



NORSILDMEL

European trends

IFFO Conference, Rome

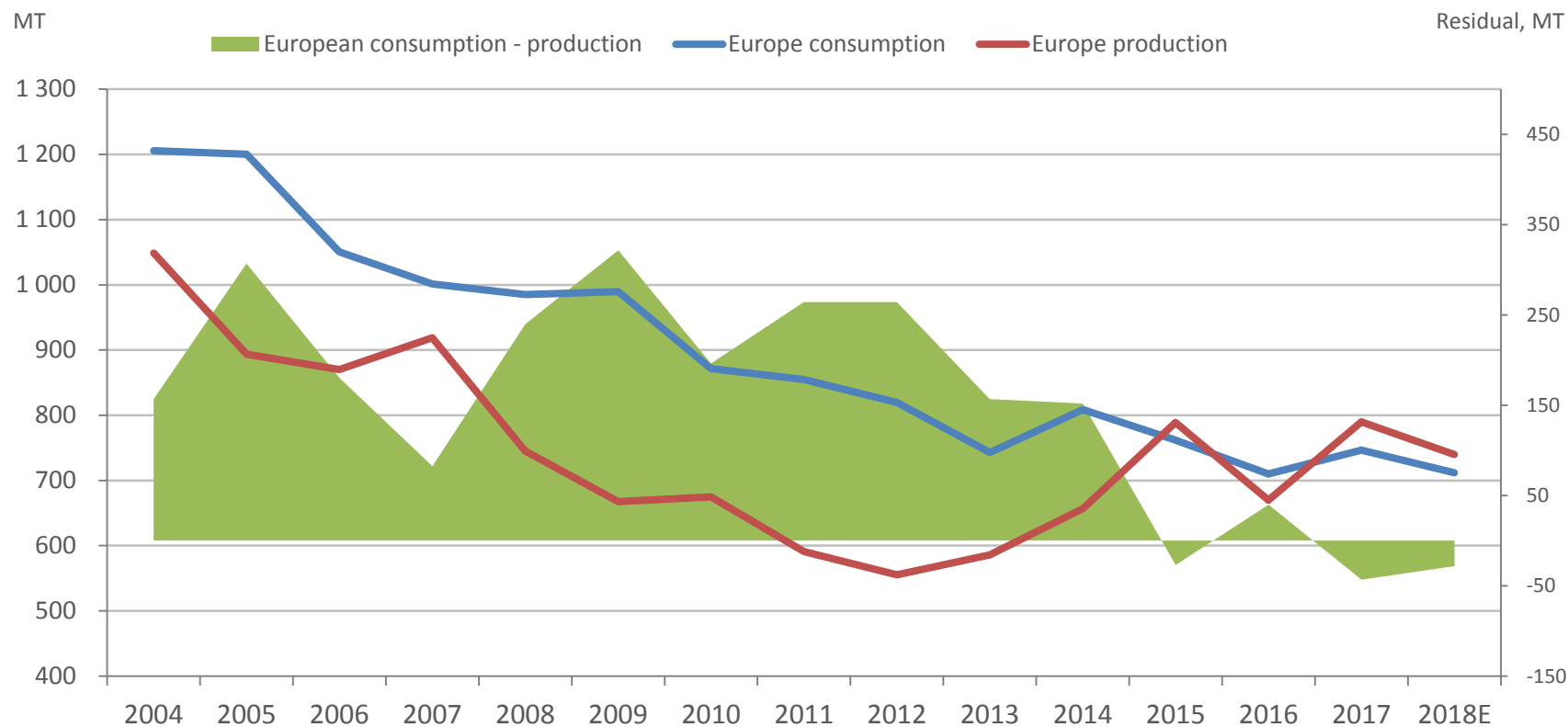


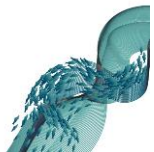


Fishmeal in Europe – supply and demand

2018 – still an over production of fish meal in Europa – although the need for export is reduced compared to 2017

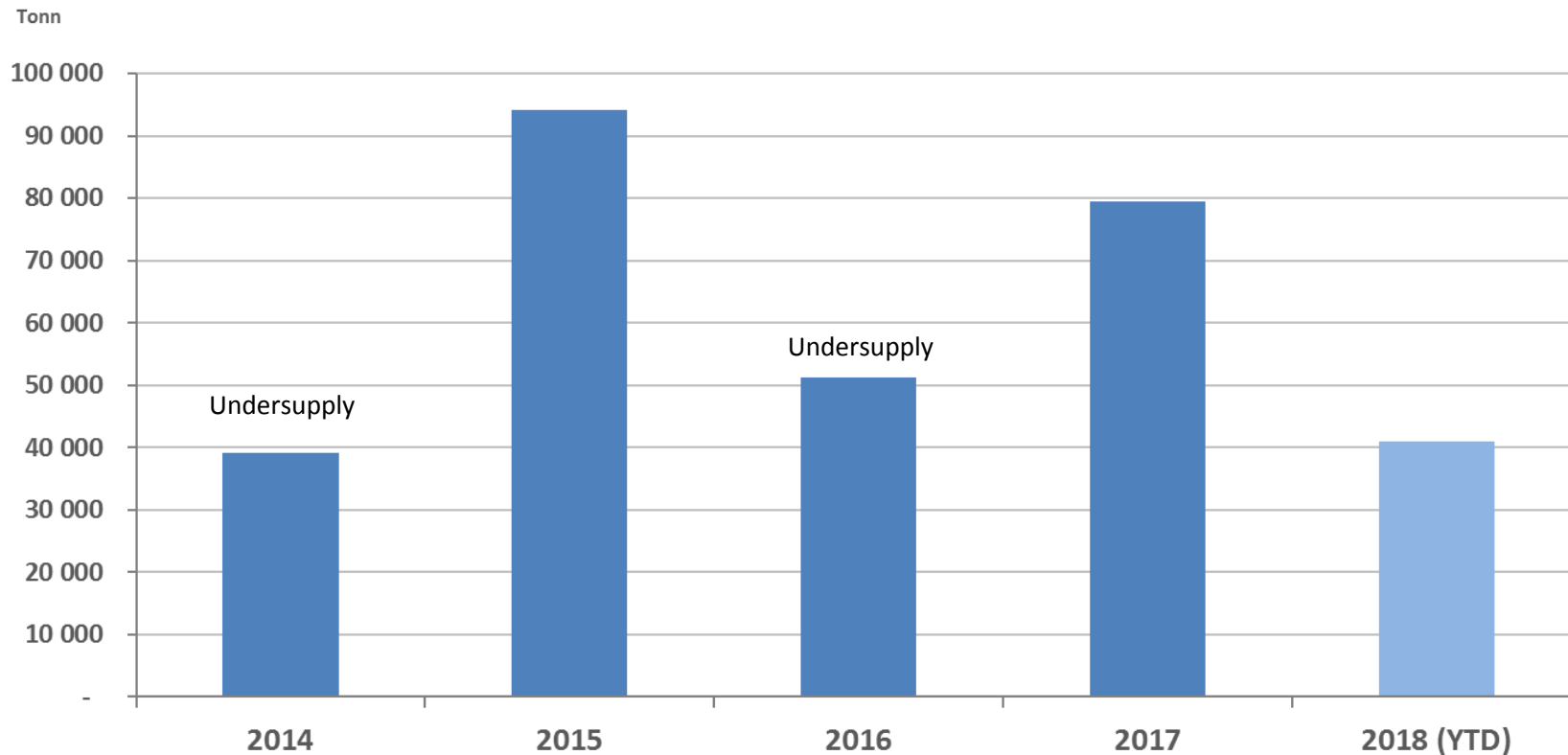
European FM production, European FM consumption and residual





Export statistics from European producers underlines how the market balance in Europe affects sales activity outside Europe

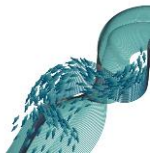
Fishmeal exports from Denmark, Iceland and Norway heading out of Europe, 2014-2018E



Source: SSB, Statistikbanken.dk, Statistics Iceland, NSM

Conclusion supply and demand fish meal in Europe 2018

- Production is fairly stable and still sufficient to cover demand.
- The aqua feed industry will optimize the use of fish meal depending on price, availability and market demand. Pure least cost evaluation does not seem to be the only factor determining inclusion rate.
- The same industry is however maintaining their focus on reducing the dependency of marine raw material – fish meal and fish oil.



Trends, challenges and opportunities.

Ethoxyquin continuously under pressure – is being replaced in European aquaculture.

SERIE: SAMARBEID MELLOM HARVEST OG MORGENBLADET


- Vi ønsker ikke å bruke oppdrettslaks på grunn av det mulige innholdet av ethoxyquin

Nestlé kuttet oppdrettslaks i barnematen på grunn av mulig ethoxyquin-innhold. Lakseprodusenter jobber nå med erstatninger. Lerøy opplyser at selskapet kuttet helt.

HOW HEALTHY IS FARMED SALMON AND WHAT IS ETHOXYQUIN?

Updated on Aug 8, 2018

 This post may contain affiliate links. Please read my [disclosure](#) for more info.

Salmon is known as a healthy food, rich in Omega-3 fatty acids. What you may not have known is that most Atlantic farmed salmon is contaminated with toxic chemicals. Manufacturers use such chemicals as ethoxyquin (EQ), butylated hydroxytoluene (BHT) and butylated hydroxyanisole (BHA) to preserve fish food.

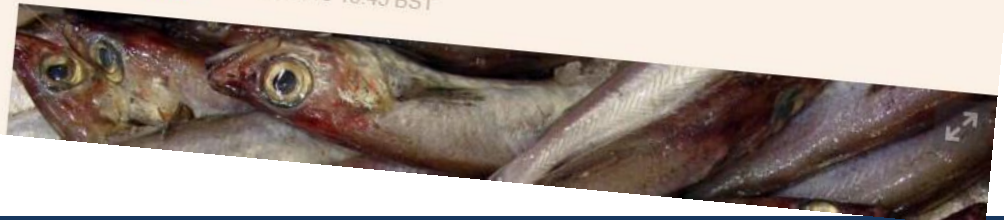
Potential challenges 2019 – fishery policies after Brexit

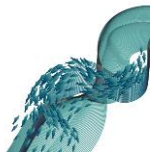
BREXIT **EUROPE** **COMPANIES**
Poll: 63% of Brits thinks UK vessels' fishing quotas should increase post-Brexit

By [Undercurrent News](#) Oct. 1, 2018 10:07 BST

BLUE WHITING **EUROPE** **COMPANIES**
ICES recommends cut in NE Atlantic blue whiting TAC, hike in horse mackerel

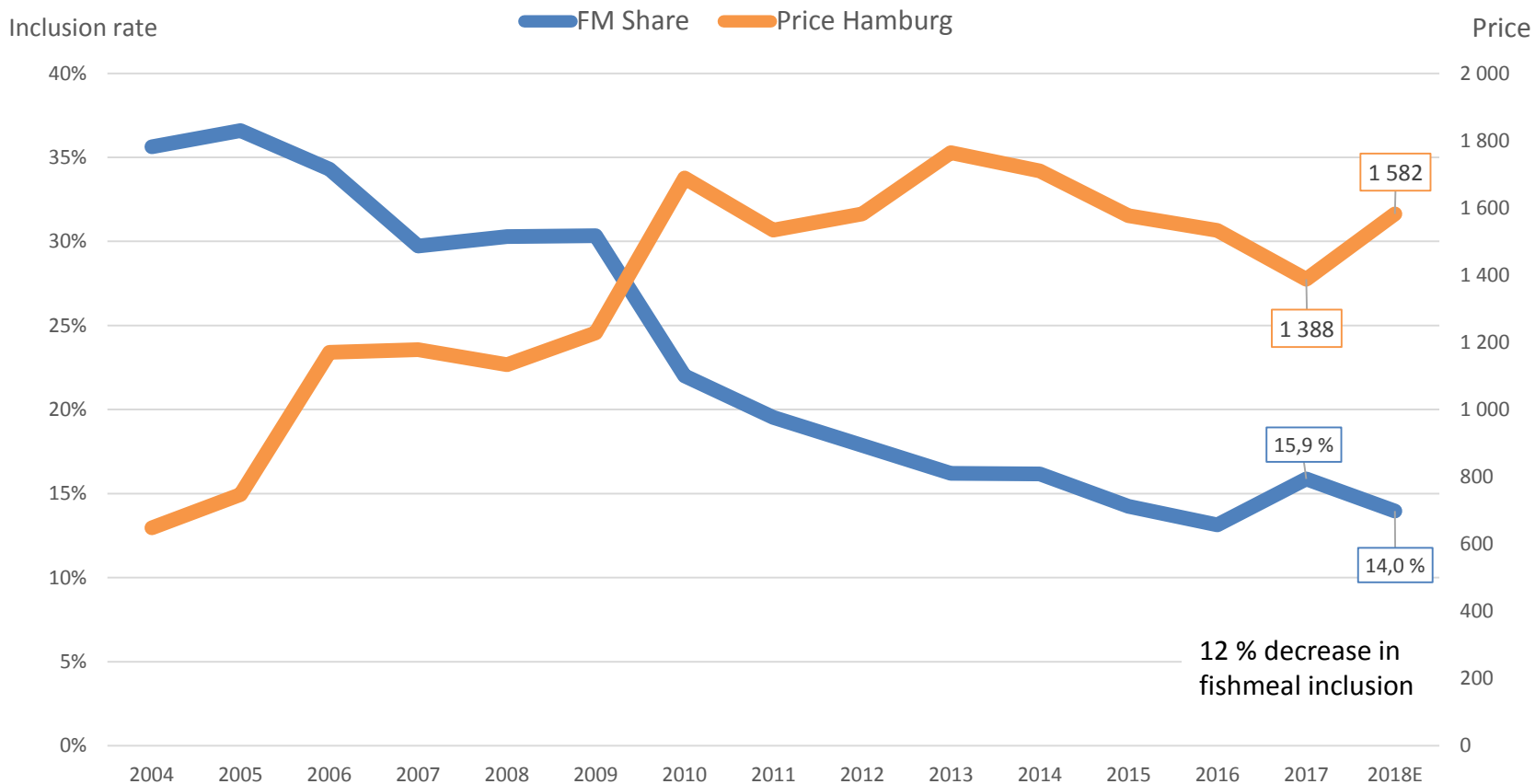
By [Tom Seaman](#) Sep. 28, 2018 15:45 BST





Fish meal consumption related to price - The rise in European fishmeal prices in 2018 has triggered a 12%* decrease in fishmeal inclusion rate.

Fishmeal inclusion rates in salmon feed and fishmeal prices, 2004-2018E



12 % decrease in fishmeal inclusion

Source: SSB, Statistikbanken.dk, Statistics Iceland, NSM

* YTD estimates per aug 2018

Potential challenge fish oil – new substitutes available faster than expected?? How do we position fish oil compared to GMO-oil??

US approves plant-based fish oil replacement



Nufarm Limited welcomes today's announcement by the United States Department of Agriculture (USDA) that it has deregulated Nuseed's proprietary omega-3 canola for cultivation in the United States.

Nuseed's omega-3 canola secured authorisation by the United States Department of Agriculture (USDA) for cultivation. Developed by Nufarm subsidiary Nuseed, in collaboration with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Grains Research and

Development Corporation (GRDC), this omega-3 canola is the world's first plant-based source of long-chain omega-3 fatty acids.

Nufarm Managing Director and CEO, Greg Hunt, said "USDA approval represents another very significant milestone in the development and commercialisation of this important new product.

"It further validates the safety and quality of the product and the regulatory progress being made in multiple jurisdictions."

The USDA deregulation marks a critical step toward global regulatory approval of omega-3 canola. Food and feed regulations are overseen by the US Food and Drug Administration (FDA). Nuseed's submission to the FDA is still being processed and approval is anticipated prior to the 2019 US cropping season.

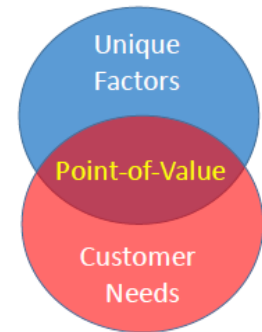
Nuseed successfully planted 15,000 acres of omega-3 canola in Montana under USDA notification this year, with that crop currently being harvested. The oil produced from this crop is destined for ongoing pre-commercial trials in key markets.

Source: [Nuseed](#)

Unravelling fishmeal: Brett Glencross University of Sterling Iffo-Rome

What Makes this Resource so Special?

- When something is no longer “essential” then how do you create value from it?
 1. Identify those factors that distinguish it from other products (understand your product)
 2. Identify those factors that customers value (understand your market)
- The interaction between both sets of factors is fishmeals’ point-of-value



un·rav·el

/,ən'raʊəl/
verb

1. undo (twisted, knitted, or woven threads).
2. investigate and solve or explain (something complicated or puzzling).
"they were attempting to unravel the cause of the problem"

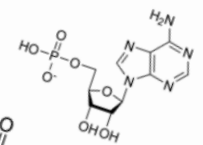
synonyms: solve, resolve, clear up, puzzle out, unscramble, get to the bottom of, explain, clarify, make head(s) or tail(s) of.

Brett Glencross – fishmeal is so much more than protein

Minerals	Anchovetta	Capelin	Herring	Jack Mackerel	Poultry Meal	SPC
Ca (units) %	4.1	2.3	2.9	3.9	2.3	0.4
P %	2.6	2.0	2.1	2.6	1.3	0.5
Mg %	0.3	0.2	0.2	0.3	0.2	0.5
K %	0.8	1.4	0.8	1.2	1.2	2.0
Na %	1.1	0.8	1.0	1.3	0.5	1.0
Cu mg/kg	4.4	5.4	5.8	7.2	15.2	192.8
Fe mg/kg	300.0	173.0	190.8	249.5	192.8	25.6
Mn mg/kg	16.0	6.0	10.9	11.0	25.6	93.7
Zn mg/kg	69.0	86.9	86.1	80.4	93.7	

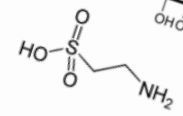
Novel Bits...

• Nucleotides



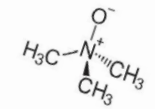
- Building blocks of DNA
- Stimulates immune system

• Taurine



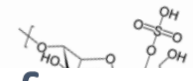
- Key component of bile acids
- Helps control osmoregulation

• TMAO



- Helps prevent protein denaturation
- Reduces fat belching in salmonids

• GAGs



- Stimulates growth in some species
- Maintains hydration of cartilage

Lipids in a more biologically active form...

Lipids come in two primary forms

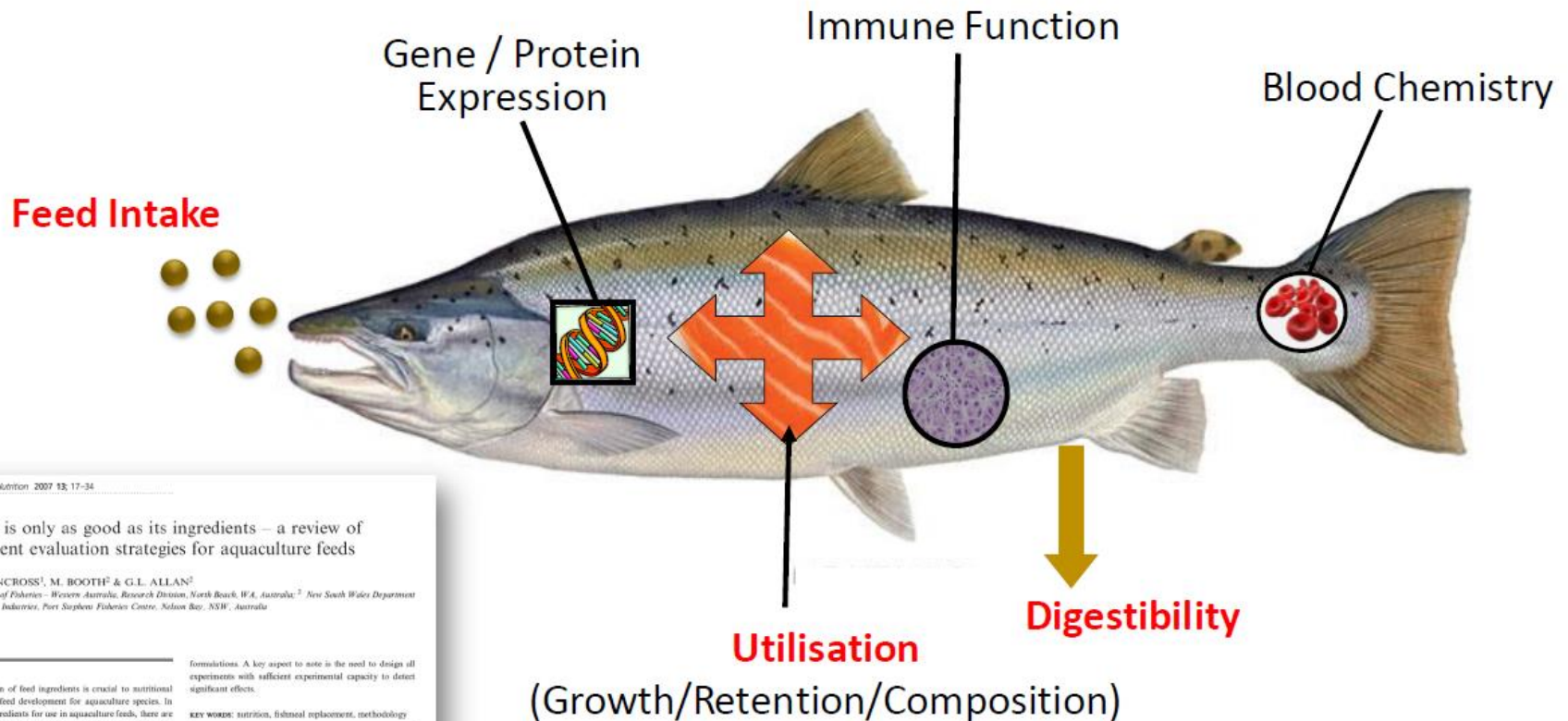
- Neutral lipids (e.g. Triglycerides)
- Polar lipids (e.g. Phospholipids)

Fishoil (and other oils) are almost exclusively triglycerides.



Brett Glencross University of Sterling – Iffo Rome

Assessing Nutritional Effects of Ingredients



Aquaculture Nutrition 2007 13; 17-34

A feed is only as good as its ingredients – a review of ingredient evaluation strategies for aquaculture feeds

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Abstract

The evaluation of feed ingredients is crucial to nutritional research and feed development for aquaculture species. In evaluating ingredients for use in aquaculture feeds, there are several important knowledge components that should be understood to enable the judicious use of a particular ingredient in feed formulation. This includes information on (1) ingredient digestibility, (2) ingredient palatability and (3)

formulations. A key aspect to note is the need to design all experiments with sufficient experimental capacity to detect significant effects.

KEY WORDS: nutrition, fishmeal replacement, methodology

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Challenges in salmon farming – death rate is still far too high – robustness still focus.

Death rate at salmon farms doubles to 20m fish a year



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Rising salmon death toll prompts Norway to take action

Last year 53 million farmed salmon died on Norway's farms.

Research on robustness of fish in demanding aquaculture environment

Gills, skin and intestines are barriers that protect fish from their environment and help maintain their health. An important issue that needs to be addressed is how feed composition affects the functioning of these barriers in farmed salmon.

A major, new, multidisciplinary project has recently been launched, the title of which is "The importance of nutrition for skin, intestine and gill health in salmon".

Interest in omega-3 and robustness

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How can we develop and value new knowledge?

- Should we develop new knowledge in collaboration with the big buyers, as an industry or as separate companies??
 - Today the salmon feed producers know more about the value of our product than we do
 - Will we ever manage to fill this gap??
- Learn more about the value of components other than protein, and then incorporate this value in the price of fishmeal.
 - In all fairness the aqua industry is already paying more for the fish meal than the straight protein value of the product
- Separate the novel products – isolating more valuable components and extracting them from meal and/or oil.
 - What is then the remaining value of the product?
 - Will the sum of the isolated product + reduced? value of the remaining meal/oil be bigger than the original value?