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**FINAL DEBRIEFING REPORT**

1985

Prepared For  
United Nations Development Programme (U.N.D.P.)

In Cooperation With  
Moroccan Ministry of Commerce, Industry and Tourism  
and  
Arab Industrial Development Organization (A.I.D.O.)

14858

Morocco, SEMINAR ON

**TECHNICAL SPECIFICATIONS, ECONOMIC ANALYSIS AND QUALITY CONTROL  
OF PACKAGES AND PACKAGING MATERIALS\***

November 19 - 28, 1984  
Casablanca, Morocco

PREPARED FOR

INSTITUT MAROCAIN DE L'EMBALLAGE ET DUE CONDITIONNEMENT (IMEC)  
and  
ARAB REGIONAL PACKAGING CENTRE (ARPAC)

Presented By: Roger C. Griffin, Lecturer

For: THE SCHOOL OF PACKAGING  
Michigan State University  
East Lansing, Michigan  
USA

\*Project DP/RAB/83/020  
Language: English

Prepared For  
INSTITUT MAROCAIN DE L'EMBALLAGE ET DUE CONDITIONNEMENT (IMEC)  
and  
ARAB REGIONAL PACKAGING CENTRE (ARPAC)

Under the Auspices of the  
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SEMINAR ON  
TECHNICAL SPECIFICATIONS, ECONOMIC ANALYSIS AND QUALITY CONTROL  
OF PACKAGES AND PACKAGING MATERIALS

November 19 - 28, 1984  
Casablanca, Morocco

Prepared By  
Susan Selke, Ph.D., Assistant Professor  
Roger Griffin, M.S., Visiting Lecturer  
Bruce Harte, Ph.D., Associate Professor  
C. J. Mackson, Ph.D., Director  
School of Packaging  
Michigan State University  
East Lansing, Michigan, USA

## SUMMARY

This report describes the work performed by the School of Packaging at Michigan State University under Project DP/RAB/83/020. The report consists of this document and an appendix which includes lecture notes of the principal participants.

The specific aim of this project was for the participants to take part in the organizing and implementing of a series of training courses (lectures and discussions) on Technical Specifications, Economic Analysis, and Quality Control of Packages and Packaging Materials to be presented 19-28 November in Casablanca, Kingdom of Morocco for the benefit of attendees from Arab countries.

This project was part of a broader program undertaken by The Moroccan Packaging Institute (IMEC) to broaden the range of training, technical studies, and research services provided by IMEC to members of the Arab Industrial Development Organization (AIDO) to encourage the expansion of IMEC's role to that of an Arab Regional Center (ARPAC).

It is concluded that:

1. Attendance at training courses at IMEC or other suitable sites is an effective way:
  - a. of improving technical packaging knowledge for representatives of Arab country government or industry agencies,
  - b. of exchanging ideas on methods for identifying and solving packaging problems,
  - c. and of promoting good will and cooperation through personal contacts and technical and cultural exchange.
2. Repetition of this training course for other attendees would be worthwhile with fewer lectures and a shorter time span.
3. Development of specialized training courses with more intensive coverage of narrower subject areas would be of even further value.
4. Continuing participation by the School of Packaging, Michigan State University in similar projects should be encouraged through establishment of cooperative links with IMEC as described elsewhere in this report.

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## INTRODUCTION

### **Aim of Project**

This report describes the work performed under project DP/RAB/83/020 Course on Technical Specifications, Economic Analysis and Quality Control of Packages and Packaging Materials.

The specific aim of the project is stated in the Summary section of this report. An ancillary aim of the project was to explore further means for continuing cooperation between IMEC and the School of Packaging of Michigan State University in the providing of similar training courses, either in Arab countries or at MSU (Lansing, Michigan, USA).

**Personnel Involved From MSU School of Packaging Were:**

**Mr. Roger Griffin, Visiting Lecturer, Team Leader, and expert in package development.**

Received his B.S. and M.S. degrees from University of Lowell (Massachusetts) in Textile and Organic Chemistry. He retired in 1982 after 32 years of industry experience (27 years in packaging research and development).

**Dr. Bruce Harte, Associate Professor and expert in food packaging and food science.**

Received his B.S., M.S. and Ph.D. degrees in Food Science and Human Nutrition from Michigan State University. He is involved in teaching and research in food packaging.

**Dr. Chester Mackson, Professor and Director, School of Packaging and expert in packaging administration.**

Received his B.S. and M.S. degrees in Agricultural Engineering and his M.A. degree in Education Administration from Michigan State University and his Ph.D. in Agricultural Engineering from Cornell University. He has served as Director of the School of Packaging since 1977.

**Dr. Susan Selke, Assistant Professor and expert in chemical engineering and package materials..**

Received her B.S. degree in mathematics and her M.S. and Ph.D. degrees in Chemical Engineering from Michigan State University. She is involved in teaching of packaging courses in economics and materials.

**Other Speakers Were:**

IMEC

**Mr. Alaoui, Conference Interpreter**

**Mr. Bassit, Head of Studies and Research**

**Mme. Bennani, Head of Economical Studies & Promotion of IMEC**

**Mr. Bennouna, General Director, IMEC**

**Mr. Bouyer, IMEC Consultant (Paris, France)**

**Mr. Oulidi, Proj. Dir., Transport Packages**

**Mr. Segrouchni, Head of Standardization**

**Mr. Shabani, Seminar Coordinator**

**Mr. El Yussufi, Proj. Dir., Comptability Analysis**

**Mr. Zamat, Head of Design Section**



## COURSE ACTIVITIES

### **Seminar Program**

#### Monday, November 19

9:00 - 10:30	Registration and Opening Remarks	Mr. Shabani Dr. Bennouna Dr. Mackson
11:00 - 12:00	Packaging Functions	Dr. Selke
12:00 - 1:00	Package Development	Mr. Griffin
2:00 - 3:00	Activities of IMEC	Dr. Bennouna
3:00 - 4:30	Tour of IMEC Laboratories	

#### Tuesday, November 20

9:00 - 10:30	Packaging Economics (USA)	Dr. Selke
11:00 - 12:30	Packaging Economics (Local)	Mme. Bejnani
12:30 - 1:00	Discussion	
2:00 - 3:30	Paper & Paperboard (USA)	Dr. Selke
3:30 - 4:30	Paper & Paperboard (Local)	Mr. Khamilichi

#### Wednesday, November 21

9:00 - 10:30	Metals	Mr. Bassit
11:00 - 12:30	Glass	Dr. Selke
12:30 - 1:00	Discussion	
2:00 - 5:00	Plant Visits - Tin Cans Corrugated Cartons	

#### Thursday, November 22

9:00 - 10:30	Plastics - Materials	Dr. Selke
11:00 - 12:30	Wood	Mr. Oulidi
12:30 - 1:00	Discussion	
2:00 - 5:00	Plant Visits - Bev. Bottling and Wooden Box Mfg.	

Friday, November 23

9:00 - 10:30	Plastics - Packages	Dr. Selke
11:00 - 12:30	Plastics - Flexible Packaging	M. Bouyer
12:30 - 1:00	Discussion	
2:00 - 3:00	Laboratory Demonstrations	
3:00 - 5:00	Plant Visit - Plastic Mfg.	

Saturday, November 24

8:00 - 10:30	Travel	
10:30 - 12:00	Plant Visit - Paper & Paperboard	
12:00 - 1:00	Discussion	
2:00 - 4:30	Travel to Fez City	

Sunday, November 25

9:00 - 12:30	Tour of Fez City
12:30 - 2:00	Travel to Meknes
2:00 - 3:30	Tour of Meknes
3:30 - 6:30	Travel to Rabat
6:00 - 7:30	Tour of Rabat
7:30 - 8:30	Travel to Casablanca

Monday, November 26

9:00 - 10:30	Food Marketing & Dist. (USA)	Dr. Harte
11:00 - 12:30	Design, Graphics & Printing	Mr. Zamat
12:30 - 1:00	Discussion	
2:00 - 4:30	Environmental Influences	Dr. Harte
	Product Degradation, Permeability, and Shelf Life	

Tuesday, November 27

9:00 - 10:30	Specific Products Packaging	Dr. Harte
	Retort Pouch	Mr. Griffin
11:00 - 12:30	Aseptic Packaging	Dr. Harte
12:30 - 1:00	Compatibility, Laws & Regulations	Mr. El Yussufi
2:00 - 3:30	Quality Control, Quality Assurance	Mr. Griffin
3:30 - 4:30	Arab Regional Standardization	Mr. Seghrouchni
4:30 - 5:00	Discussion	
5:00 - 8:00	Reception	

Wednesday, November 28

9:00 - 12:00	Course Evaluation, General Questions
12:00 - 1:00	Discussion

**List of the Attendees**

<b>Mr. Salama Sharari Qatarneh</b>	<b>Head of Standardization Department Ministry of Commerce and Industry P.O. Box 2019 - Amman, JORDAN</b>
<b>Mr. Omar Chibani</b>	<b>Responsible for Studies Section in the National Institute of Standardization P.O. Box 1012/23 - Tunis, TUNISIA</b>
<b>Mr. Abdulla Jami Jami Algazi</b>	<b>Responsible for Industrial Section Ministry of Industry and Finance P.O. Box 64 - Dubai, ARAB EMIRATES</b>
<b>Mr. Ali Ahmed Abdul Raheem</b>	<b>Head of Standardization Quality Control Department of Ministry of Industry P.O. Box 2184 - Khartoum, SUDAN</b>
<b>Mr. Abddrrahman Mallim Hamza</b>	<b>Ministry of Industry P.O. Box 3022 - Mokadicho, SOMALI</b>
<b>Mrs. Inaam Nathim Mahmud</b>	<b>Engineer in Standardization Ministry of Industry Baghdad, IRAQ</b>
<b>Mr. Hamad Saad Majid Al Saad</b>	<b>Agriculture Engineer Industrial Development Technical Center B.O. Box 2599 - Duha, QUATAR</b>
<b>Mr. Ahmet Hassan Hussein Al Fouzan</b>	<b>Engineer in Food Standardization Direction of Standardization Metrology Ministry of Industry and Commerce B.O. Box 2944 - Safat, KUWAIT</b>
<b>Mr. Hilmi Hassan</b>	<b>Engineer Head of the Section of Chemical Industries - Ministry of Commerce, Industry and Tourism - Rabat, MOROCCO</b>
<b>Mr. Adil Abdulla Hussein</b>	<b>Responsible for Standardization Section Ministry of Industry B.O. Box 300 - Adan, YEMEN</b>
<b>Mr. Nardi Ahmed</b>	<b>Head of Administration Affairs and Staff - Moroccan Packaging Institute P.O. Box 8006 - CASA/OASIS</b>
<b>Mr. Muthanna S.Y. Al-Kheykat</b>	<b>Technical Director, Iraqi Company for Carton Manufacturing P.O. Box 29029, Zaafarana Industrial District, Baghdad, IRAQ</b>

## EVALUATION

The IMEC administration conducted an evaluation of the course by the attendees. As results of this evaluation have not been transmitted to the MSU participants, we can only rely upon our subjective judgements, which are set forth in the memorandum from R.C. Griffin to Dr. Mackson appended to this report.

### CONTINUING COOPERATION

Correspondence relating to the acceptance of this project included invitations for consulting at the administrative level on means for establishing and continuing a cooperative relationship between IMEC and/or ARPAC and the School of Packaging at Michigan State University. The Director General of IMEC, M. Bennouna, and the Director of the School of Packaging, Dr. Mackson, conferred on this at some length. Other members of the MSU team discussed the subject informally with staff of IMEC. Suggestions evolving from these discussions are as follows:

1. Staff members of IMEC or representatives from ARPAC member nations might work on master's programs at MSU doing their course work in East Lansing and their research in their respective laboratories under the direction of an MSU professor.
2. MSU faculty might advise on research programs conducted by IMEC or ARPAC.
3. Staff members from IMEC or ARPAC with suitable credentials might spend three or more months at MSU assisting in teaching and research, conducting seminars, and getting hands-on experience in our laboratory.
4. IMEC and/or ARPAC might participate in our Internship Program - where MSU senior students would be employed to work one semester in a member country on existing projects.
5. The MSU faculty might help to design and conduct special seminars for special interest groups to be held in USA or Arab countries. These could be tailored to food, pharmaceutical, or other industrial interests.
6. The MSU faculty might help the development of instructional materials for ARPAC nation governments or industry agencies. These could include computer programs.
7. Selected graduate students from MSU might spend three or more months working cooperatively with IMEC or other research agencies on suitable research or testing projects.
8. One or two individuals with suitable qualifications from IMEC or ARPAC might be made adjunct professors of the School of Packaging so they could advise and participate in graduate research programs.

9. MSU might accept packaging people from IMEC or ARPAC for attendance at summer short courses or for a complete term in residence to improve their packaging education and give them practice in using English.
10. MSU might promote the concept and assist IMEC in becoming the center for packaging expertise for Arab nations.
11. IMEC or ARPAC with support from United Nations agencies might jointly sponsor undergraduate and graduate students from Arab nations to study at MSU and perform research in their respective countries.
12. MSU faculty might advise and assist IMEC and ARPAC in the establishing of industry specifications, test methods, and quality standards for packaging for domestic, exported, or imported products.

As a result of the forementioned discussions, there appears to be a consensus that continued cooperation between IMEC and MSU would be mutually beneficial.

Further discussions to establish specific cooperative objectives are anticipated.

## CONCLUSIONS AND RECOMMENDATIONS

MSU School of Packaging performed the duties described by the proposal for Project DP/RAB/83/020. The lectures and discussions were well received by participants in Casablanca.

Establishment of good relations and beneficial communications between MSU and ARPAC members has been initiated. This should be actively expanded to be of benefit to all parties.

The staff at IMEC includes a substantial number of technically qualified, able, and enthusiastic individuals with growing expertise in packaging. Further professional growth in the technical aspects of packaging will add to their current capabilities in providing assistance to industry in Morocco and other Arab nations.

It is recommended that continued assistance be provided through continued interaction between IMEC and MSU along the suggestions in the previous section of this report.

It is recommended that specific programs for continued assistance via long term or short term consultation and via training courses be developed.

# APPENDIX I

## MICHIGAN STATE UNIVERSITY

SCHOOL OF PACKAGING  
TELEPHONE (517) 254-1231

EAST LANSING • MICHIGAN • 48824-1328

December 3, 1984

### MEMORANDUM

To: C.J. Mackson  
From: R.C. Griffin, Jr.  
Subject: Technical Specifications, Economic Analysis, and Quality Control  
of Packages and Packaging Materials  
November 19 - November 28, 1984  
Casablanca, Morocco

The subject seminar presented an opportunity for the attending members of the teaching staff of the Michigan State University School of Packaging to meet with officials and staff of I.M.E.C. (Moroccan Packaging Institute), to become acquainted with the IMEC facility, and to learn about the accomplishments and plans of the Institute.

The IMEC staff appears to be making a substantial effort to initiate and carry through action in several important areas:

- Establishment of IMEC as the official packaging institute for Arab countries.
- Development and publication of agreed upon packaging terminology for Arab countries.
- Development and publication of standard test methods for package testing for Arab countries.
- Encouragement and promotion of legislation, where needed, to mandate standardization of specifications for packaging for domestically produced, imported, or exported products and materials.
- Where appropriate, assistance in the establishment of local industrial operations in order to reduce dependency upon imported goods through development and/or evaluation of improved packaging which meets export market requirements.
- Assistance in the further technical training and instruction of persons involved in packaging industry in Arab countries.

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Our contacts with seminar attendees from ten or more Arab countries revealed that few, if any, have had formal training in packaging. Nearly all learned what they know "on-the-job." They were most interested to learn of the existence of the School of Packaging and we may expect many of them to seek further formal training either at MEU or via a cooperative training course conducted in Morocco or other selected countries. We may expect several to attend the 1985 Conference on Packaging.

Despite the language barriers, we feel we made a good impression both with the seminar participants and the five industrial plants visited. Very friendly relationships were established. For example, many personal inquiries were made with respect to Dr. Susan Selke's safe departure and messages of fond regards were conveyed.

Dr. Marte suggested to representatives of Moroccan interests that they had an excellent potential for export of cut flowers to the U.S.A. which is something they had not considered.

At a reception Tuesday evening, November 27th, we met Mr. Daniel Philips, United States Consul General, who expressed great interest in the School of Packaging and promised to smooth the path for continued good relations in Morocco.

It is strongly recommended that the School of Packaging follow up this good beginning by developing a cooperative program with IMEC for participating in future seminars, providing special training courses, and assisting in their effort to develop specifications and standards.