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Dyadic expands non-animal dairy pipeline with new strategic development agreement

07 September 2026 | News

Dyadic International is adding another precision-fermented dairy protein program to its commercial pipeline as food companies increasingly look for alternatives to animal-derived ingredients

Dyadic International is expanding its presence in the emerging non-animal dairy market through a new development and commercial license agreement with a European biotechnology company, adding another precision-fermented dairy protein program to a portfolio that already includes recombinant chymosin and alpha-lactalbumin. The Florida-based biotechnology company said the agreement will broaden its food and nutrition pipeline while creating additional opportunities for revenue through development payments, licensing and commercial participation. Financial terms were not disclosed.

The deal is the latest example of Dyadic's strategy of using its proprietary Dapibus precision fermentation platform to develop recombinant proteins for commercial partners rather than relying solely on internally developed products. Under the agreement, the European biotechnology partner will work with Dyadic on additional precision-fermented dairy proteins. The program will move through strain optimization, process development and commercial scale-up, with Dyadic eligible for development and commercial payments, licensing-related revenues and other economic participation if the products reach the market. "This agreement represents another important step in expanding Dyadic's commercial food and nutrition pipeline," said Joe Hazelton, president and chief operating officer of Dyadic Applied BioSolutions.

The company's approach reflects a broader shift in the alternative protein industry. Precision fermentation is increasingly being used to produce individual proteins found in conventional dairy without relying on cows as the production source. For food manufacturers, the technology offers a potential way to reproduce specific functions associated with dairy proteins, including texture, processing performance and nutritional characteristics.

Dyadic already has commercial and development relationships covering several dairy proteins. Its portfolio includes recombinant bovine chymosin, which is being commercialized through its partnership with Inzymes ApS, and recombinant

bovine alpha-lactalbumin, which is under development with BRIG BIO. The new agreement gives Dyadic another opportunity to apply the same underlying fermentation platform to a different protein and market application.

Dapibus is designed to produce recombinant food proteins and enzymes through microbial fermentation. By using established fermentation processes and industrial infrastructure, Dyadic is seeking to shorten development timelines and provide a route to larger-scale manufacturing without building a separate production system for every protein.

That scalability is becoming increasingly important as precision fermentation companies move beyond laboratory demonstrations toward commercial production. The technology's long-term economics will depend not only on whether individual proteins can be produced successfully, but also on fermentation yields, downstream processing costs, manufacturing capacity and the ability to secure customers at commercially viable prices. For Dyadic, partnerships provide a way to share those commercialization risks while maintaining potential participation in future product revenues.

"Together with the commercialization of recombinant bovine chymosin through our partnership with Inzymes ApS and our ongoing bovine alpha-lactalbumin collaboration with BRIG BIO, we are building a diversified pipeline of precision-fermented dairy proteins and enzymes," Hazelton said. The company is targeting applications across food and nutrition, including ingredients designed to improve functionality, texture and nutritional performance. Its broader pipeline spans dairy processing as well as higher-value nutrition applications.

The new agreement also highlights the potential for precision fermentation platforms to become multi-product businesses. Rather than depending on a single flagship ingredient, companies such as Dyadic are attempting to build platforms that can be adapted to produce multiple proteins for different customers and end markets. For Dyadic, that model could create several potential sources of revenue, ranging from upfront development payments and licensing income to commercial manufacturing and product-related revenues.

The company is also applying its recombinant protein technology beyond food and nutrition, with programs spanning bioindustrial and biopharmaceutical applications. That diversification is intended to reduce reliance on any single market while increasing the commercial value of its underlying microbial expression technology. The immediate focus of the new dairy program will be technical development and scale-up. Whether the agreement ultimately becomes a meaningful commercial revenue stream will depend on the successful development of the protein, regulatory requirements, manufacturing economics and market adoption.

Still, the expansion gives Dyadic another foothold in a market where food manufacturers are looking for ways to reproduce the functionality of conventional dairy ingredients without depending entirely on traditional animal-based supply chains. As precision fermentation moves deeper into commercial food production, the competitive question is increasingly shifting from whether the technology works to who can produce the right proteins at the right cost and scale. Dyadic is positioning its Dapibus platform around that next stage of the market.