



Transition paths to sustainable legume-based systems in Europe

Faba bean in salmon diets instead of fishmeal and GMO soy

Atlantic salmon (*Salmo salar*) is one of the most important farmed fish species in Europe with a production of 1.7 million tons and a value of 8.3 billion Euros in 2019. Fishmeal and fish oil still constitute traditional resources for feeds for fish and crustaceans kept in aquaculture. The fishmeal contains readily digested protein, a complete amino acid profile and provides all nutrients the animals, especially carnivores such as salmon, trout, seabass, seabream, shrimps, require. Demand for fishmeal has risen as the aquaculture sector has expanded, placing pressure on the marine food chain and increasing prices. Legumes are the main alternative to fishmeal, and soya has been main ingredients in fish diets for more than 20 years. The use of other locally produced legumes like lupin or faba bean, which are more suitable in terms of digestibility and sustainability, is now a focus of research.

At the Alfred Wegener Institute, researchers tested faba bean protein concentrate, lupin meal, and lupin concentrate from local sources at inclusion rates of 35% in feeds formulated for Atlantic salmon. Results showed that with an inclusion rate of 35% faba bean protein concentrate, it is possible to replace all soy concentrate. Additionally, the use of fish meal can be reduced to less than half of what is currently used in a conventional diet. The use of regional resources is highly recommended, as neither the growth nor the health of the salmon is affected. Moreover, faba beans are considerably less expensive than soy and fishmeal.

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Figure 1. Various legumes and pulses . Photo credits ©: Mariana Duarte



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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