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Pow.Bio triples protein productivity in 3,000-litre continuous fermentation trial

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Pow.Bio, the pioneer in continuous biomanufacturing, BÃ¼hler Group, the global solutions provider for food, feed, and advanced materials, and ATV Technologies, the accelerator of fermentation process industrialisation, today announce the successful scale-up of Pow.Bioâ??s continuous platform to 3,000 litres at ATV's facility in CompiÃ¨gne, France. Producing three times more protein than its equivalent fed batch process, the project represents a significant milestone in validating Pow.Bioâ??s platform at increasingly larger scales.

In addition to improvements in productivity and COGS, Pow.Bio's advanced machine learning (ML) algorithms and model predictive control systems replaced traditional guesswork with data-driven decision making, enabling real-time adaptation to unexpected operational challenges.

ATV's capabilities helped Pow.Bio achieves a critical proof point, demonstrating that continuous fermentation can be seamlessly integrated at larger scales with robust, globally scalable performance.

Key Outcomes Include:

Higher Productivity: Pow.Bio's platform more than tripled productivity for a high-quality dairy protein compared to fed-batch methods.

Reduced COGS: The newly implemented process also reduced projected costs of goods sold (COGS) by over 50 per cent compared to a typical process.

Nimble Conversion: Pow.Bio's CapEx-light adaptation of ATV's existing facility generated three times more product from a minimal investment, with BÃ¼hler providing essential adaptation expertise to adapt the site for continuous trials.

ML-Driven Process Adaptability: Advanced machine learning and predictive control rapidly improved process outcomes, using novel optimisation strategies for facility-specific requirements.

Ahead of the trials, BÃ¼hler conducted a comprehensive pre-qualification of ATV's site, supporting facility readiness and ensuring alignment with continuous fermentation requirements. BÃ¼hler also supported the adaptation of existing

infrastructure to accommodate continuous operation and facilitated a smooth technology transfer from Pow. Bio to ATV, helping accelerate trial initiation and execution.

"ATV has been a reliable partner with a highly skilled team who have helped bring our technology to life at a larger scale. This collaboration proves that our continuous fermentation platform delivers reliably at scales that matter with unmatched economic viability," said Shannon Hall, CEO and co-founder of Pow. Bio. "What excites me the most is that our customers can now leverage our technology to get to market faster than ever before. As we advance toward even larger scales, this is one of many partnerships that validate our approach to transforming global biomanufacturing."