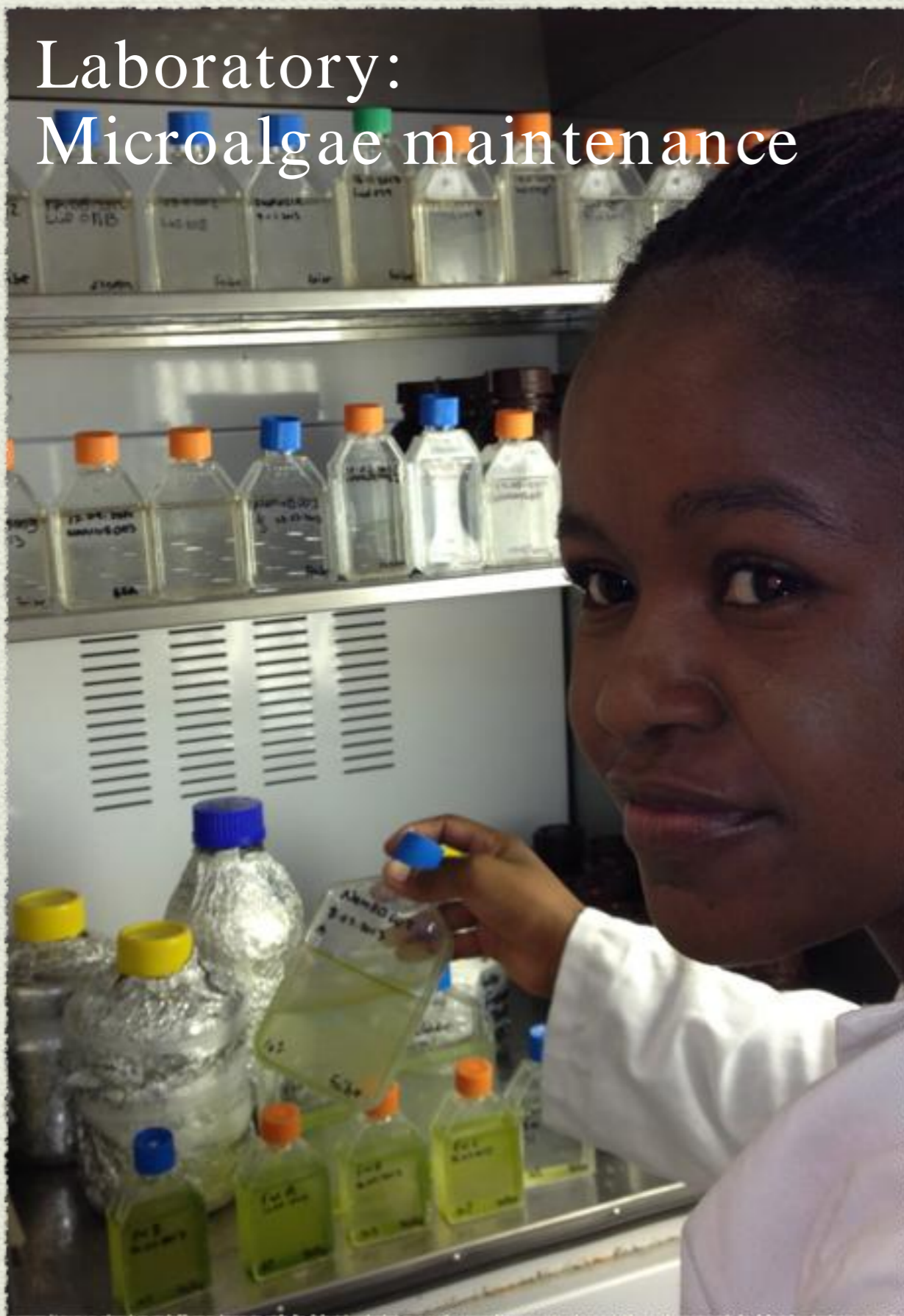


- ◆ Middle 2012:
 - ▶ Project idea and contacts made with Prof. Pat Harvey

- ◆ Late 2012:
 - ▶ Meeting with international stakeholders and local stakeholders in Swakopmund;
 - ▶ Informal partnership with MFMR and first cultures of *Dunaliella* sp.;
 - ▶ Methodology for sites survey and glycerol extraction;

- ◆ Early 2013:
 - ▶ Reagents for glycerol extraction ordered;
 - ▶ Swakopmund Salt Company survey;
 - ▶ Glycerol extraction;
 - ▶ Preliminary results.

Laboratory: Microalgae maintenance



Swakopmund Salt Company survey

- ▣ 10 sampling sites;
- ▣ Preliminary sampling data:
 - ▣ Dissolved oxygen;
 - ▣ Temperature;
 - ▣ Salinity.



Site 10



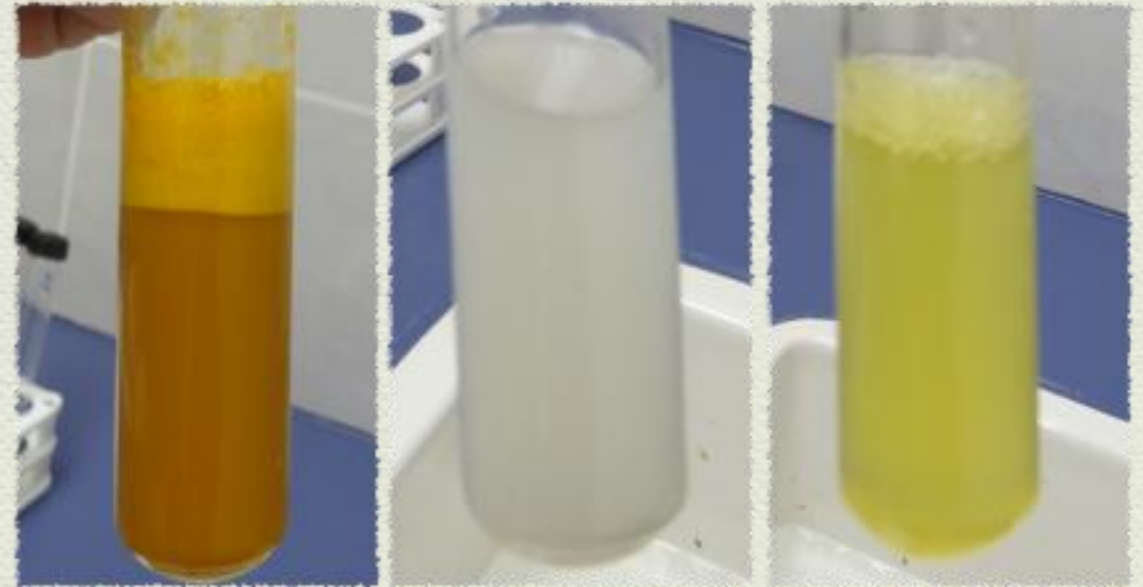
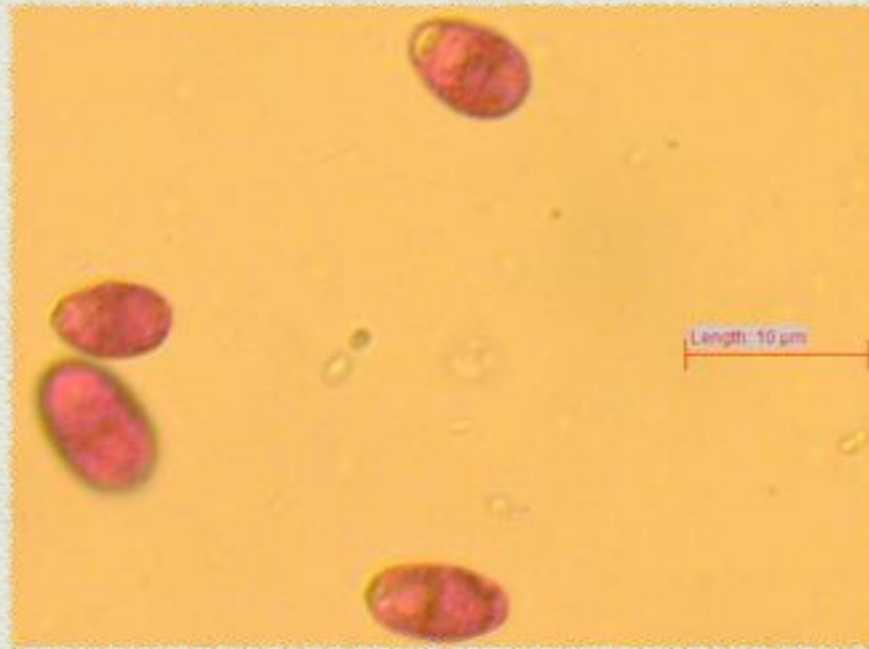
Site 5



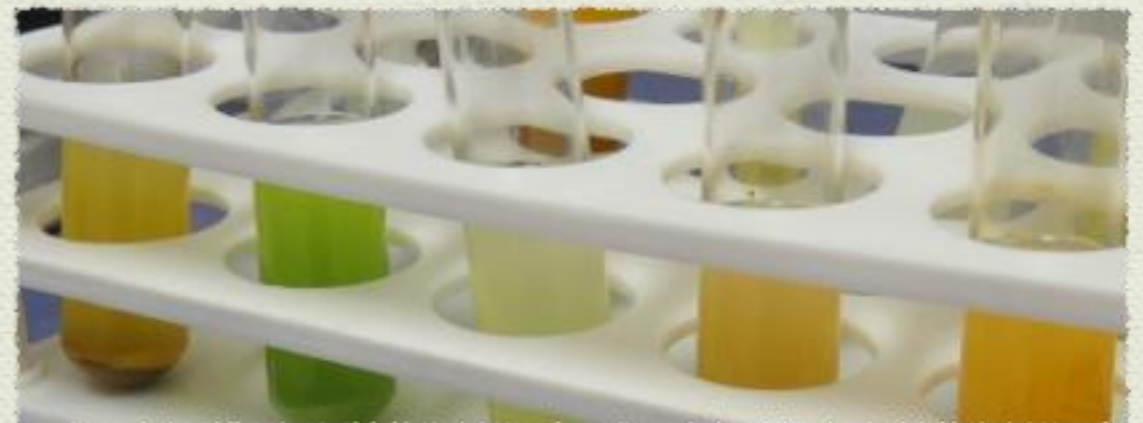
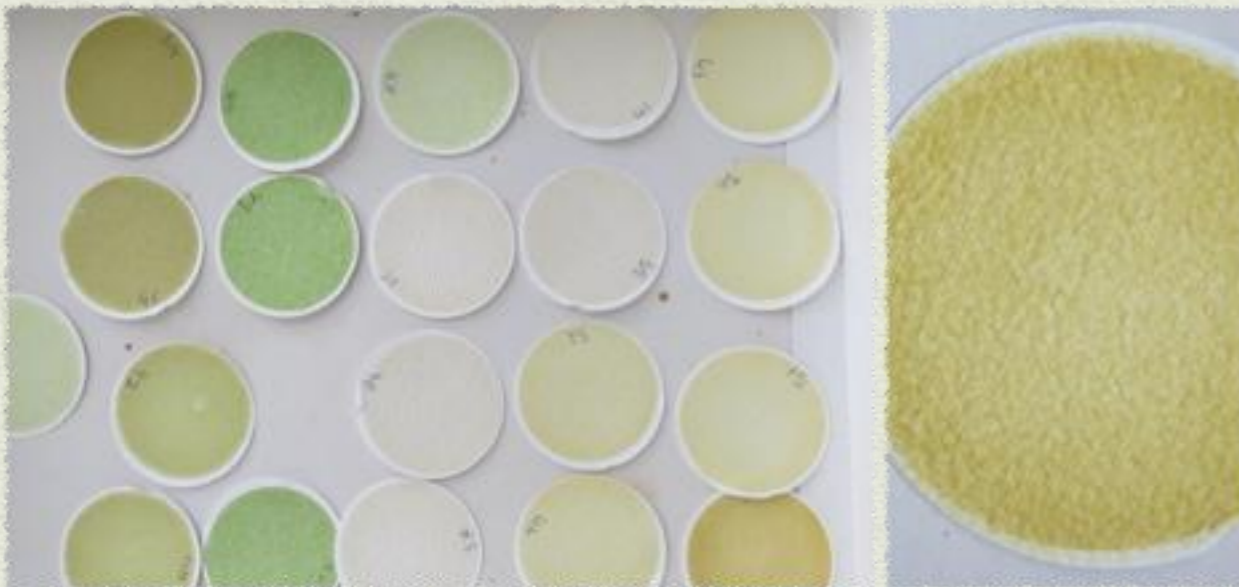
Salt Company Survey



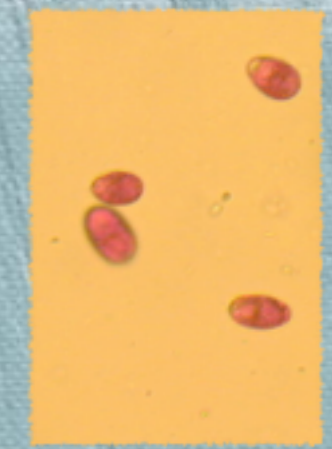
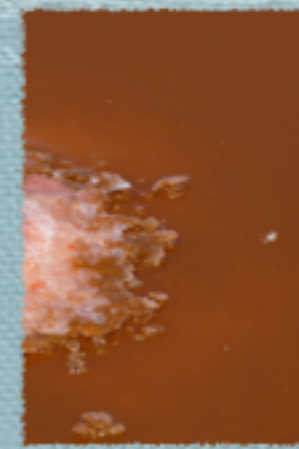
Laboratory: Glycerol extraction



Dry mass weight



Preliminary data

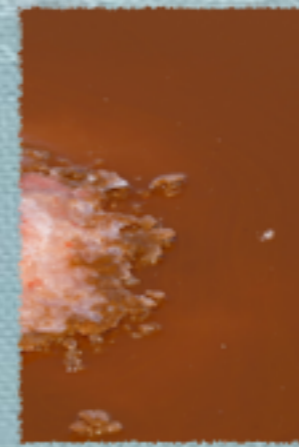


- ◆ The glycerol protocol needs to be optimized;
- ◆ Data needs to be validated.

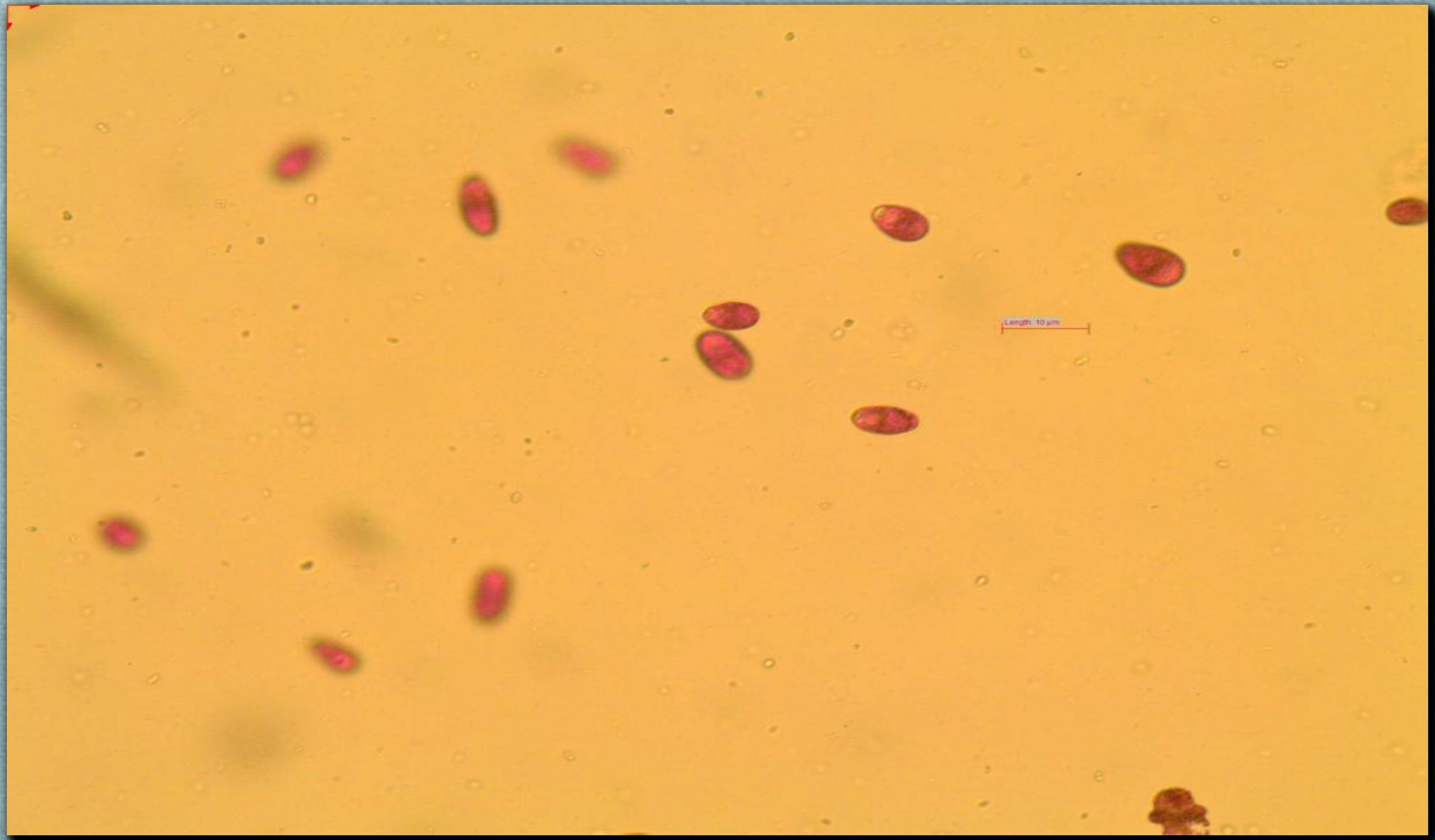
	Dry mass / ml (mg/ml)	Glycerol (nM/ml)	Glycerol / Dry mass (nM/mg)	Salinity (%)	Temperature (°C)	DO (mg/ml)	Flow Cam particles* (%)
Site 1	0.51	66.25	129.89	20	23.3	3.35	0.14
Site 2	0.95	131.26	138.17	21	21.7	2.05	2.22
Site 3	1.83	117.81	64.38	22	21.4	0.98	2.24
Site 4	2.26	119.86	53.04	26.5	24.6	0.2	1.45
Site 5	11.21	1108.69	98.90	28.5	-	-	64.62
Site 6	3.74	894.41	239.15	24	-	-	49.17
Site 7	3.74	61.76	16.51	-	-	-	0.37
Site 8	0.2	16.74	83.69	-	-	-	0.20
Site 9	0.32	17.49	54.64	-	-	-	0.09
Site 10	1.10	1117.10	1015.54	-	-	-	81.65

*particles that look like *Dunaliella* sp.

Future research



- ◆ Optimization of glycerol protocol;
- ◆ Site survey at Walvis Bay Salt Company;
- ◆ Site survey at other locations;
- ◆ Glycerol extraction of cultured microalgae;
- ◆ Training of MFMR staff members on extraction of glycerol;
- ◆ Research outcome from workshop;
- ◆ Identify the technology adapted to Namibia.



Dunaliella sp.

Case study - Glycal Namibia