

EARLY WEANING OF BURBOT (*Lota lota*) in RAS



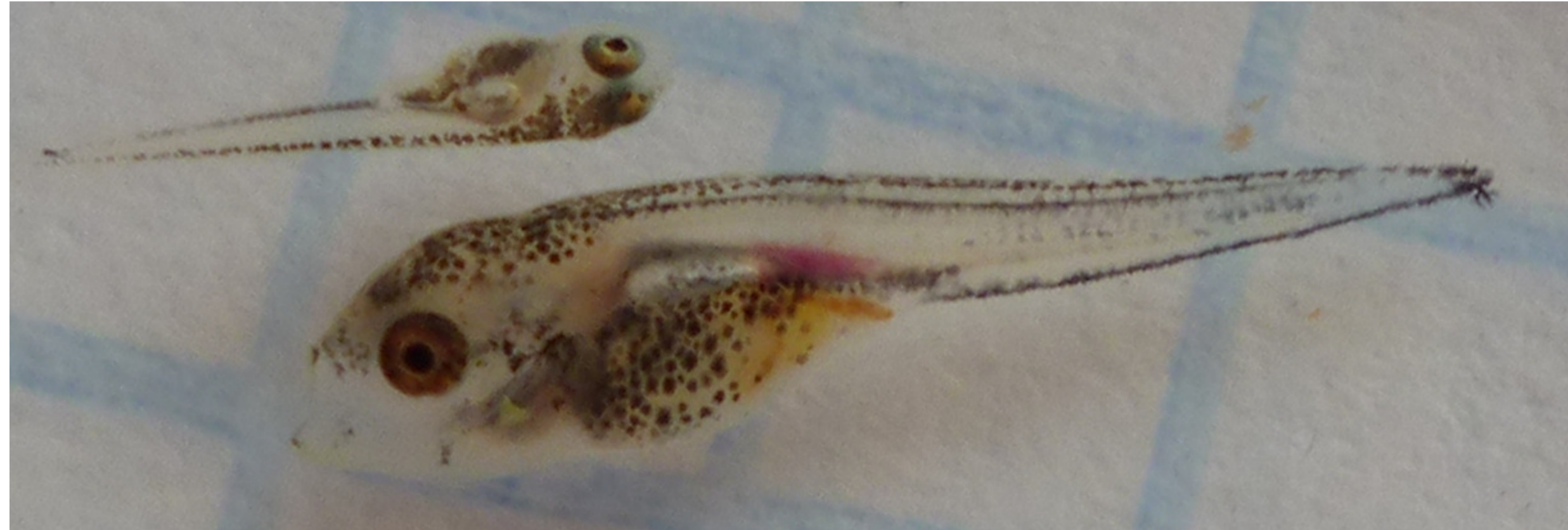
AQUA-ERF

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ABSTRACT

Burbot larviculture needs more than 50 days ARTEMIA

→ complicating breakthrough commercial burbot culture

Trial with 3 ≠ weaning start moments: 46, 60 and 74 days post-hatching.

Observation of production parameters and histological analyses.

Weaning after 57 days artemia (DPH74) best results: 37.6% survival.

INTRODUCTION

High mortality during larval rearing can partly be attributed to a low weaning effectiveness due to not fully developed gastro-intestinal tract. Combined with the long Artemia period this restrains the set-up of a stable commercial burbot culture. The aim of this study is to determine by means of histological analysis the larval size on which the digestive tract of burbot larvae is mature enough for direct weaning on artificial feed.

MATERIALS & METHODS

Prior to experimental phase:

- Burbot larvae reared from DPH11 till DPH39 in RAS,
- Temperature increased from 12°C to 16°C, 24h light
- 24h feeding starting DPH15 with Artemia nauplii followed by enriched Instar II

Experimental phase:

- Stocking: 1500 larvae/tank (DPH39, ±14.1mm; ±3mg)
- 9 tanks (50l) in RAS at 16°C, 24h light
- 24h feeding with Artemia Instar II enriched with Easy Dry Selco (Inve Aquaculture)
- 3≠ weaning starting moments (46, 60 and 74DPH)
- Weaning protocol: Artemia-stop on same day as start feeding with dry feed Aglonorse (Tromsø Fiskeindustri AS)
- Weekly collecting larvae samples for Length, Wet and Dry weight.
- Larvae samples were fixated and followed by PAS en AB stain, but analyse of these results are still in progress.

RESULTS	Start weaning on		
	DPH46	DPH60	DPH74
L at stocking(DPH39)	14.1±1.3		
L at start weaning	15.9±1.4	17.6±2.3	21.5±4.0
L at DPH88	-	30.5±3.9 a	26.6±5.2 b
DW at stocking(DPH39)	3±1		
DW at start weaning	4±1	6±1	11±5
DW at DPH88	-	33±9	22±9
Survival at DPH88	-	10.3%±3.1 b	37.6%±7.4 a

Table 1: Production parameters, DW: dry weight (mg); L: length

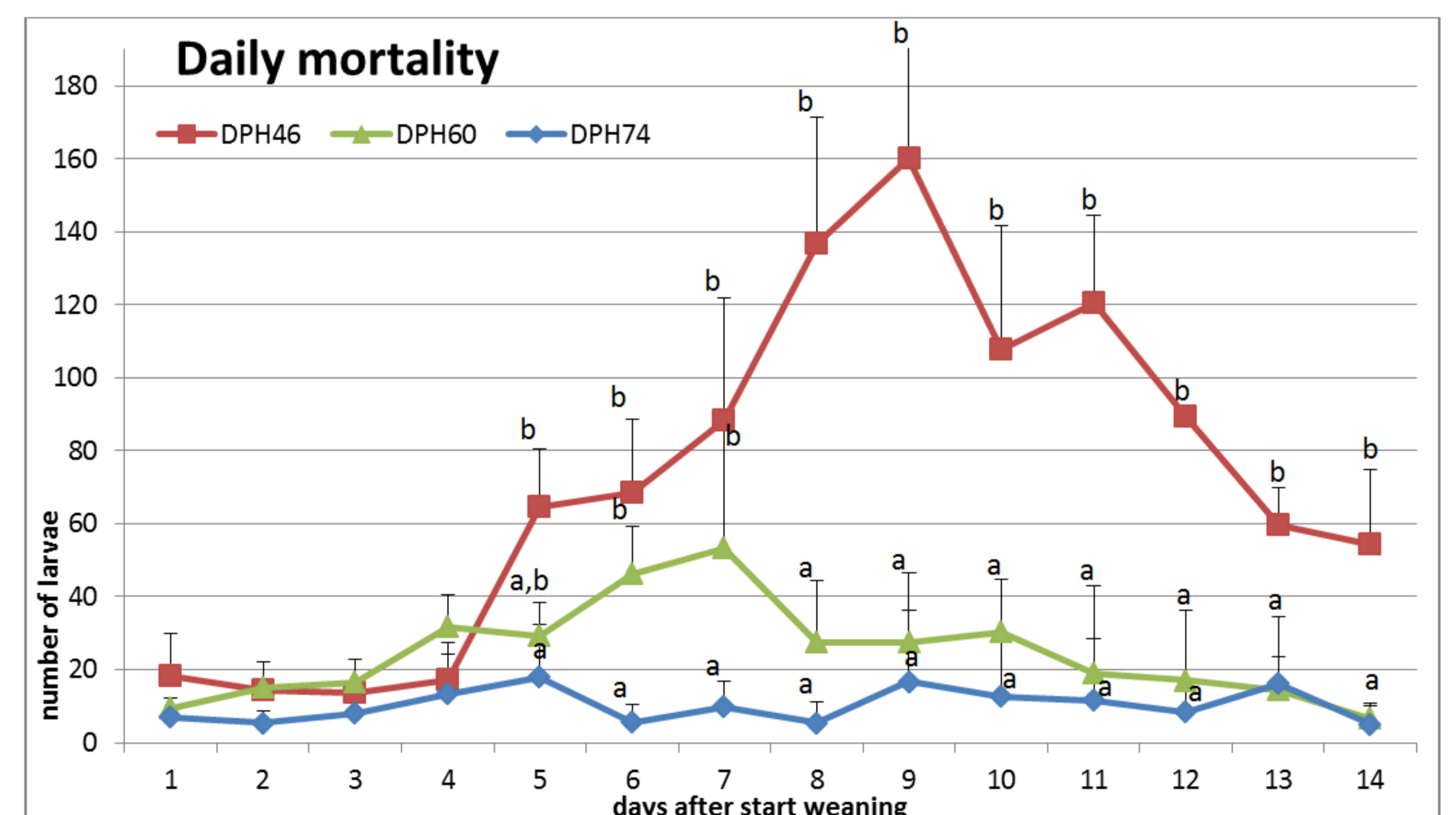


Figure 1: Daily mortality during the two weeks after weaning (different superscripts are statistically significant)

DISCUSSION & CONCLUSION

*Weaning at DPH60 results in bigger larvae, but survival indicates the application of a longer artemia period (DPH74).

A possible explanation for these bigger larvae is that smaller larvae of DPH74 were better adapted to the weaning. In contrast, the smaller larvae of DPH60 died, increasing the average body weight and length for DPH60.

*Mortality after weaning shows a peak after one week for all treatments. However this is less pronounced with longer artemia administration.