

Moving towards sustainable crustacean farming: Innovative aquaculture – white shrimp – *Litopenaeus vannamei*

Food from farms is a big part of our everyday life. We have become frequent consumers of aquaculture products, but we know little about where they come from and under what conditions they are farmed, especially crustaceans like shrimp. Most of the aquaculture products we eat come from Asia, nevertheless there are a growing number of aquaculture farms in the U.S and Europe although countries in the South Baltic region, including Poland, still have a very small role in the sector.

To change the current situation the team from the Institute of Oceanography, University of Gdańsk (IOUG), has taken a challenge to develop the potential of crustacean aquaculture focusing on combination of new species and technologies. The topic is carried out as part of the InnoAquaTech project.

Since the aim of the project is to increase the innovative potential of the economy based on the use of aquatic resources in the South Baltic region through technology transfer for aquaculture, as well as to provide small- and medium-size enterprises in the region with access to knowledge and competences in this field, a summer school: Innovative aquaculture - white shrimp - *Litopenaeus vannamei* was organized on September 17-19, 2018 at the IOUG.



Summer school presentations session, Gdynia

The event was directed to aquaculture entrepreneurs, potential investors and specialists interested in recirculation technology and crustacean farming. In total, over thirty people participated in the three-

days-event: representatives of small and medium-size enterprises from Warsaw, Łódź, Ostróda, Gdańsk and Gdynia, as well as employees of universities, specialized laboratories and research institutes from Poznań, Szczecin, Puławy, Olsztyn, Gdańsk and Gdynia. The participants represented various sectors: aquaculture, animal nutrition, consulting, cultivation equipment and setup production, fish transport, fishing, as well as pharmacy, veterinary medicine, animal production, aqua feeds, product economics, ornamental fish retail market, business modeling, seafood import and retail market, and the IT industry.

The summer school program included presentations, laboratory workshops and discussions held by an interdisciplinary team composed of private entrepreneurs and practitioners, as well as experts cooperating within the InnoAquaTech project.

The program was divided into thematic sessions, starting with lectures and a practical laboratory workshop focused on crustaceans present on the Polish market. Another session was dedicated to aquaculture in RAS. During this session participants were familiarized with issues related to establishing a farm, such as applicable legal issues, investment and running costs, the current state of technological advancement, development prospects, design and installation principles including RAS-filters, and practical hints on basic parameters of water quality in land-based white shrimp farming.



Summer school laboratory workshop, Gdynia



Laboratory workshops activities

Short panel presentations underlined the participants' main topics of interest – also in relation to shrimp farming. They soon realized that investing into or setting up a shrimp farm is met with many practicalities related to technology, live animals and administrative procedures. All these issues were combined with the program of the summer school, including: practical requirements related to the import of live animals for breeding, feeding regime for shrimps and issues related to diseases and pathological changes in marine invertebrates. More issues regarding shrimp RAS potential in Poland, operational costs and practicalities, aqua feed and alternative protein sources were followed with high interest during the visit of the laboratory for shrimp production in RAS at the IOUG, as part of the InnoAquaTech project. Not only the results of the InnoAquaTech project in fields of white shrimp cultivation were discussed, but also the outcomes of our shrimp meat quality assessment (published soon). Moreover, the institute shared its experience with other aquatic species and how they can be cultivated in recirculation systems in the Pomeranian region.



Participants visited the laboratory for shrimp production in RAS at IOUG, Gdynia



Market species and IOUG RAS cultivated shrimps specimens at the workshop

Market conditions for the future domestic production of warm-water shrimps seem to be very promising according to the presented research and discussions among stakeholders. Public awareness is still very poor, therefore more educational campaigns are needed. Trainings, such as those presented at the summer school “Identification of seafood species by various techniques” will also contribute to this knowledge transfer. The culinary workshop revealed white shrimp from RAS to be a highly appreciated product among consumers that are expecting best food quality in renowned restaurants – the right time to promote shrimps and to engage the sector in the Pomeranian region.



Summer school culinary workshop, Sopot

At the end the latest results of the InnoAquaTech [pilots](#) were presented by our project partners to take a look into the future of RAS in the South Baltic Region.



Summer school discussion panel, Gdynia

We hope that the knowledge and competences gained through the course will be used and result in new activities aimed at increasing the innovative potential of the economy, including new investments. We would like to thank all the speakers and participants for their commitment, fruitful discussions and great atmosphere during classes.

In April 2019 a similar event is planned to take place at the University of Rostock with focus on land-based freshwater aquaculture in recirculating systems and the potential of aquaponics within the South Baltic Region.

More information about the InnoAquaTech project can be found at: www.innoaquatech.eu
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