

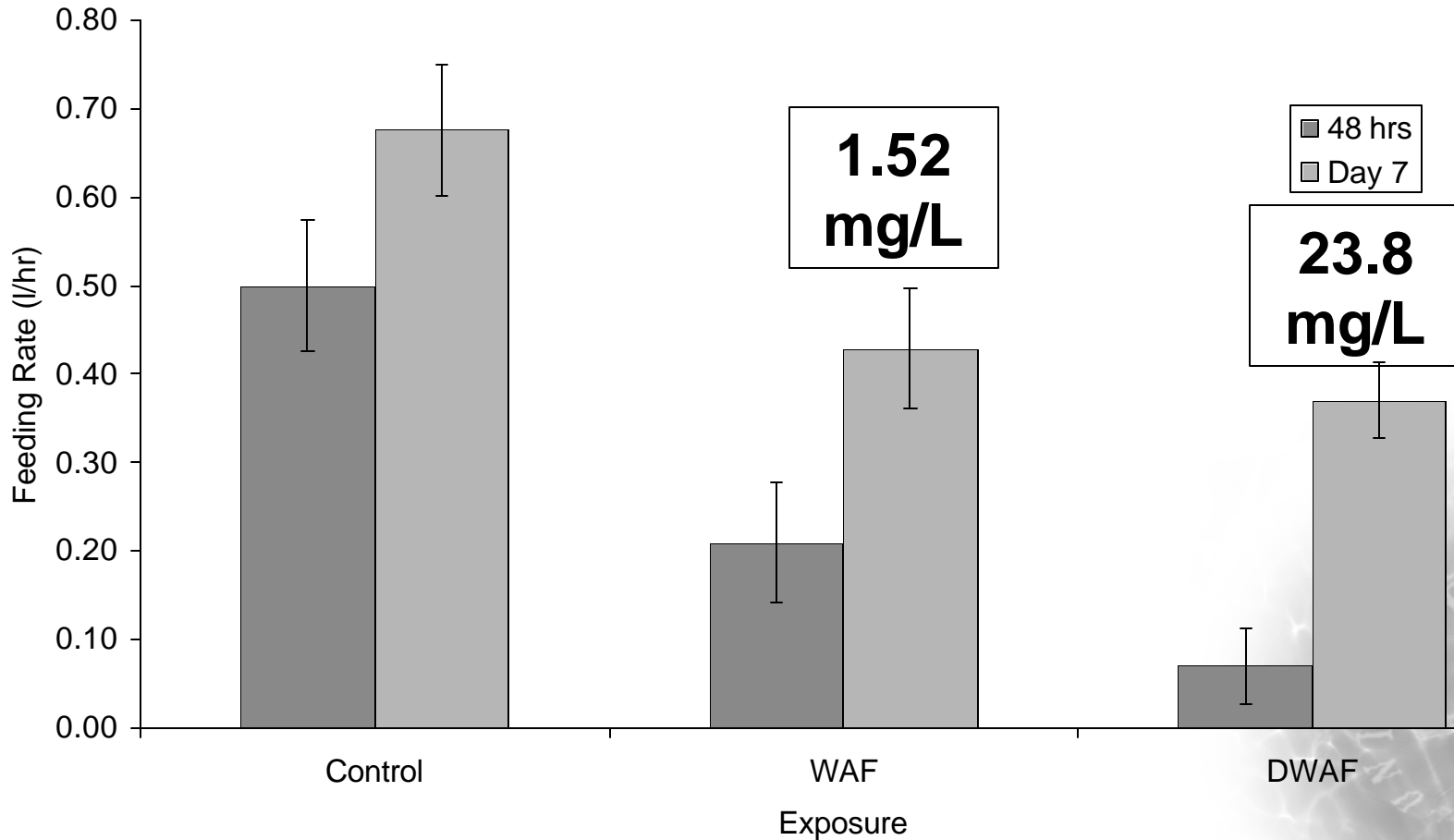
# Potential Ecological Effects of Chemically-dispersed and Biodegraded Oils



# Forties and Superdispersant 25

- No settle time

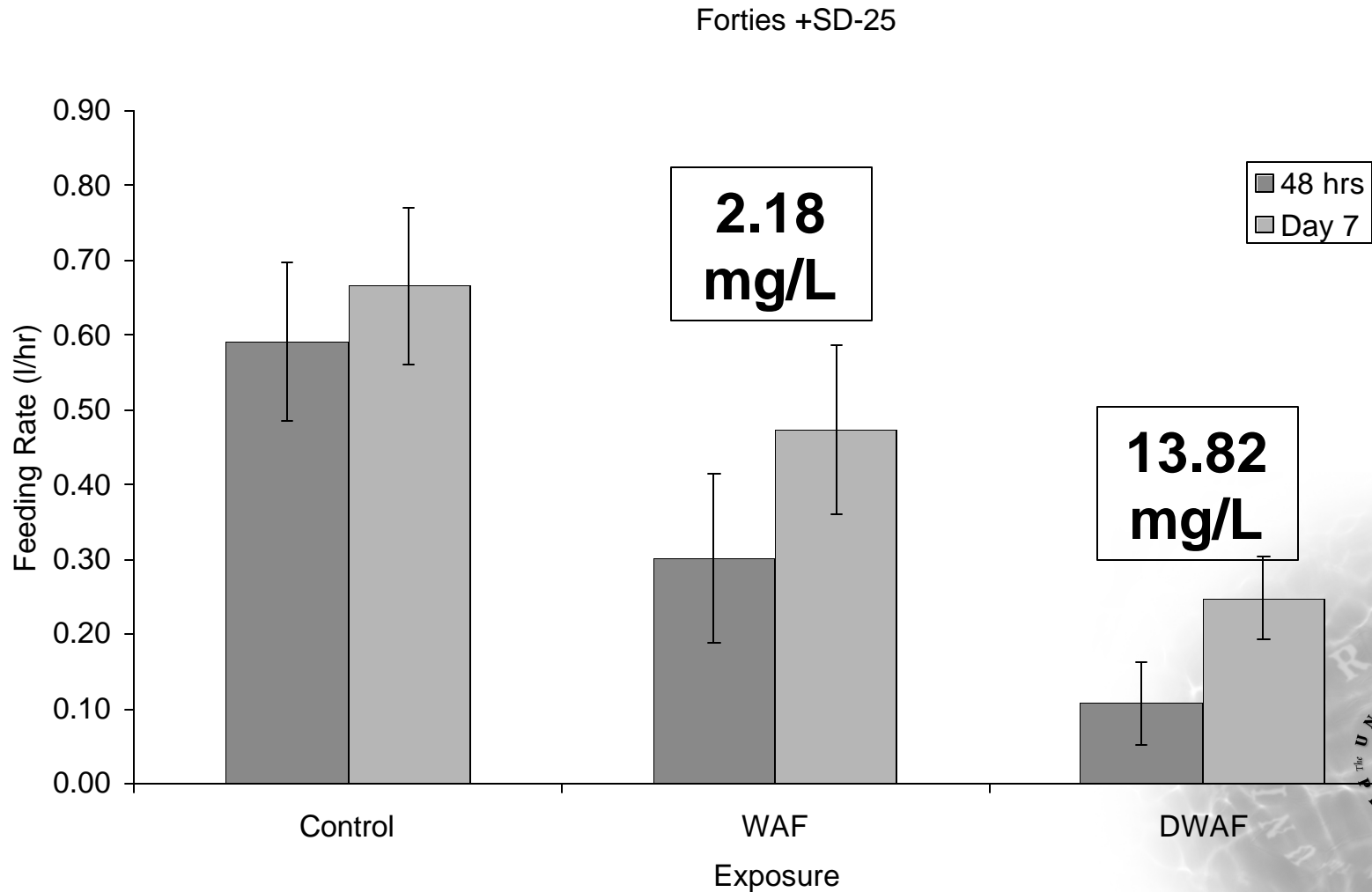
Forties + SD-25





# Forties and Superdispersant 25

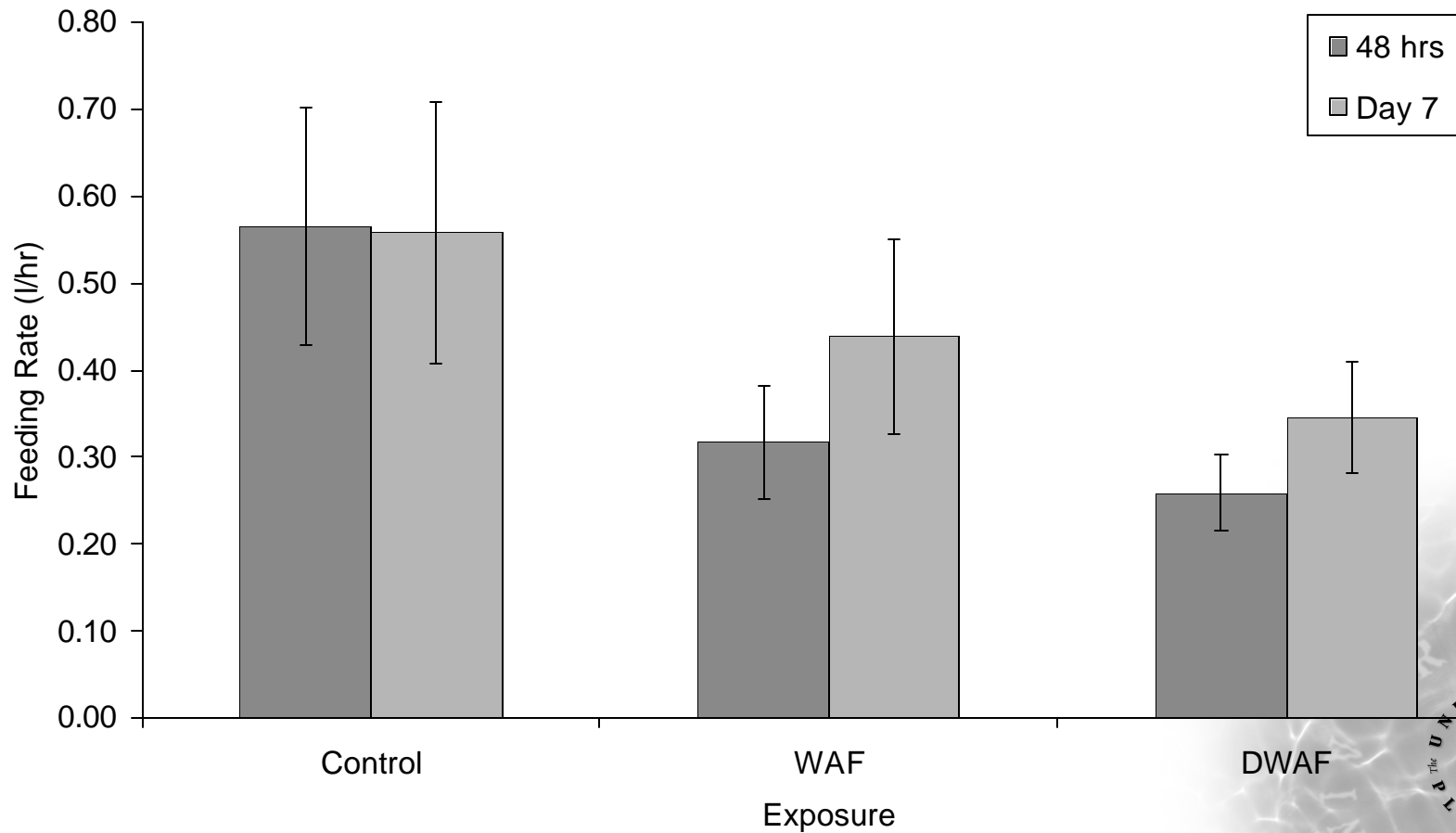
- 1hr settle time



# Forties and Superdispersant 25

## • 50% dilution

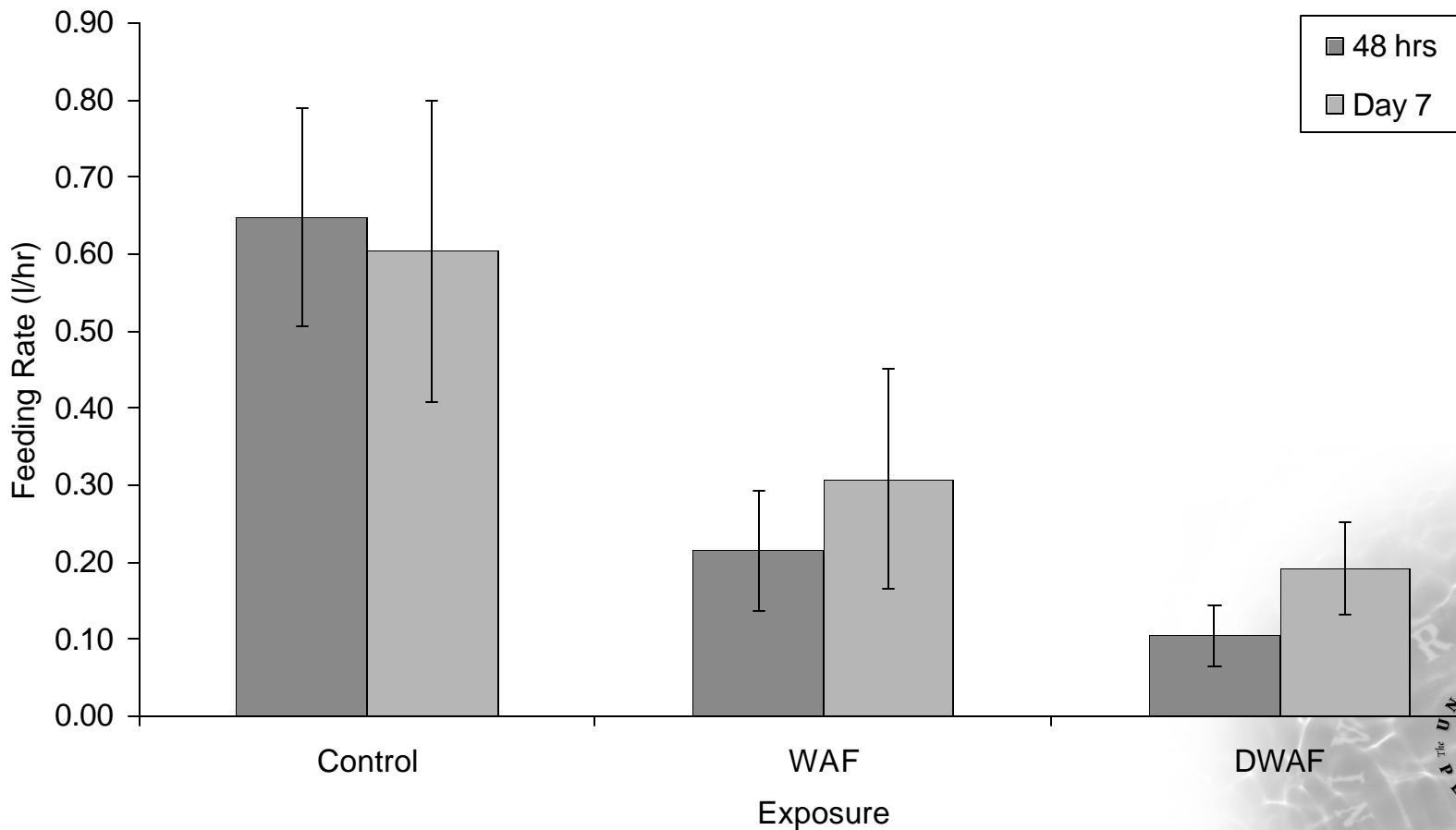
Forties + SD25



# Forties and Superdispersant 25

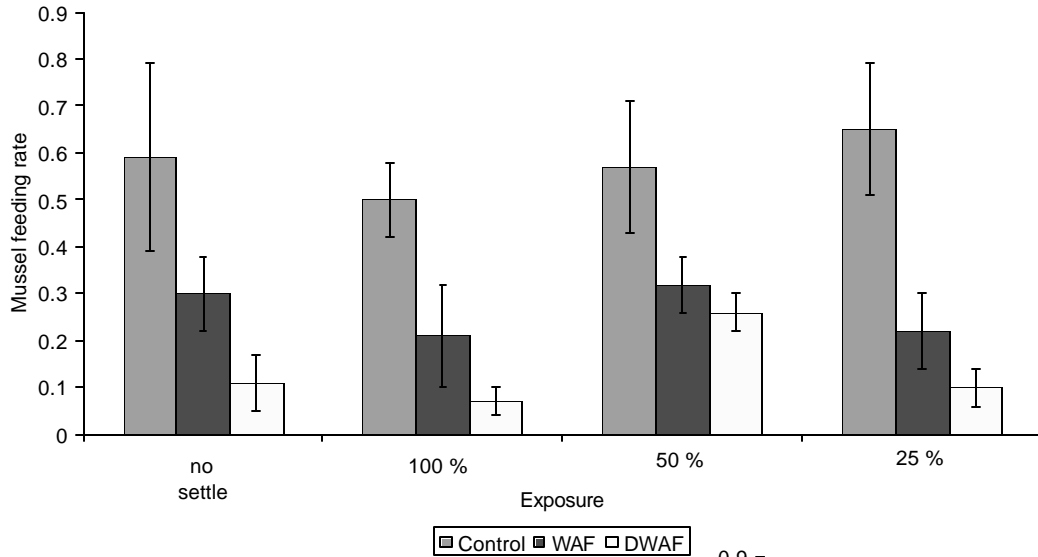
- **25% dilution**

Forties + SD25 25% dilution

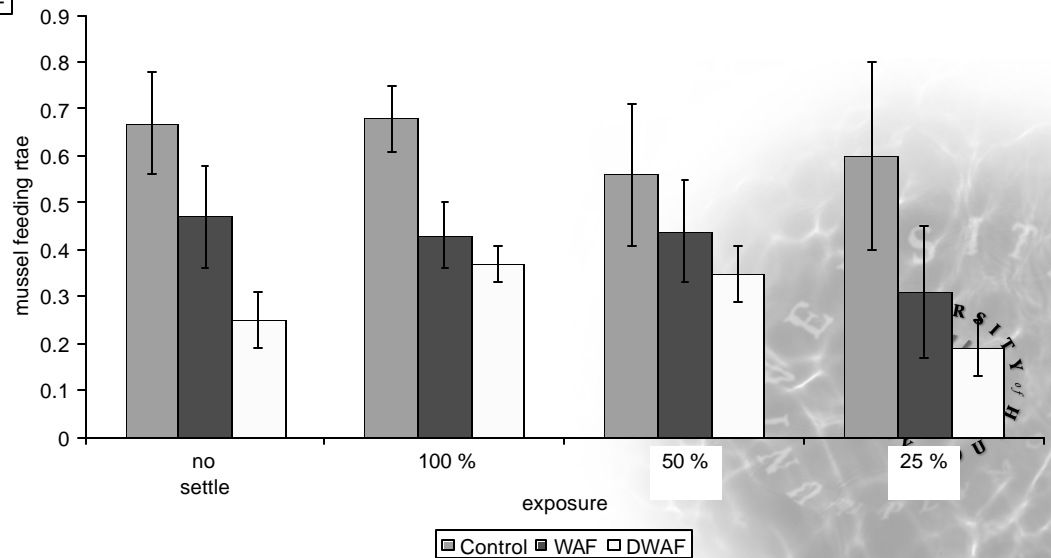


# Forties and Superdispersant 25

Forties 48 hr



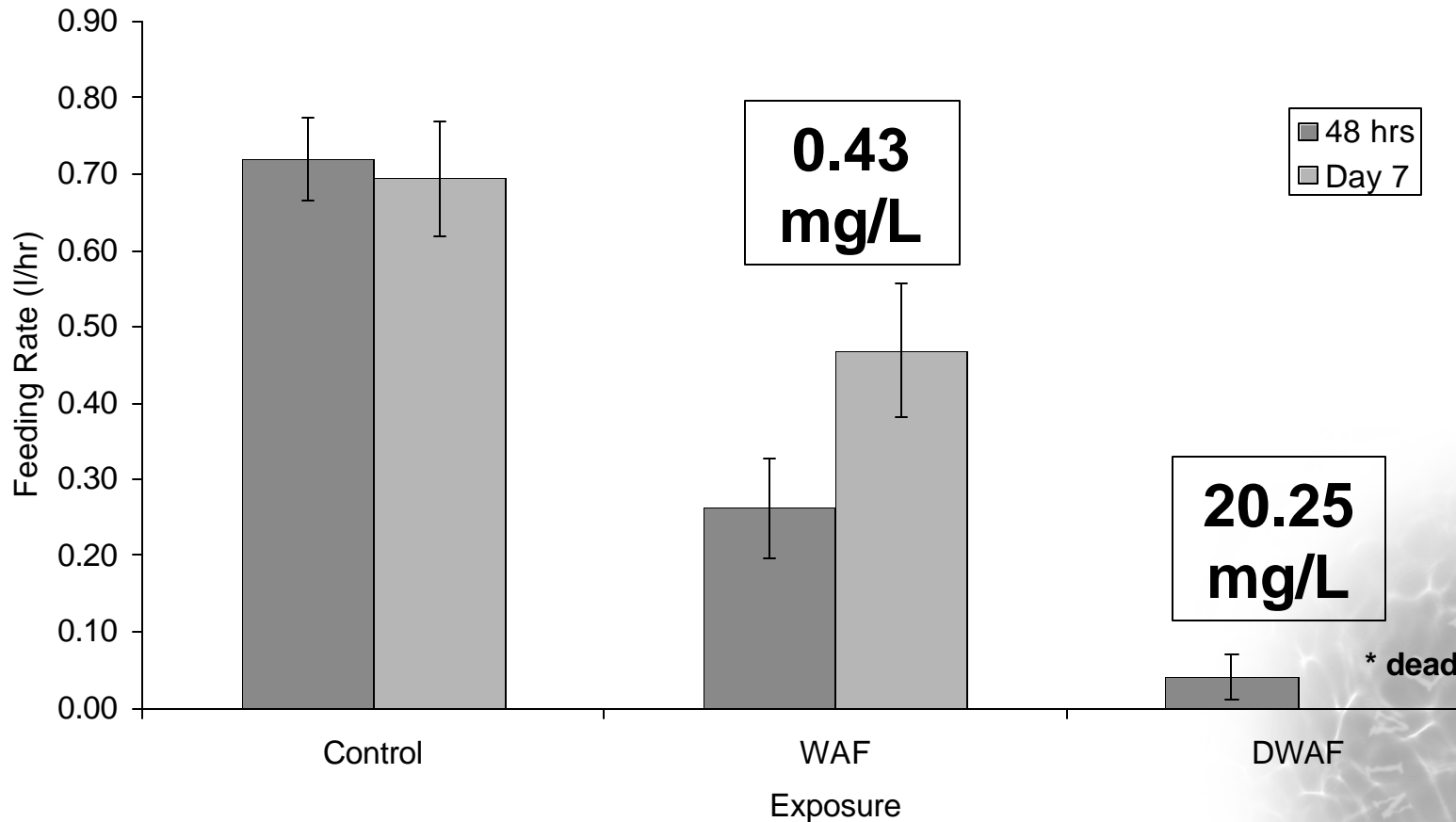
Forties 7 day



# ANS and Corexit 9527

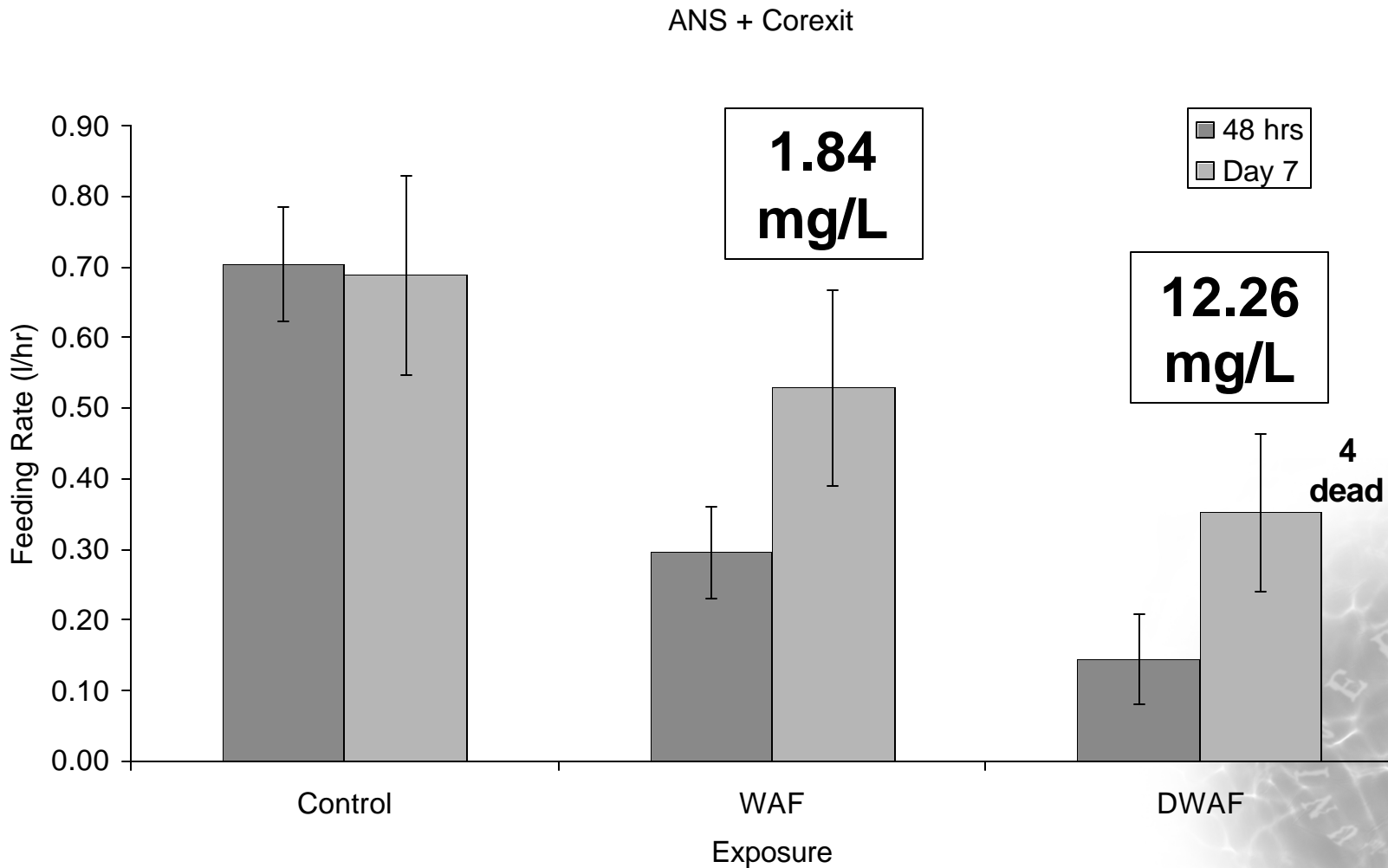
- No settle time

ANS + Corexit



# ANS and Corexit 9527

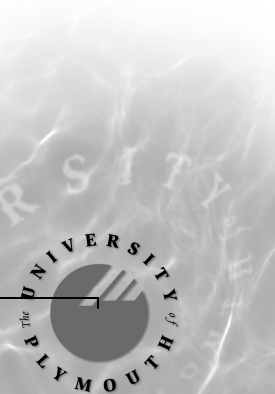
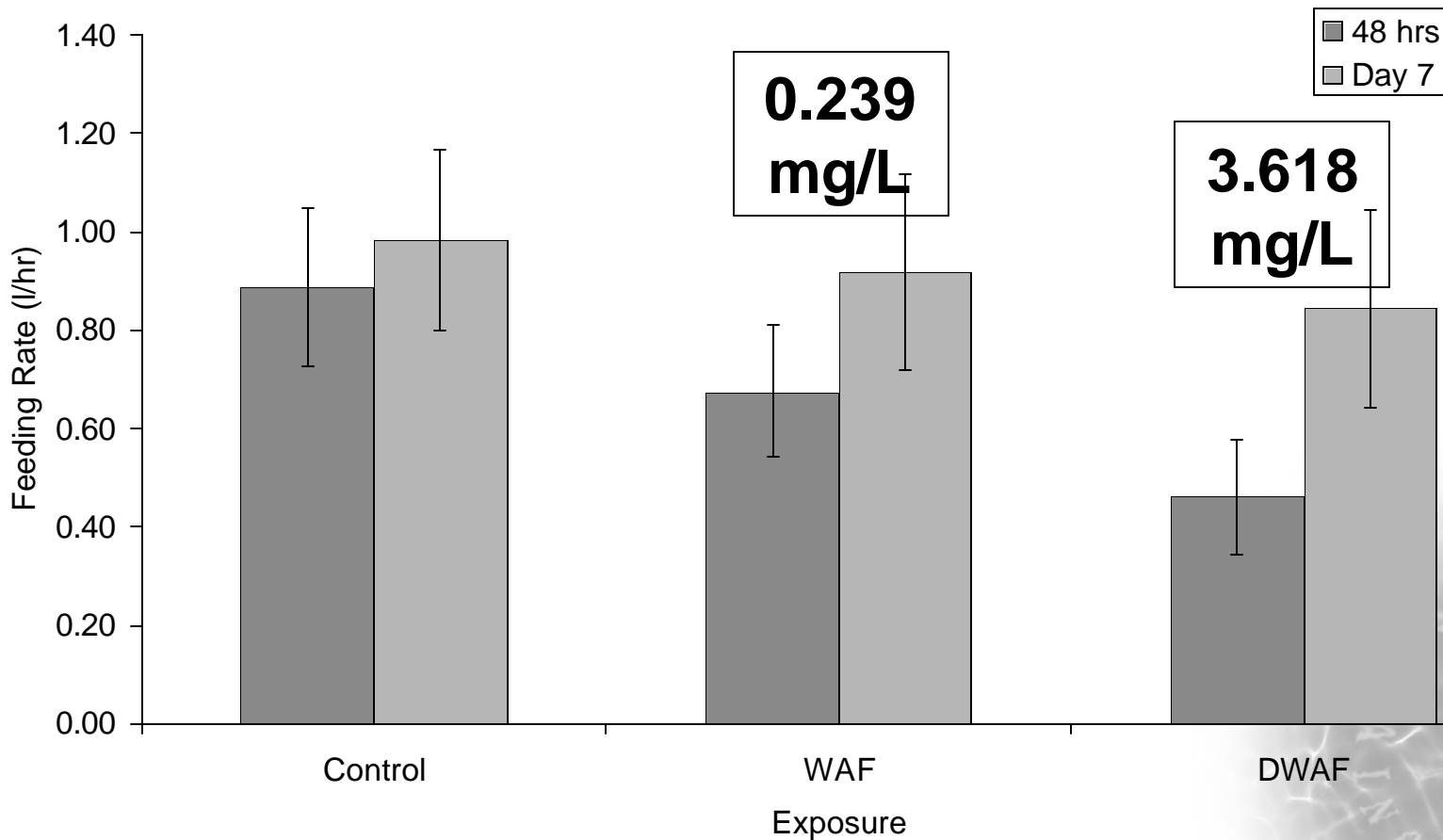
- 1 hr settle time



# ANS and Corexit 9527

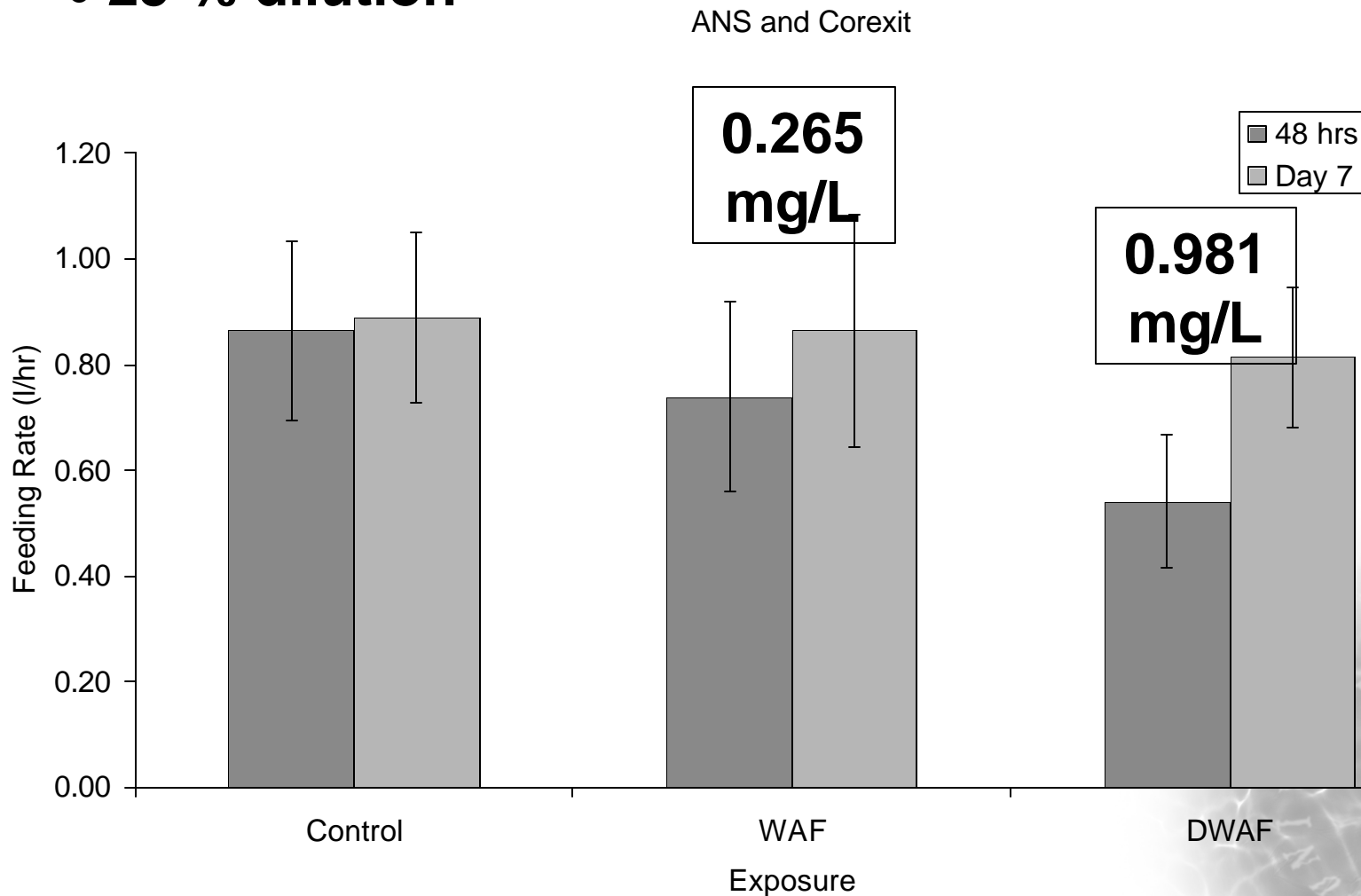
- 50 % dilution

ANS and Corexit  
(WAF & DWAF 50% dilutions)



# ANS and Corexit 9527

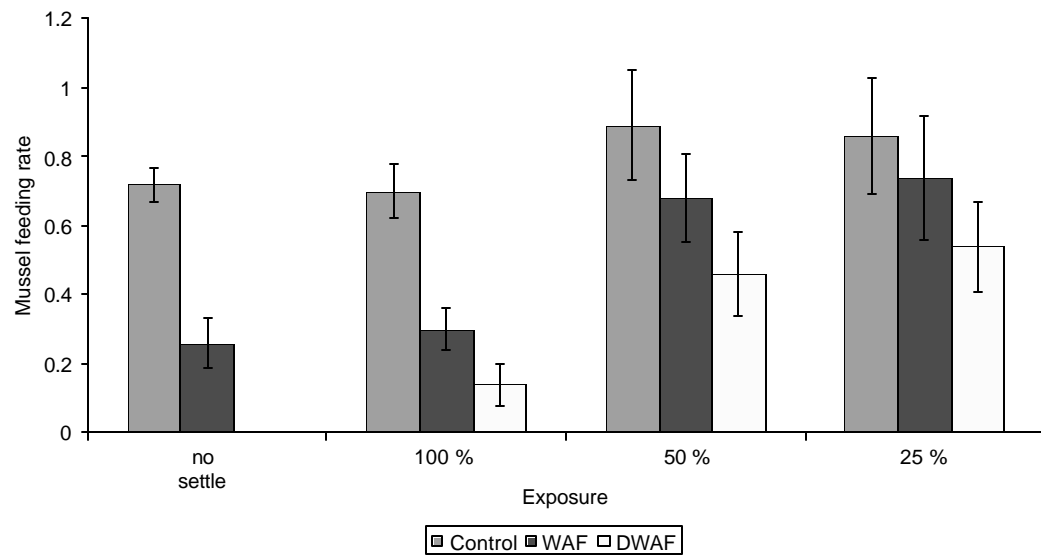
- 25 % dilution



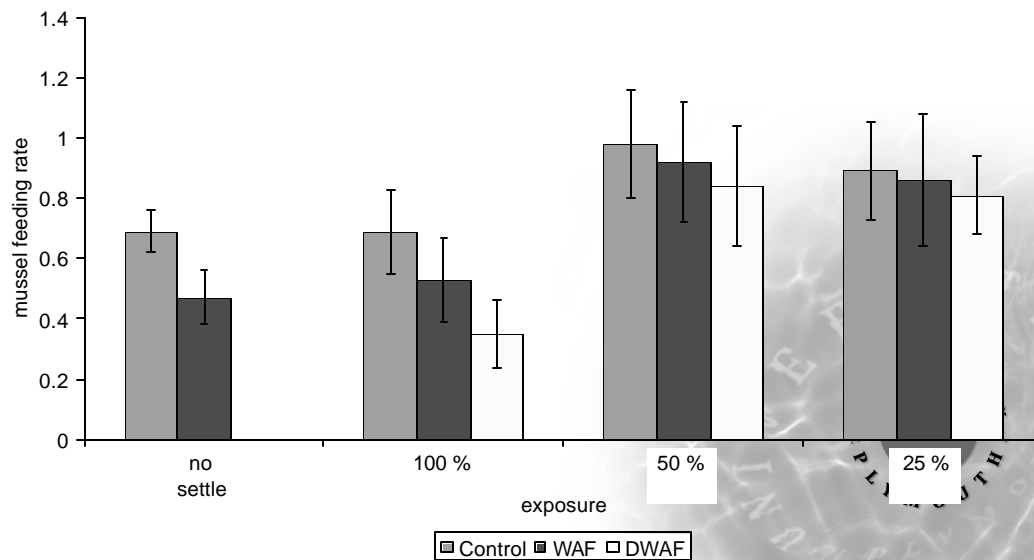


# ANS and Corexit 9527

ANS 48 hr



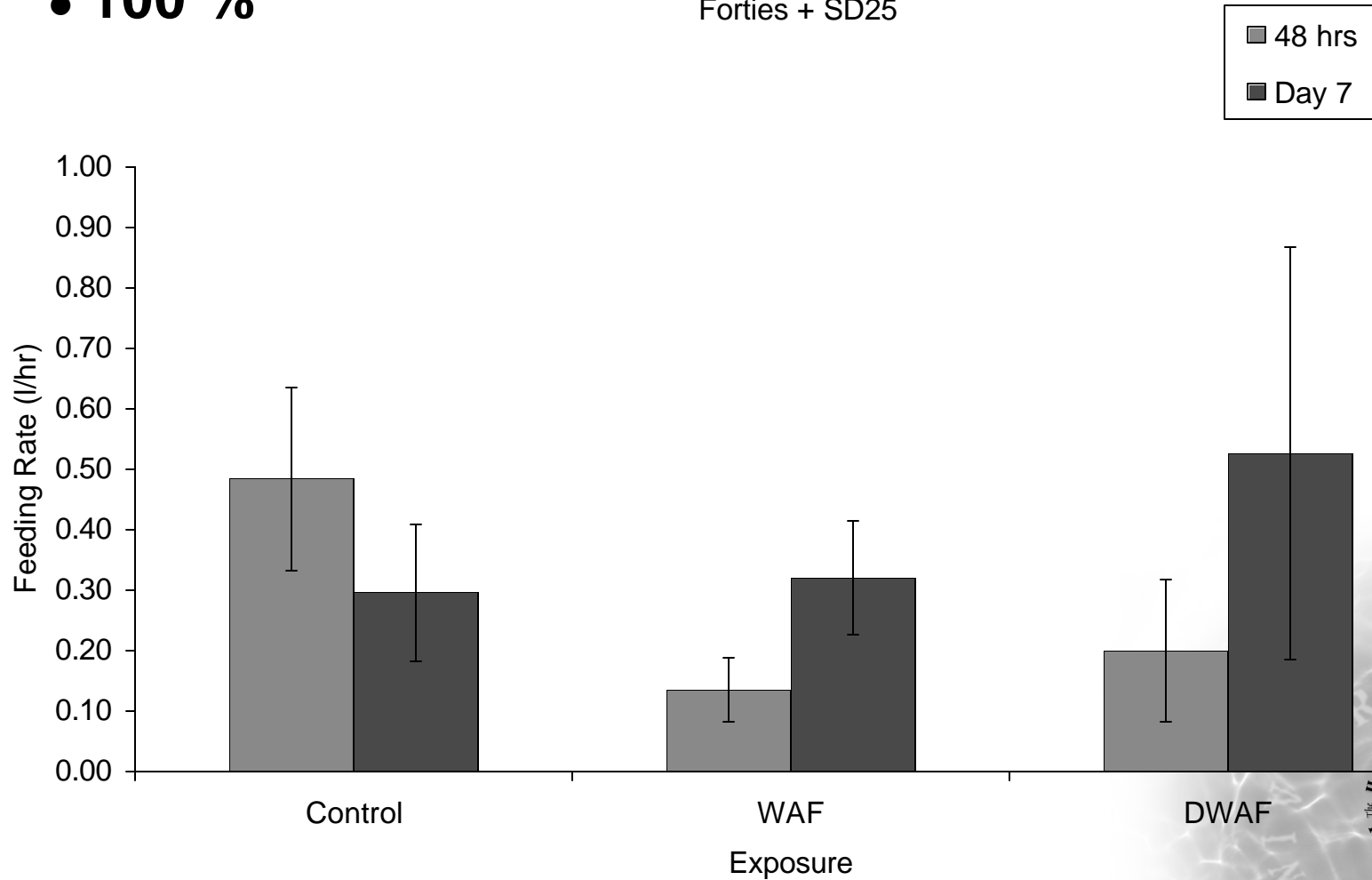
ANS 7day



# Forties and Superdispersant 25

• 100 %

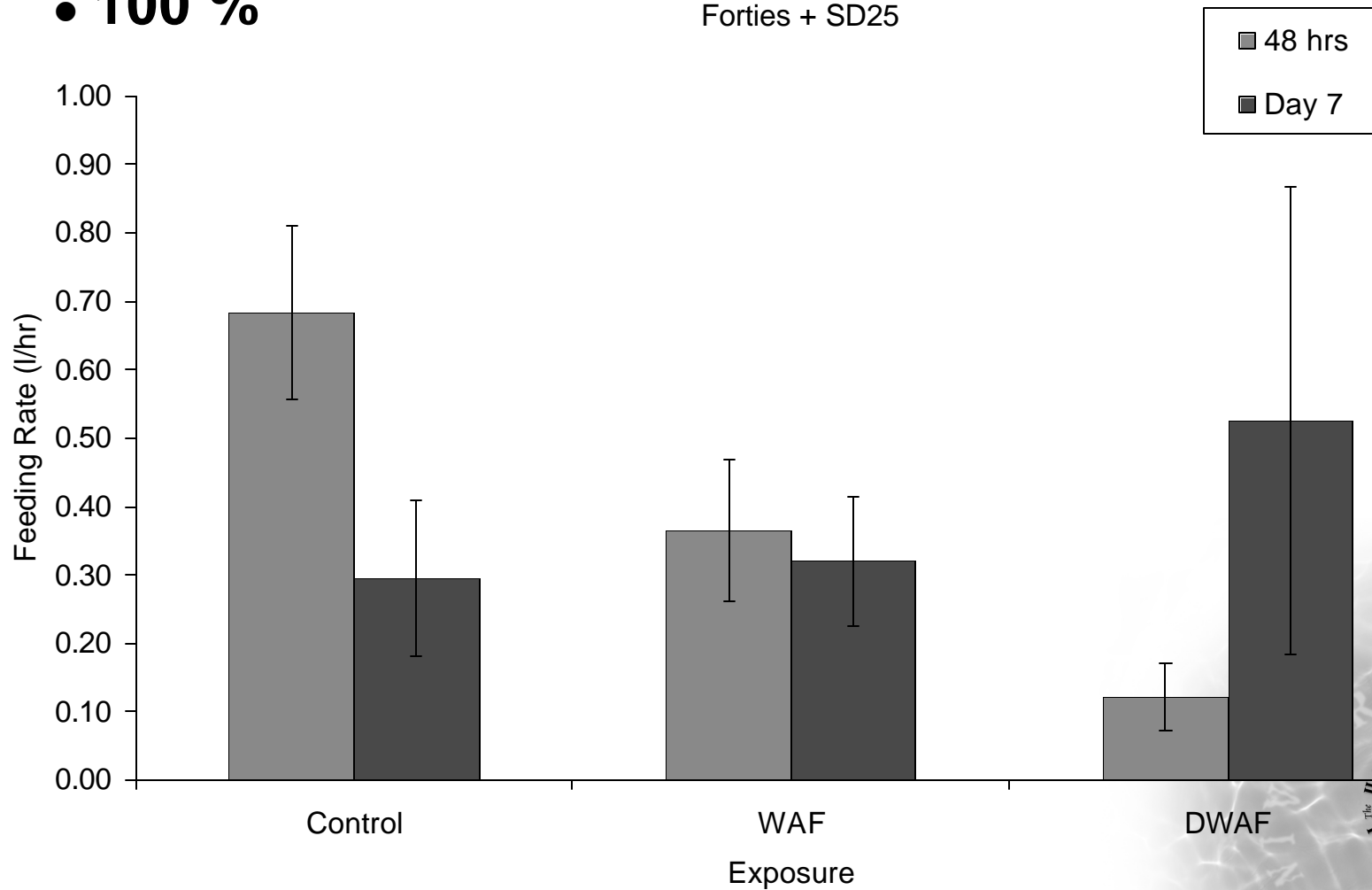
Forties + SD25



# Forties and Superdispersant 25

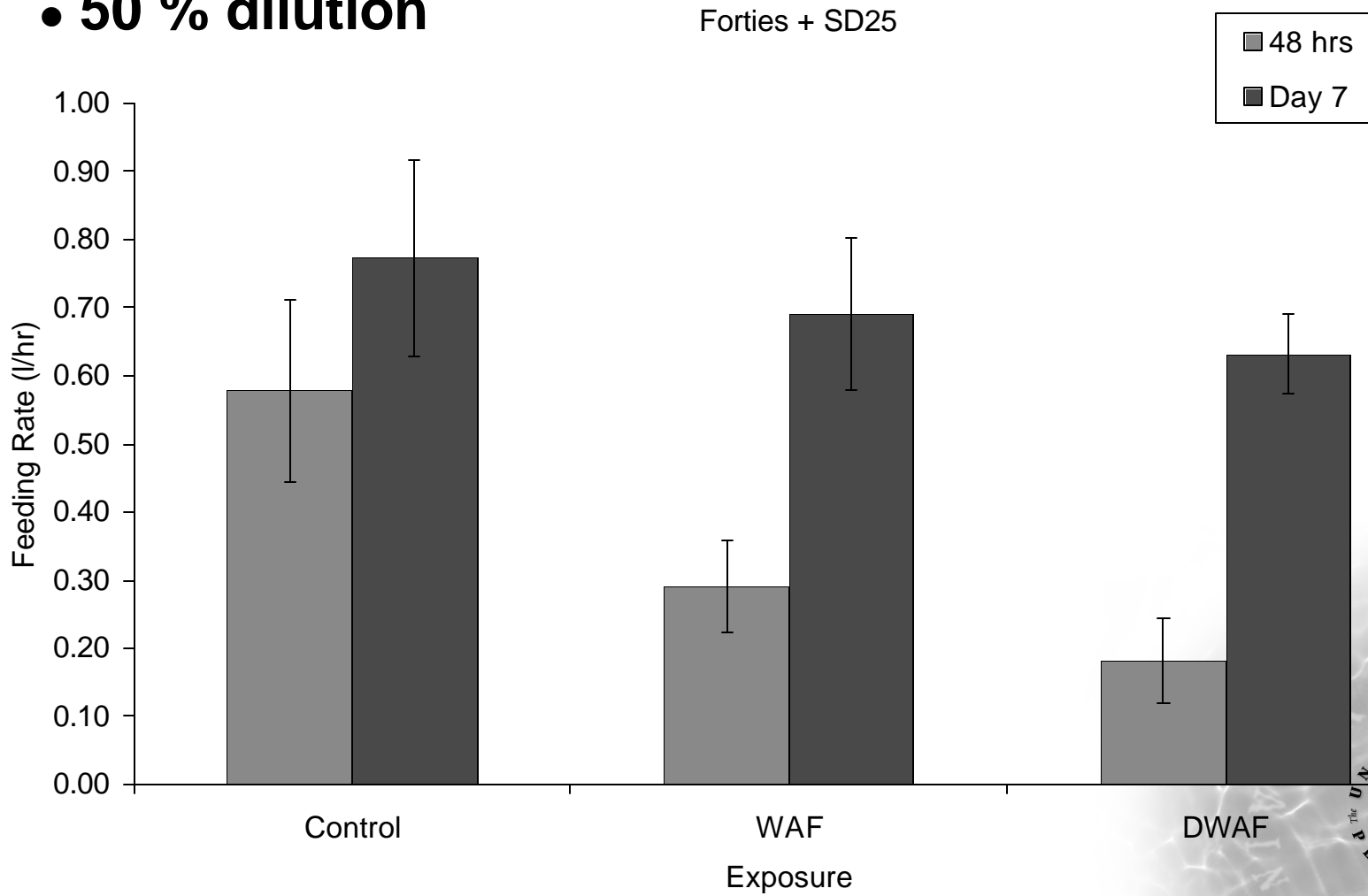
• 100 %

Forties + SD25



# Forties and Superdispersant 25

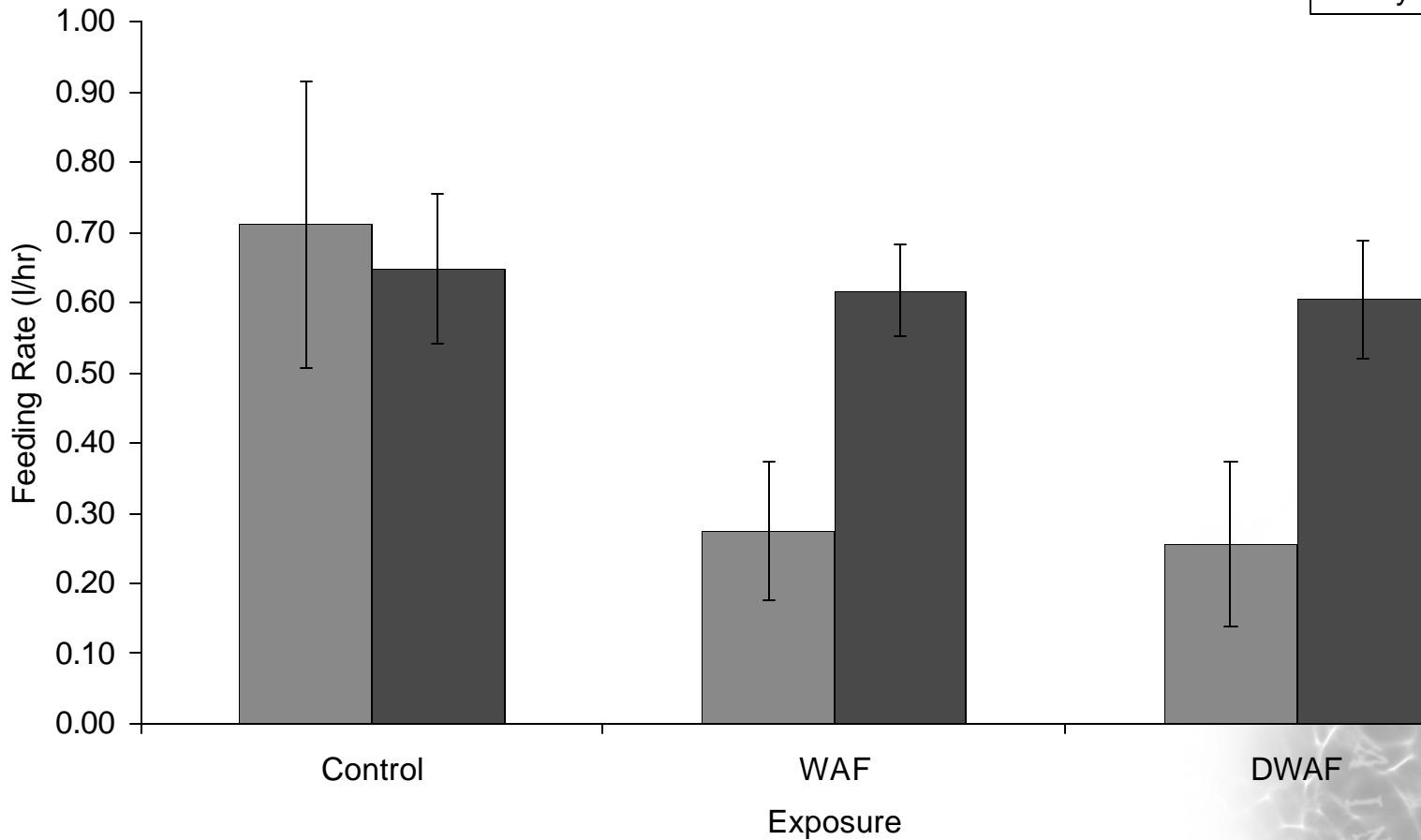
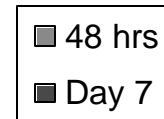
## • 50 % dilution



# Forties and Superdispersant 25

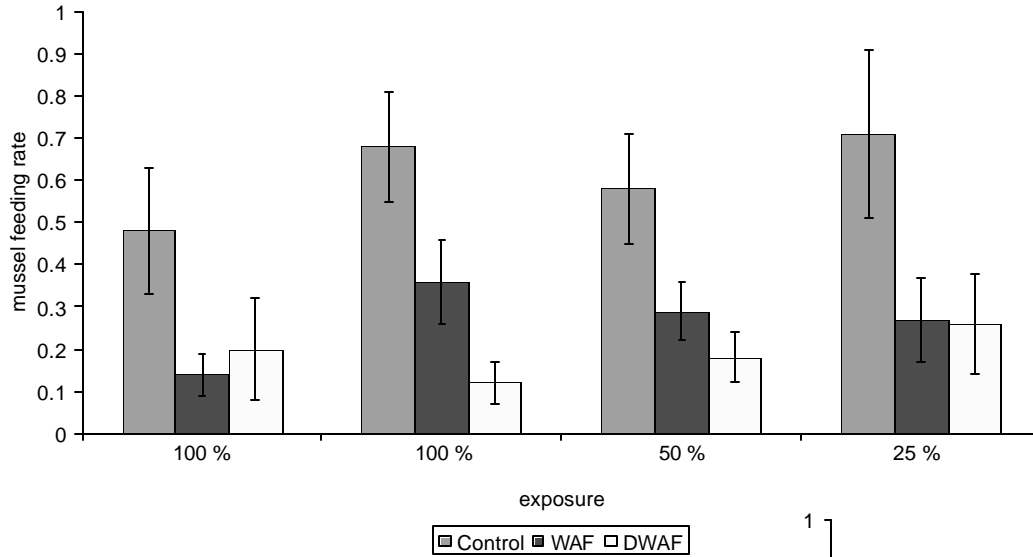
• 25 % dilution

Forties + SD25

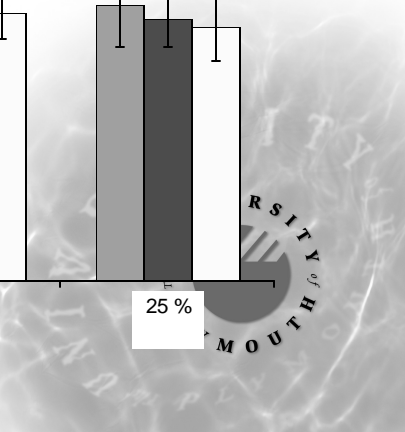
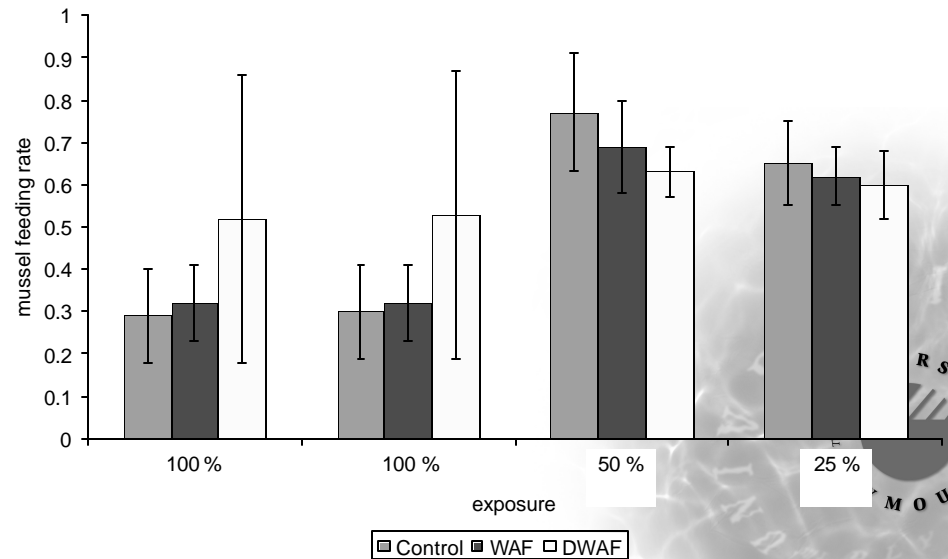


# Forties and Superdispersant 25

Forties 48 hr (Repeat)



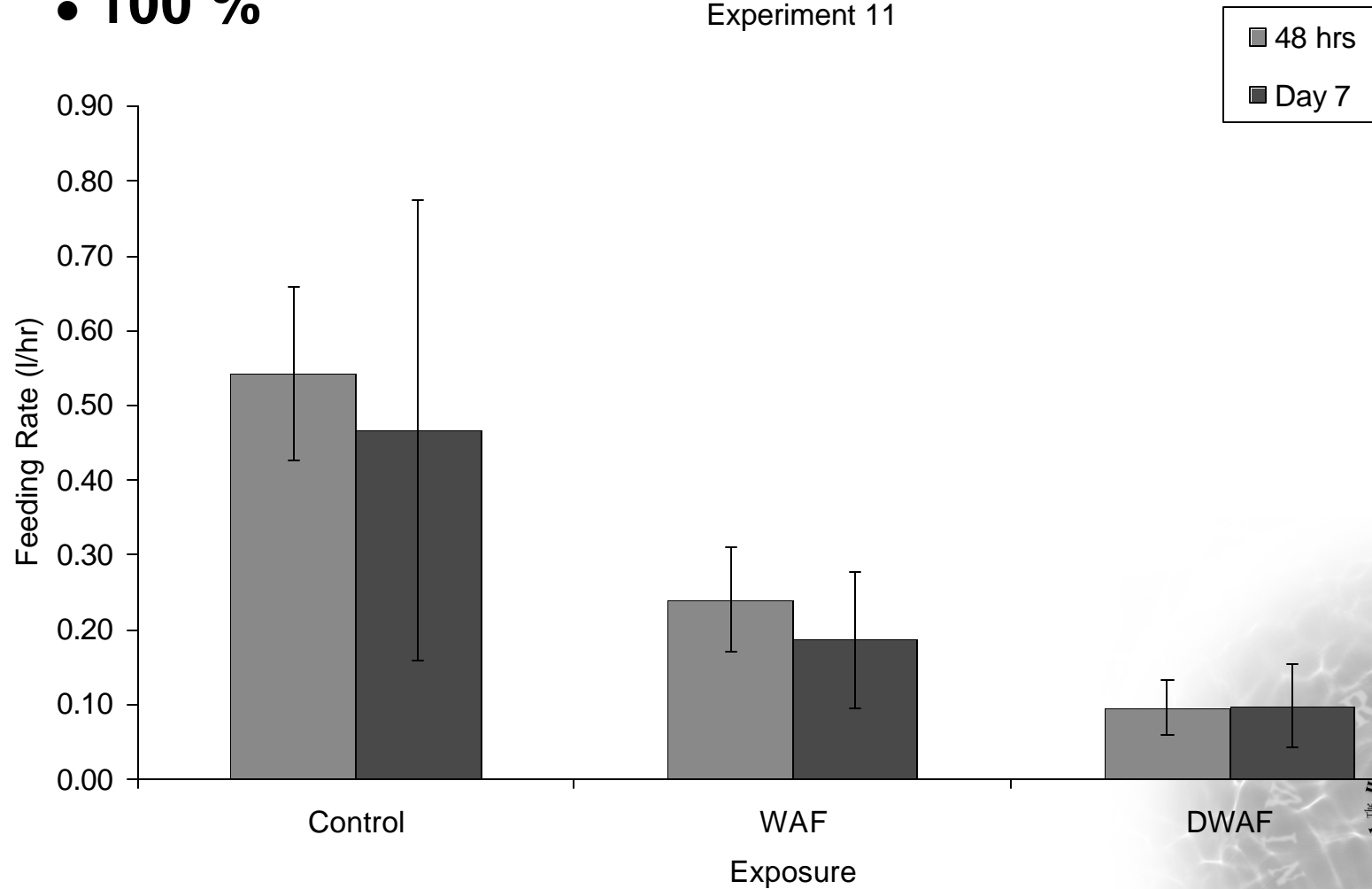
Forties 7 day (Repeat)



# ANS and Corexit 9527

• 100 %

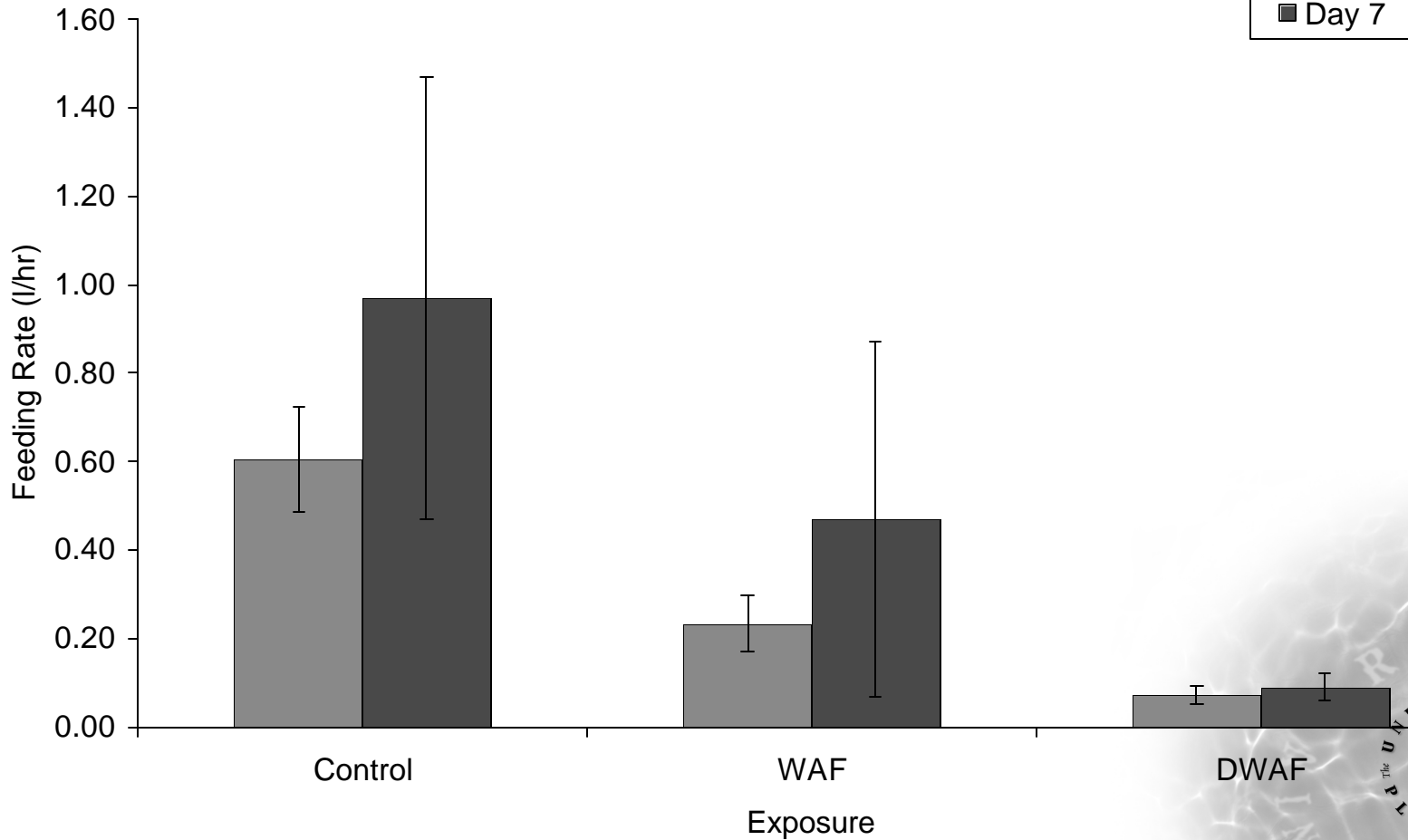
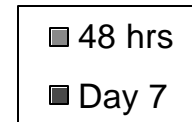
Experiment 11



# ANS and Corexit 9527

• 100 %

Experiment 18:

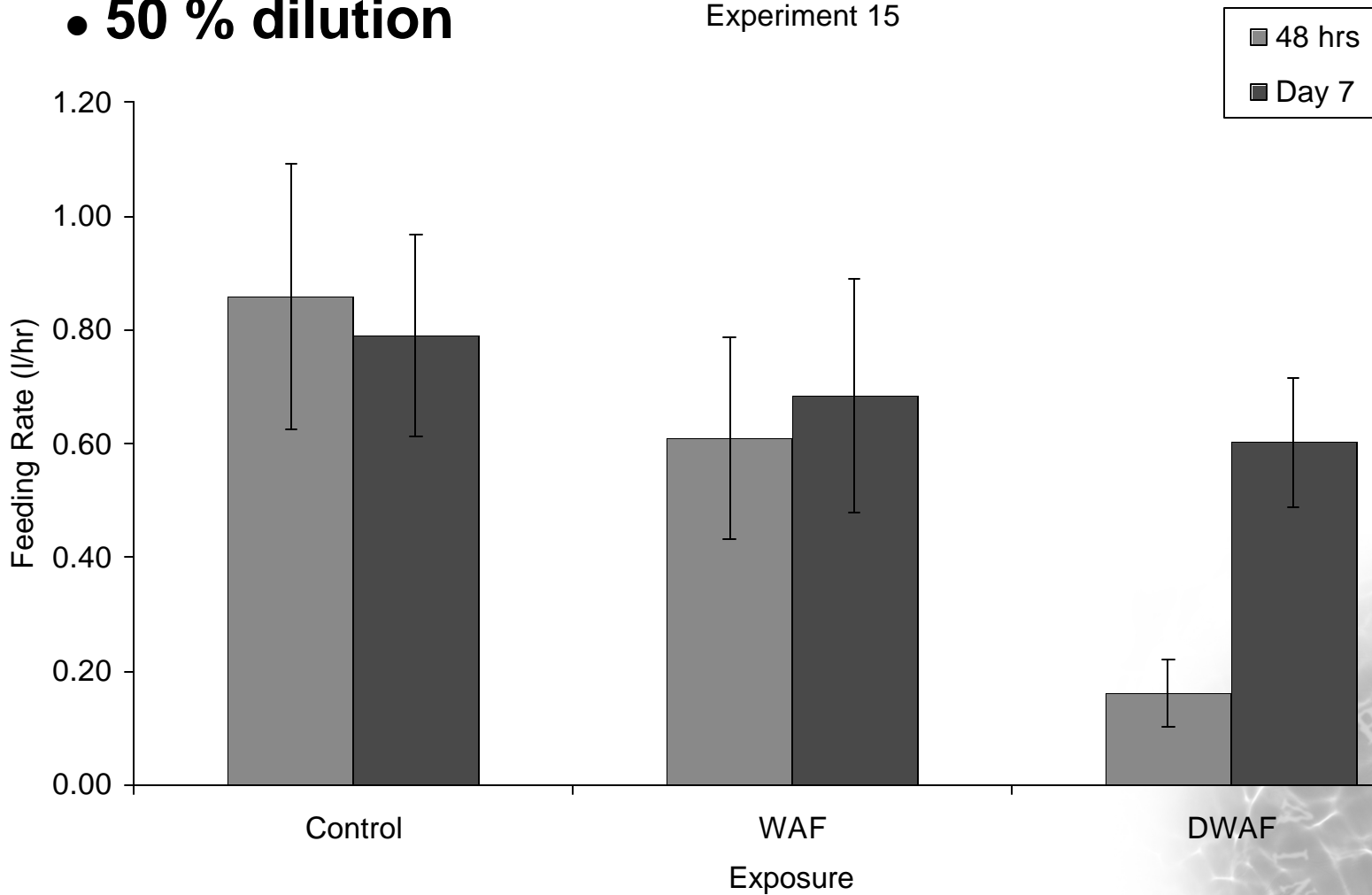




# ANS and Corexit 9527

• **50 % dilution**

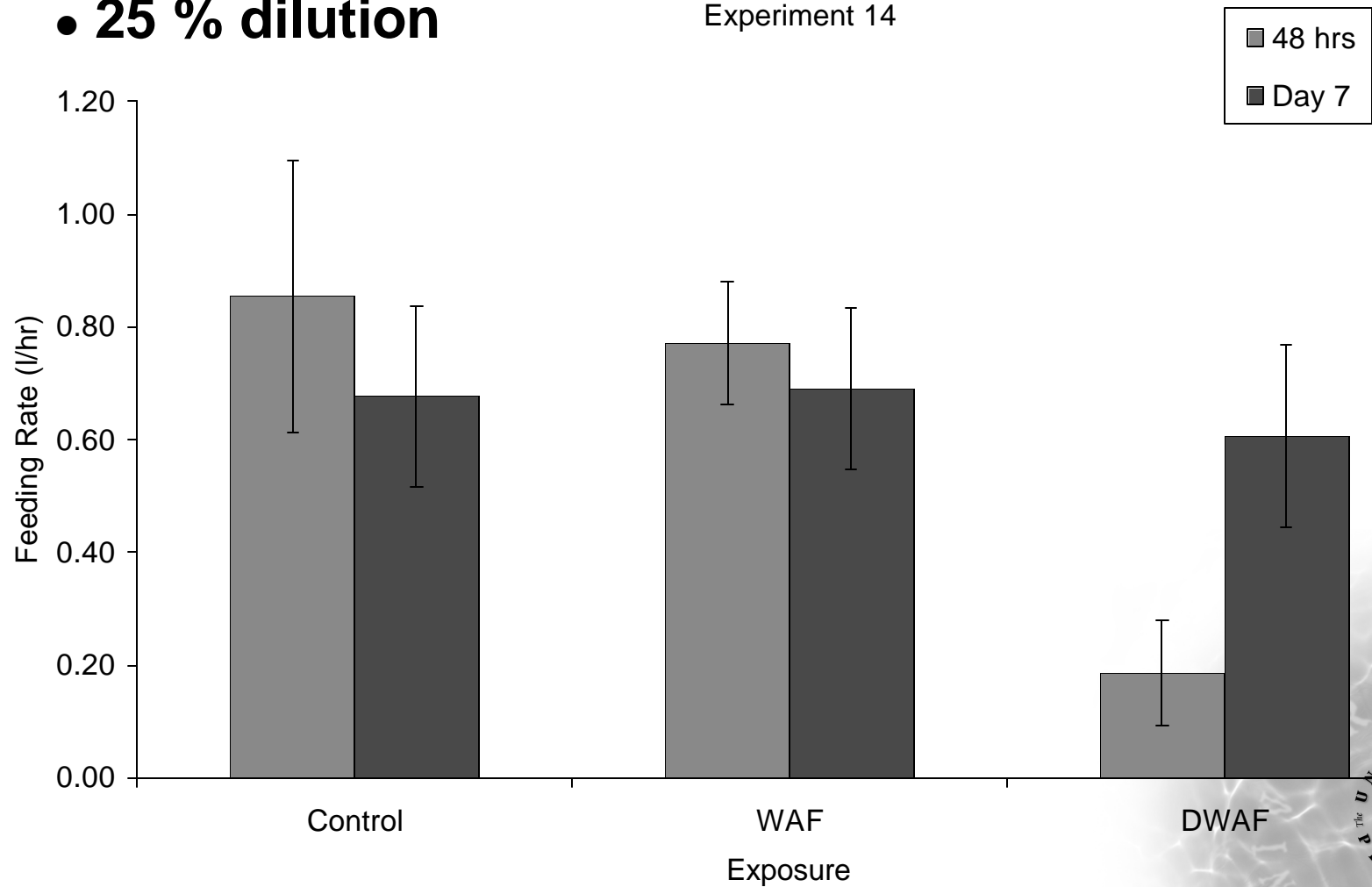
Experiment 15



# ANS and Corexit 9527

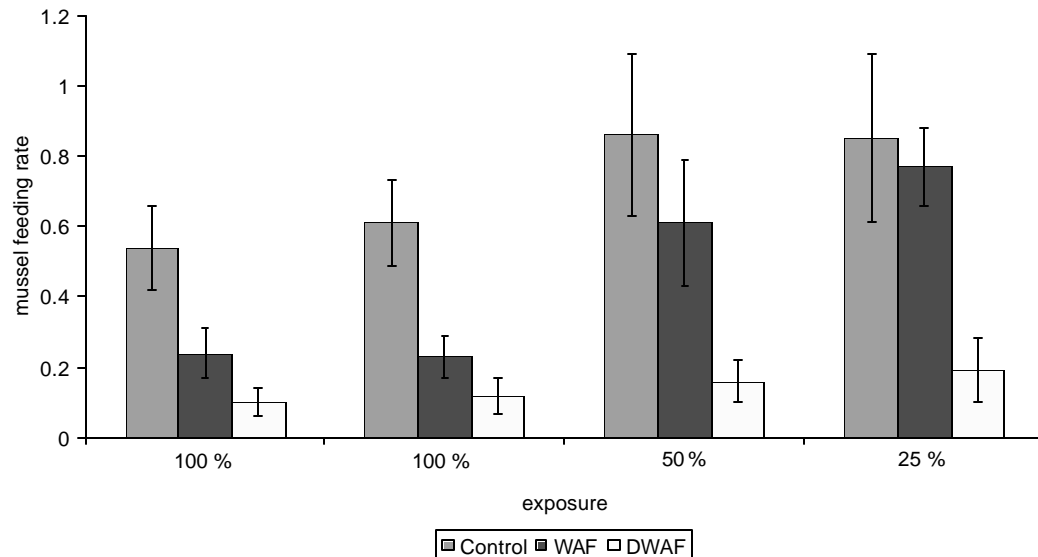
• 25 % dilution

Experiment 14

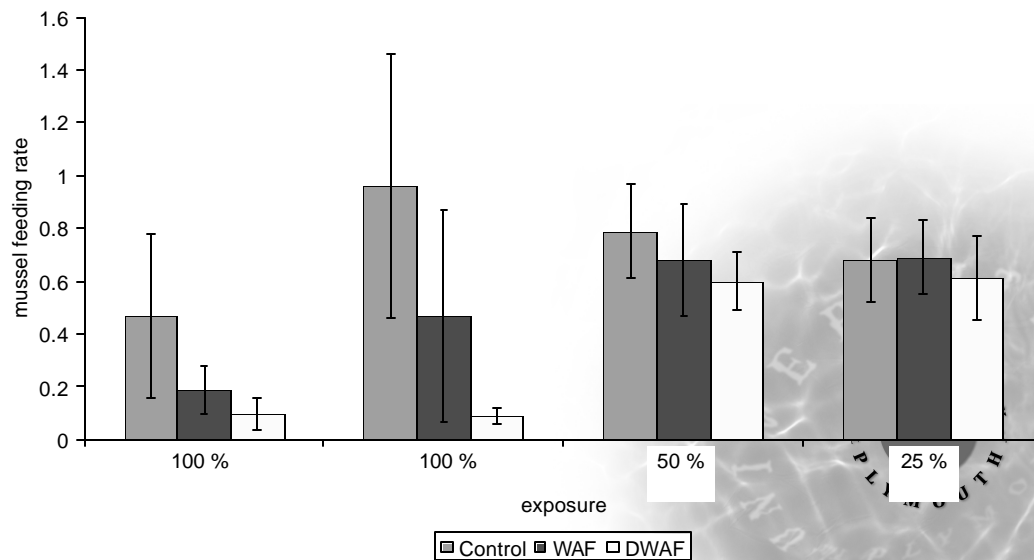


# ANS and Corexit 9527

ANS 48 hr (Repeats)

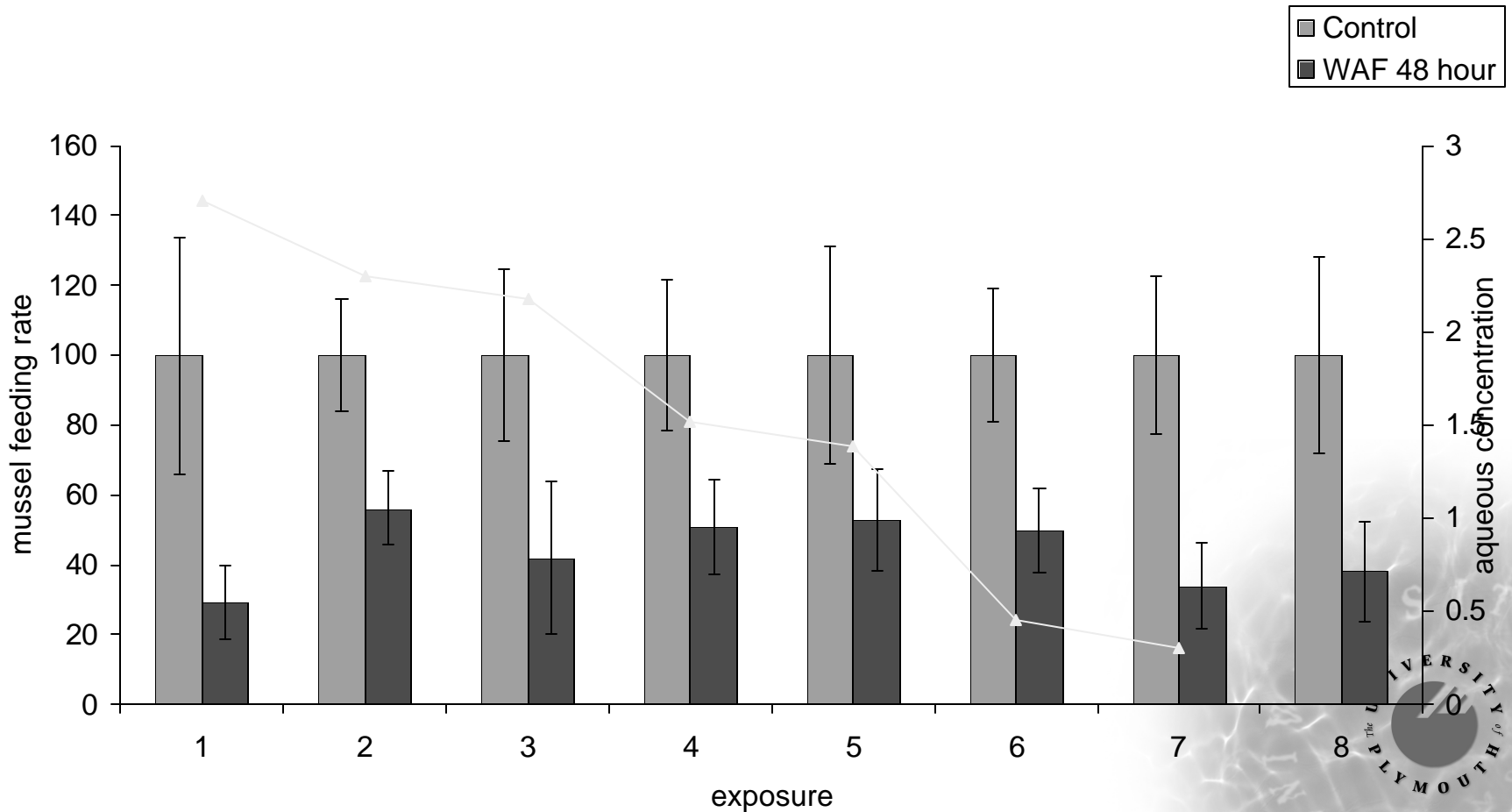


ANS 7 day (Repeats)



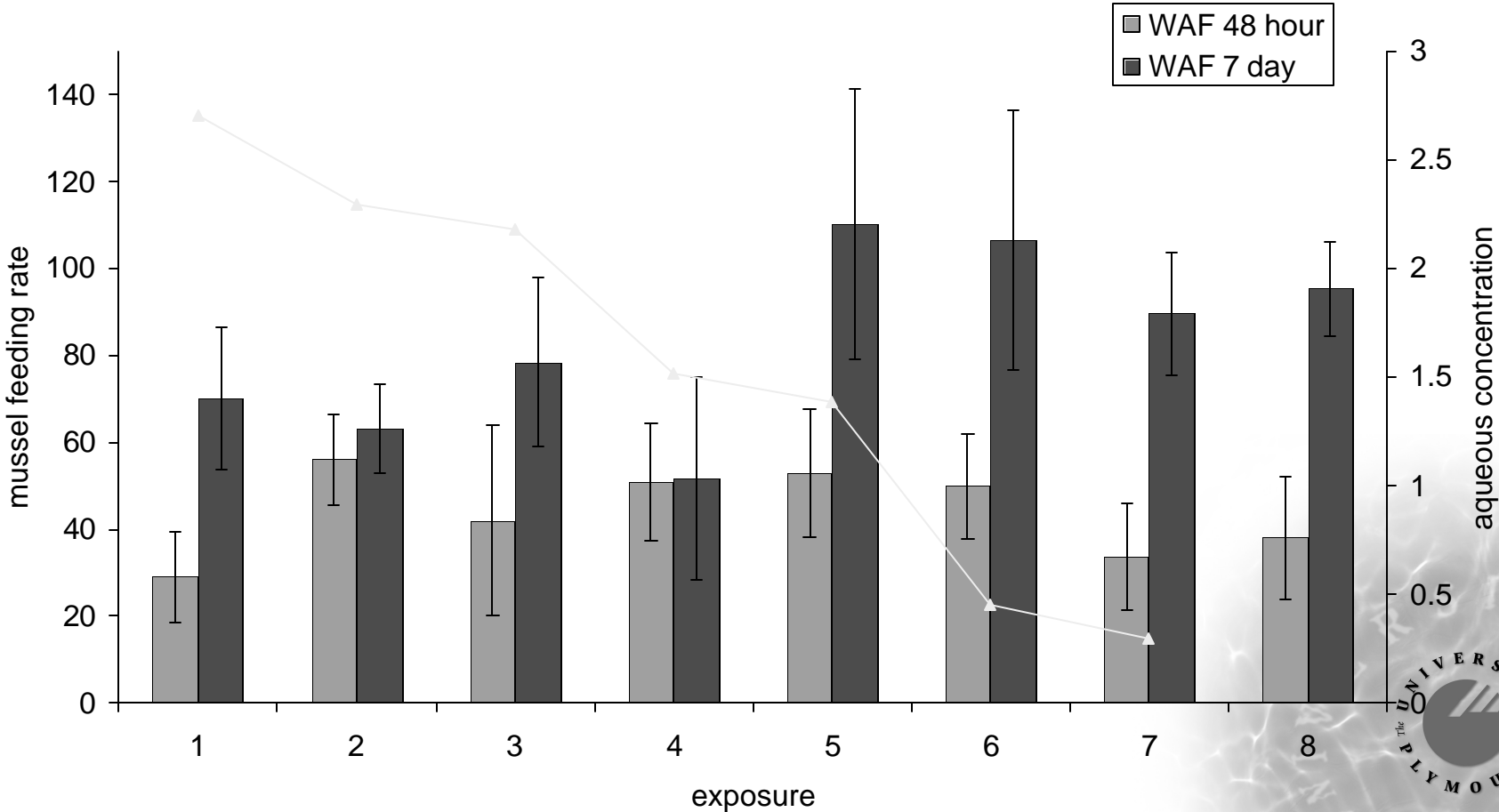
# All Forties WAFs 48hr

All Forties WAFs 48hr



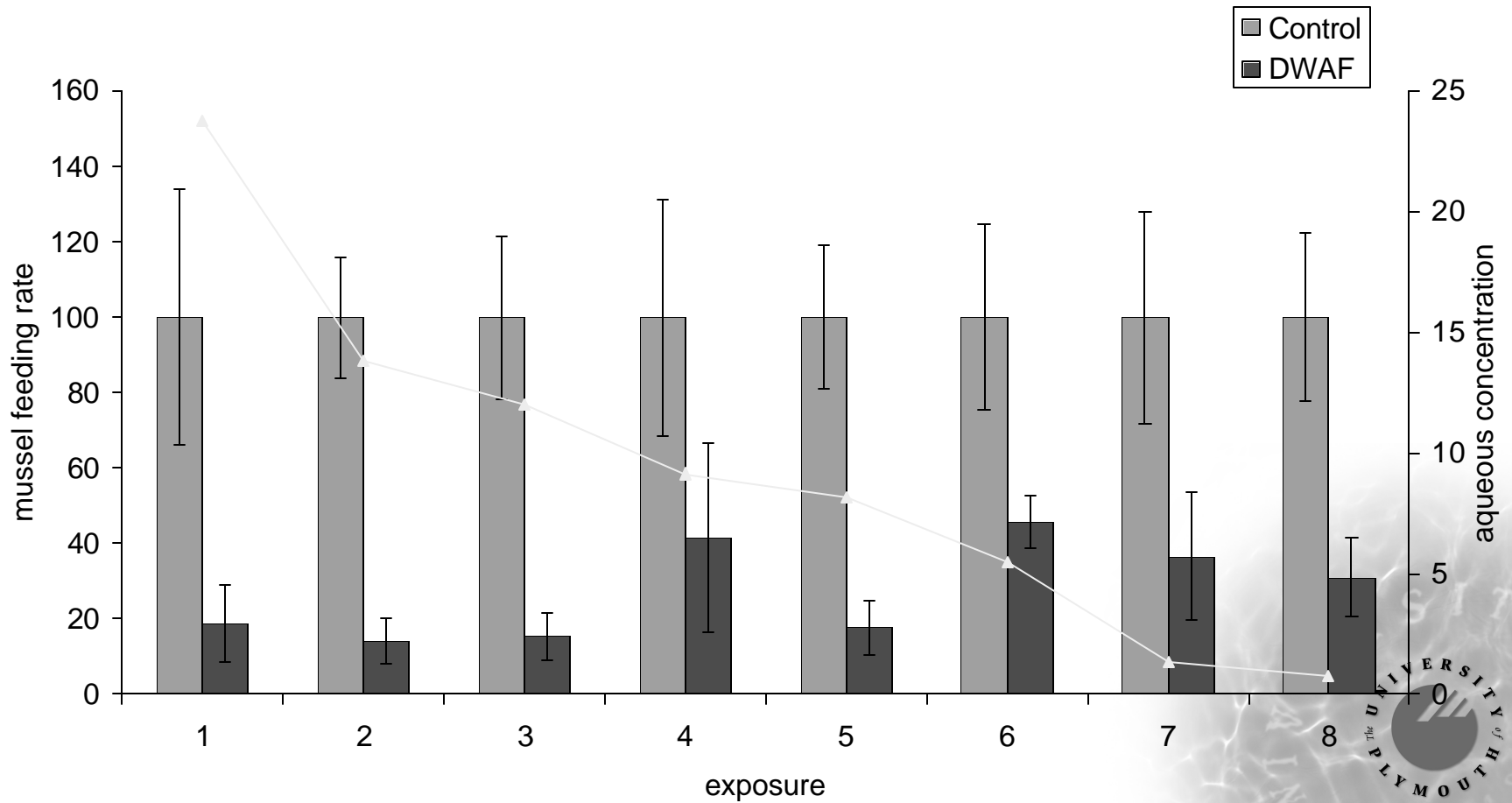
# Forties WAF recovery

Forties WAF recovery



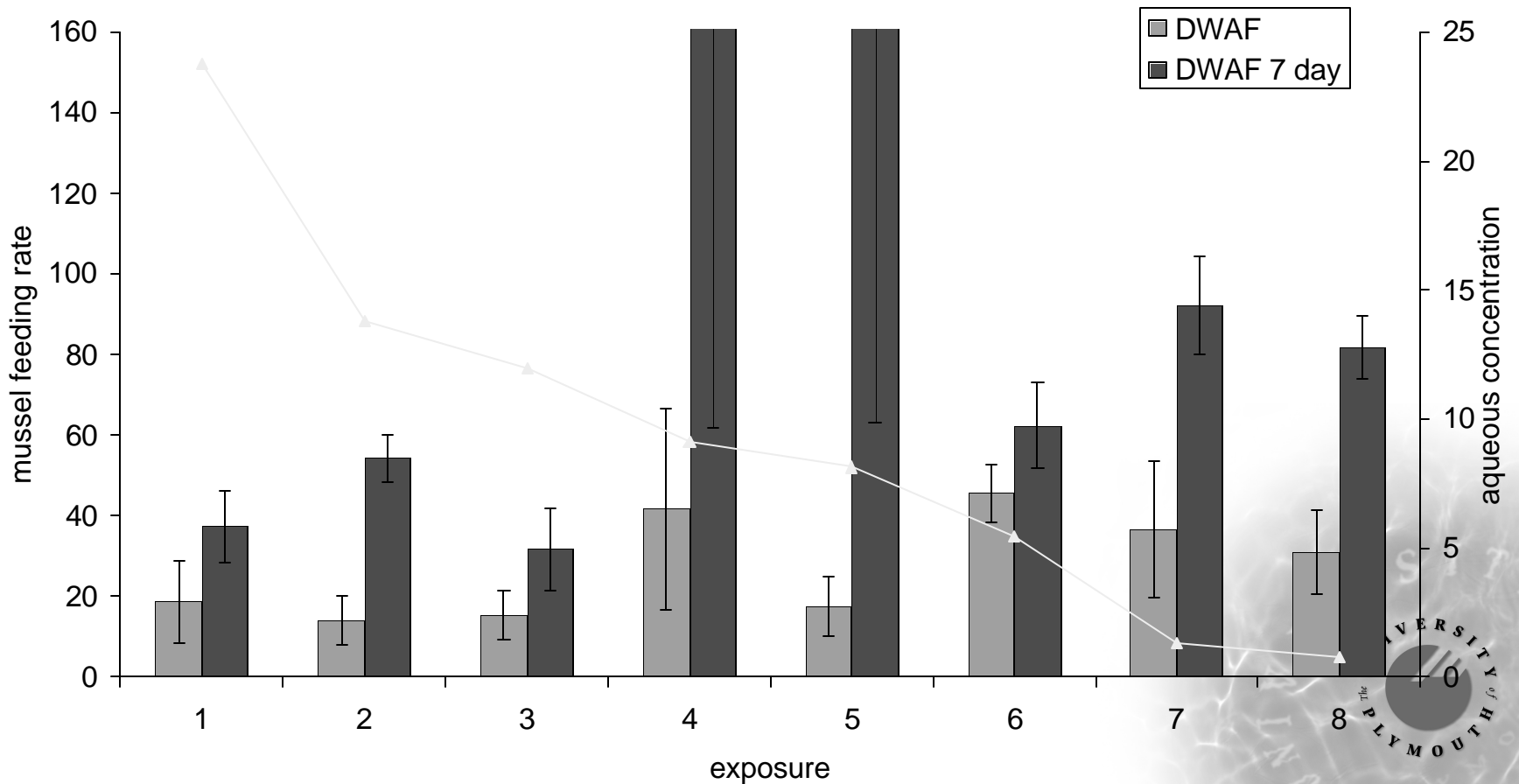
# All Forties DWAFs 48hr

All Forties DWAFs 48hr



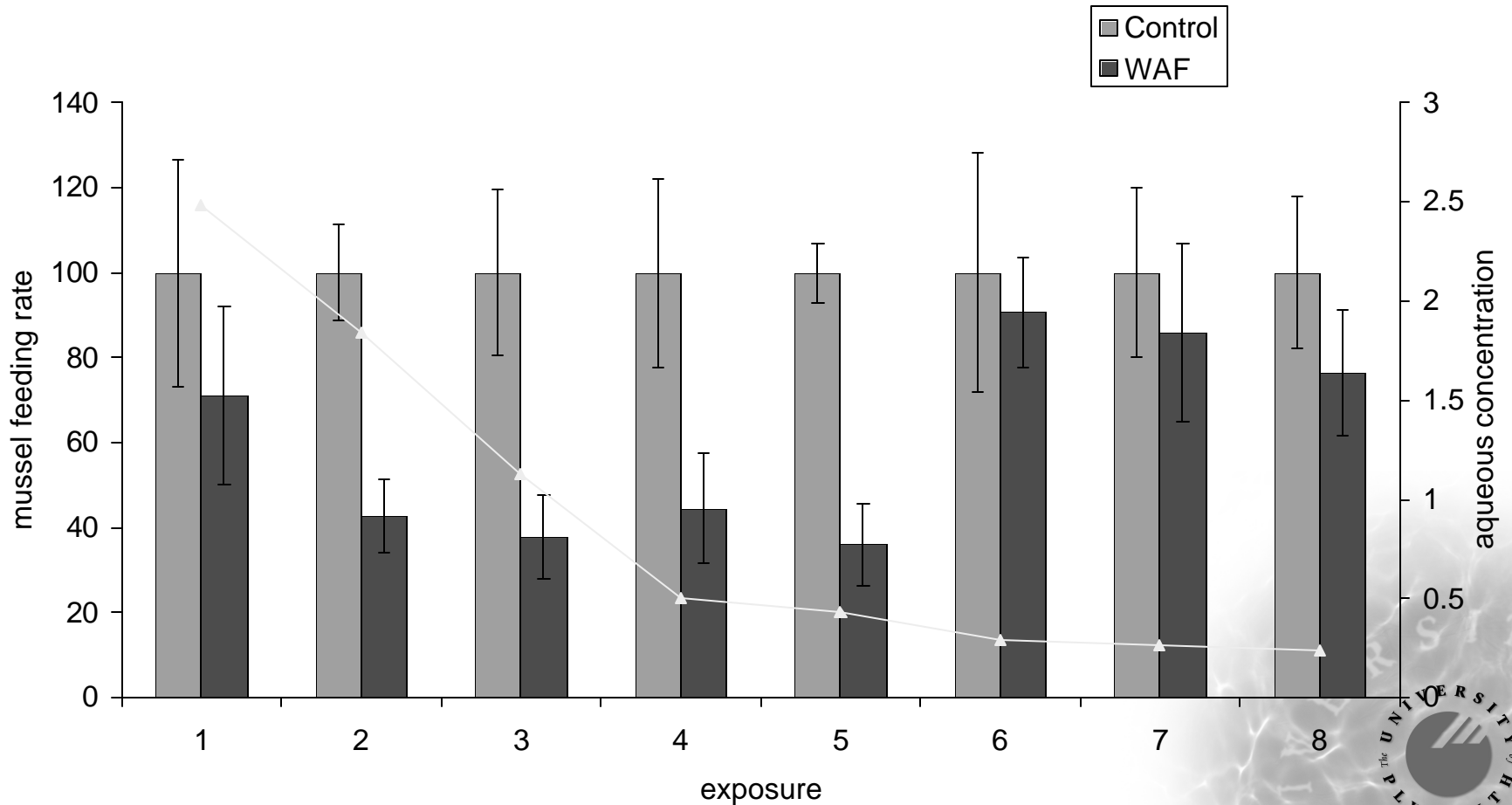
# Forties DWAf recovery

Forties DWAf recovery data



# ANS all WAF 48hr

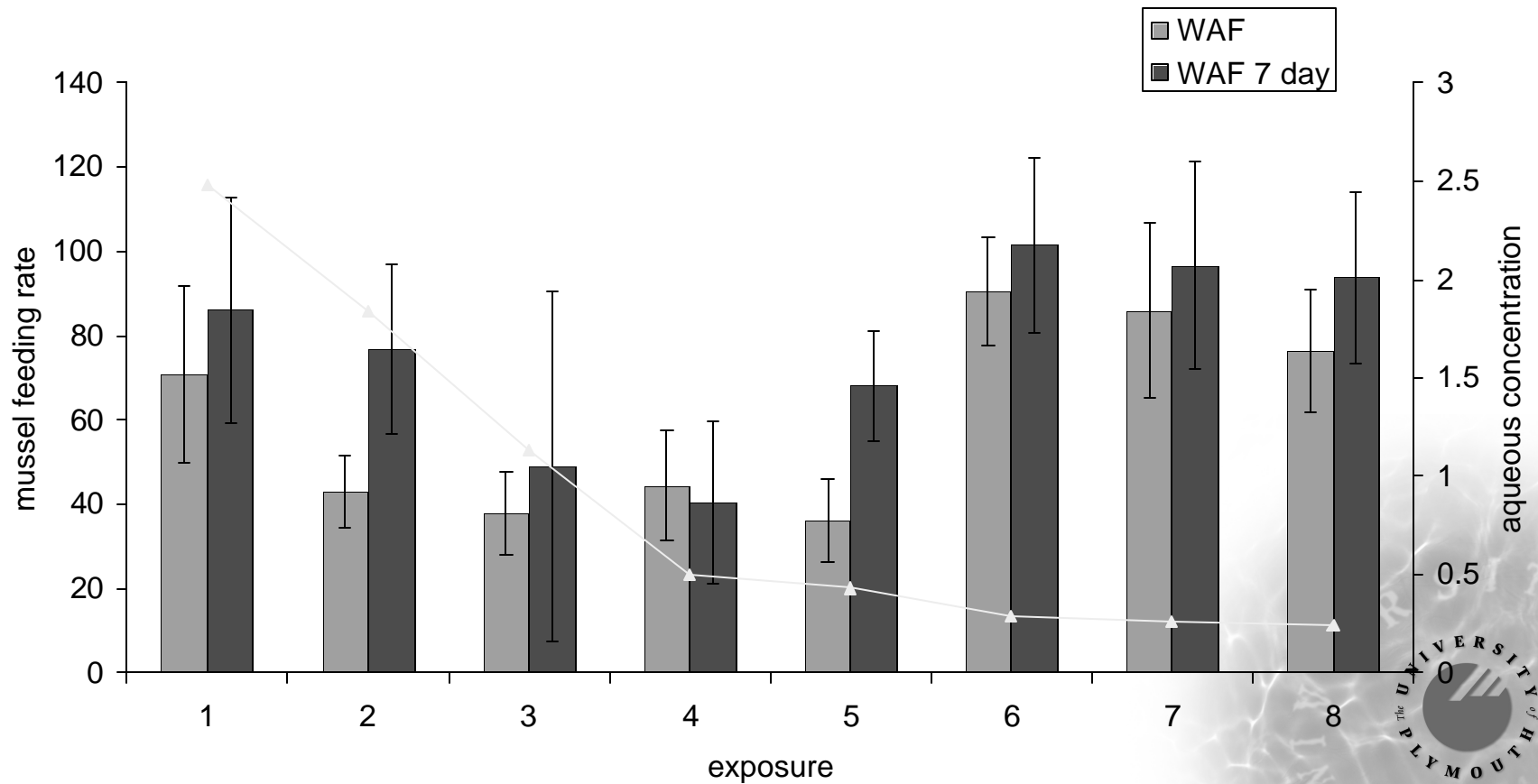
ANS all WAF 48hr





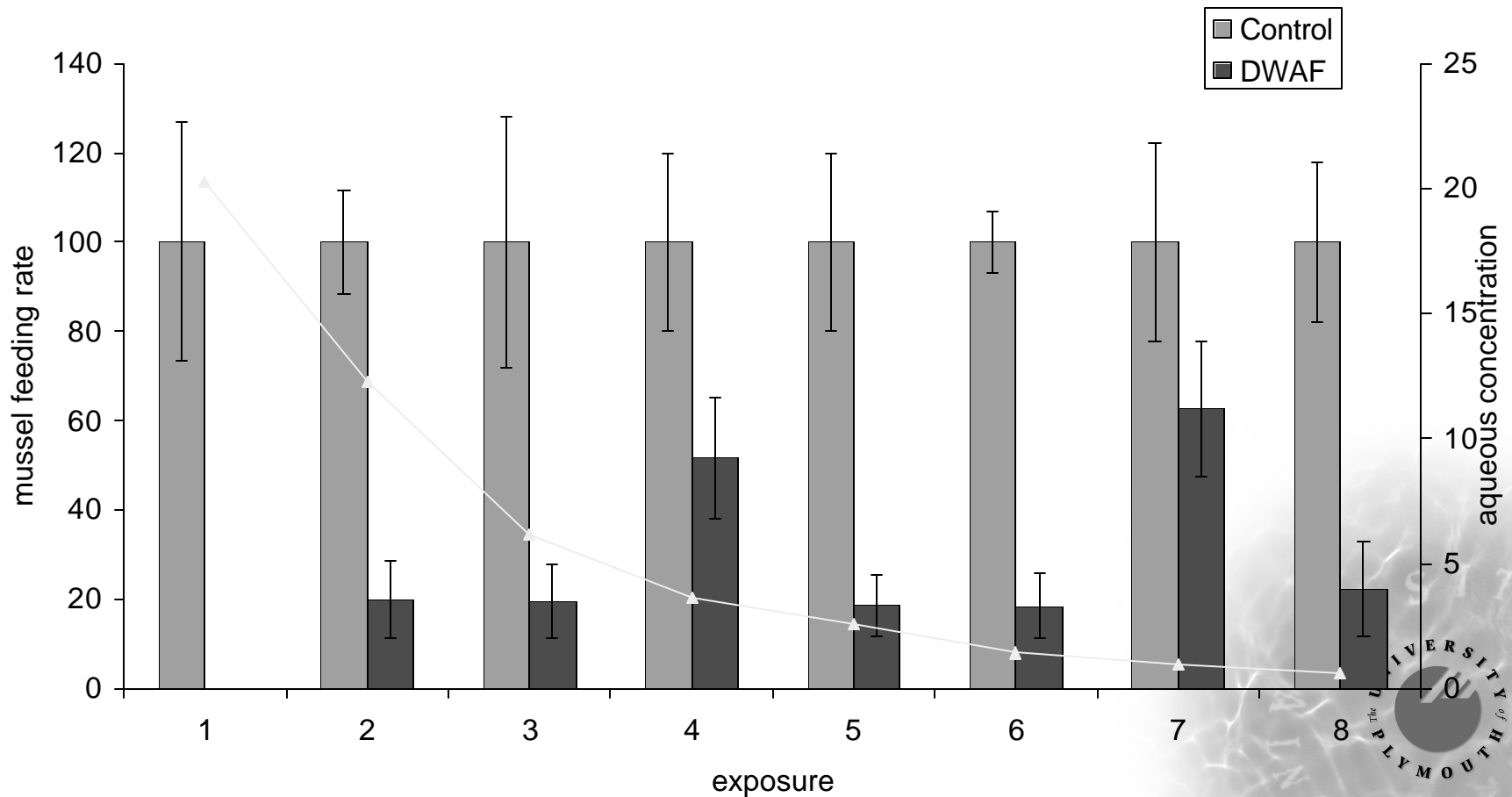
# ANS WAF recovery

## ANS WAF recovery



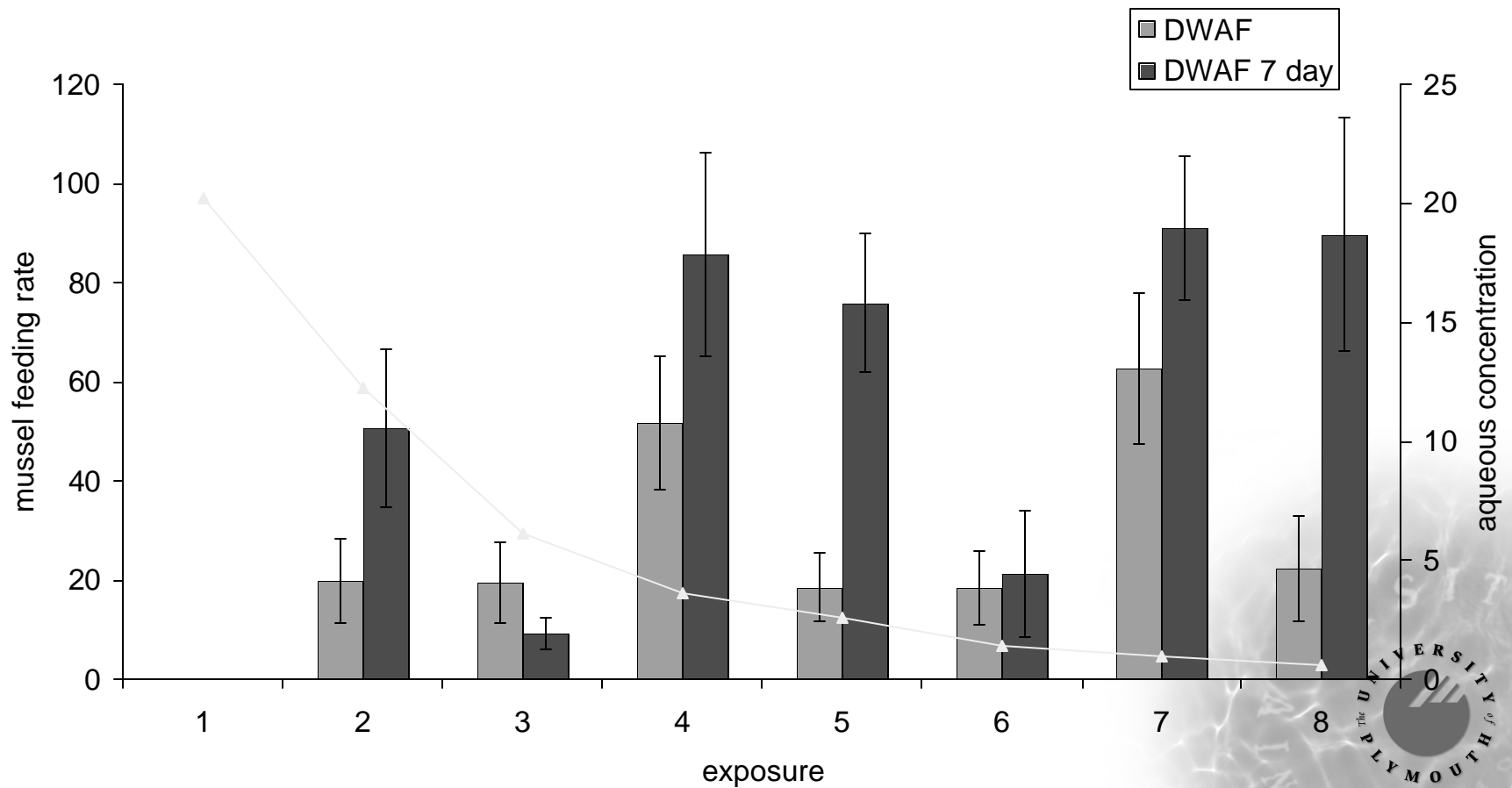
# ANS all 48hr DWAF

ANS all 48hr DWAF



# ANS DWAF recovery

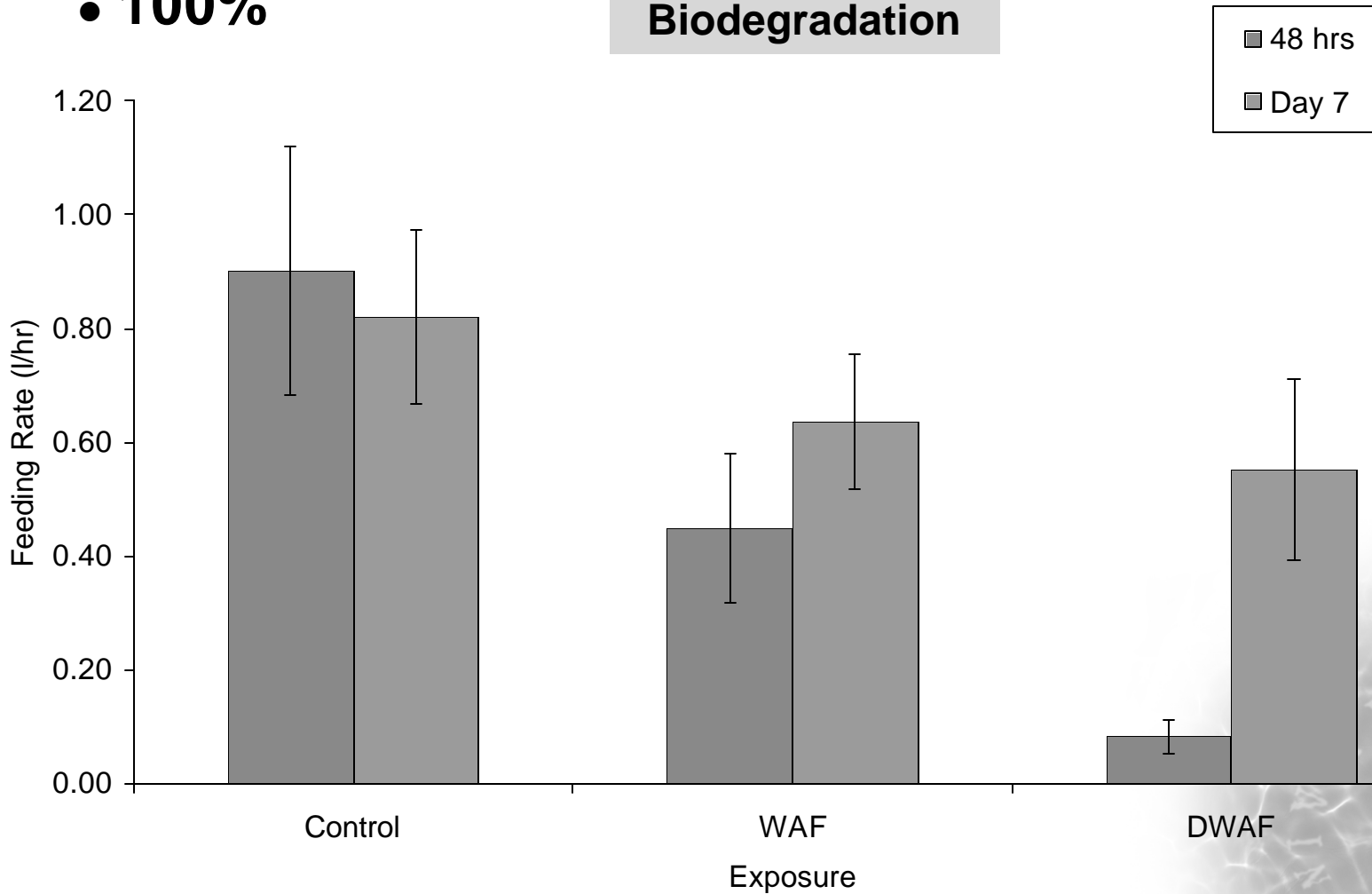
ANS DWAF recovery



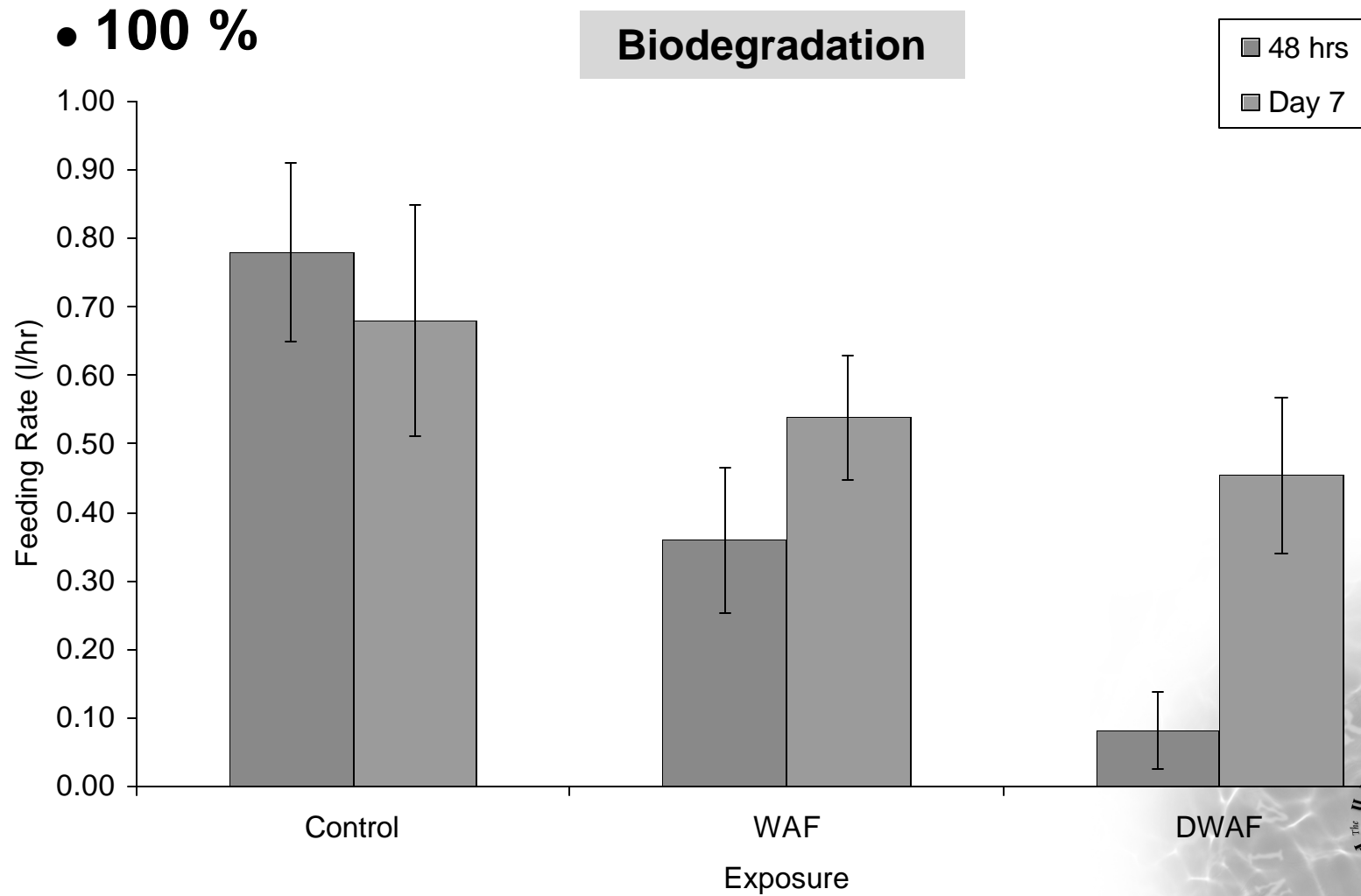
# Forties and Superdispersant 25

• 100%

Biodegradation



# ANS and Corexit 9527

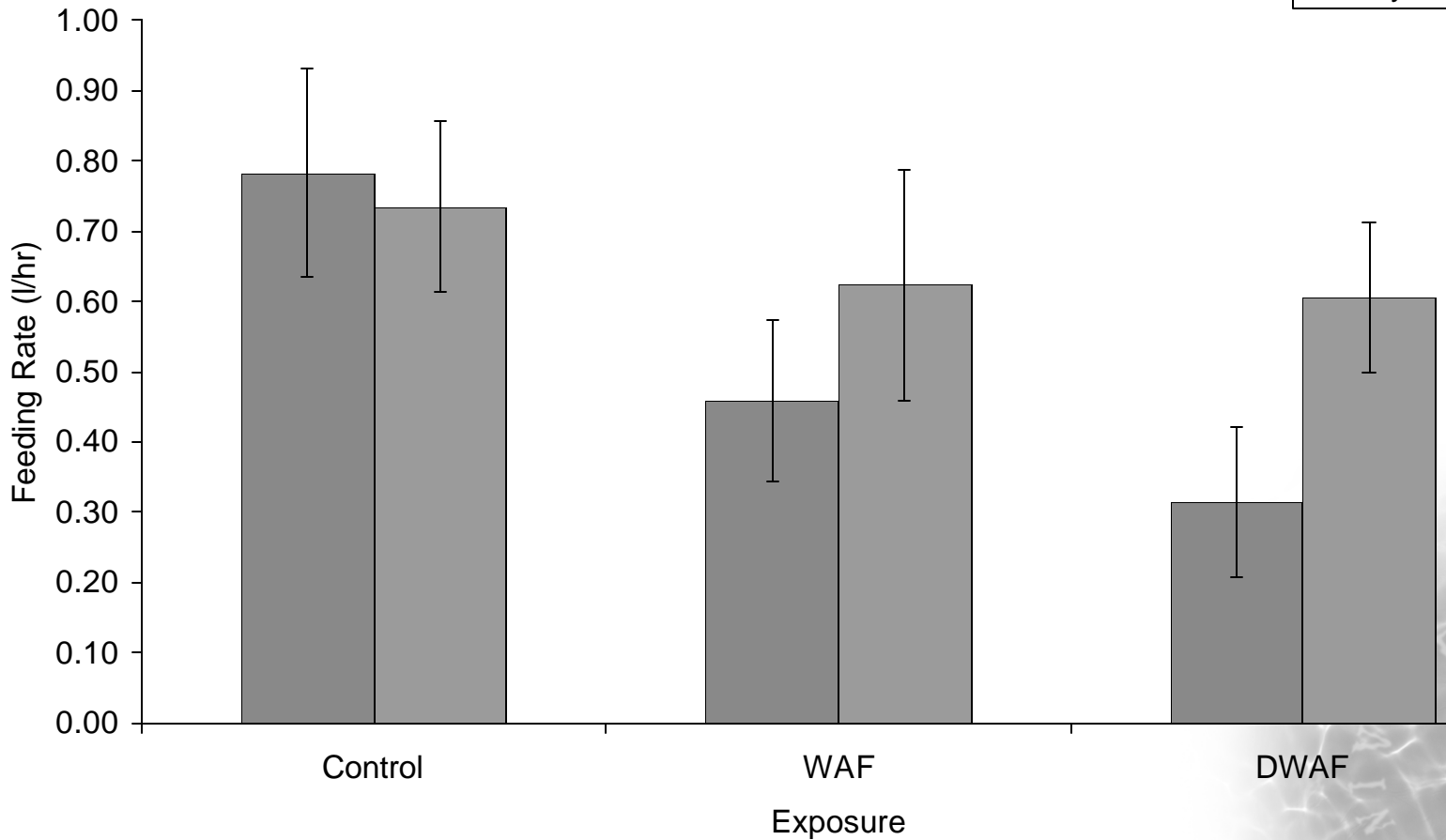


# Forties and Superdispersant 25

• 50 % dilution

Biodegradation

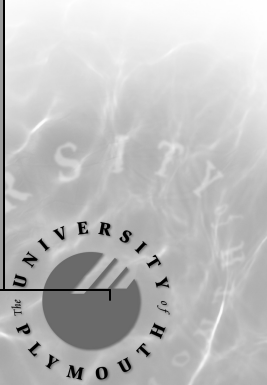
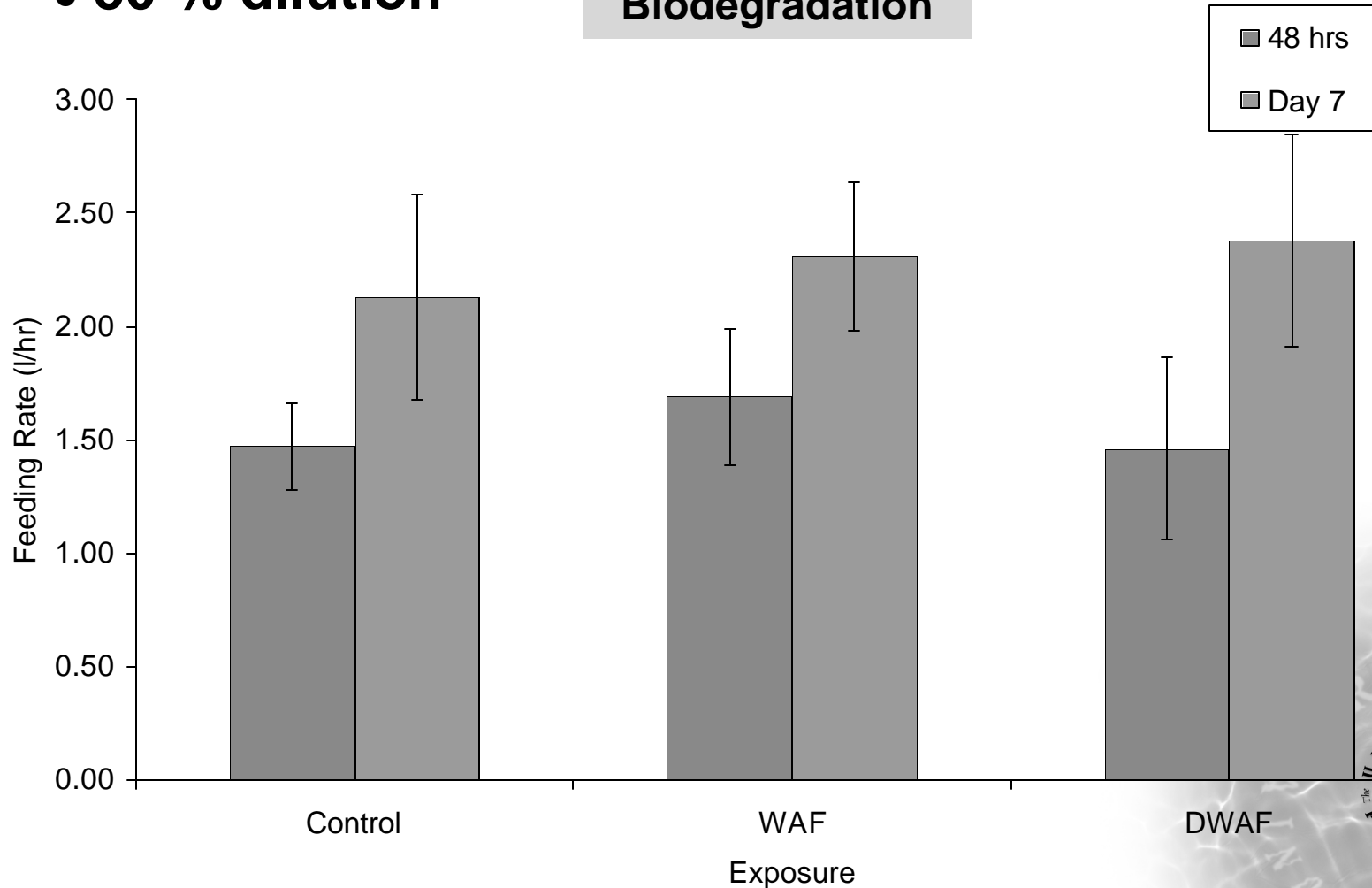
■ 48 hrs  
■ Day 7



# Forties and Superdispersant 25

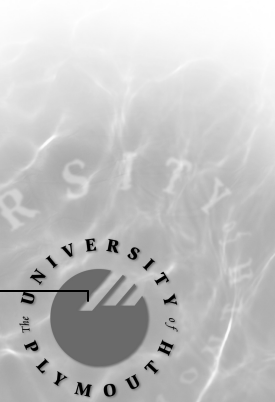
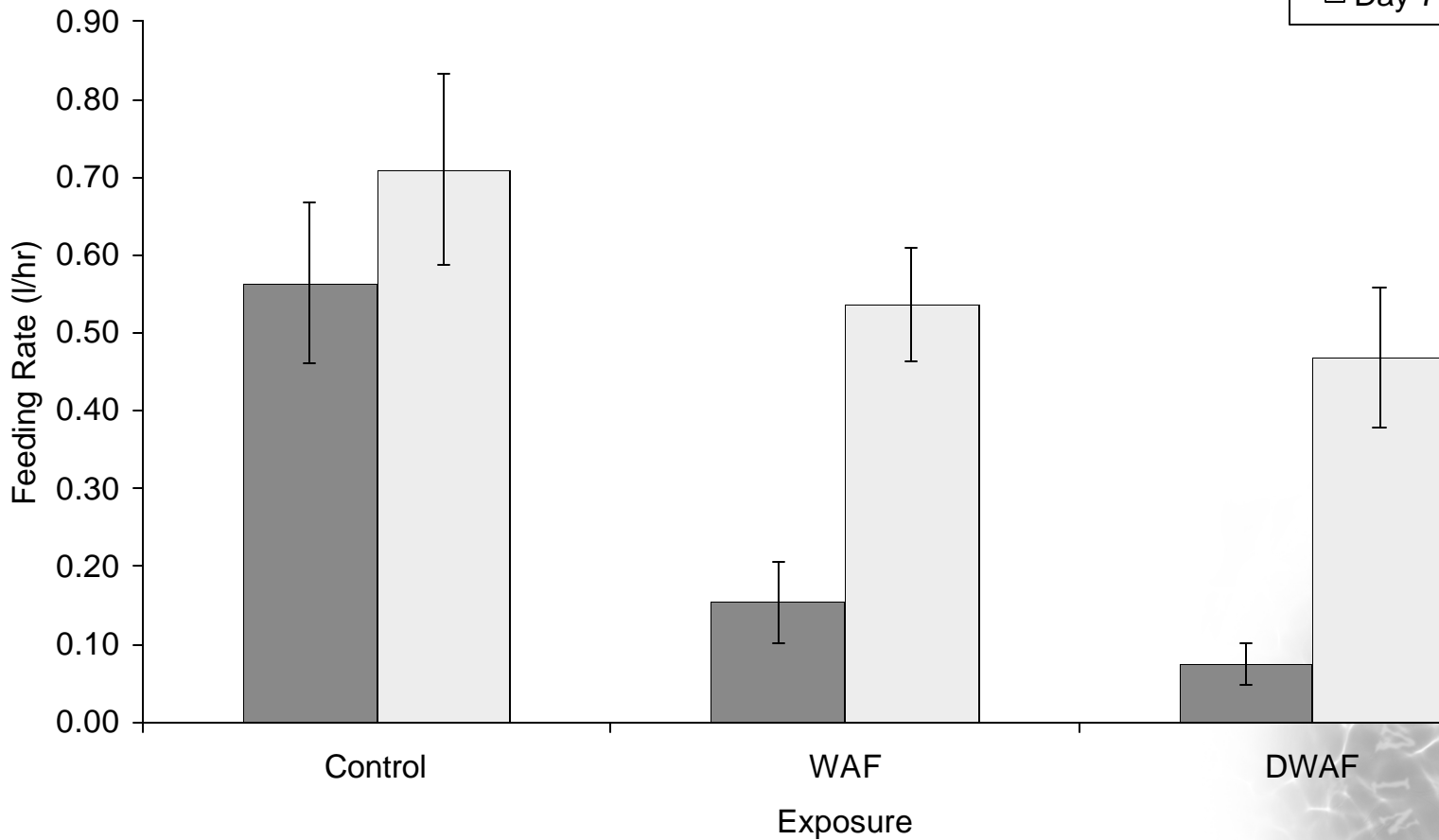
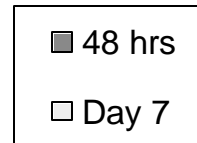
• 50 % dilution

Biodegradation



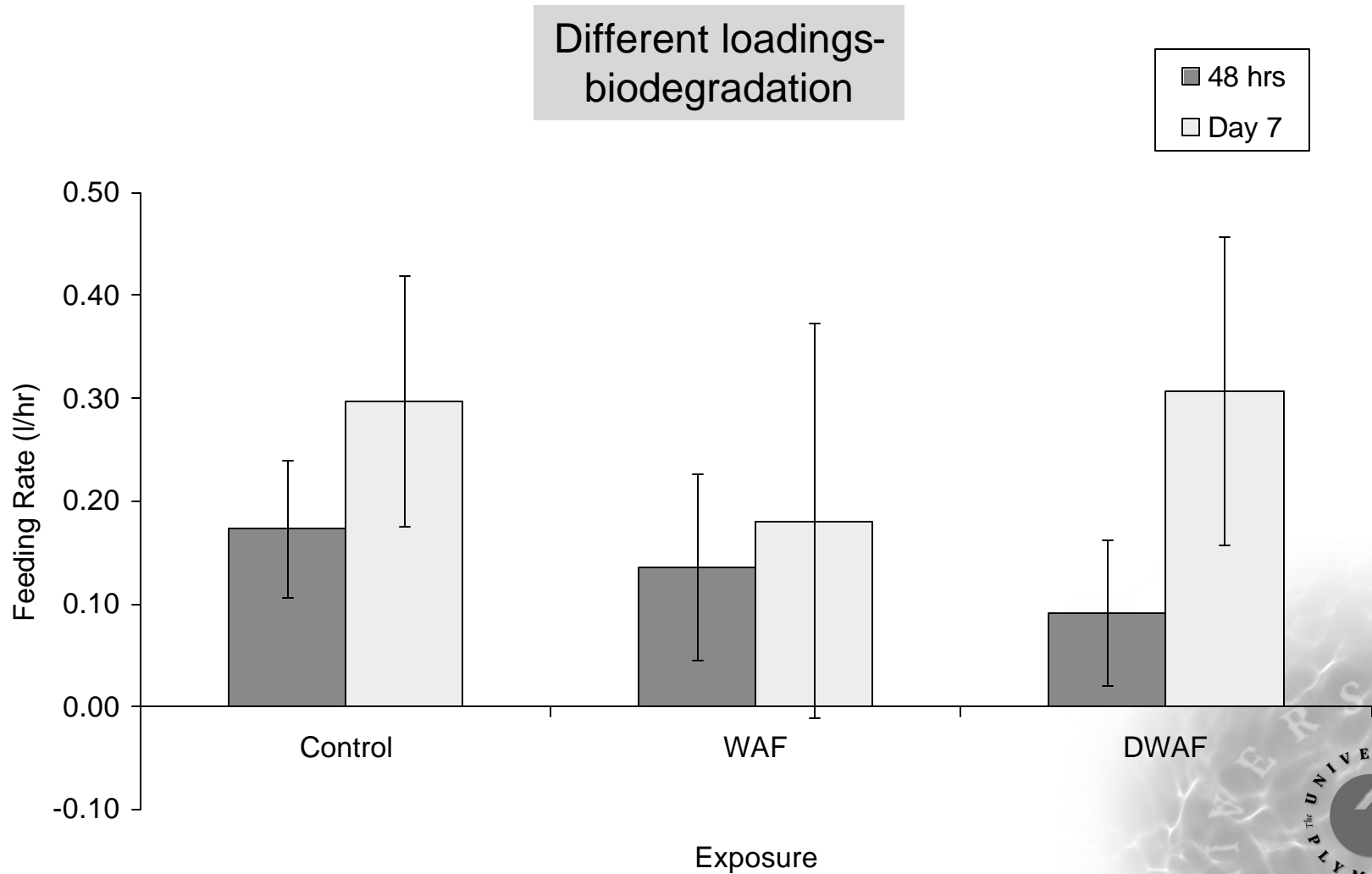
# Forties and Superdispersant 25

Different loadings-  
similar results

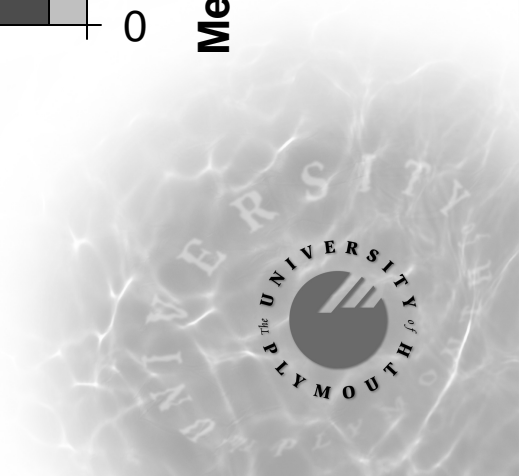
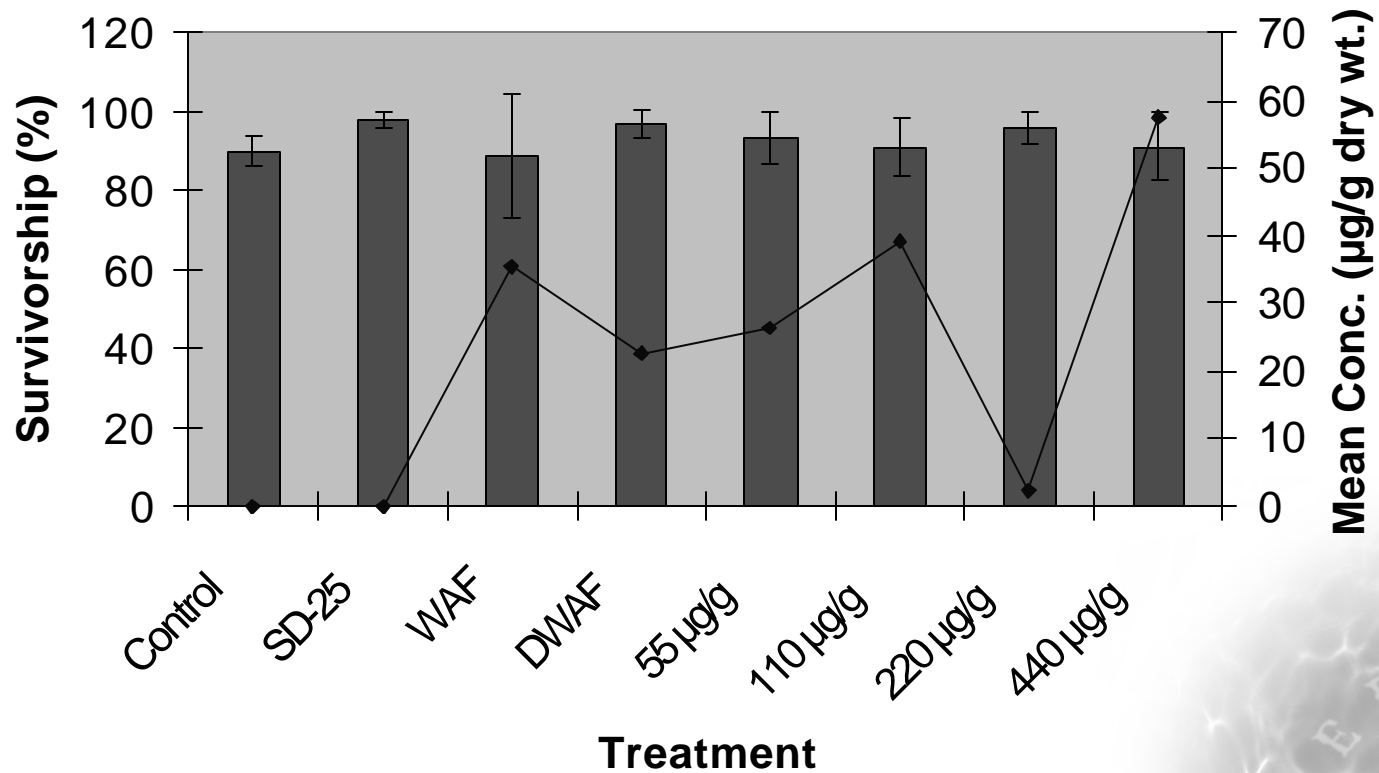




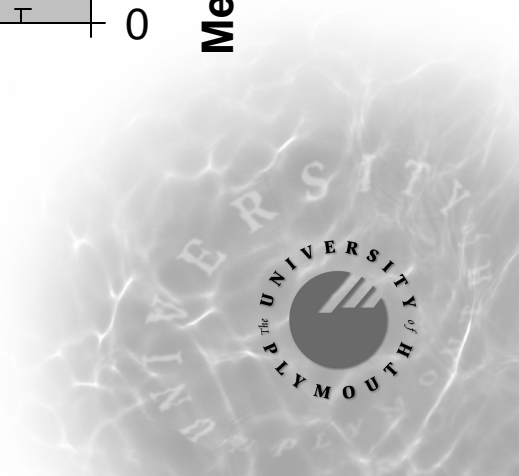
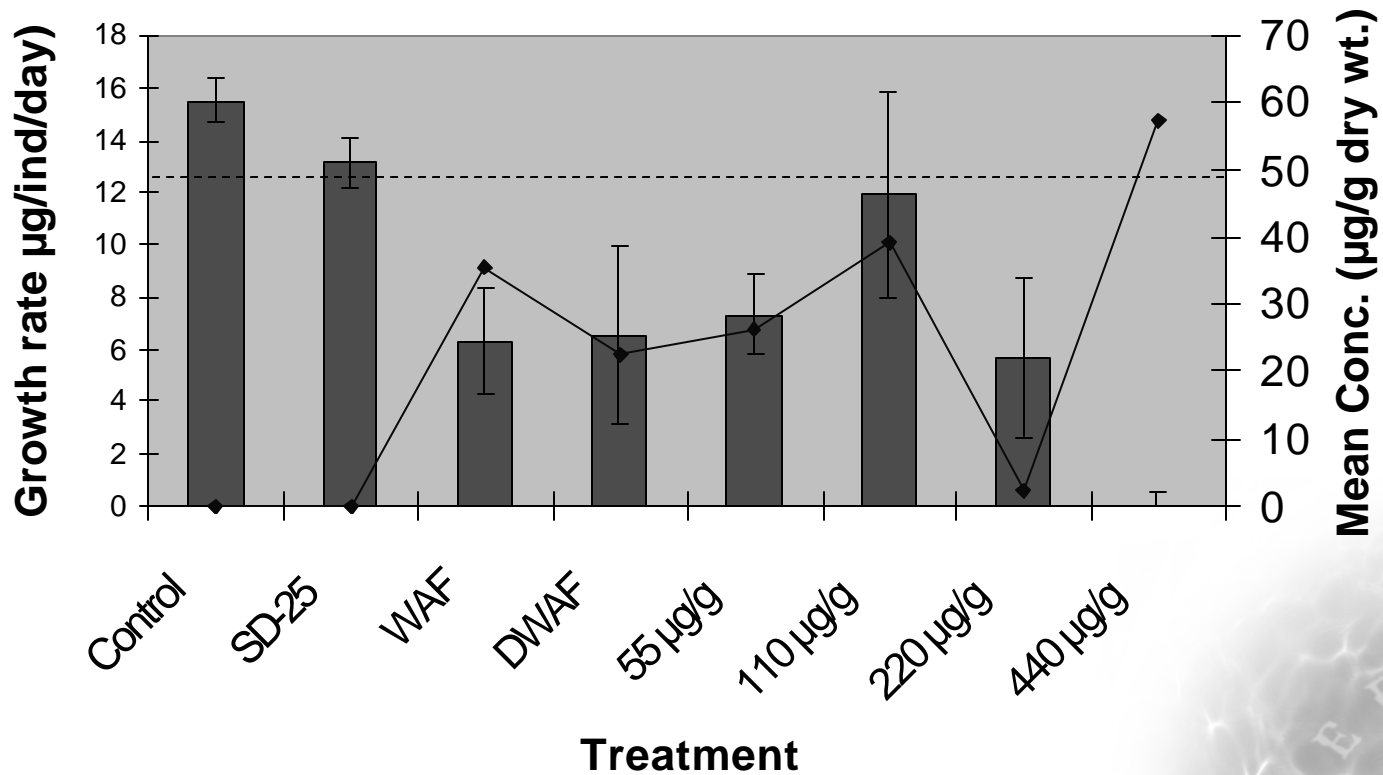
# Forties and Superdispersant 25



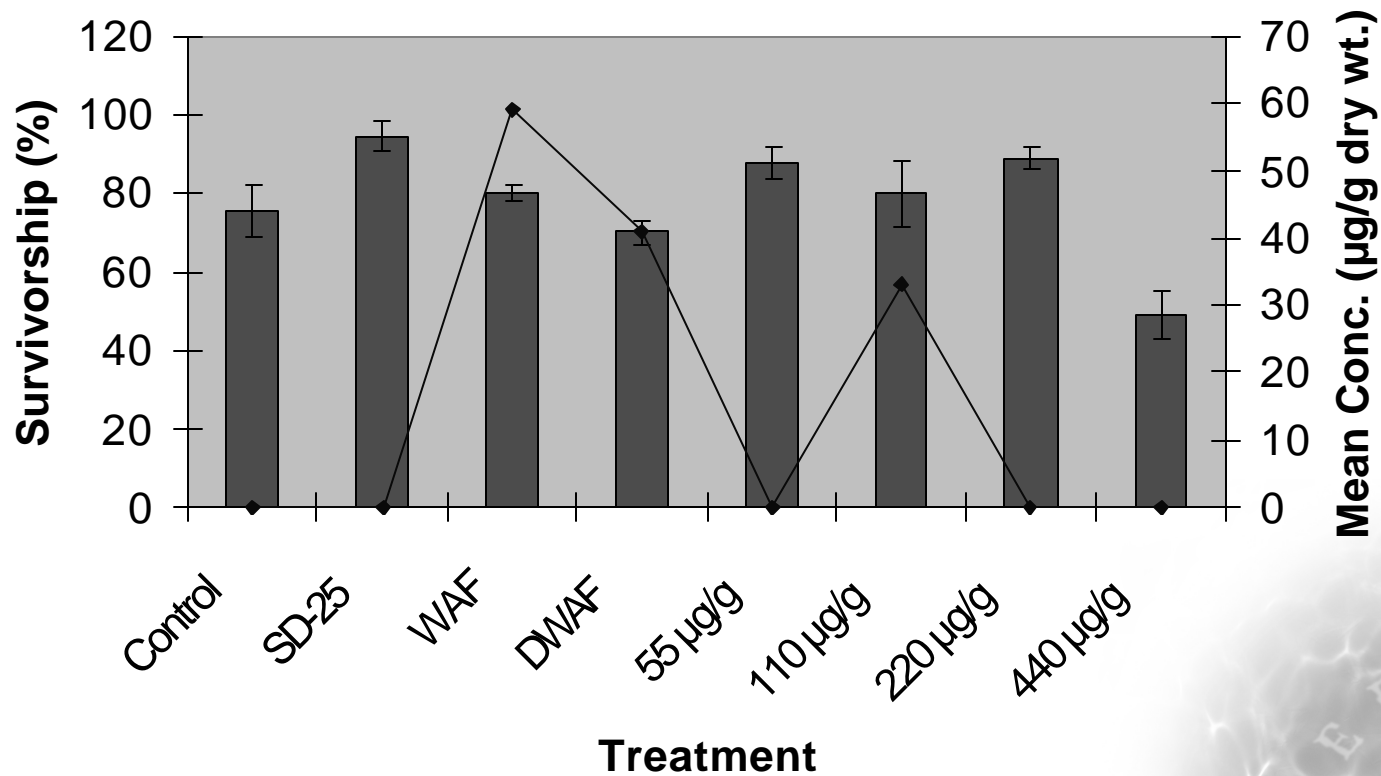
# Forties: Period 0 – 28 days Survivorship



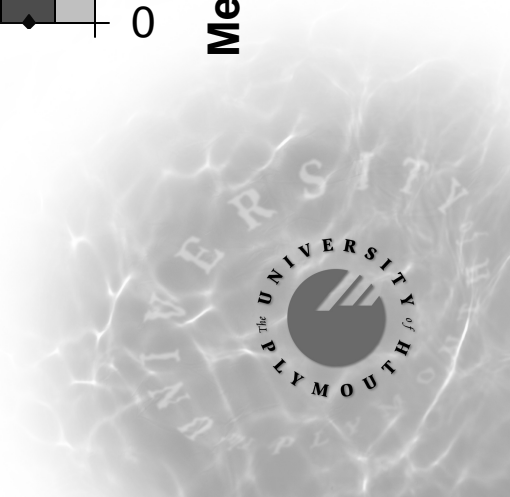
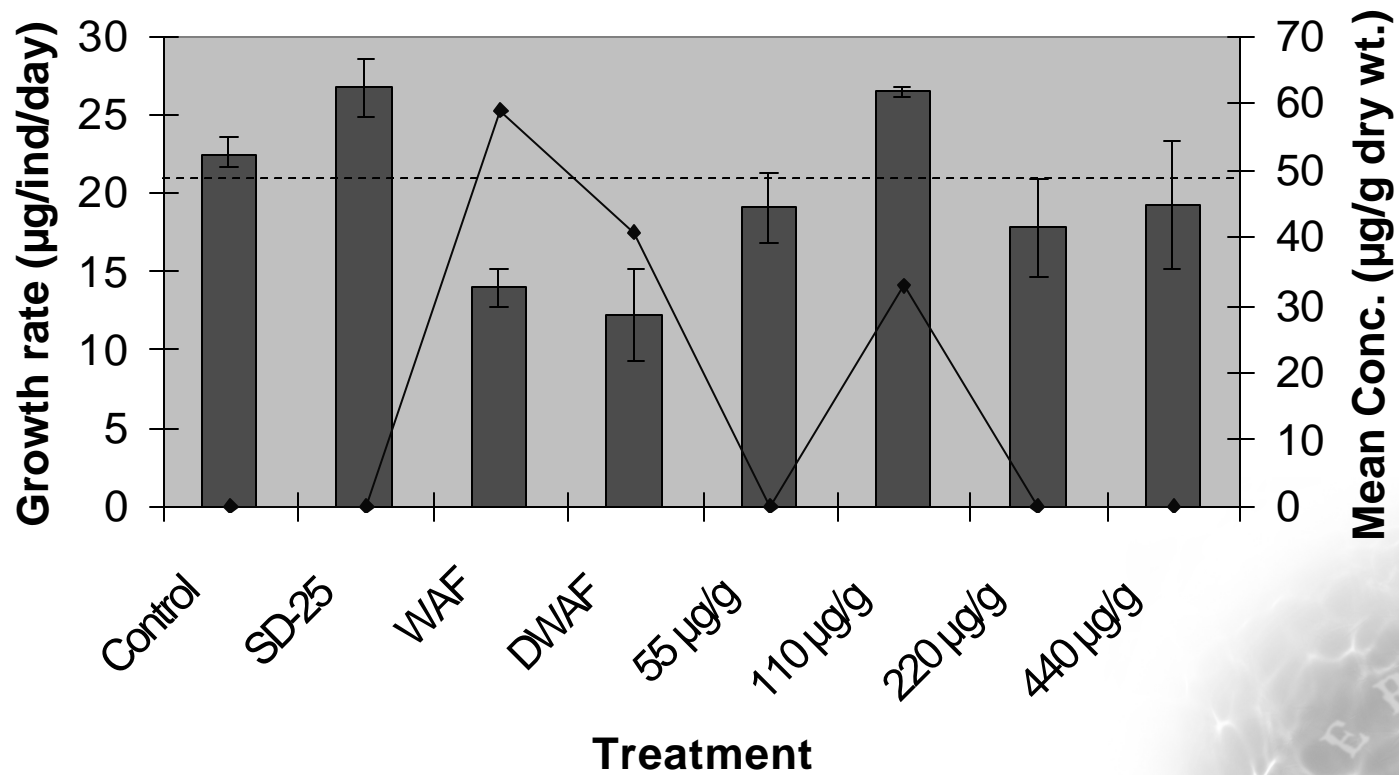
# Forties: Period 0 – 28 days Growth rate



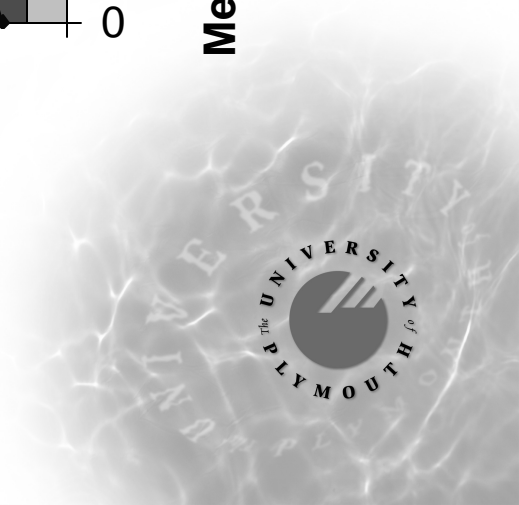
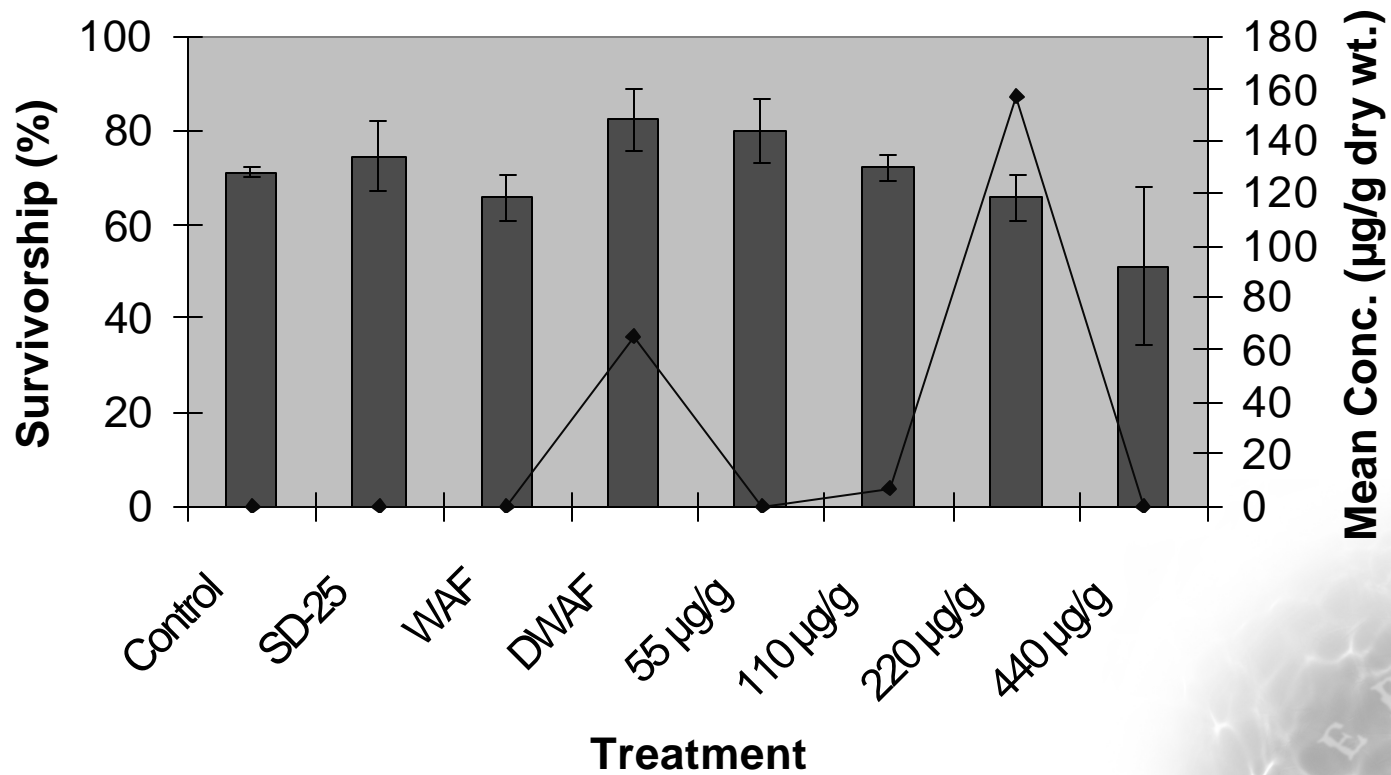
# Forties: Period 28 - 70 days Survivorship



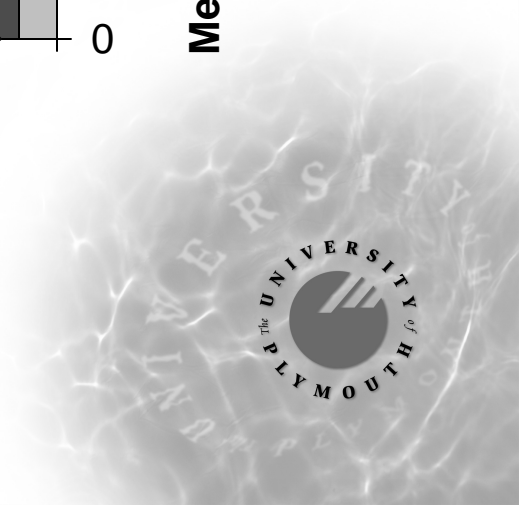
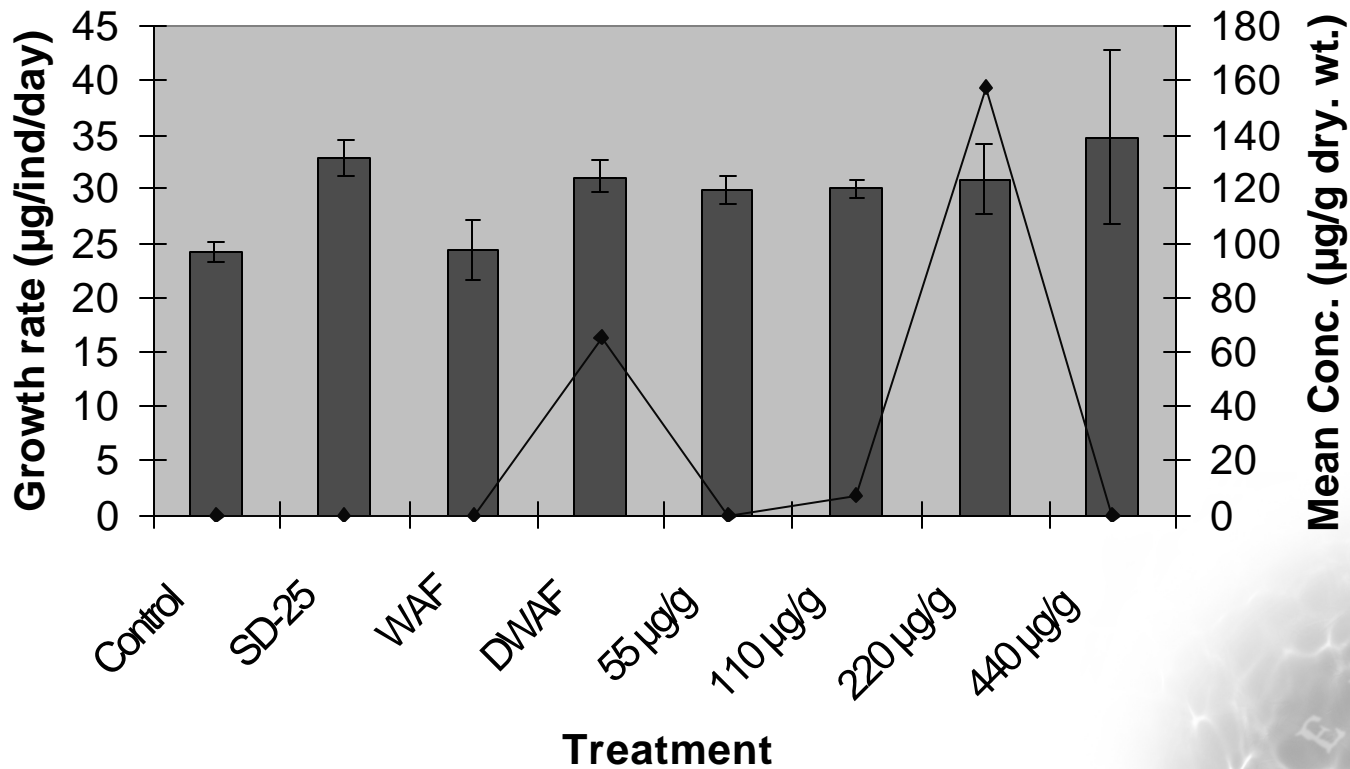
# Forties: Period 28 - 70 days Growth rate



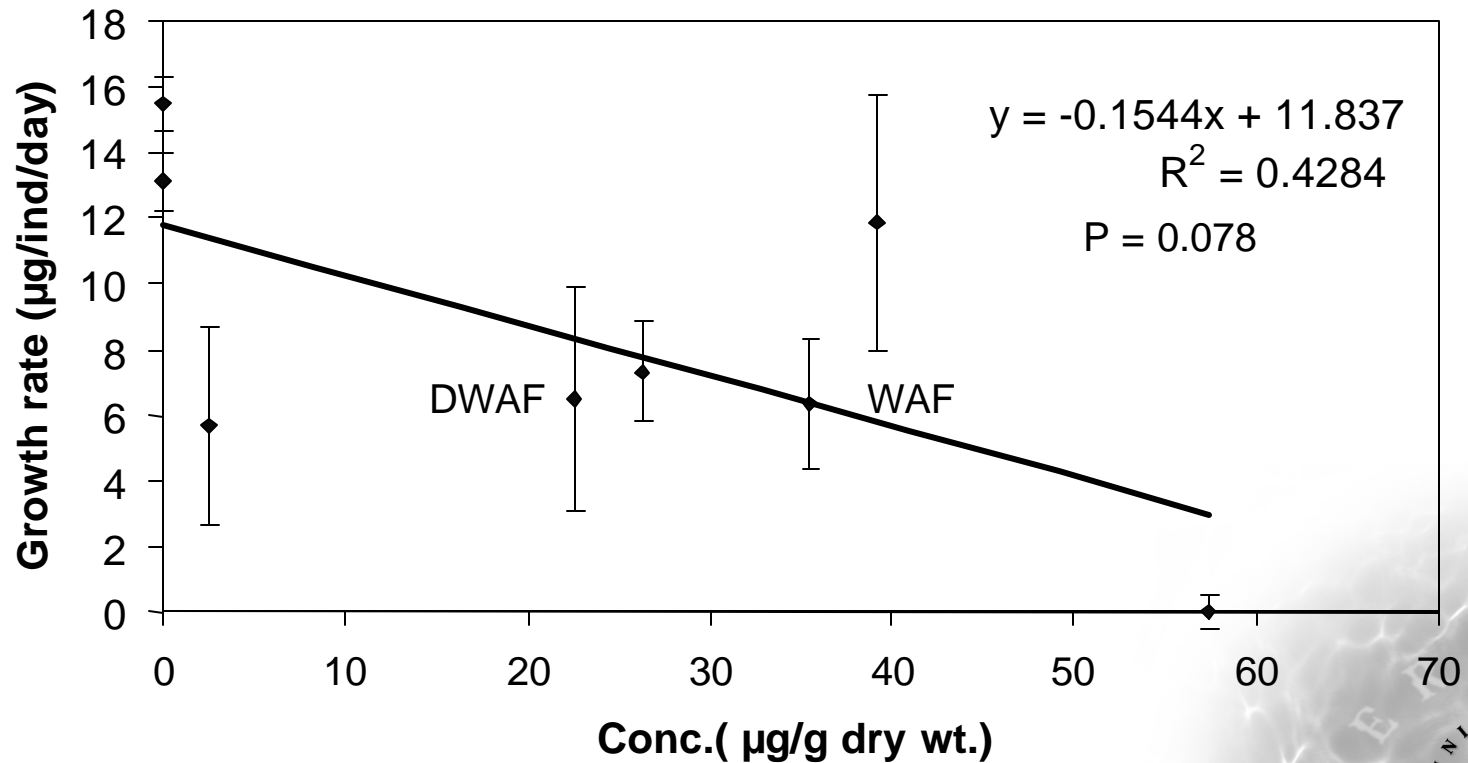
# Forties: Period 70 - 110 days Survivorship



# Forties: Period 70 - 110 days Growth rate



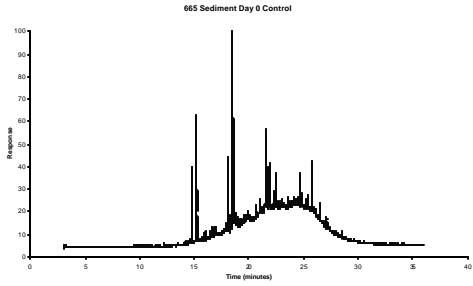
# Forties: Relationship Growth rate & Conc. during 0 – 28 day period



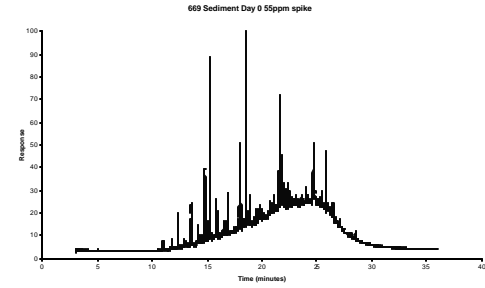


# DAY 0

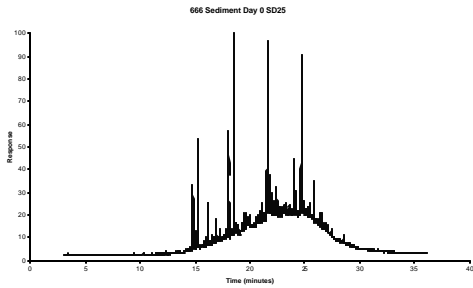
**Control**



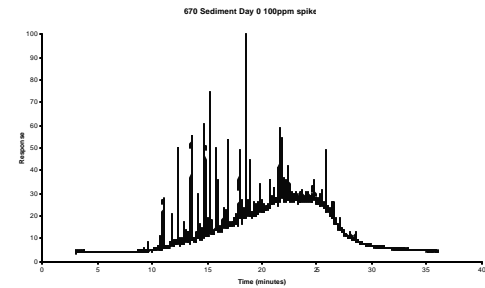
**Spike  
55**



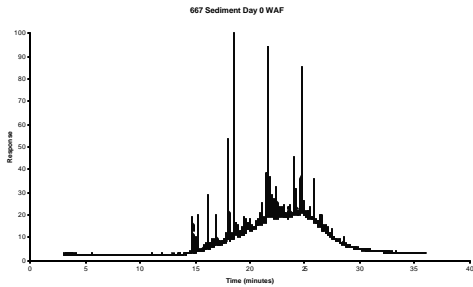
**SD25**



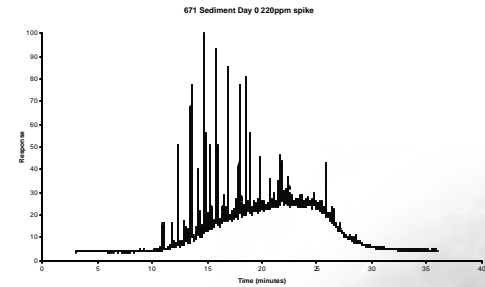
**Spike  
110**



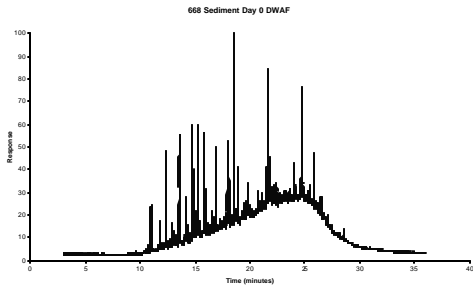
**WAF**



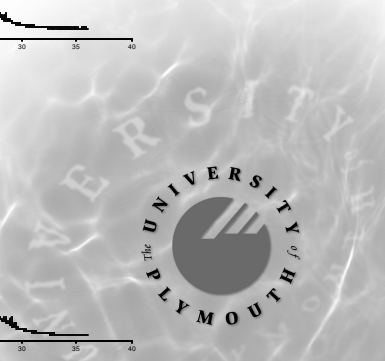
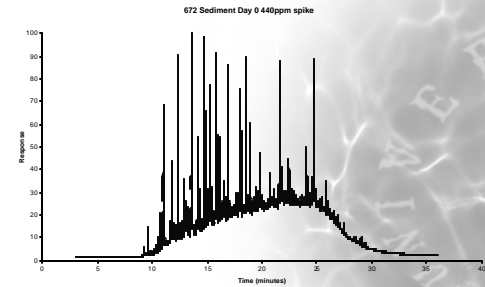
**Spike  
220**



**DWAF**

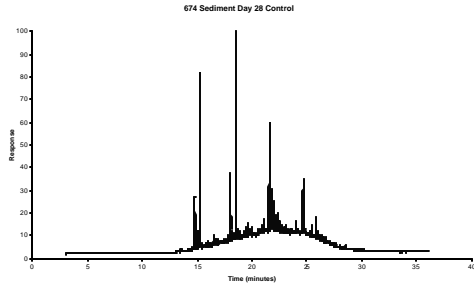


**Spike  
440**

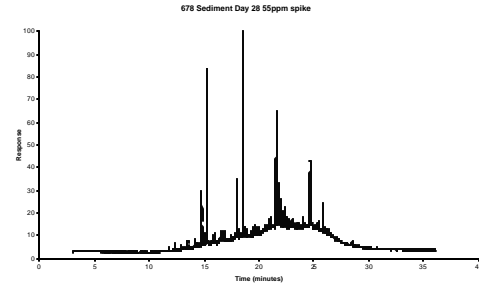


# DAY 28

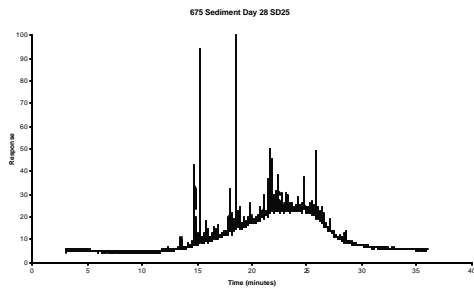
**Control**



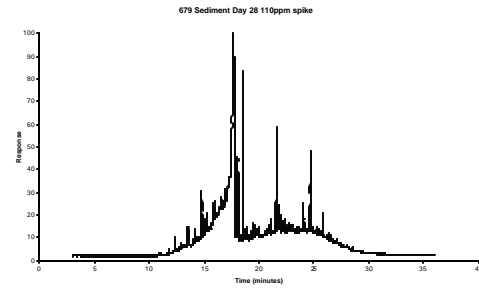
**Spike  
55**



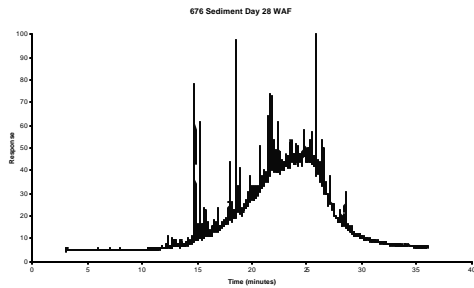
**SD25**



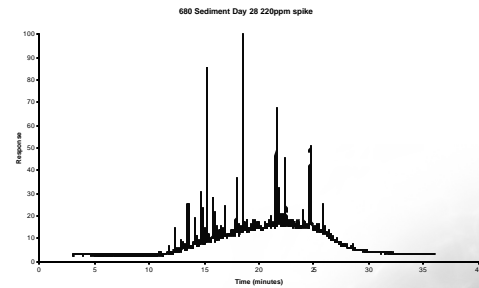
**Spike  
110**



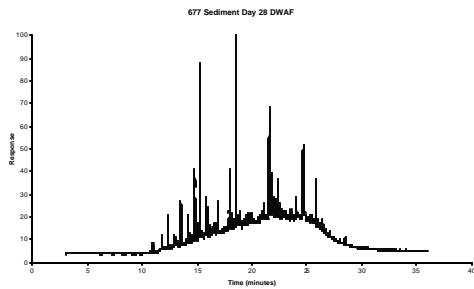
**WAF**



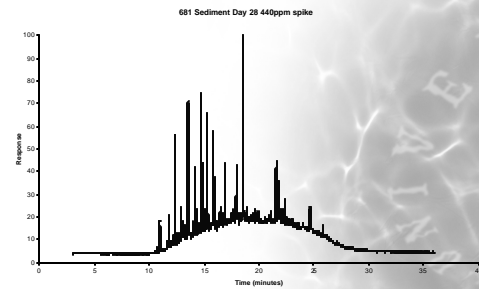
**Spike  
220**



**DWAF**

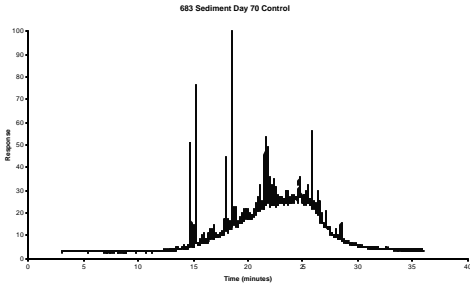


**Spike  
440**

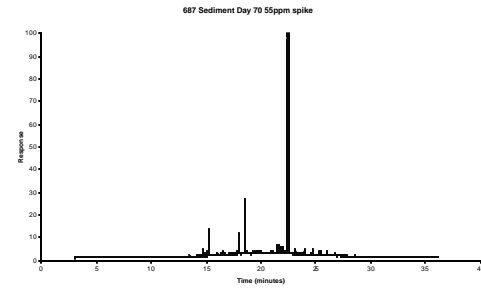


# DAY 70

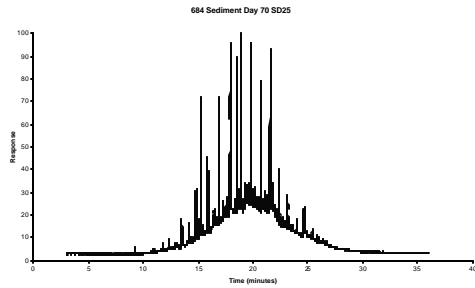
**Control**



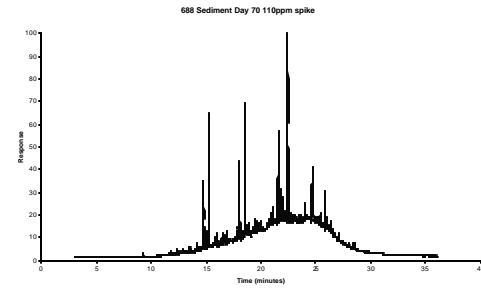
**Spike  
55**



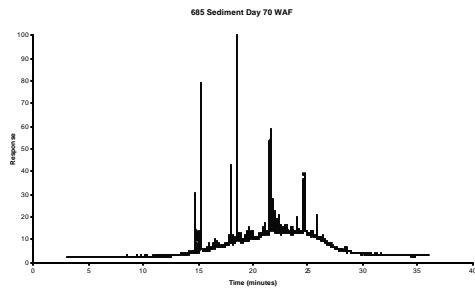
**SD25**



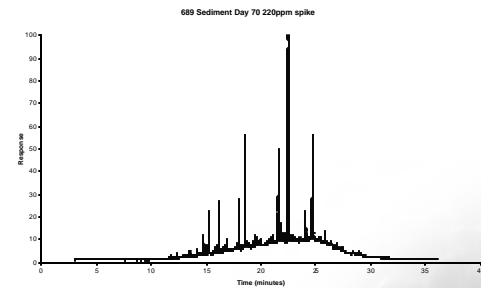
**Spike  
110**



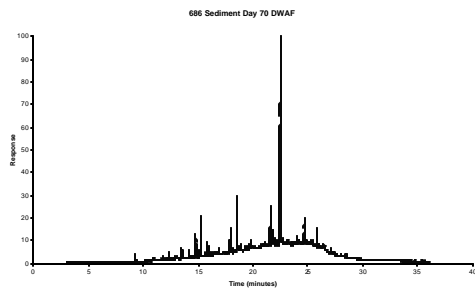
**WAF**



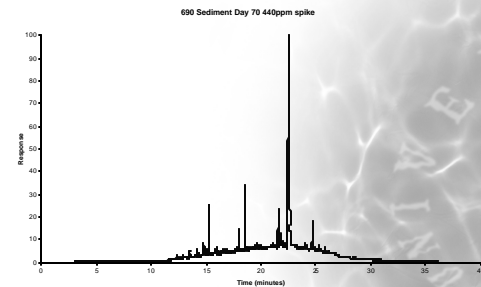
**Spike  
220**



**DWAF**

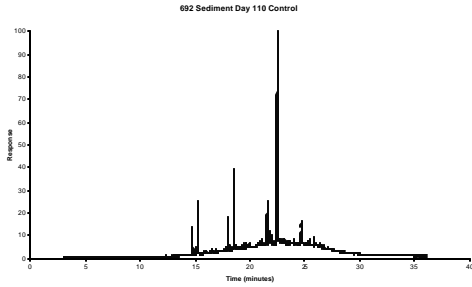


**Spike  
440**

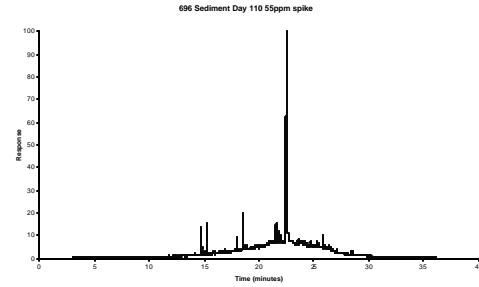


# DAY 110

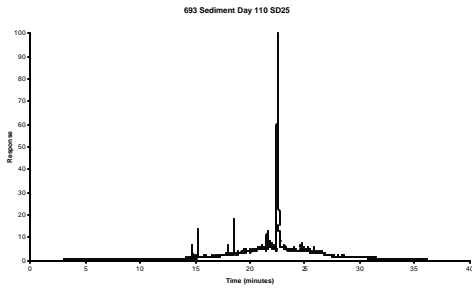
**Control**



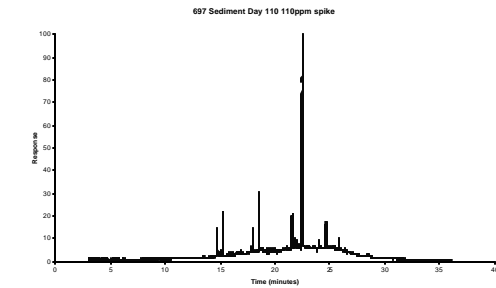
**Spike  
55**



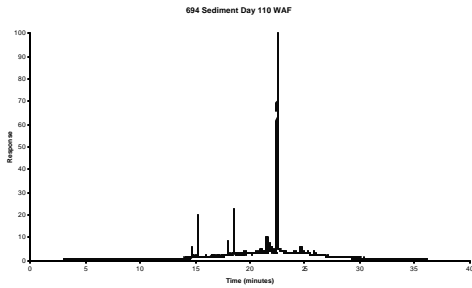
**SD25**



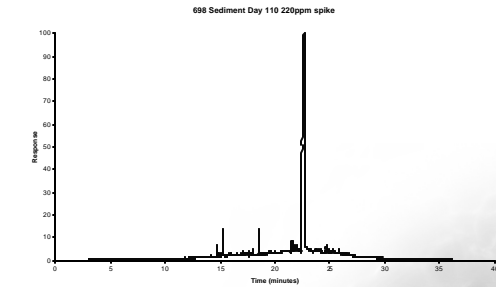
**Spike  
110**



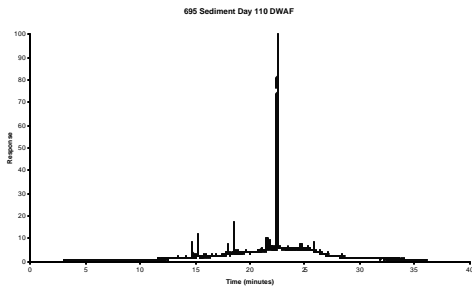
**WAF**



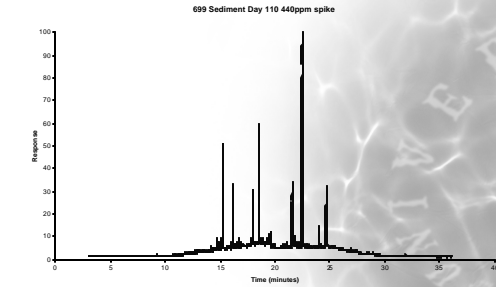
**Spike  
220**



**DWAF**



**Spike  
440**



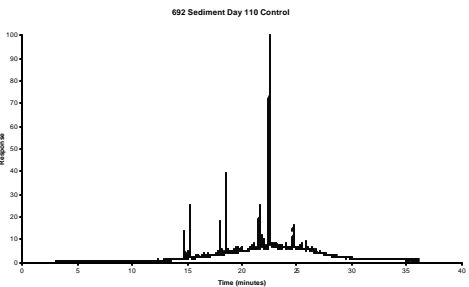
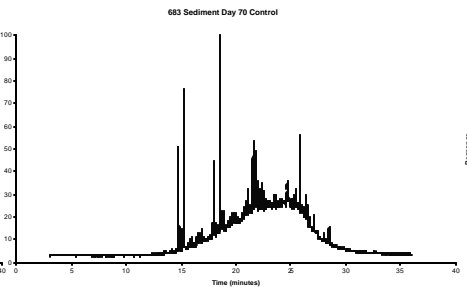
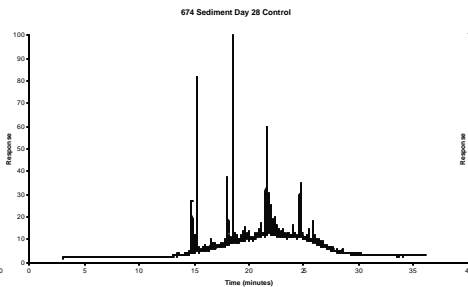
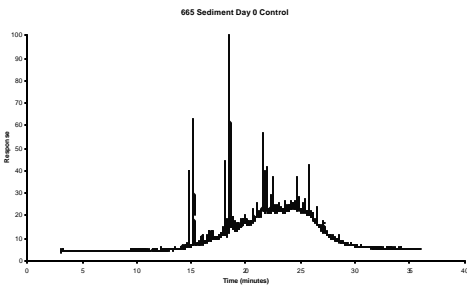
DAY 0

DAY 28

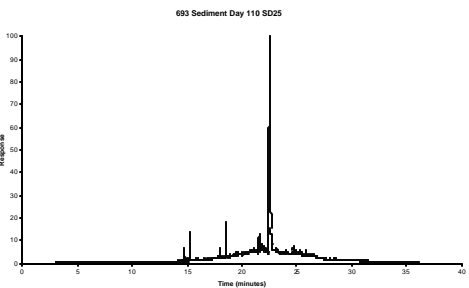
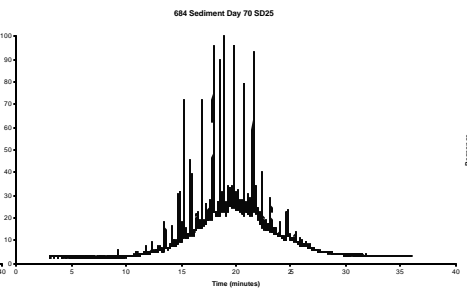
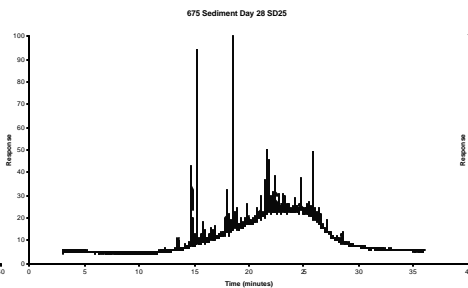
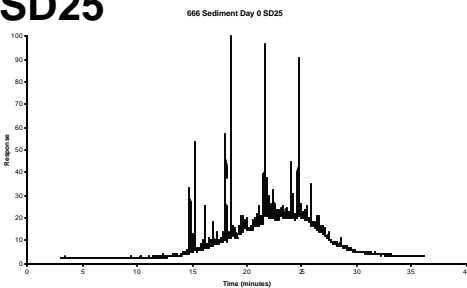
DAY 70

DAY 110

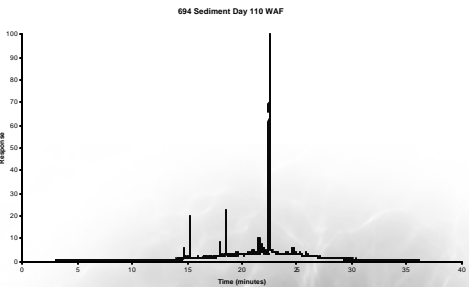
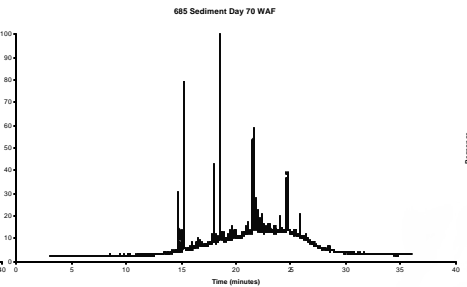
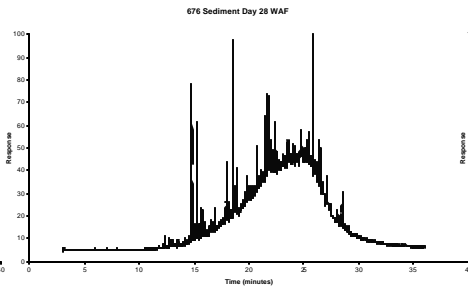
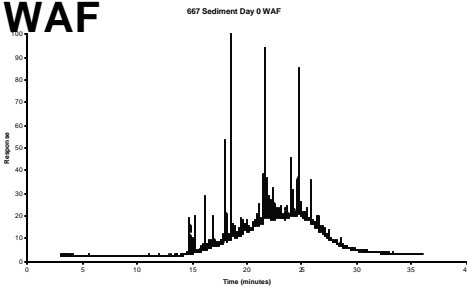
Control



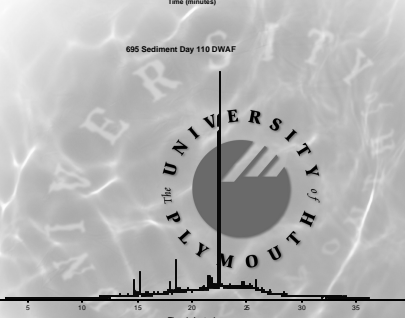
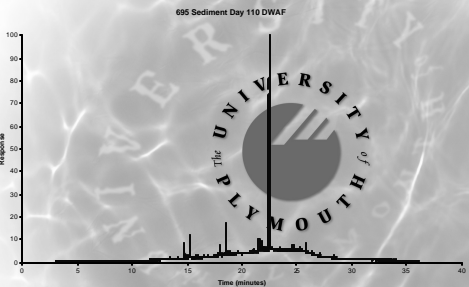
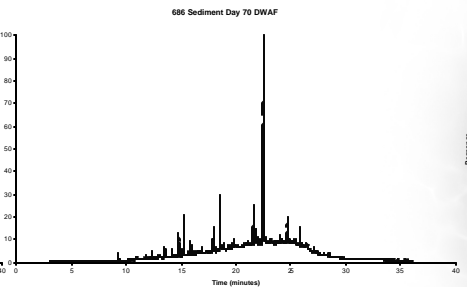
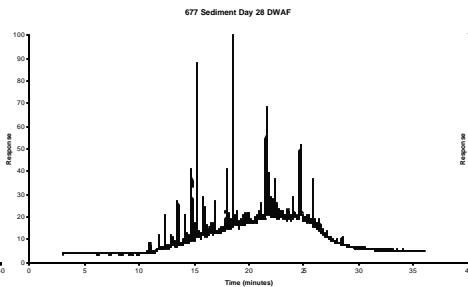
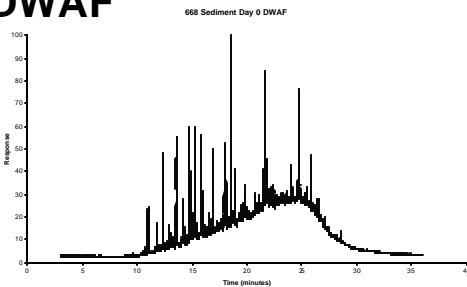
SD25

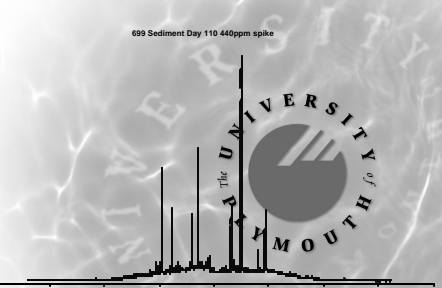
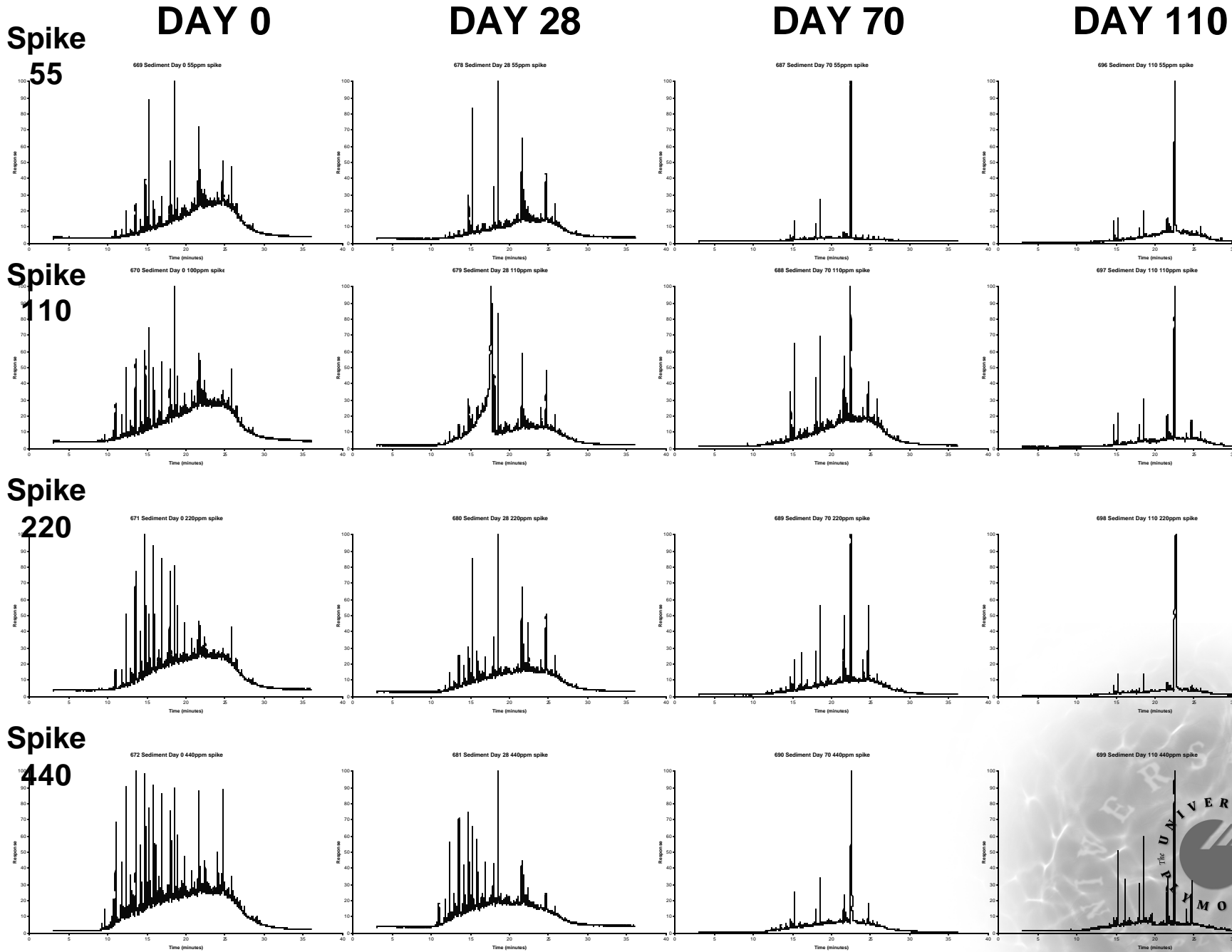


WAF

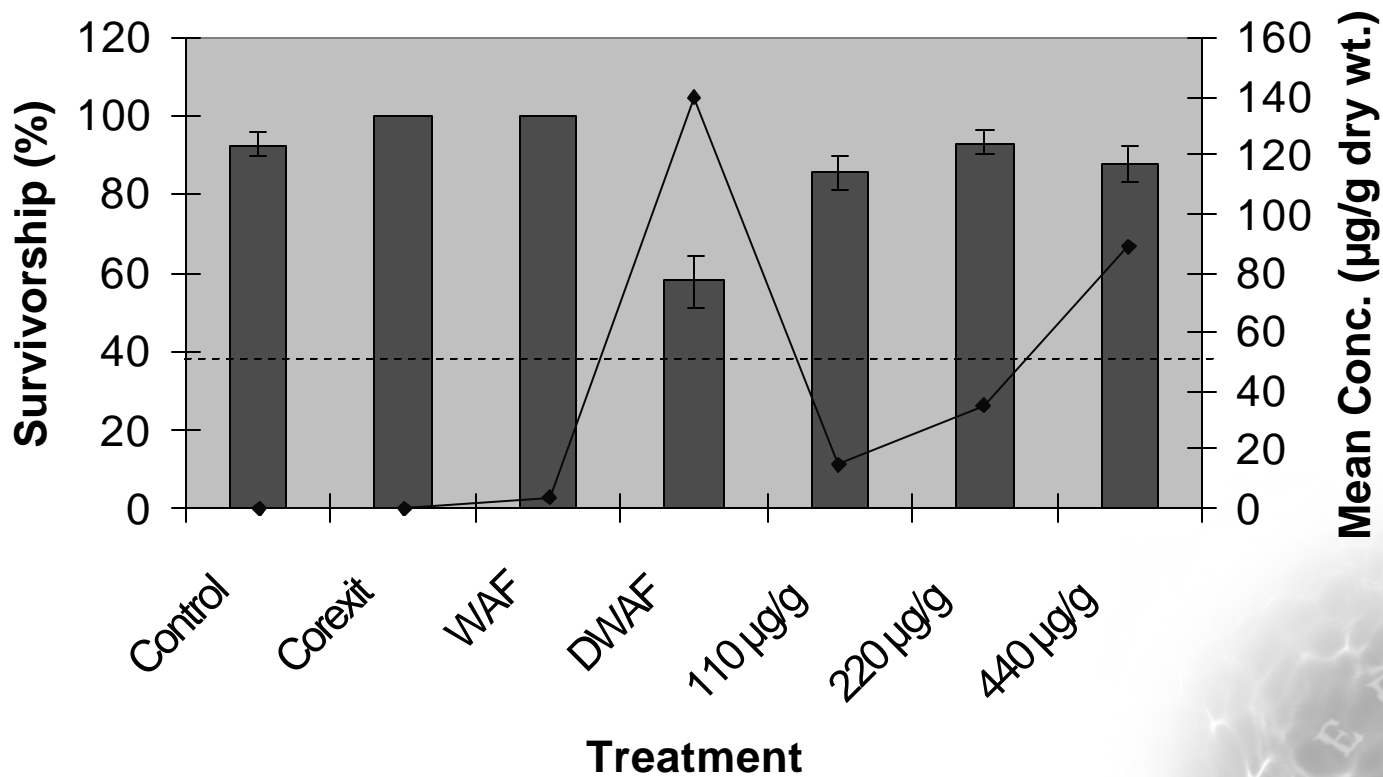


DWAF

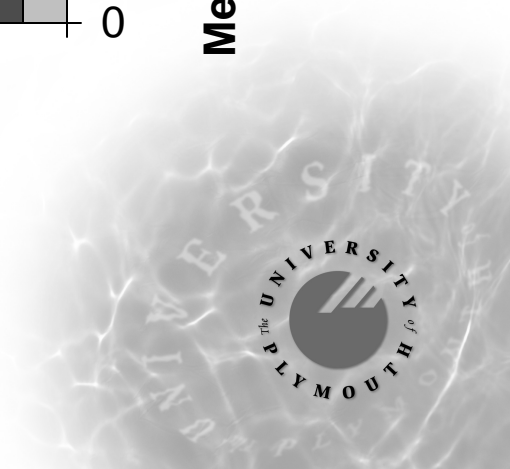
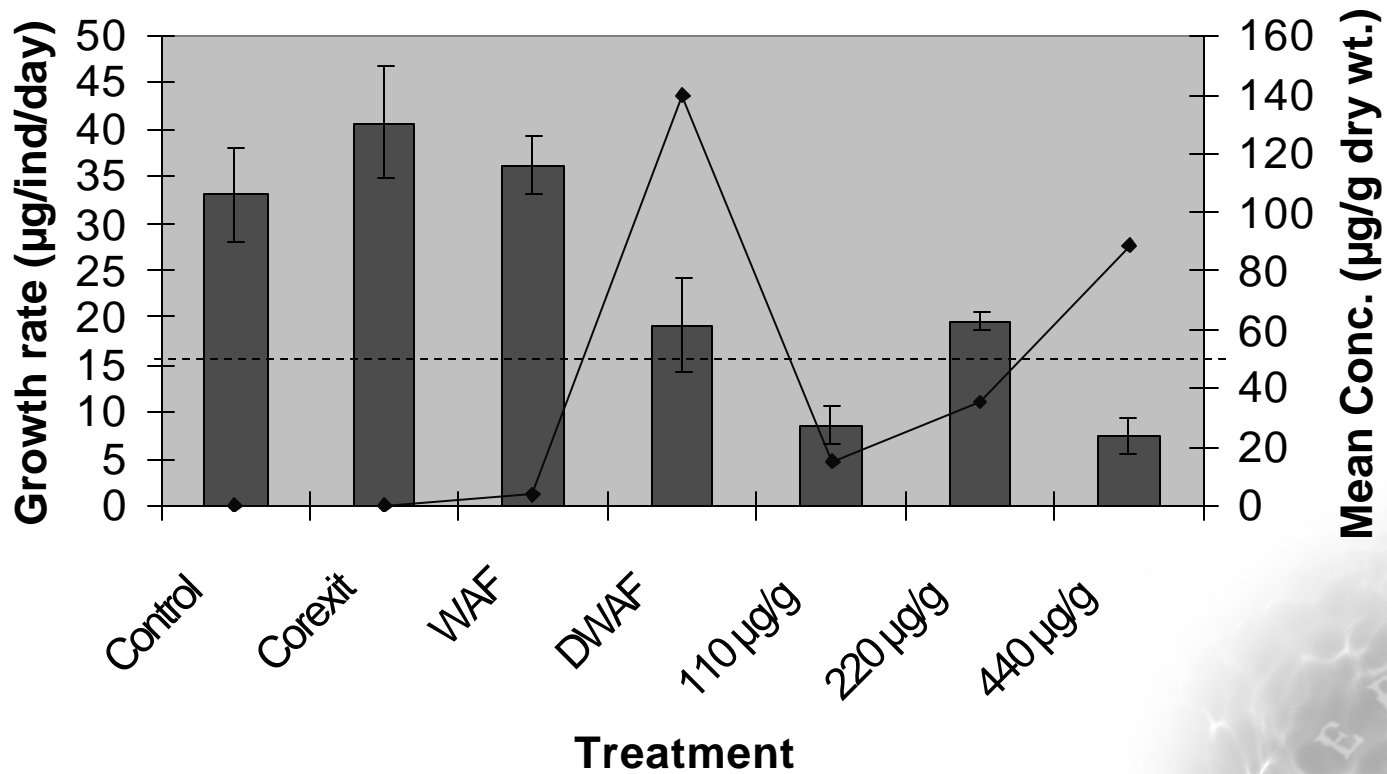




# ANS: Period 0 – 28 days Survivorship

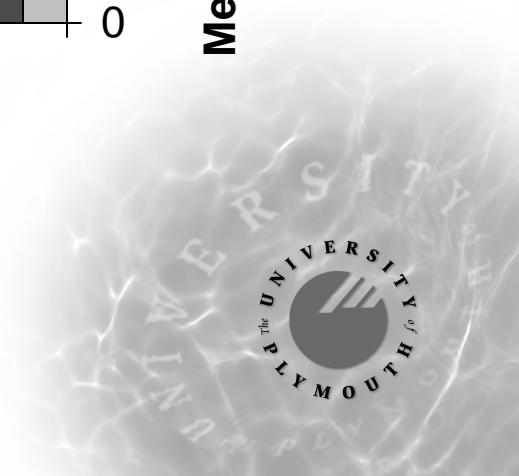
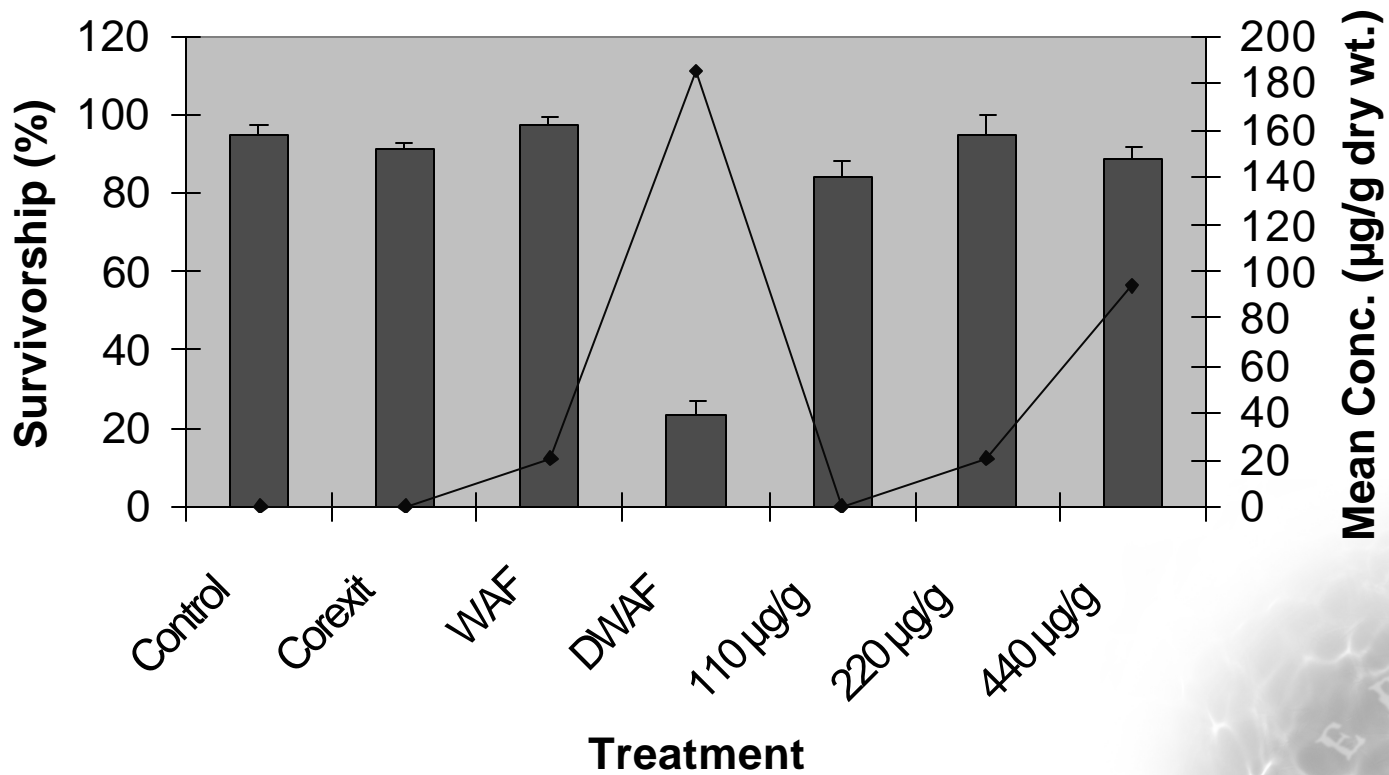


# ANS: Period 0 – 28 days Growth rate

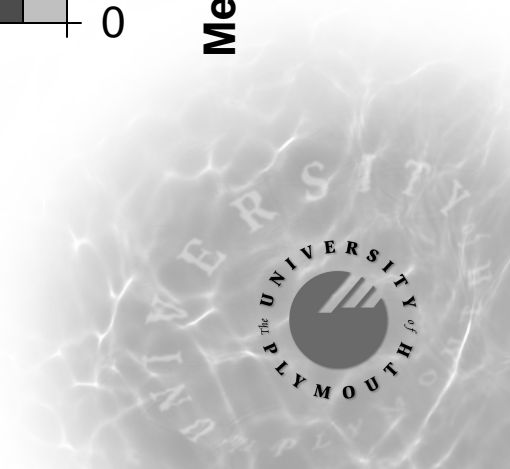
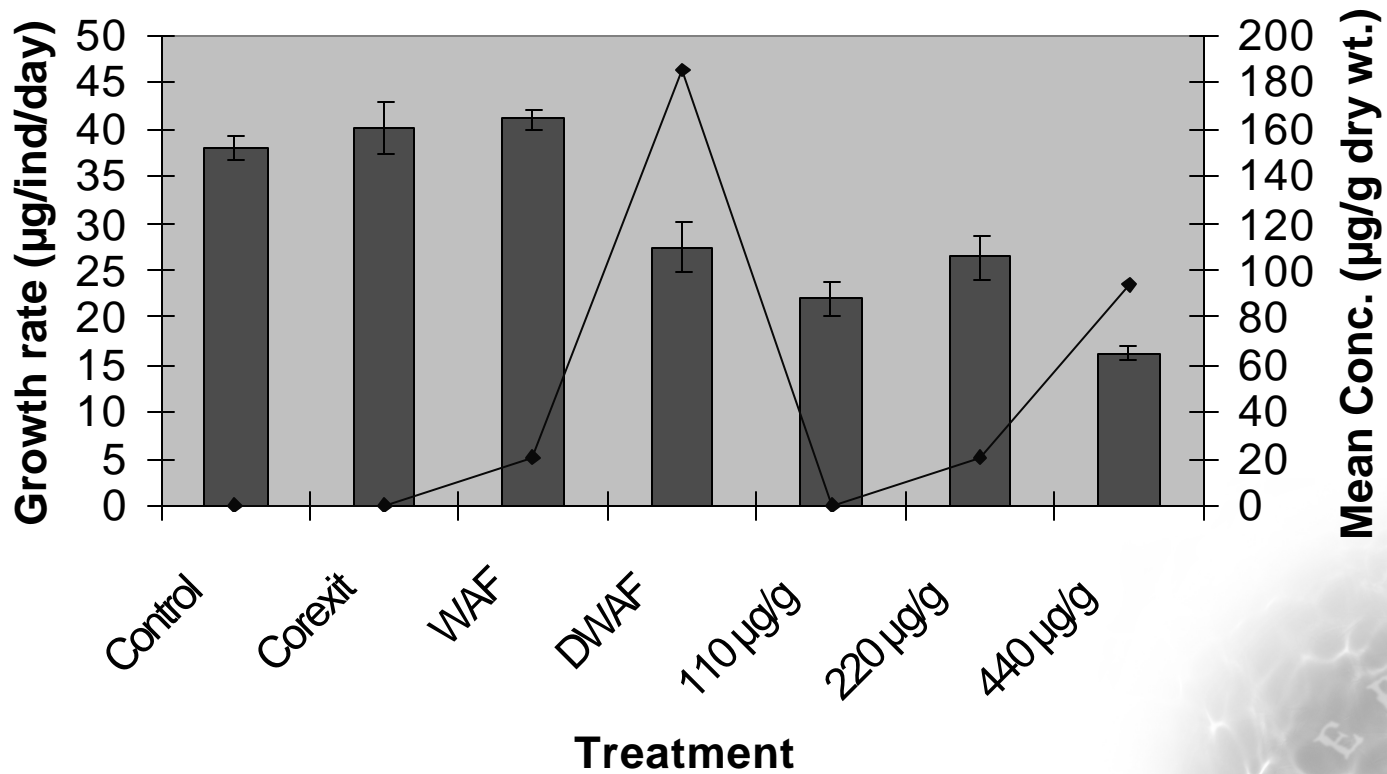




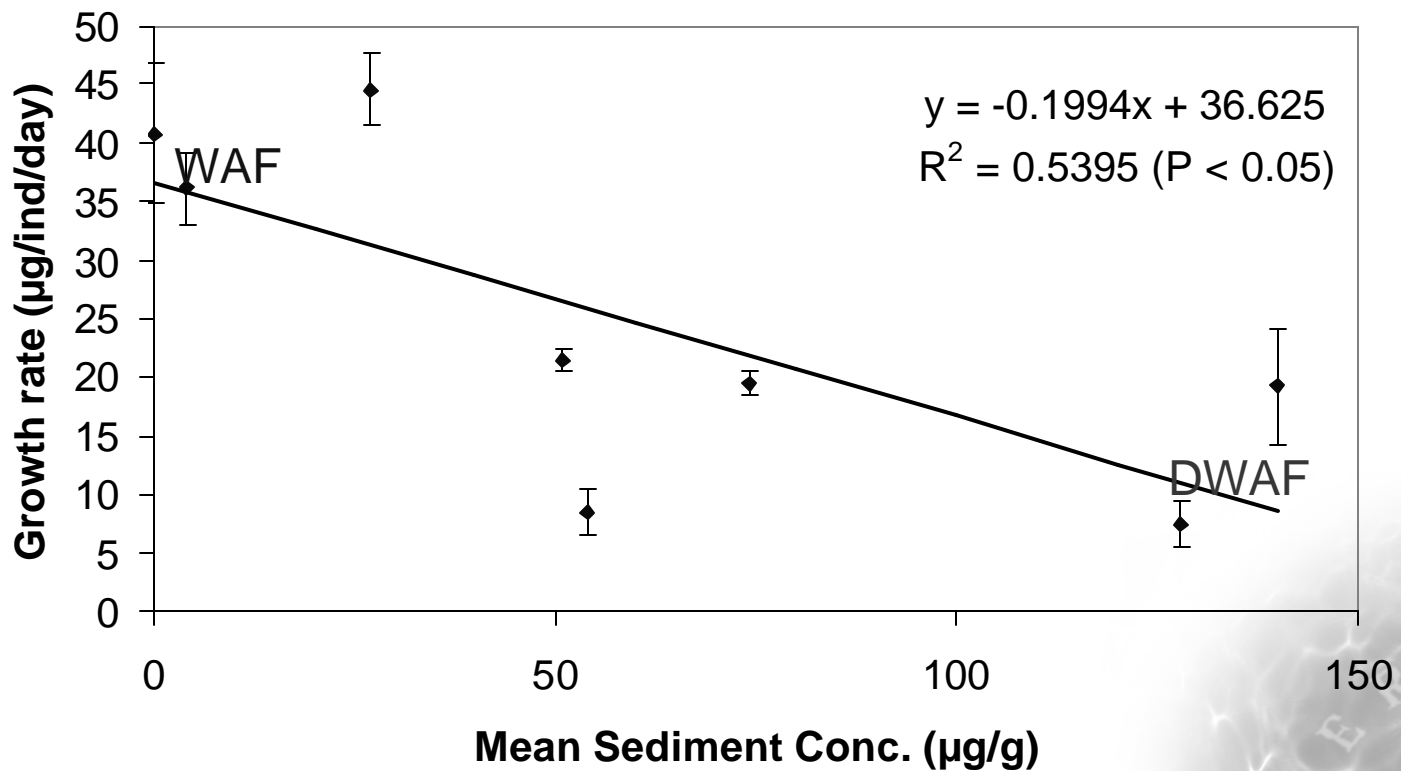
# ANS: Period 28 -75 days Survivorship



# ANS: Period 28 - 75 days Growth rate

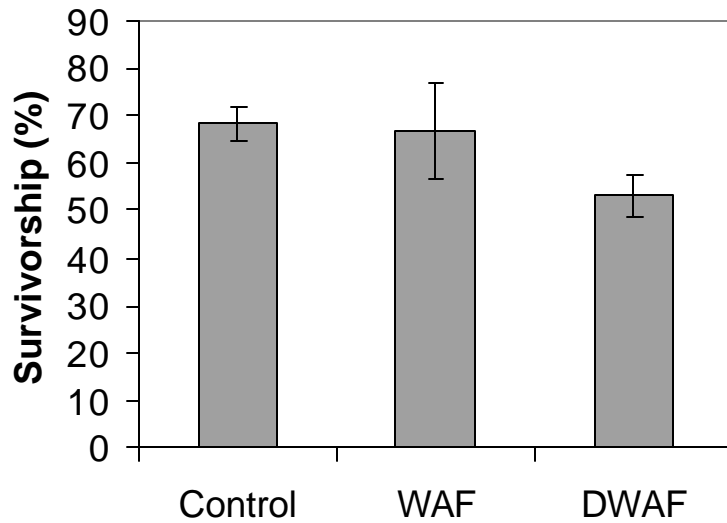


# ANS: Relationship Growth rate & Conc. during 0 – 28 day period



# ANS Biodeg: 28 day exposure

Survivorship



Growth rate

