

## Foreword

### 1st International Symposium on Spray Drying of Milk Products

The 1st International Symposium on Spray Drying of Milk Products organized by the dairy research laboratory (LRTL) INRA of Rennes took place from 16th to 18th October 2001. The aim of this symposium was to establish a progress report on current knowledge in the field of spray drying of the dairy products and to carry out scientific exchanges between the specialists in the area, the dairy companies and the equipment manufacturers. This symposium gathered 239 participants (51% from the dairy industry, 18% from research laboratories, 14% from equipment manufacturers, 8% from University and 9% students) of different nationalities (18 countries represented).

During these 3 days, 5 topics (State of the art - Physicochemical properties - Water transfers - Dairy Powders - Equipment/Energy) were approached in 23 lectures (50% French - 50% Foreigners) with simultaneous translation French/English.

Spray drying combined with pretreatment of milk by tangential membrane filtration contributes to a diversified and increasing complexity of the dairy powders. The last physicochemical and thermodynamic results leading to significant advances were presented to the participants. Several lectures showed the influence of drying parameters on the properties of the resulting powders through improved methods able to determine the powder color, the flow properties of dairy powders, the particle sizing and the rate of  $\alpha$ -lactose monohydrate in order to predict the most favourable dehydration degree for powder storage or to follow milk powder rehydration by using NMR relaxometry. Moreover a review on the state of the art of spray drying of milk products, presentations were devoted to the world market of milk powder, the glass transition, the phase diagram, the water activity, the microencapsulation and to the spray drying of new powders enriched in fat or proteins. In the last session of the symposium were treated economical and energetical aspects of spray drying and the available technology for post-agglomeration of the powdered particles.

These lectures have generated numerous exchanges about the standardization of the products to be dried, the water transfer, its modelling during drying and rehydration and the putative development of new polyvalent equipments adapted to the new dairy products.

This issue of "Le Lait" contains all the presented papers which were in agreement with the criteria of publication of the journal.

Financial support of the numerous sponsors are deeply acknowledged as well as the unlimited help given, since one year, by the members of the organizing and the scientific committees.

The scientific committee of the symposium has decided that the 2nd International Symposium will be held in Cork (Ireland) and organized by P.M. Kelly of the National Dairy Products Research Center, in 2004 (reception@moorepark.teagasc.ie).

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