

HANDLING STRESS RELATED MORTALITY OF WHITELEG SHRIMP *Litopenaeus vannamei* IN STANDARD OPEN AND ISOLATED TANKS OF RECIRCULATING AQUACULTURE SYSTEM

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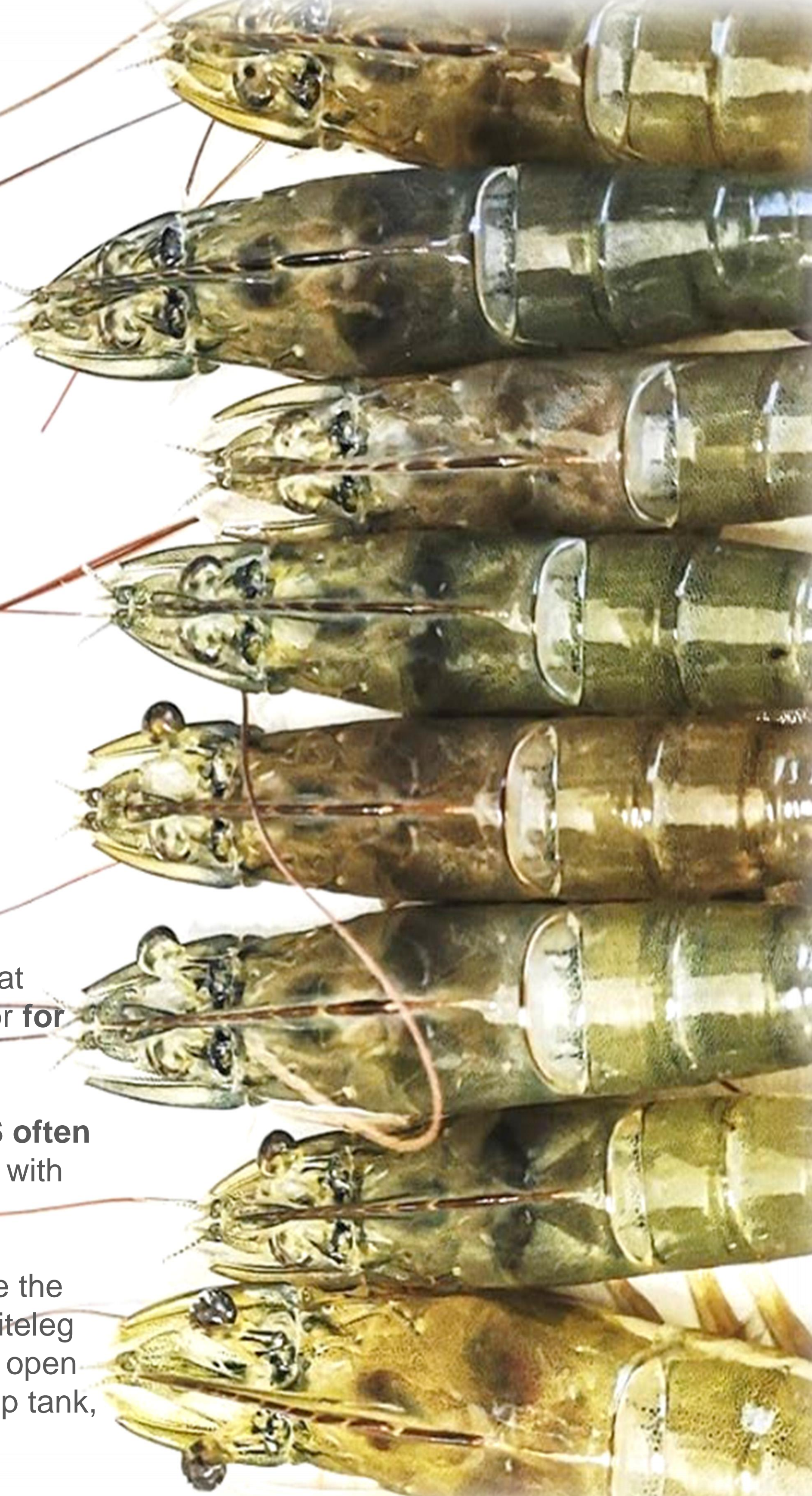
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Pilot RAS infrastructure is operated at Klaipeda University Business Incubator for whiteleg shrimp technology R&D.

Animal handling procedures in RAS often cause substantial stress for shrimp with different negative consequences.

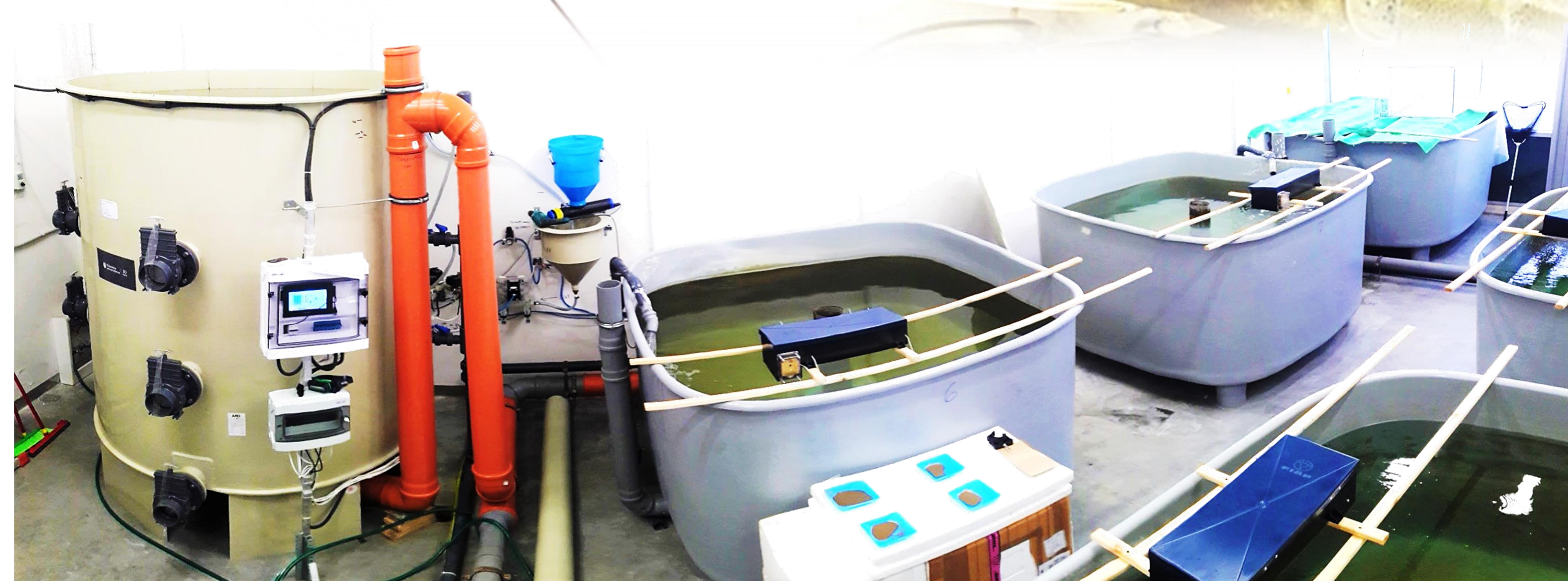
The aim of this study was to evaluate the handling stress-related mortality of whiteleg shrimp in RAS by comparing standard open and the new completely isolated shrimp tank, developed at Klaipeda University.



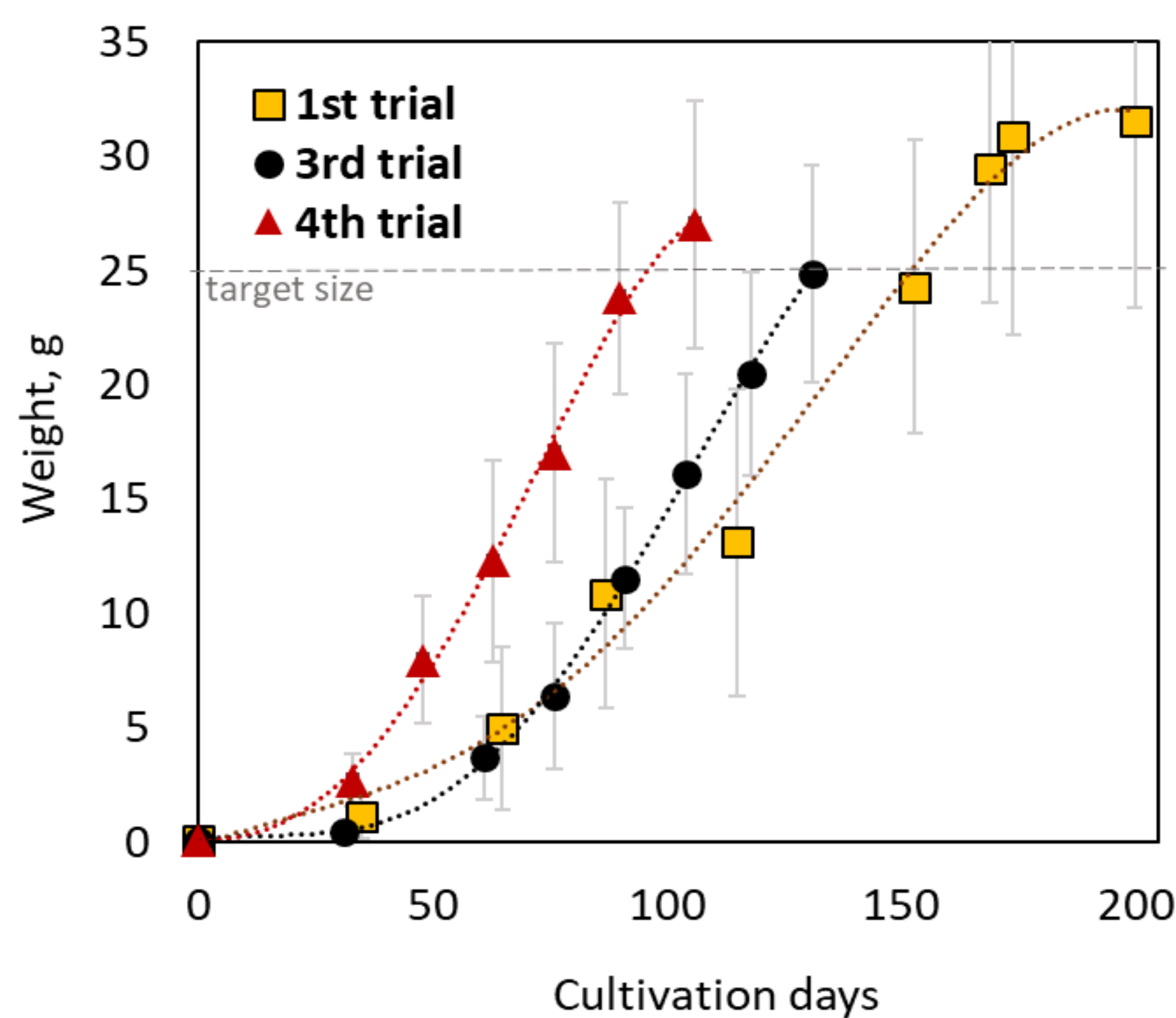
Materials and methods

Handling mortality was evaluated for three different cultivation cycles. Handling was considered as measurements and sorting procedures for experimental purposes. During or shortly after these procedures, the acute mortality rate of handled animals was monitored.

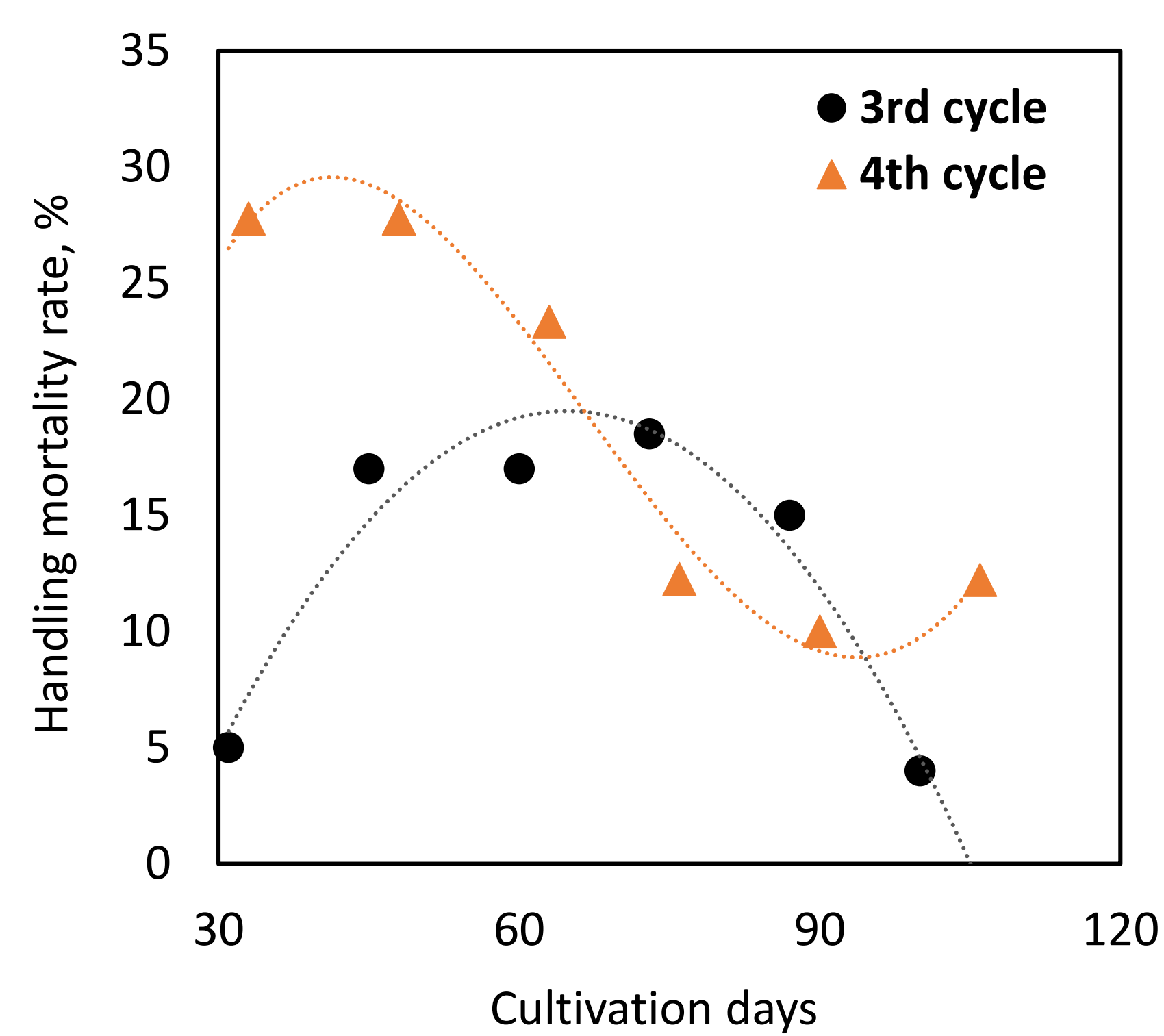
In 2021, more elaborated study on growth performance and mortality was conducted, comparing an innovative, completely isolated shrimp tower tank, and 6 standard open tanks – three as a control and three with different handling treatments.



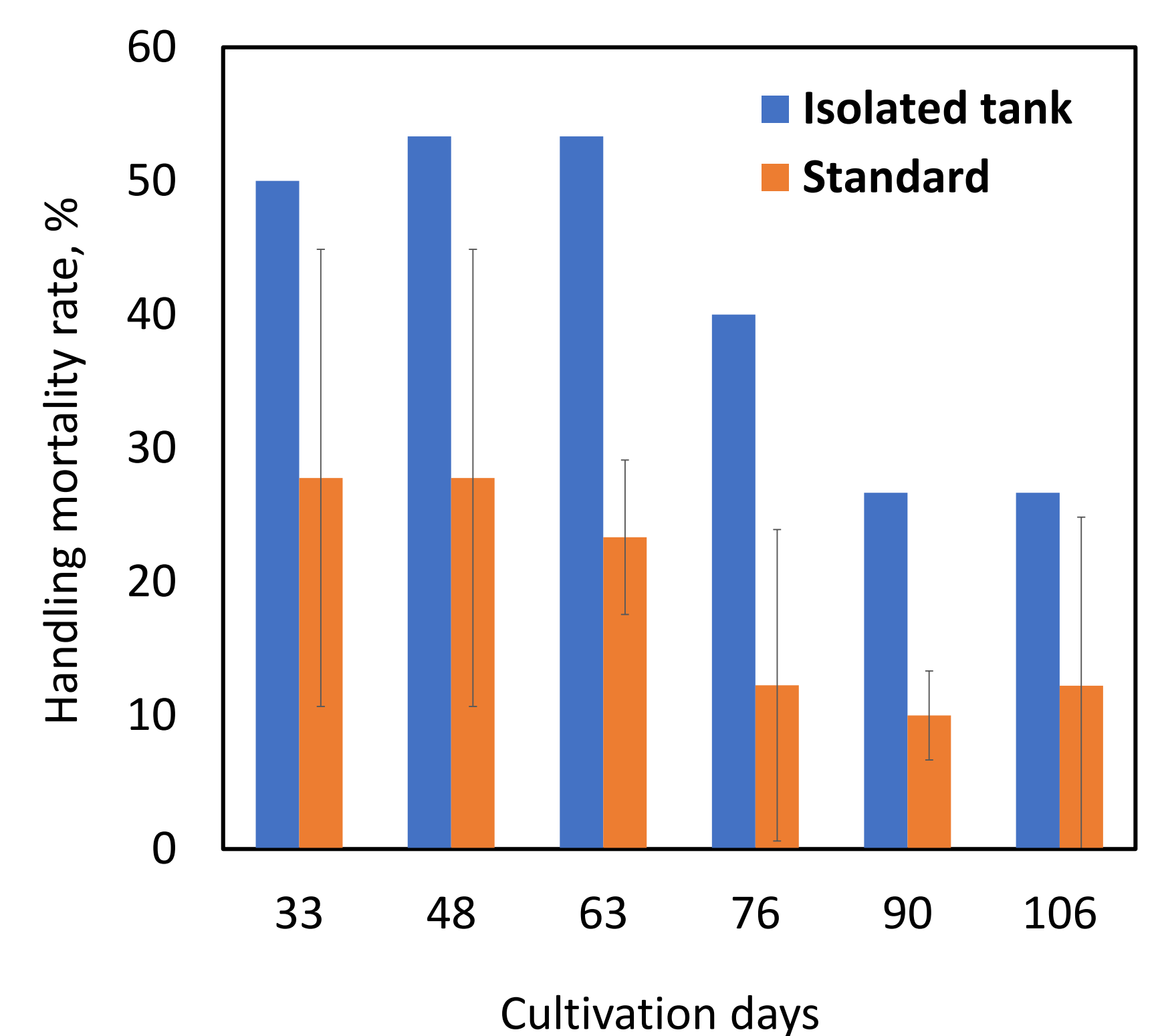
Results and discussion



Growth rate of first three shrimp cultivation cycles (the 2nd failed due to Covid 19 restrictions) at KU facility, reaching target average size of 25 g.



Handling stress related mortality patterns during two experimental cultivation cycles. The mortality rate was related to the age of animals, when the highest procedural mortality rate was recorded during the second-third month or at 5-15 g of individual weight.



In 2021 the comparison of handling stress related mortality in standard versus isolated tanks revealed that significantly higher mortality rate suffered handled shrimps grown under complete isolation conditions.