



Can the loop between fish and plant production be closed?

## Demonstration of co-production of fish and *Salicornia*

### Authors

Ramon Perez, Alpha Aqua A/S, Denmark  
Jiwan Kumar Chettri, Alpha Aqua A/S, Denmark

The circular approach of AQUACOMBINE combines aquaculture, farming and bioprocessing to utilize all fractions of the produced biomass and produce value added food, feed, bio-compounds and bioenergy.

[www.aquacombine.eu](http://www.aquacombine.eu)



## Demonstration of co-production of fish and *Salicornia*

Can the loop between fish and plant production be closed?

The production of *Salicornia europaea* in a decoupled aquaponic system using only the fish process water from a **Recirculatory Aquaculture System (RAS)** culturing rainbow trout did not yield high *Salicornia* biomass as compared to the production using artificial fertilizer. Although the nitrate level was maintained at an average of 70 mg/l or above, the water quality analysis showed a lack of micronutrients in the fish process water, which may have affected the growth of *Salicornia*.

The decouple aquaponic unit adds flexibility and has the advantage of handling fish or plant units independently if required. From the previous results, it is necessary to add supplementary nutrients in the fish process water to achieve a higher biomass gain of *Salicornia* in the aquaponic unit. Therefore, to simplify the operational procedure and maintain high productivity in both units, the loop between the fish and plant will not be closed and the demonstration unit will be run as a decoupled aquaponic unit.



**Contact:**

Ramon Perez  
Alpha Aqua A/S, Denmark  
rap@es.alpha-aqua.com



Jiwan Kumar Chettri  
Alpha Aqua A/S, Denmark  
jkc@dk.alpha-aqua.com

