

Agro-industry sector background document: Summary report of the ABDC-10 parallel session¹

Current status and options

Biotechnology applications in food processing and food safety in developing countries

1 March 2010, 16.45-18.30

In this session, attended by 25 delegates, the importance of upgrading fermentation bioprocessing through the improvement of starter cultures and bioreactor technology, was emphasized by Rosa Rolle (FAO Regional Office for Asia and the Pacific) in her presentation of the background paper. Schematic steps of an ideal fermentation process were outlined, following which the case of *tempe* fermentations was highlighted, to illustrate that fermentation is only one step of a series of processing operations in the production of traditional fermented foods. Examples of “appropriate” and defined starter cultures applied in developing country food fermentations, and innovations in bioreactor technology were highlighted to illustrate the gradient of technologies that exist across the developing world. Lessons learnt and priority actions for Governments and for the international community were also outlined.

Two discussants (Morven McLean from the International Life Sciences Institute [ILSI] and Marilia Nuti from the Brazilian Agricultural Research Corporation [EMBRAPA] then gave their reflections on the document. The floor was subsequently opened for a full discussion, facilitated by Masami Takeuchi from FAO’s Nutrition and Consumer Protection Division.

The utility of biotechnological tools for strain and starter culture improvement, and for enhancing rapidity, efficiency and sensitivity in monitoring food safety were highlighted. Growing importance of the use of the DNA bar code for traceability of fermented and non-fermented foods was also highlighted.

Participants added examples from Brazil, Japan and Nigeria to illustrate growing consumer demand for fermented foods. The general discussion focused on the way forward for enhancement of traditional fermented foods. Their market demand is being driven by changes in socio-economic conditions across the developing world and growing demand in international markets, which has been a driving force for their production in small and medium enterprises (SMEs), rather than at the household and village levels. An enabling environment for innovation through government support, capacity building in biotechnology, public-private partnerships and regional collaboration is essential for success. Intellectual property rights (IPR) is one of the important issues for both scientists and policy makers and its crucial role must be addressed. An immediate need is the development of a prioritization tool that will help identify fermented foods for improvement based upon their major contribution to food security, their development potential and technical feasibility. An *ex ante* analysis and expert assistance supported by international organizations could be a starting point. This can be followed up with contextual research by national research institutions adequately supported by information sharing mechanisms between countries. As globalization advances and the food chain is internationalized, biotechnological tools are playing a significant role in the improvement of traditional fermented products and their safety.

¹ This is the summary report of the parallel session organized by FAO on the background document on biotechnologies in food processing and in food safety (ABDC-10/7.1, synthesized in ABDC-10/7.2) held on the first day of the FAO international technical conference on Agricultural Biotechnologies in Developing Countries (ABDC-10) that took place in Guadalajara, Mexico on 1-4 March 2010 (<http://www.fao.org/biotech/abdc/parallel/en>). Sridhar Dharmapuri was the Rapporteur.