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CERTIFICATE OF PRESENTATION

This is to certify that

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has successfully presented on 15 December 2017 a paper entitled

Microalgae *Haematococcus pluvialis* protect against Naphthalene-induced Cataract Formation in Mice Lens

as part of the Short Course on Academic Skills,
which was organised by the Ministry of Religious Affairs of the Republic of Indonesia
and Leiden University Centre for the Study of Islam and Society (LUCIS).

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MICROALGAE *Haematococcus pluvialis* PROTECT AGAINST NAPHTHALENE INDUCED CATARACT FORMATION IN MICE LENS

Presented on 15 December 2017

Mohamad Agus Salim

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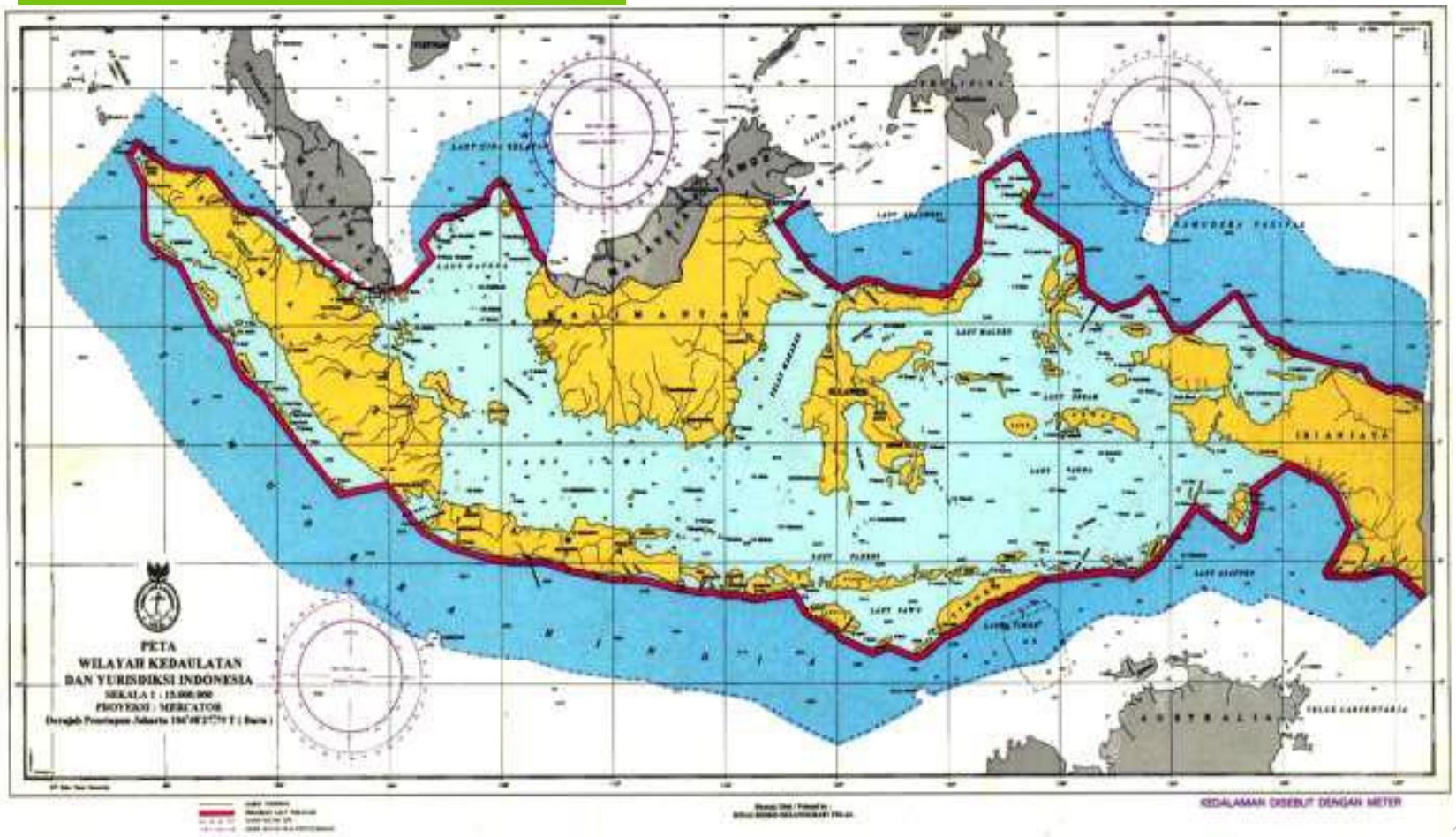
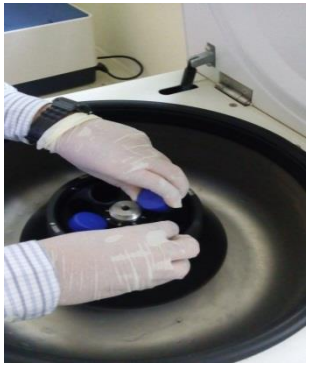
Indonesia: | 62 % water | +/- 18.110 islands, 108.900 km coastline | 5100 km from Aceh to Papua



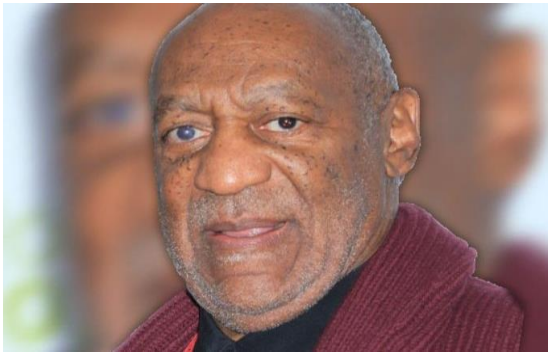
Microalgae Culture



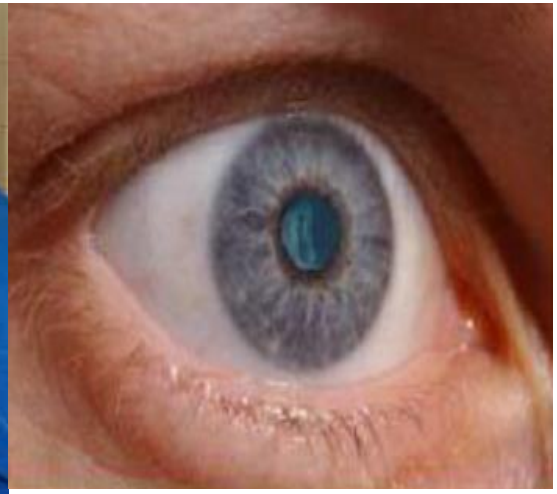
A microalgae from the family of red algae, rich in antioxidant compounds such as flavonoid, β carotene, vit E and C, phenolic compounds, chlorophyll and especially phycoerithrin.

Porphyridium cruentum

Cataract development is a gradual process but it can occur rapidly.

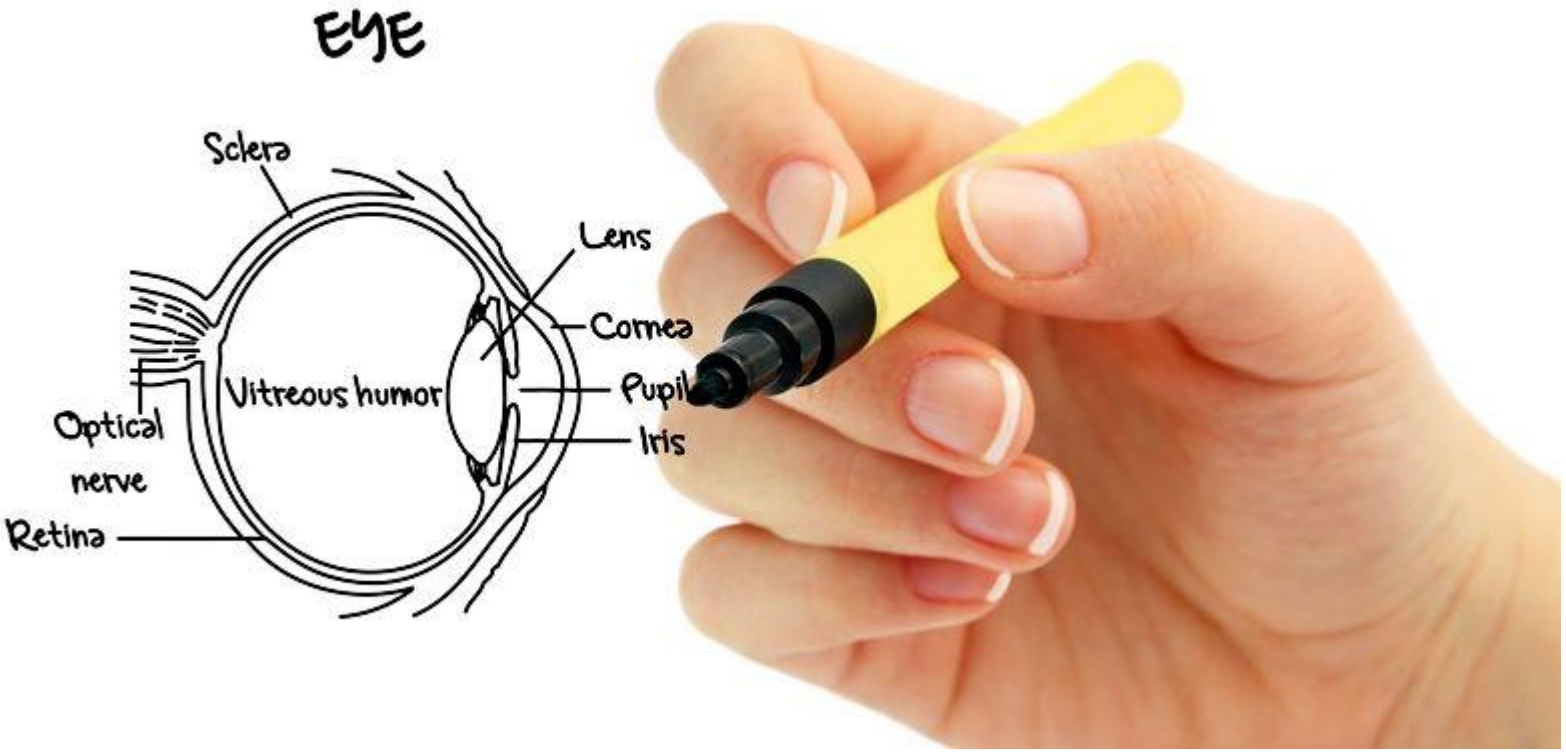


The remedy of cataract is surgery.
Problems of surgery: long waiting lists, costs, risks of complication and lack of technical equipment.

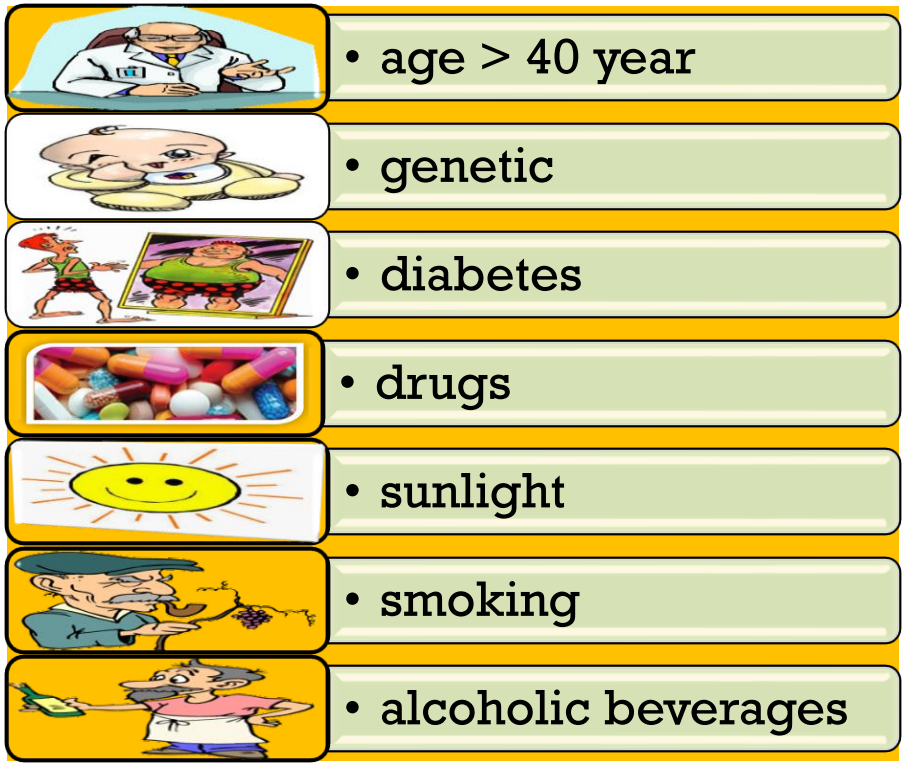


Backlog in Indonesia:

- cataract patients: 210,000 people/year
- only 80,000 people/year undergo surgery

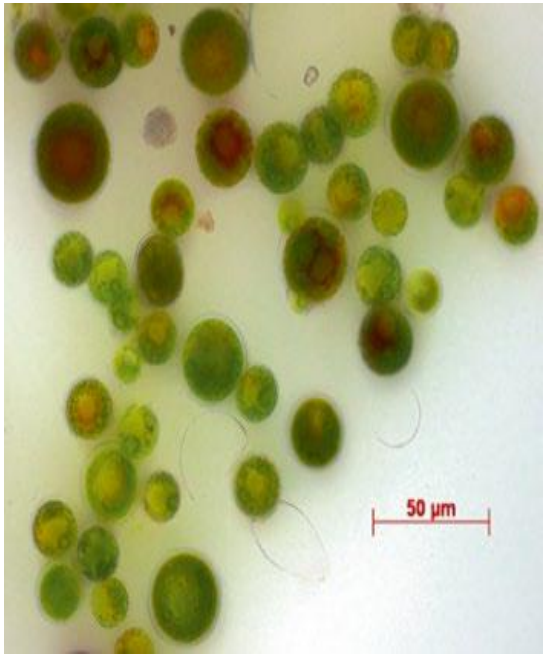


Cataract risk factors



It is estimated that a 10-year delay would reduce the need for surgery by 50%.

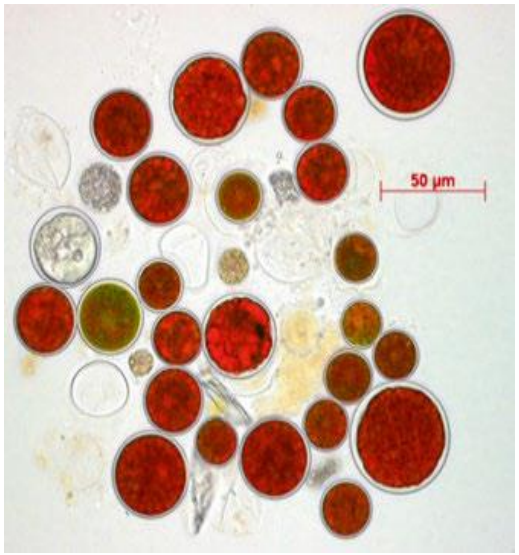
Reseach Objectives



- Study the potentiality of *P. cruentum* to protect against cataract formation in mice lens

- Develop an alternative method to surgery for the treatment of cataract

Contribution

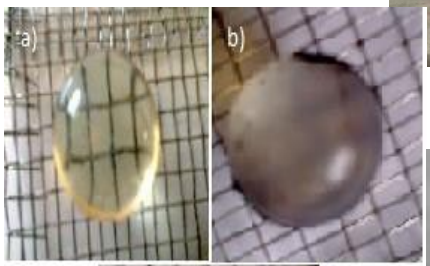


Experimental Design

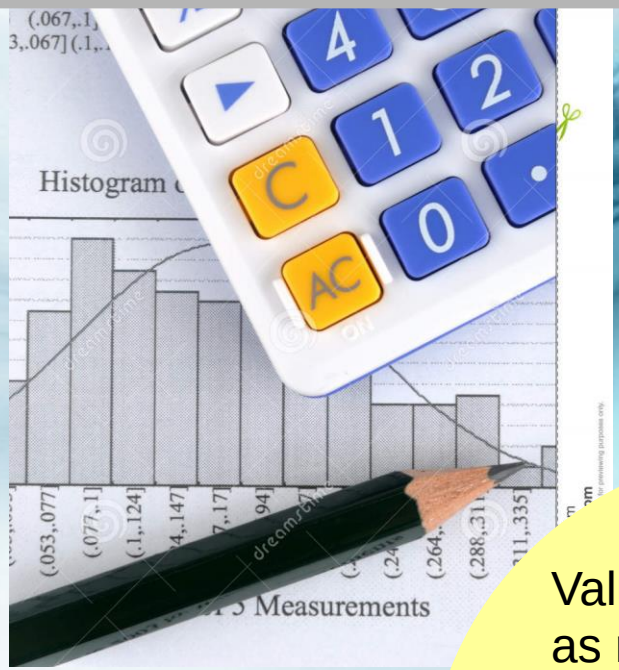
G1 : Aquabidest 2cc p.o)
G2 : Naphthalene 1 g/kg BW/day (0,5 g/kg BW/day in 3 days early)
G3 : P. cruentum 1g/kg BW/day
G4 : P. cruentum 1g/kg BW/day + Naphthalene 1g/kg BW/day

DEGREE OF OPACIFICATION

THE LENS SOLUBLE PROTEIN & WATER CONTENT



STATISTICAL ANALYSIS

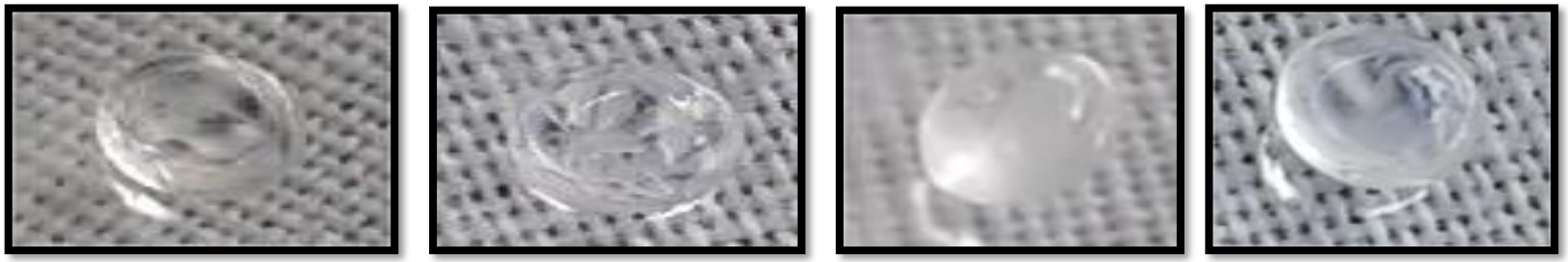


Values are presented as mean ± SEM. Results were compared by one-way ANOVA followed by Duncan's test. A value of $p<0.001$ was considered significant

RESULTS

Group	Treatment	Soluble Protein (x 10^{-3}µg/ml)	Water Content (%)
G1	Control	0,48 ± 0,04	59 ± 4.67
G2	P. cruentum	0,49 ± 0,03	60 ± 7,31
G3	Naphthalene	0,39 ± 0,01	30 ± 10,54
G4	P. cruentum + Naphthalene	0,42 ± 0,02	53 ±11,30

Group	Treatment	Degree of opacification
G 1 :	Control	0
G 2 :	P. cruentum	0
G 3 :	Naphthalene	+++
G 4 :	P. cruentum +Naph	+



G1 G2 G3 G4

Conclusion

P. cruentum biomass can prevent the cataract progression in naphthalene-induced cataract models.

Thank you for listening
I hope you found it interesting