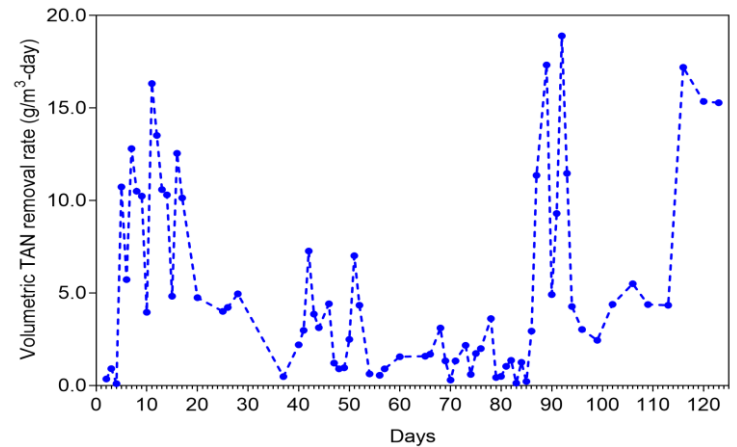
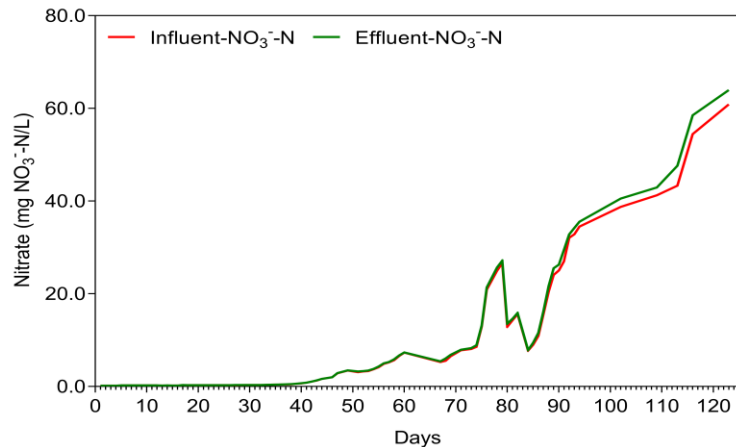




NEWSLETTER

SIMTAP in Turkey

An operation of RAS requires a continuous water treatment with a basic system consisting of solids removal, biological filtration, aeration, and degasification. Biological filtration is carried out using bacteria to eliminate some toxic substances such as ammonium and nitrites. The biological filtration in the SIMTAP system in Turkey is provided by a moving bed bioreactor (MBBR) filled with polyethylene carrier (surface area in bulk of 500 m²/m³). MBBR was operated at a carrier filling ratio of 60%, a total wetted volume of 1.2 m³ and a retention time of 25 minutes and was aerated and mixed using an air blower (50-60 Hz; 2.55 kW - nominal capacity of 318 m³/h air to diffusers). A commercial mixture of bacterial cultures was inoculated on the 5th day of system start-up period. Ammonium chloride was added into recirculating water to promote the bacterial growth and was maintained between 3 and 5 mg/L.



European seabass and gilthead seabream juveniles were stocked at a density of 7.1 kg/m³ and 9.5 kg/m³ respectively on the 79th day. Volumetric total ammonia nitrogen conversion rate (VTR) of the bioreactor was recorded as 18.90 g NH₄⁺-N/m³-day on the 92nd day of system start-up period when nitrate nitrogen in biofilter influent and effluent reached to 32.84 mg NO₃⁻-N/L. Significantly lower VTR values were obtained at the concentrations less than 1.0 mg NH₄⁺-N/L compared to medium (1.0 < mg NH₄⁺-N/L < 2.0) and high level (>2.0 mg NH₄⁺-N/L) of concentrations (p<0.001). A clear decrease in ammonia concentrations and a clear increase in nitrite concentrations at a period of one month was observed, indicating growth success of ammonia oxidizing bacteria. The complete acclimatization of nitrifying bacteria nearly took three months in the system built under elevated temperature and salinity conditions of the eastern Mediterranean.

Dissemination activities

Webinar participation

Sevgili, Hüseyin: Novel approaches towards self-sufficient integrated multi-trophic marine aquaponic systems: the SIMTAP project.

In: Modern Technologies in Aquaculture: Perils and Potentials, Faculty of Fisheries & Wildlife, University of Veterinary and Animal Sciences, Lahore-Pakistan, 16 November, 2021

MSc Thesis

Akbas, Yasir:

The Effect of Polychaete (*Hediste diversicolor*) on Growth Performance and Body Composition of Sea Bass (*Dicentrarchus labrax*) Larvae.

University of Bologna



University of Milano



Korolev GmbH



INRA UMR SAS Sol Agro et hydrosystème Spatialisation



Lycée de la Mer et du Littoral



Aquaculture Directorate, Department of Fisheries and Aquaculture, MAFA



Mediterranean Fisheries Research Production and Training Institute



University of Pisa

