ALGAE4FISH

LARVAL TRIAL HIGHLIGHTS

UNIVERSITY OF SOUTH BOHEMIA (FROV)

MAIN FOCUS AREAS

- ENRICHMENT DIETS TESTING BASED ON ALGATECH MICROALGAES PRODUCTION (LARVAE & ROTIFERS)
- ROTIFERS CULTURE DEVELOPMENT (FRESHWATER ROTIFERS)

ALGAE ENRICHMENT TESTING

- 12 DIETS BASED ON ALGAE GROWN AT ALGATECH WERE TESTED ON PIKE PERCH LARVAE

ALGAE:

- *A) NANNOCHLOROPSIS OCCULATA (NANNO 3600 REED MARICULTURE), (CONTROL)*
- *B) CHLORELLA VULGARIS CULTURED AT 20 ℃ IN BG117 MEDIA*, (ALGATECH)
- C) *CHLORELLA VULGARIS CULTURED AT 30 ℃ IN BG117 MEDIA*, , (ALGATECH)

ALGAE:

- *D) CHLORELLA VULGARIS CULTURED AT 20 °C IN UREA MEDIA,* , (ALGATECH)
- *E) CHLORELLA VULGARIS CULTURED AT 30 °C IN UREA MEDIA,* , (ALGATECH)
- *F) TRACHIDISCUS MINITUS CULTURED AT 15 °C* , (ALGATECH)
- *G) TRACHIDISCUS MINITUS CULTURED AT 25 °C* , (ALGATECH)

ROTIFER ENRICHMENT TRIAL

- ENRICHMENTS VIABILITY FOR ROTIFER GROWTH AND REPRODUCTION

SET UP

- ALL DIETS WERE TESTED IN 2 LITER BEAKER IN BATCH CULTURE
- STANDARD *BRACHIONUS PLICATILIS CULTURE* CONDITIONS
- TRIAL DURATION 2 WEEKS

RESULTS

- **ALL ENRICHMENTS WERE POSITIVELY ACCEPTED BY ROTIFERS, NO SIGNIFICANT DIFFERENCE WERE FOUND BETWEEN DIETS.**

- **ONLY TREATMENT *G)* (*TRACHIDISCUS MINITUS CULTURED AT 25 °C*) ↑ *REPRODUCTION RATE***

PIKEPERCH LARVAL TRIAL

EXPERIMENT SET UP

- DURATION: 21 DAYS
- FROM DAY 4 POST HATCHING
- 3 FEEDINGS A DAY FROM DAY 4 POST HATCHING (7:30, 11:30AM & 15:30)

PROTOCOLS

- **FEED:**

  ROTIFERS ENRICHED WITH THE 7 DIETS

- **LARVAL INITIAL STOCKING DENSITY:**

  100 LARVAE /LITER, IN 6 LITER TANKS

THE SYSTEM

- **3 REPS PER TREATMENT:**

  TOTAL TANKS : 21

- **RAS SYSTEM:**

  TEMP 17 ℃, *SALINITY 4 PPT*

SAMPLING & DATA RECORDING

- 50 LARVAE WERE MEASURED PRIOR TO STOCKING
- LAST DAY (21 DPH):

60 LARVAE PER TREATMENT WERE COLLECTED FOR FA ANALYSIS

30 LARVAE PER TREATMENT FOR RNA-DNA RATIO

75 PER TREATMENT FOR MORPHOMETRIC DATA

DATA RECORDING

- STANDARD LENGTH
- TOTAL LENGTH
- MYOMERE HEIGHT
- EYE DIAMETER
- AIR BLADDER INFLATION
- SURVIVAL

RESULTS:

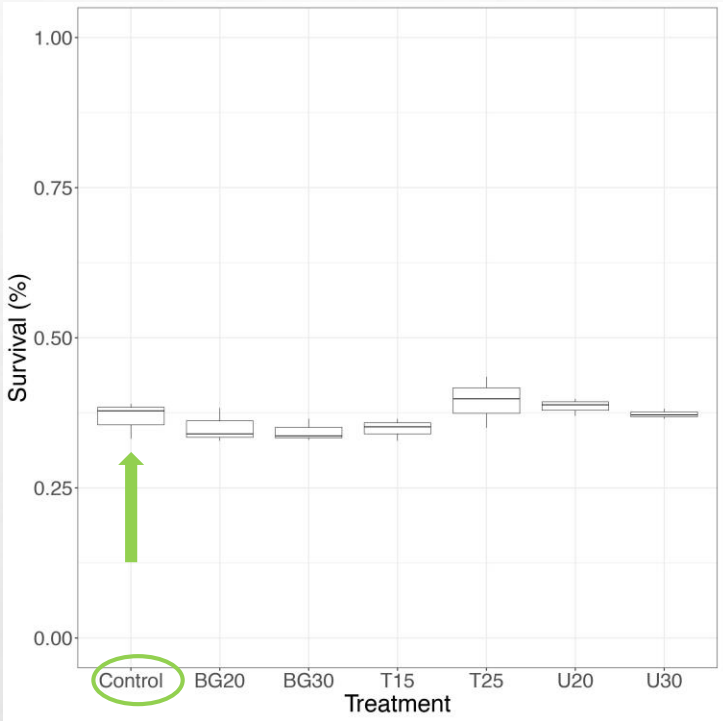
SIGNIFICANT DIFFERENCES:

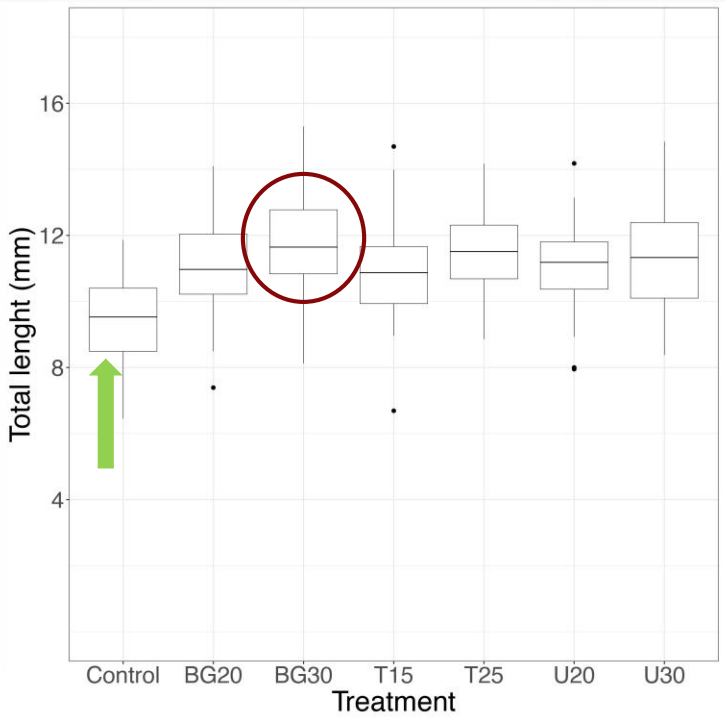
TOTAL LENGTH (TL),

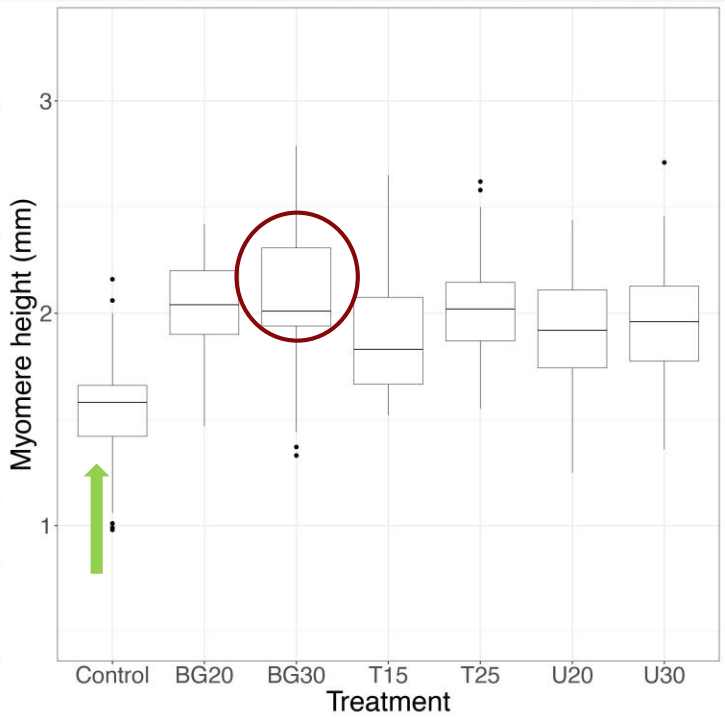
MYOMERE HEIGHT (MH)

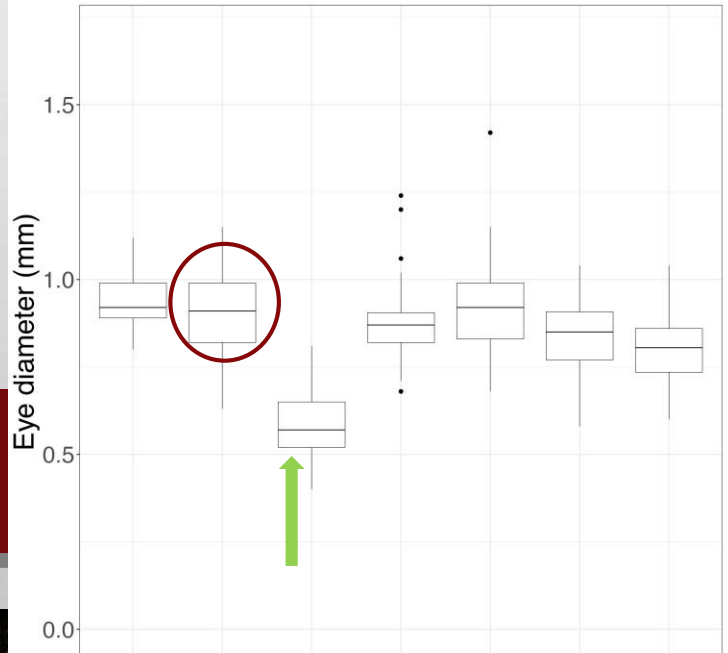
EYE DIAMETER (ED)

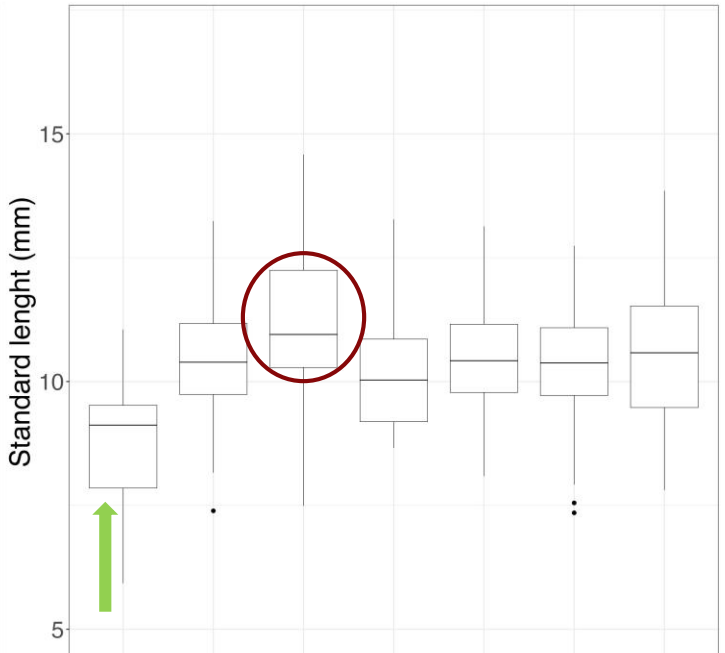
FATTY ACID COMPOSITION.


Survival (%)
1.00
0.75
0.50
0.25
0.00
Control
BG20
BG30
T15
T25
U20
U30
Treatment


Total lenght (mm)
16
12
8
4
Control
BG20
BG30
T15
T25
U20
U30
Treatment


Myomere height (mm)
3
2
1
Control
BG20
BG30
T15
T25
U20
U30
Treatment


Eye diameter (mm)
1.5
1.0
0.5
0.0


Standard lenght (mm)
15
10
5

RESULTS:

TREATMENT C SIGNIFICANTLY HIGHER (*CHLORELLA VULGARIS CULTURED AT 30 ℃ IN BG117 MEDIA*)

TOTAL LENGTH,

MYOMERE HEIGHT

EYE DIAMETER

↑ **CONCENTRATION OF:**

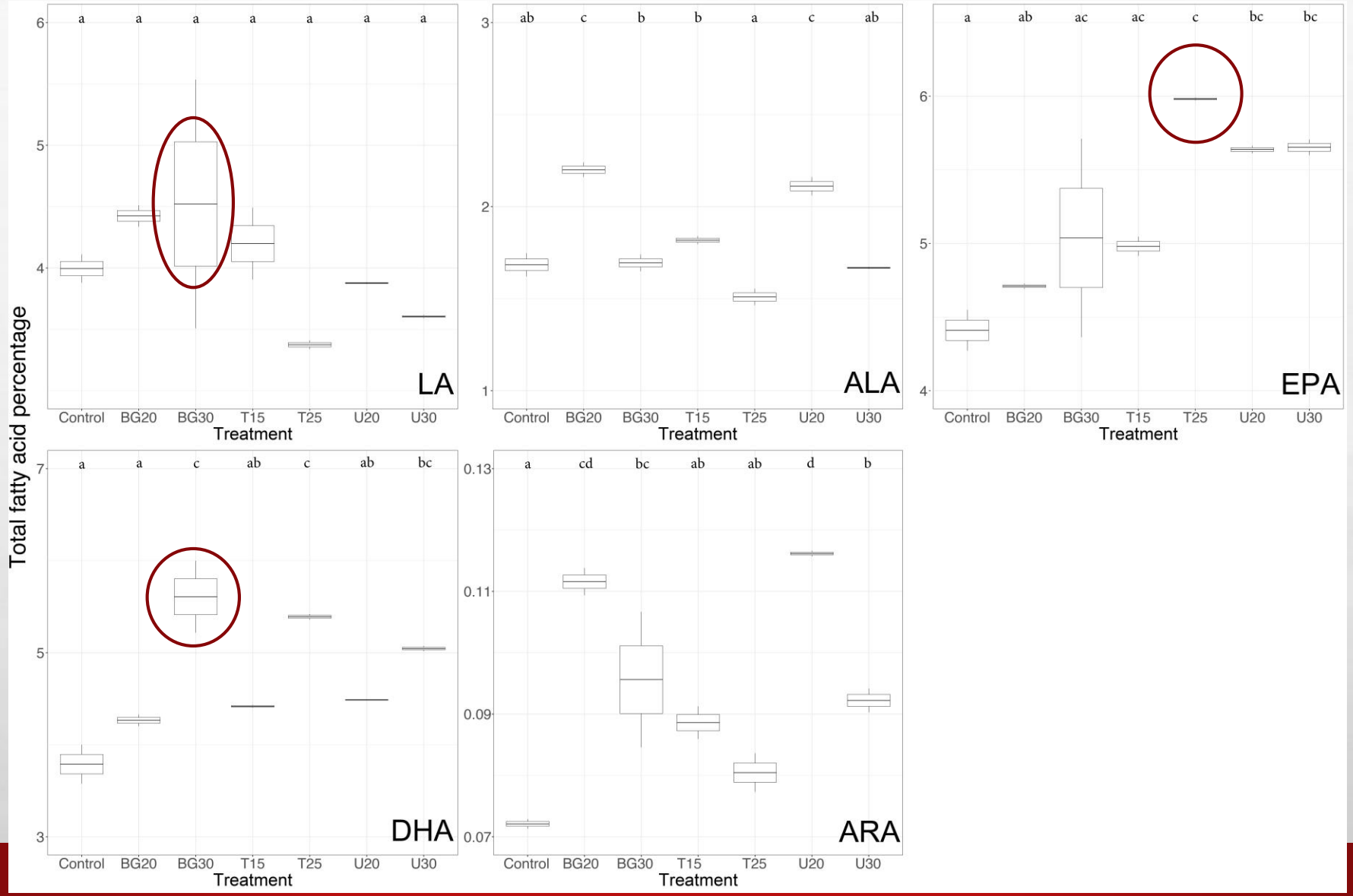
DOCOSAHEXAENOIC ACID (DHA) (%), AND LINOLEIC ACID (LA) (%)

RESULTS:

LARVAE FROM TREATMENT G) (*TRACHIDISCUS MINITUS CULTURED AT 25 ℃*)

↑ CONCENTRATION OF:

EICOSAPENTAENOICA ACID (EPA)


Total fatty acid percentage
LA
ALA
EPA
DHA
ARA
Control
BG20
BG30
T15
T25
U20
U30
Treatment

CONCLUSIONS

- OVERALL, LARVAE FROM TREATMENTS C AND G, PERFORMED BETTER THAN THE OTHER TREATMENTS, LIKELY DUE TO THE DIFFERENCE IN ESSENTIAL FATTY ACIDS (EFA) CONCENTRATION.

THANK YOU, DANKE, DIKY