

Skretting comments: Taken from email dated 12/08/2014

Dear Sir/Madame,

I would just use the opportunity to make a few comments related to your aquaculture standard and more specific the feed part.

Comment criteria 5.2. Net protein gain or loss

The standard states “A measure of the net protein gained or lost during the fish farming process. Aquaculture has the potential to be a net producer of protein, but when external feed is used in any significant quantity, there is typically a net loss of protein when feed is converted into farmed fish.”

These statements have no meaning as phrased. Only plants can be net protein producers (synthesize protein from nitrogen). All animals, including fish, will not be able to retain all the protein in their feed . There are a number of parameters that can be used to measure how effectively animals and fish retain protein. One of them is;

Biological value (BV) is a measure of the proportion of absorbed protein from a food which becomes incorporated into the proteins of the organism's body. It captures how readily the digested protein can be used in protein synthesis in the cells of the organism. Proteins are the major source of nitrogen in food. BV assumes protein is the only source of nitrogen and measures the proportion of this nitrogen absorbed by the body which is then excreted. The remainder must have been incorporated into the proteins of the organisms body. A ratio of nitrogen incorporated into the body over nitrogen absorbed gives a measure of protein 'usability' - the BV.

Within fishfarming one sometimes has used the term “net fish protein producer”. This is more a popular term to demonstrate that it is possible to produce more “fish protein” than you use of fish (marine) protein in the feed.

Comment 5.3b Land area foot print

One normally does not use a whole crop in the feed, but some processed raw material. This can for example be wheatgluten or extracted soybean meal. It can then not be correct to use the footprint of the whole crop, but it must be possible to use a fraction that represents what actually is used in the feed of the specific crop. Though this in theory might be right, there will be big challenges in practice to obtain correct figures both when it comes to yield and also good crop harvest per unit figures. This should be addressed in describing the methodology.

Best regards

Trygve Berg Lea

Sustainability Manager Skretting Group