65c Biotechnology in Everyday Life: Opportunities for Membrane Technology in Non-Pharmaceutical Biotechnology

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The term biotechnology is commonly associated with the biopharmaceutical industry, which neglects the fact that mankind has practiced biotechnology long before recombinant protein drugs were commercialized. Ancient peoples have baked leavened breads, fermented beverages and dairy products by using the power of microbial cell factories. All the while, they have unknowingly improved these microbes to generate better and safer foods. More recently, modern industrial and food biotechnology has applied the principles of biological and pathway engineering to enhance crop production, introduce sustainable products and production technologies, and to create entirely new products.

In the industrial, agricultural and food biotechnology area, membrane technology plays a key role in water treatment, the dairy and beverage industries. It was only natural to extend existing membrane applications to the therapeutic, functional food, probiotics and general bioprocess development areas. This included classical solid/solid and solid/liquid separations as well as the application of membranes to enhance product properties themselves. This presentation will give an overview of currently applied membrane technologies in the field. Special emphasis will be placed on novel properties and applications as well as opportunities that will be created with further development in membrane technologies. This includes new product features based on porous materials and opportunities to create low cost sustainable technologies fitting to provide for a growing global population.