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INTERVIEW: European Soy Protein Concentrate Producer Offers 'Pure' Protein Option for Young Animals, Fish

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16 May 2017- Modern animal production is built on soy. The legume's complete amino acid profile has made it one of the most irreplaceable feed ingredients, in a wide variety of diets. However, its use is circumscribed by the ability of animals to digest it. "By nature, soybeans contain certain anti-nutritional factors (ANFs), combined with sucrose and oligosaccharides, all of which to some extent are still present in soybean meal. These ANFs cause digestive disorders in young animals like piglets, broiler chicks and calves," explains Risto Uusitalo, commercial director at Nordic Soya, which claims to operate the largest full-scale multi-stage soy processing plant in the EU. The solution commercialized by the company is a highly specialized, purified form of soy, known as soy protein concentrate (SPC). "In the SPC process, these ANFs are largely eliminated by ethanol extraction," he says. The result is not only free of ANFs, but extremely dense in protein, which passes from approximately 46-48% in soybean meal to 64-65% protein in SPC by Nordic Soya.

These factors make the substance interesting for any feeding situation where maximizing the digestibility and protein content are key imperatives. In this sense, SPC is increasingly providing an adequate substitute for fishmeal, even in aqua diets traditionally ill adapted to soy, a development Mr. Uusitalo credits to the flurry of R&D work in recent years which has made this transformation possible. "SPC has been a major driver in the vast growth of the farmed salmon business over the last fifteen years or so," he claims. "SPC is offering near-identical protein to fishmeal at a lower cost to fish feed producers. Fishmeal is a scarce product these days and it is fair to say that without SPC, the growth of the salmon business would not have been possible at the level we have seen. The cost of salmon would be higher in the supermarket, too."

Risto Uusitalo
Commercial Director
Nordic Soya

This market has required a particular strategy on the part of Nordic Soya, namely its investment in the development of a non-GMO product. "Especially in Norwegian salmon feeds, or Scandinavian rainbow trout feeds, non-GMO SPC is the choice. In this fish growing season in the Northern hemisphere, we are happy to cater the AQUA segment in both Norway and Finland with our SPC." However, this is a relatively new development for the company, part of a new strategy adopted in 2017. "In early 2016, we started with a YAF [Young Animal Feed] strategy only, but currently cater to both YAF and AQUA," Mr. Uusitalo discloses. On this front, as well, the company sees vast room for growth. "The demand in the YAF segment is growing steadily in Europe and we see increasing interest in Asia-Pacific region where we are developing a distributor network."

Powering this growth is Nordic Soya's distinct product, produced at a state-of-the-art EUR 100 million factory commissioned at the end of 2013. In Mr. Uusitalo's words, "the SPC quality has been excellent from the start, with higher protein levels than most of the competition. As analyzed by TNO/Triskelion laboratories in the Netherlands, the anti-nutrients i.e. lectin, glycinin, β-conglycinin and trypsin inhibitor levels are lowest possible in SPC by Nordic Soya. Similarly, sucrose, raffinose and stachyose levels are also very low." Ingredients-wise, the company uses raw materials certified by the Round Table of Responsible Soy, of which it is a member, and also offers stricter ProTerra certified soy which meets more stringent demands for traceability and identity preservation. "The business is about effectiveness in raw material sourcing, production and sales. In our business, raw material quality and pricing is a critical success factor. We have been able to create a good network of partners for supply of beans, or meal for SPC production."

Mr. Uusitalo underlines that this effectiveness comes as part of the company's small scale, and not in spite of it. "Being a medium-sized company with agility and flexibility…we are independent, quick on our feet, and can source our raw material from any source that fit our quality and value needs. Even if we are in a commodity business, we have a specialty mindset in quality and service elements to our customers." There are other assets to the company's management structure that make him confident the company can succeed in a niche where others, notably Finnprotein (the constructors of the plant Nordic Soya now operates, who went defunct in 2014) have failed. "Nordic Soya is privately owned by a family, giving integrity in management, financing and decisiveness. [Moreover], Nordic Soya has a greater degree of freedom in how to run the plant, meaning we can scale up according to market demand, not having to maximize capacity-in-use, in case we do not see the customer value for our products."

Indeed, going forward, the company is comfortable with its production capacity. "We have taken a good piece of the pie by now, and are growing our production volumes and business steadily, in a controlled way. We can only say that our SPC capacity is 'sufficient' to anticipate volume growth in the next five years." Their focus is now largely concentrated on R&D, as Mr. Uusitalo notes there remains plenty to be discovered about SPC. "At Nordic Soya, we are interested in ileal digestibility and absorption of amino acids in the gut. We know that the SPC raw material, whether soybean meal or white flakes, makes a difference in SPC quality. We have developed a lab test mimicking our ethanol extraction, and are able to evaluate the protein uplift potential in different soy pre-samples rapidly, even before buying into this raw material. This lab test has become part of our purchase specification." Moreover, the constant chase for greater protein purity is always foremost on their priorities list: "Process parameter research is something we are doing a lot ourselves, thanks to our new plant and sophisticated process automation. We can influence the final product quality and protein uplift by adjusting process parameters. From the start-up, we have been able to offer a more concentrated protein up to 65% as is, and simultaneously more purified soy protein to the sensitive young animals and fish, compared to most of our competition." Finally, he notes, the company is thinking more widely about the future of protein. "Soy is not our sole R&D interest. We are also processing faba beans, locally produced vegetable protein, testing its use in animal feeds, and we see a lot of promise in faba bean based products for both food and feed applications."

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