



Dairy Ingredients: Opportunities and Challenges

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Inside this Issue...

Introduction.....	1
Ingredient Manufacturing Processes: Old, New and on the Horizon	2
UF Membranes: Uses, Costs and Configurations	4
Potential for and Barriers to Increased Sales of Milk Ingredients	6
Ingredients and Their Effect on Milk Price	7
Conclusions.....	8
Appendix: Milk Substrates	9
References	10

Key Points:

- **Milk is an organically complex liquid composed of proteins, lipids, lactose, vitamins, and minerals. Milk components can be separated by physical and chemical methods to produce a variety of dairy products and ingredients.**
- **Recent developments in filtration technology allow milk components to be separated into fractions by molecular weight or electrical charge to yield new dairy-derived ingredients with unique functional, nutritional and flavor profiles.**
- **Filtration also has the potential to alter dairy processing procedures and plant configurations for existing products. For example, ultra-filtered milk can be used in the fortification of existing dairy products such as cheese, yogurt and ice cream.**
- **Filtration technologies have become more financially feasible in recent years, and demonstrate economies of scale.**
- **Standards of identity for some dairy products, like cheddar cheese, do not permit the use of some new dairy ingredients. The Food and Drug Administration has been petitioned to allow their use, but has not yet rendered a decision.**
- **New dairy ingredients must be introduced to food formulators who will need to learn their functional, nutritional and flavor properties. In turn, formulators will have to learn what non-dairy proteins and other components the new ingredients might substitute for and what the relative costs will be.**
- **New dairy ingredients have the potential to increase the demand for farm milk, but there is a need for continuous innovation to offset milk supply response and the impacts of demand for nonfat milk solids rather than butterfat.**

Introduction

The vast majority of dairy products sold today are easily recognizable products such as beverage milk, cheese, butter, yogurt, etc. However, there is growing interest in dairy products that are not final consumer items. Often these dairy ingredients are used in further processing other dairy products. Examples include the use of nonfat dry milk or milk protein concentrate in cheese making or adding dry whey to ice cream mix. More recently, dairy ingredients are being used in foods that we don't think of as dairy products, including sports beverages and snacks.