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AQUAPONICS: THE UGLY DUCKLING IN EUROPEAN ORGANIC REGULATION

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Introduction

Aquaponics is an integrated closed-loop multi-trophic food production system that combines elements of a recirculating aquaculture system (RAS) and hydroponics (Endut et al., 2010; Goddek et al., 2015; Graber and Junge, 2009). Organic agriculture has in principle the same approach defined by the International Federation of Organic Agriculture Movements (IFOAM, September 2005)

"Organic Agriculture is a production system that sustains the health of **soils, ecosystems and people**. It **relies on ecological processes, biodiversity and cycles adapted to local conditions**, rather than the use of inputs with adverse effects. Organic Agriculture combines **tradition, innovation and science** to benefit the shared environment and promote **fair relationships** and a good **quality of life** for all involved."

Organic certification therefore appears to be a natural step for a commercial oriented aquaponics producer since the whole production system is based on a holistic approach in terms of recycling, lowering the resource intake and securing zero pollution. However, the present EU organic regulatory regime does *not* have any standards or regulations for certifying organic aquaponics. The RAS technology itself is *forbidden* under the present EU organic regulation, which seems to be more of a political and economic protection of the more extensive open pond systems prevalent in organic fish production rather than having anything to do with fish welfare or to secure a cleaner aquatic environment. Likewise, the hydroponic production technology in the absence of an organic growth-media, is also prohibited.

It is only possible to have an aquaponics production system completely certified organic if a *non-holistic* approach is taken, meaning, a certification towards the organic fish- and horticulture regulation is made separately. Firstly, the plants must be grown in soil or an equivalent accepted growth-media.

Secondly, the fish produced must be fed with organic certified fish feed, and thirdly, organic fish can only be produced in a RAS system if they are sold as fingerlings for finishing growth in open-air pond systems certified organic.

The present regulatory framework for organic fish and horticultural production in the EU is regulated by the Council Regulation (EC) No. 834/2007 whereas more detailed rules are regulated by the Commission Regulations (EC) No. 889/2008, and (EC) no. 710/2009.

Discussion and conclusion

If aquaponic produce gains markets and moves into larger scale production systems, it seems indisputably that the organic farm movement in EU will need to revise its present regulatory regime.

Under the US organic regulation, it is possible for aquaponic producers to obtain an organic certification. The reason for this, is, that the US organic movement is having a more *principle-based* approach assessing if new technologies or production systems convey with their organic principles. With a principle-based approach, the US organic regulatory regime allows new innovative and resource productive systems to gain momentum if they can comply with the principles of organic agriculture (saving resources, lowering pollution etc).

In contrast, the EU organic regulation seems to have locked themselves in a more *technology-based* approach hence blocking new innovative ways in organic agriculture of using existing technology solutions such as aquaponics for raising productivity, save valuable resources and in the same offer a minimum of waste.

At present aquaponics is an ugly duckling within EU the organic agriculture regime. However, with the growth of aquaponics, this new environmental friendly and highly productive food system, should in the near future, turn into a beautiful certified organic swan.

References

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Aquaponics test plant of IGFF/Denmark. Moveable plant tables placed above fish tanks for shade and 'economies of space'. Plants are grown in soil and can obtain an organic certification if fish are fed with organic fish feed. However, the fish cannot be certified organic, hence impossible to obtain the premium.

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