

**NEW PRODUCTS IN THE FOOD AND AGRICULTURAL BIOTECHNOLOGY PIPELINE**

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**ABSTRACT**

*Biotechnology is not new, in thousands of years of agricultural history, the selection by prehistoric farmers of improved plant lines and of desired traits in the breeding of animals, and even the simple culling of plants and animals with undesired characteristics, inevitably altered the genomes of the domesticated species. Similarly, prehistoric developments in food technology include the use of microorganisms in the production of bread, beer, wine, and cheese. All of these endeavors have advanced rapidly in the 20th Century and especially in the past 15 years, because of new developments in genetics, plant breeding, biochemistry, and chemistry and most recently, in molecular genetics. New technologies have been applied in agriculture and food production as they evolved. Genetic engineering through the application of recombinant DNA methods is the new technology currently having the greatest impact. Its application in crop and animal agriculture and food production will be discussed. Tomato lines with improved ripening and shelf-life characteristics and squash resistant against specific viruses were the first to meet with regulatory approval and reach the market. Herbicide-tolerant crops, insect-resistant cotton and potatoes, rapeseed with altered lipid composition, and crops with reversible male sterility to allow efficient breeding control were next in the development pipeline. New, genetically-engineered crops are likely to be important not only to agriculture and the food industry but also in the chemical and pharmaceutical industries as production factories for economically important products such as thermostable biodegradable plastics. So, although biotechnology is the broadest sense is not new. What is new is the level of complexity and precision involved in scientists' current ability to manipulate living things, making such manipulation predictable, precise and controlled, with the potential to contribute to a safer more nutritional and more economic food supply and a healthier environment.*