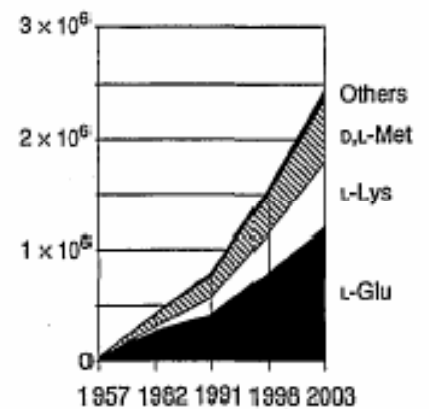
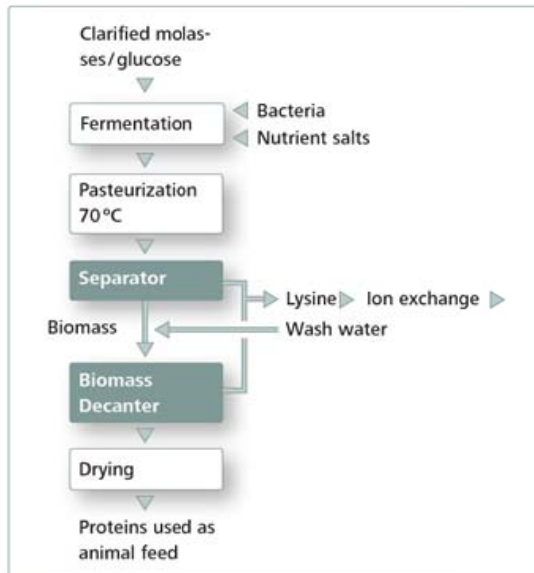
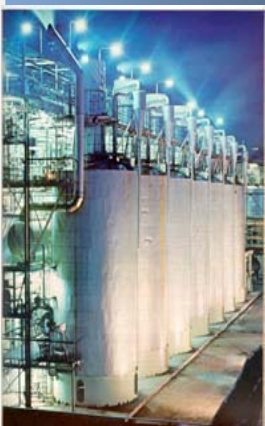




Demands for amino acids for use in the areas of food and feed additives and drug manufacturing have increased. In medicine, amino acids are used for infusions and as therapeutic agents. Amino acid derivatives are also used in the chemical industry, such as in cosmetics, synthetic leathers, surface-active agents, fungicides, and pesticides. The production methods developed so far may be summarized as follows: (1) protein hydrolysis, (2) chemical synthesis, (3) microbiological production, for example, from carbon sources such as glucose or from chemically synthesized precursors, and (4) enzymatic synthesis. Whereas chemical synthesis produces a racemic mixture, which may require additional resolution, the latter procedures give rise to optically pure amino acids. Because of their importance, the microbial production of L-lysine will be described in this expertise. The commercial production of lysine is important because lysine is a necessary additive to corn feed given to dairy cows and chicken farms. Without this additive, the cattle would not have the amino acids necessary for protein synthesis and subsequent milk production and the poultry need this essential AS for egg laying and metabolism. *Corynebacterium glutamicum* is the primary bacterium used in the commercial production of amino acids, particularly lysine. This expertise will describe BASF (GER) and Ajinomoto (JP) company as one of the leaders for Lysine production in different chapters.



The amino acid market doubles about every ten years. Numbers are in tonnes per year.



Microbial Lysine production for animal feed application project study

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