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**Achieving European Protein Demands using Ethanol Co-products**

**Peter E.V. Williams; Senior Nutritionist, Fluid Quip Technologies**

Driven by consumer demands for healthier and more environmentally friendly options, the European food market is shifting towards more sustainable, homegrown sources of plant-based protein. The European Commission predicts that by 2050 the demand for plant-based protein will increase by 50% and recently stated, “We will improve our food security by reducing our dependencies on key imported agricultural products and inputs, in particular by increasing the EU production of plant-based proteins”. Given that Europe is only 27% self-sufficient in high quality protein, this presents a significant challenge for the animal feed industry.

Establishing a new protein crop for Europe would take a decade to establish elite, geographically adapted varieties, adopt new agronomic practices, and establish appropriate supply chains. There are significant advantages to embracing traditional crops and practices. The dry grind ethanol industry is an international business converting traditional crops into renewable fuel and co-products. Distillers Dried Grains and Solubles is a valuable feed co-product from the dry grind ethanol process but was never designed for any specific purpose and has limited application across a wide range of livestock species. However, co-products *per se* are a unique category of feed materials that do not compete with food and when used in feed contribute to a circular economy.

A novel mechanical separation technology (The Maximised Stillage Co-products (MSC™) has been installed in several corn ethanol plants. The product has been successfully tested in over 50 trials, and commercially across the full range of livestock, in aquaculture and diets for companion animals. Corn fermented protein (CFP) ranges in protein concentration from 52% crude protein (CP) *as is* to over 60% CP when higher protein crops such as wheat are used as feedstock. The term corn fermented protein references that the product is derived from an initial fermentation lasting up to 70 hours. A high proportion of the yeast generated during fermentation is recovered in the MSC process (approx. 24% spent yeast in dry matter of 52% CFP).

The MSC CFP product has been used to replace a variety of protein materials in feed formulation, particularly imported soy-based products, and without exception, been proven to be an ideal replacement protein with additional benefits from spent yeast and fermentation characteristics. Current production of CFP, which is regulatory compliant, is over one million tons per annum. These new protein co-products align well with the goals of the circular economy and can contribute a large volume of high quality, home-grown, non-GM plant protein. Utilizing these co-products meets the growing consumer demand for plant-based protein while also reducing environmental impact. Corn Fermented Protein is the first commercially viable, new high-concentration, vegetable protein for the feed industry in the past 20 years.

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