



Transition paths to sustainable legume-based systems in Europe

Lupin in shrimp diets reduces cost and promotes animal health

Problem

Fishmeal and fish oil still are traditional resources for feeds for fish and crustaceans grown in aquaculture. The fishmeal in particular contains readily digested protein and a complete amino acid profile. This provides all nutrients the animals, especially carnivores like salmon, trout, seabass, seabream, shrimps, need. The demand for fishmeal has risen as the aquaculture sector has expanded, which has driven up prices for fishmeal. Legumes are the main alternative to fishmeal: soya has been one of the main ingredients in fish diets besides fishmeal for more than 20 years. The use of other locally produced legumes such as lupin or faba bean, which are more suitable in terms of the digestibility and sustainability, is now a focus of research.

Research findings and recommendation

At the Alfred Wegener Institute, researchers tested dehulled lupin meal at high diet inclusion rates (10, 20 and 30%) in feeds formulated for white leg shrimp, which is the most produced shrimp species worldwide. Results showed that an inclusion rate of 10% lupin meal is more than recommendable as this boosted immune response, showed excellent growth and lowered diet cost by 7 %.

Author(s)

Monika Weiß, Matt Slater, Alfred-Wegener-Institute, Helmholtz-Centre for Polar and Marine Research

Contact

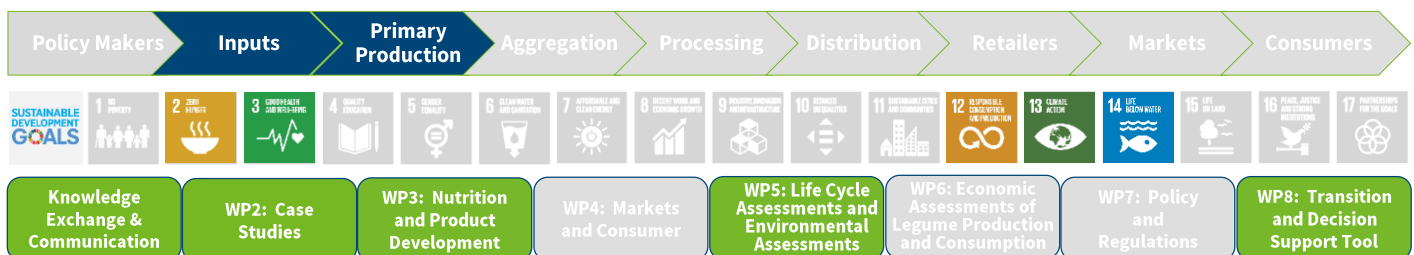
Monika Weiß,
Monika.Weiss@awi.de

Country/Region

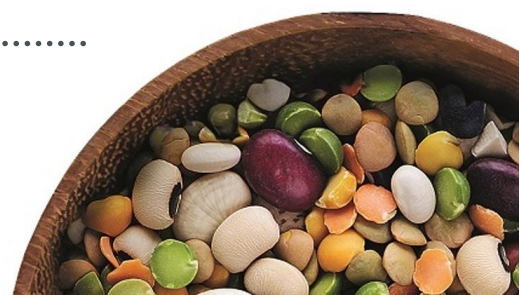
Germany

Keywords

Lupins, aquaculture, feed



All Practice Abstracts prepared by the TRUE Project in the EIP-Agri common format can be found here: <https://ec.europa.eu/eip/agriculture/en/find-connect/projects/transition-paths-sustainable-legume-based-systems>





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Practice Abstract #3



An experimental diet (Basis) with 30% fishmeal was formulated. *Lupinus angustifolius* kernel meal was added as 10, 20 and 30% of the diet (L10, L20 and L30 respectively), incrementally replacing fishmeal. A commercial control (Com) was also maintained.



About TRUE

The EU funded project "TTransition paths to sUustainable legume based systems in Europe" (TRUE) is a balanced practice-research partnership of 24 institutions, which aims to identify the best routes, or "transition paths" to **increase sustainable legume cultivation and consumption across Europe** and includes the entire legume feed and food value chains.

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