Списание за наука „Ново знание“
ISSN 2367-4598 (Online)
Академично издателство „Талант“
Висше училище по агробизнес и развитие на регионите - Пловдив

New Knowledge Journal of Science
ISSN 2367-4598 (Online)
Academic Publishing House „Talent“
University of Agribusiness and Rural Development - Bulgaria

http://science.uard.bg

ORGANIC AQUACULTURE PRODUCTION IN TURKEY: A BRIEF REVIEW

Pınar Yildirim[1], Ertan Ercan[2], Gülen Türker[3]
[1]Çanakkale Onsekiz Mart University, 1Department of Fisheries Technology, Applied Sciences College, Çanakkale, Turkey
[2]Faculty of Fisheries, Muğla Sıtkı Koçman University, Kötekli, Muğla, Turkey
[3]Çanakkale Onsekiz Mart University, Department of Food Technology, Applied Sciences College, Çanakkale, Turkey

Abstract: The value of fisheries used as human food is increasing day by day. Aquaculture has also been influenced by organic demand and gained importance all over the world. Turkey has less polluted water sources compared to the countries that intensively apply the traditional farming methods and the countries where industrialization has occurred in advanced levels. This provides a great opportunity for organic production. It is clear that, in Turkey, many water sources and many facilities are structurally suitable for organic aquaculture. In the organic fish production method, the health status, welfare and wastes of the fish products are taken into account. The aim is to sell healthier, high-quality and reliable fish to consumers. The prohibition of the use of harmful chemical compounds in the production and processing of fish is an indication that these fish are of good quality and safety. Organic aquaculture production is a very important opportunity for the sustainable development of fisheries and should be supported for its development.

In this study current situation and general application in organic aquaculture in Turkey have been investigated.

Keywords: aquaculture, organic, fisheries, Turkey, sustainable development.

INTRODUCTION

In recent years, the concept of "organic farming" has emerged due to the concentration of chemical additives in foods, the protection of ecological balance and the provision of nutrition for the human population. The increase of Organic agriculture is not only in the

amount of production but also in for alternative methods of treatment (phytotherapy, beneficial parasites and predators, etc.) in which the synthetic chemical inputs are kept away from the production environment, is a highly controlled, certified production system that is highly sensitive to human, animal and environmental health, aiming at increasing the product quality and sustainability (Çavdar 2004). One of the fastest growing food sectors in the world, the organic development of aquatic products is quite similar to organic farming. However, nowadays, organic aquaculture lags behind the agriculture sector in terms of certified product range and quality (Bergleiter, 2001; Brister and Kapuscinski, 2001).

The protection of existing water resources and the enhancement of the quality of water resources for the sustainability of human health and ecology are essential. At this point, the regulations to be implemented in the application of aquaculture, where water resources are used, have a large precaution (Kayhan, 2015).

In the aquaculture sector, production of organic aquaculture products has been started to provide safe food supply. Production of organic aquatic products differs from conventional productions. Organic aqua products are separated from other production models as they increase production reliability. Organic aquaculture production; is the contracted production model that keeps the health, prosperity and quality of the product in the forefront.

Organic aquaculture standards, antibiotics, and herbicides prohibits the use of genetically modified organisms and allowing the application as a last resort for treatment of parasite agents under veterinary supervision (Kayhan and Ölmez, 2014).

The use of hormones is forbidden as it is in all organic animal products. The unit area per fish in cages is higher than conventional production. In this case, the fish are more likely to get into the stratus and injure it. It also reduces the risk of fish becoming ill. Thus, there is less need for antibiotic administration as determined by legislation and more limited than conventional production (URL-1).

Turkey required in terms of inland waters as well as marine aquaculture is very suitable for the cultivation has huge potential. Achieving economical contribution efficiently using technological developments of this potential is very important both economically and socially. This paper aims to review the situation in the Turkey organic aquaculture sector.

DEVELOPMENT FOR ORGANIC AQUACULTURE IN TURKEY

As is known, organic aquaculture production; organic animal and organic vegetable production as well as human health in front of the plan, environmental health, even the health of the product, the prosperity and quality of the pre-plan, every stage is a controlled production model. For the purpose of ensuring a safe food supply in the fisheries sector, the project first organic aquaculture production in Turkey in 2006 in Rize province, was launched in Cayeli district. For the operation of this project, in which organic trout farming is carried out, a healthy area remote from domestic, industrial and agricultural wastes has been selected. Under this project, both organic aquaculture production in Turkey is provided both organic fish feed. This is done in studies on the economic situation of the enterprises, their structural conditions and their activities (Kaya ve Şahin, 2016).

The second attempt at organic aquaculture in Turkey, organic sea bream and sea bass are organic production operation launched in the Muğla province. Organic aquaculture is still in the province of Muğla is known to continue. According to data from the Ministry of Food Agriculture and Livestock; derived from organic aquaculture production is given in Table 1.

Table 1. 2015 Year Organic Aquaculture Statistical

Province	Total number of operating	Cultivated species	Annual Production Amount (Ton)
Muğla	1	Sea bream	317,2
		Sea bass	241,8

Fish stocks should be managed by scientific methods. Otherwise, the amount obtained from hunting will not increase. Moreover, fish stocks may not give the fish they demand situation of the people. For this reason, it is quite clear that the fish demand of the growing world population can be met by aquaculture. Every day new technological advances are recorded in relation to the aquaculture sector. In Turkey, as in other countries, aquaculture production possible by minimizing environmental impacts. For this purpose, the necessary technologies are available in Turkey.

Representing the latest regulation addressing organic aquaculture in Turkey comprehensively, "Regulation for Principles and Implementation of Organic Agriculture" was entered into force after its publication in 2010 and Official Gazette. This regulation is still applicable.

The following general rules by the certification unit in organic aquaculture production in Turkey are used:

a) The characteristics of the water which will be held Aquaculture; it is analyzed by the entrepreneur or the authorized body and the body is approved by the authorized body.

b) The aquaculture unit should not be in a settlement or a river bed which is a major source of pollution.

c) The production of aquatic products should be suitable for environmental protection, and the wastes should not harm the environment.

d) In aquaculture facilities, all production activities are performed under the control of authorized institutions.

e) Water creatures should be produced in accordance with organic farming rules. Organically produced feed and feed additives should be used in feeding.

f) Fish meat coloring synthetic materials and unnatural methods can not be used.

g) The area where fish feeds are located should be in accordance with organic farming rules.

h) The use of synthetic materials that encourage production and growth is prohibited.

i) Naturally, the selection of disease-resistant species and subspecies should be considered

j) In organic aquaculture, the genetic structure of animals can not be changed

k) Genetically modified organisms and products produced therefrom can not be used as input.

l) Organically produced fish are subjected to methods that do not cause excessive stress during catching, sorting and cutting.

m) Polyculture will be preferred when appropriate. The natural needs of each cultured cultivar are met.

CONCLUSION

The rapid developments in many sectors in Turkey is seen. However, the organic aquaculture production sector is still in its infancy. Converting traditionally maintained aquaculture into organic is a laborious and tiring process (Xie et al., 2013). Turkey has rich

water resources and quality, and there is a future for organic aquaculture. However, the policy of dissemination of organic aquaculture production should be developed. Capacity increase in organic aquaculture activities and revision in enterprises should be done.

Extensive research in enterprises engaged in aquaculture should be continued. Current status of businesses engaged in aquaculture practices should be observed. In the light of the data obtained in organic aquaculture businesses with the potential to promote organic farming and organic production informed about the operation by making studies should be increased.

REFERENCES

1. Anonim, 2010. 18 Ağustos 2010 tarih ve 27676 sayılı Resmi Gazete; Organik Tarımın Esasları ve Uygulanmasına İlişkin Yönetmelik.

2. Bergleiter, S., 2001. Organic products as high quality niche products; background and prospects for organic freshwater aquaculture in Europe. Paper presented at the ad hoc EIFAC/EU Working Party on Market Perspectives for Europan Freshwater Aquaculture, Brussels (Belgium), 14-14 May 2001.

3. Brister, D.J. and Kapuscinski, A., 2001. Global rise of aquaculture: A trigger for organic and eco-labelling standards for aquatic animals. The organic standard, 3: 7-11

4. Çavdar, Y., 2004. Organik Tarıma Genel Bir Bakış ve Organik Su Ürünleri Yetiştiriciliği, Türk Tarım Dergisi, 156, 44-47, Ankara.

5. Kaya,A., Şahin,T., 2016. Rize İlinde Organik Alabalık Yetiştiriciliği Yapan İşletmelerin Yapısal ve Ekonomik Analizi. El-Cezerî Journal of Science and Engineering Vol: 3, No: 2, 2016 (229-237)

6. Kayhan, M.H., Ölmez, M., 2014. Aquaculture and Organic Aquaculture in Turkey. Journal of Aquaculture, 5:5

7. Kayhan, M.H., 2015, Isparta İlindeki Alabalik İşletmelerinin Organik Yetiştiricilik Açisindan Değerlendirilmesi, Süleyman Demirel Üniversitesi Fen Bilimleri Enstitüsü, Yüksek Lisans Tezi, 80s.

8. URL 1: http://ekolojikpazar.org/organik-balik-da-olur-muymus-demeyin/

9. Xie B, Qin J, Yang H, Wang X, Wang Y, Li T (2013) Organic aquaculture in China: a review from a global perspective. *Aquaculture*, 414–415: 243–253.