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Innovative Hydrosome Labs technology poised to usher in new era of precision fermentation

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Research Shows New Process Doubles Precision Fermentation Yields and Decreases Production Time



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A new research with innovative technology from Chicago-based Hydrosome Labs is poised to solve multiple problems faced in precision fermentation, a process that involves the customization of yeast and/or bacteria to produce specific molecules for use in a wide variety of applications including food, ingredients, biofuels, industrial enzymes, and pharmaceuticals. This new technology also has the potential to help solve a global industry bottleneck in fermentation capacity and equipment, allowing for the production of dramatically higher yields in the same size or previously unsuitable tanks.

The breakthrough comes through Hydrosome Labsâ?? development of a natural and chemical-free process improving the power of water through the emerging science of ultrafine bubbles. The clean, green technology delivers active ingredients to cells more efficiently and completely. In addition to more efficient precision fermentations, commercial applications include helping plants grow faster and healthier with less fertilizer, improving nutrient uptake in skin care, and delivering faster, longer lasting, and enhanced hydration in performance drinks.

"Itâ??s truly exciting to see how easily the ultrafine bubbles produced by Hydrosomeâ??s technology integrated into our pilot scale reactors and showed immediate benefit to microbial growth,â? said Brian Jacobson, Associate Director of Strategic Operation at the Integrated Bioprocessing Research Laboratory (IBRL) at the University of Illinois Urbana-Champaign. â??While there have been significant advances in synthetic biology resulting in a tremendous number of new products capable of being made through fermentation, we have seen very little innovation in the fermentation process or equipment to assist in scaling these discoveries. This technology has the potential to positively impact the economics of new products in a

wide range of industries and can also be applied to existing processes or retrofit last generation fermentation equipment currently unsuitable for these new products,â?• said Jacobson.

Hydrosomeâ??s preliminary evaluation at IBRL showed that substituting Hydrosome H_2O for regular water in an example fermentation resulted in:

- **2X** faster cell doubling rate
- **25%** less overall fermentation time
- **2X** higher peak cell biomass

The bottom-line benefits to the industry include faster fermentations, higher yields, lower energy and nutrient inputs, lower labor costs, higher efficiencies, no added chemicals, and no regulatory impact.

Paul Gadbut, CEO of Hydrosome Labs said the â??future is nowâ?• and called the breakthrough â??a win for manufacturers, consumers, and investors alike.â?• He also noted the sustainability benefits of allowing manufacturers to do more with less, use fewer chemicals, fewer nutrients, reduce environmental impact, and shorten supply chains.

Precision fermentation encompasses a portion of a nearly $200 billion-dollar biomanufacturing industry spread across contract manufacturers and vertically integrated global companies. Hydrosome Labs completed a seed funding round last year and expects to close a Series A Round this summer.