

# L-selenomethionine: a powerful antioxidant for commercial fish species

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In intensive animal production, high daily weight gain and high feed efficiency are essential. However, high performance is associated with increased levels of stress. Stress – such as from high stocking density, pathogenic pressure and temperature – is associated with enhanced levels of reactive oxygen species (ROS) and linked to suboptimal antioxidant status. Selenium (Se), in this respect, is a very important essential trace element as it is a vital component of selenoenzymes (eg glutathione peroxidase, GPx) which play a role in reducing ROS and maintaining a healthy antioxidant status.

Selenium can be added to the diet in either inorganic or organic forms. The advantage of using organic selenium, specifically L-selenomethionine, is its ability to be incorporated directly, without conversion, into general body proteins as a methionine source. The incorporated selenium, in the form of L-selenomethionine, acts as a storage of selenium in the animal. This stored selenium ensures optimal supply, even during stressful periods.

Dietary L-selenomethionine supplementation is known to offer a way to reduce performance loss under stress, such as crowding conditions (Küçükbay *et al.* 2008). A recent study in Nile tilapia, performed at the

Maharakham University in Thailand, showed increased performance, improved innate immune response and high protection against pathogenic pressure (*Streptococcus agalactiae*).

L-selenomethionine (Excential Selenium 4000, Orffa Additives BV, The Netherlands) was tested and validated by independent researchers around the world in peer-reviewed publications (eg Bertssen *et al.* 2018; Silva *et al.* 2019) and proven to be effective in increasing the selenium and antioxidant status of fish, even under challenging conditions. Using L-selenomethionine in your diets will result in improved performance, immune function and higher economical return for your aquacultural production!

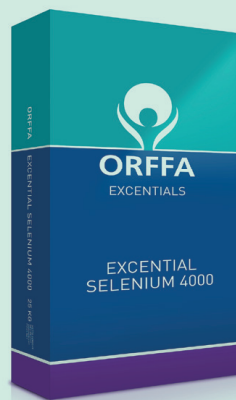


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EXCENTIALS

## EXCENTIAL SELENIUM 4000

The new generation of organic selenium

All selenium is  
in the most effective  
organic form  
(=L-selenomethionine)



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act 36 of 1947

*L-selenomethionine:*  
*A powerful antioxidant for*  
*commercial fish species!*

(supported by science: Silva *et al.* 2019,  
Küçükbay *et al.* 2009)

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