

The status of modified atmospheres (MA) and controlled atmospheres (CA) in developing countries

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Abstract

Development in the world in general is not very consistent nor uniform and much less well defined, and therefore it is very difficult to establish a very clear geographical classification for “developing” and “developed” countries. Some countries in continents generally considered as “developing” (Africa, Asia, Latin America) or some parts in these countries are as developed or more developed than certain countries or parts of countries in continents considered as “developed” (North America, Europe, Oceania). For simplification in this article, “developing countries” will denote those in Africa, Latin America and Asia except Japan and Singapore. MA and CA in their different applications (storage, marine transport, and packaging) have been used in some of the Developing Countries (DCs) for many years. For example, the use of MA for storage and packaging of different types of foods, although not in the form we know and apply today, has been used in ancient nations such as China, Egypt, Turkey and Mexico for hundreds of years. MA and CA, in their forms developed in the last 3-7 decades, have been used in several DCs for marine transport of several perishable foods and for storage of few commodities (mostly apples) for at least the last 4 decades. However, packaging in MA in an adequate form is still not practiced properly. Although there is a strong need for them and a strong potential for their development, all the 3 main applications of MA and CA in DCs, especially the packaging application, have not been developed nor used very well in the last several years due to several obstacles, among the most important are the very weak establishment and application of the cold chain, and very weak research and development, education, extension and awareness activities in these countries. This article will give an overview of the application of the different forms of MA and CA in DCs, the problems they are facing, and some recommendations for their improvement.