

Post-academic course

Food Packaging



Scientific coordination

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Department of Food Safety and Food Quality, Ghent University

Module 0: Effect of packaging on the chemical, physiological and microbiological spoilage of food products

21 and 28 October, 18 and 25 November, 2 and 9 December 2010

Module 1: Production and thermal-mechanical characteristics of packaging materials

27 January, 3, 10, 17 and 24 February 2011

Module 2: Specific requirements for packaging materials and new technologies

17, 24 and 31 March, 7 and 28 April and 5 May 2011

Module 3: Filling techniques and marketing aspects of food packaging

19 and 26 May, 7 and 16 June 2011

2nd edition



This program allows to obtain a certificate granted by the Ghent University



introduction

WHY THIS COURSE?

The main objective of this post-academic course is to give the participants a broad and clear overview on the packaging of food products. This must enable them to set up a good combination of food product, packaging and filling system which will deliver the desired shelf-life for a specific food product.

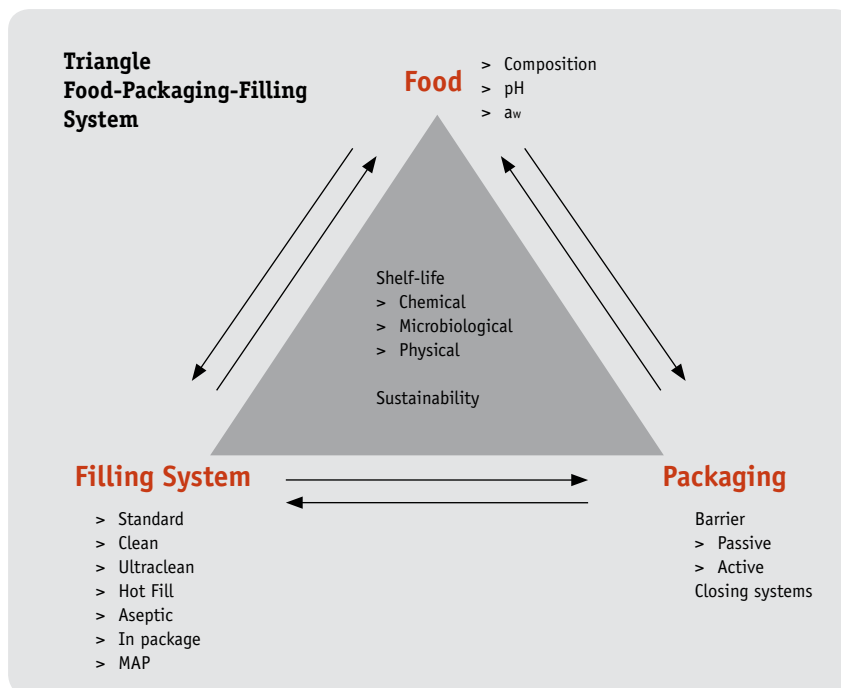
Food products are sensitive to many factors such as oxygen, light, temperature and moisture. Packaging materials need therefore to have the right properties to avoid or at least postpone chemical and/or microbiological degradation of the food product. The sterility of the filling system and the injection of gases will contribute to the final establishment of the shelf-life. Also the way of distribution and the distribution temperature are important parameters.

The course is divided in four modules and will start with the basics of chemical, physiological and microbiological degradation of food products and how packaging can affect these spoilage phenomena. In the next two modules, packaging materials are highlighted. Not only the production and the technical characteristics, but also special requirements and new technologies of these packaging materials are discussed. In the last module, attention is paid to the different filling techniques and to the marketing and distribution of food products.

WHO SHOULD ATTEND?

This course focuses on food packaging. It discusses the topic from multiple perspectives, which makes it an interesting program for all players who are – directly or indirectly – involved in the food packaging industry.

- > **Producers and suppliers of packaging materials** will gain a clear insight in the sensitivities of food products and the subsequent requirements for packaging materials.
- > **Producers of food products** will be able to find a suitable packaging solution in a more efficient way with a good balance between price and desired quality.
- > **Producers and suppliers of filling systems** will be able to combine the right packaging material with the chosen food product in order to achieve the desired shelf-life.



Understanding the relation between properties of food, packaging and filling system should allow participants to use packaging for innovation of food products.

POST-ACADEMIC COURSE CERTIFICATE GRANTED BY THE GHEENT UNIVERSITY

This program is part of the Ghent University post-academic courses. To receive a certificate, one should attend at least 3 modules, make a cross-module project and successfully defend it.

Course certificates are a personal merit: participants who aspire a certificate cannot be replaced, others can.



program

Module 0: Effect of packaging on the chemical, physiological and microbiological spoilage of food products

Module 0 offers an overview of basic mechanisms of food spoilage and how packaging can affect these spoilage phenomena. The sensitivity of different food components towards (bio)chemical degradation and its consequences on food product quality (e.g. fat oxidation, discolouration, vitamin degradation) is discussed including factors that could influence these degradation reactions. Besides biochemical degradation processes, various factors influencing the microbiological quality of packaged food products are discussed with particular attention to the effect of modified atmosphere packaging on the microbiological quality of food products.

This module also includes an elaborated discussion on respiring products such as fruits and vegetables and how this respiration activity affects packaging concepts. Practical sessions are also organized within this module, dealing with the behavior of micro-organisms in food products (predictive microbiology) as well as with the selection of packaging materials for respiring products.

Concepts introduced in module 0 will be used in the other modules.

Teachers: B. De Meulenaer, F. Devlieghere, P. Ragaert and A. Vermeulen

Date: 21 and 28 October, 18 and 25 November, 2 and 9 December 2010

Reference books

All modules are supported by the handbook '*Food Packaging: Principles and Practice*' by G.L. Robertson (€ 73 incl VAT).

This book is prescribed for all participants.

The handbook '*Zakboek Verpakkingen*' by R. ten Klooster, J.M. Dirken, F. Lox and A.A. Schilperoord (€ 67 incl VAT) is optional for the Dutch speaking participants.

Reference books are billed directly by the bookshop.

Module 1: Production and thermal-mechanical characteristics of packaging materials

The packaging industry offers different materials and combination of materials with different characteristics. This part of the course starts with an overview of the different basic packaging materials such as: glass, metal, paper, carton, plastics,..., including additives, inks and adhesives. The origin of the raw materials, the production method and some application possibilities will be explained. During the presentations, the currently hot items such as migration and biodegradability will be included. Special attention will be given to the heat resistance of packaging materials in relation to potential hot fill applications.

Teachers: R. Borms, G. Jacobs, M. Kamp, J. Kolstad, B. Schellemans, P. Van der Mullem, S. Verbrugge and others

Date: 27 January, 3, 10, 17 and 24 February 2011





program

Module 2: Specific requirements for packaging materials and new technologies

Firstly this module offers information on food packaging and its environmental aspects focusing amongst others on national and international waste prevention, waste policy and recycling strategies. Specific attention is also given to packaging materials based on bioplastics.

Secondly, technologies to increase the functionality of packaging materials are discussed: barrier technology including plasmatechnology and active and intelligent packaging materials.

To be able to innovate, a number of innovative aspects have to be taken into consideration. But at the same time, new products should be compatible with the existing legislation, especially concerning migration and traceability. This will be combined with a GMP-approach, based on the latest developments in the field. The use of a simulation model will be illustrated with practical examples. There will also be an extension of migration to the influence of packaging materials on aroma-components and the link will be made with loading security of secondary and tertiary packaging materials.

Teachers: B. Degroof, B. De Meulenaer, P. Dirinck, L. Jacxsens, G. Janssens, R. Peeters, P. Ragaert, I. Van Bree, D. Vangeneugden and M. Wittebolle

Date: 17, 24 and 31 March, 7 and 28 April and 5 May 2011

Module 3: Filling techniques and marketing aspects on food packaging

This module integrates the information of previous modules into the final packaging concept. An overview of filling techniques and equipment, both for solid and liquid food products is given. This provides participants the knowledge and possible strategies on how to implement or modify packaging lines in their company. Topics that are discussed include: how can we apply modified atmosphere packaging? Do we need an aseptic filling system or is an ultra-clean system sufficient?

For liquid food products practical aspects have to be considered (PET, PP, PEHD). The production of these different types of bottles requires different equipment and potential customers have to know what the possibilities are in each group. For each application group, there is also the need for specific caps (dimensions, heat resistance, barrier,...). Different factors play a role in an attractive packaging design, which should not compromise the other functions of packaging (e.g. barrier properties).

Finally, the module includes a practical session in which participants need to develop a packaging concept for a specific food product taking into account the obtained know-how of the different modules as well as their own experiences.

Teachers: G. Dohogne, P. Ragaert, R. ten Klooster, H. Van Baekel, B. Vansteenkiste, C. Vlasselaer and others

Date: 19 and 26 May, 7 and 16 June 2011

After following at least 3 modules, participants will have the possibility to work out their own project. This will be submitted to a jury and after a successful defence this will result in a post-academic Ghent University certificate.

teachers

SCIENTIFIC COORDINATION

> **Prof. dr. ir. Bruno De Meulenaer**

> **Prof. dr. ir. Frank Devlieghere**

Department of Food Safety
and Food Quality,
Ghent University

> **Ing. Guy Dohogne**

> **Prof. dr. ir. Peter Ragaert**

> **Dr. ir. An Vermeulen**

Pack4Food
Department of Food Safety
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Ghent University

TEACHERS:

- > Ronny Borms, Arets Graphics
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- > Guy Dohogne, Pack4Food, Department of Food Safety and Food Quality, Ghent University
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- > Maril Kamp, Ball Packaging Europe
- > Jens Kolstad, Elopak
- > Liesbeth Jacxsens, Department of Food Safety and Food Quality, Ghent University
- > Gaëlle Janssens, Fost Plus
- > Roos Peeters, XIOS-Hogeschool Limburg / Verpakkingscentrum Hasselt
- > Peter Ragaert, Pack4Food, Department of Food Safety and Food Quality, Ghent University
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- > Roland ten Klooster, Packaging Design and Management, Universiteit Twente
- > Hans Van Baekel, Silgan White Cap
- > Ilse Van Bree, d'Haubry
- > Patrick Van der Mullem, Crown Food Belgium
- > Dirk Vangeneugden, VITO
- > Bart Vansteenkiste, Resilux
- > Sam Verbrugghe, Department of Organic Chemistry, Ghent University
- > An Vermeulen, Pack4Food, Department of Food Safety and Food Quality, Ghent University
- > Christian Vlasselaer, Multivac
- > Maxence Wittebolle, Het Belgisch Verpakkingsinstituut
- > and others

Subscription form

Preferably via www.ivpv.ugent.be OR by using this form:

- > by mail: UGent IVPV – for the attention of Els Van Lierde, Technologiepark 913, 9052 Zwijnaarde
- > by fax: IVPV +32 9 264 56 05

I wish to subscribe for:

| | Fee |
|--|---------|
| <input type="checkbox"/> Module 0: Effect of packaging on the chemical, physiological and microbiological spoilage of food products | € 900 |
| <input type="checkbox"/> Module 1: Production and thermal-mechanical characteristics of packaging materials | € 750 |
| <input type="checkbox"/> Module 2: Specific requirements for packaging materials and new technologies | € 900 |
| <input type="checkbox"/> Module 3: Filling techniques and marketing aspects of food packaging | € 600 |
| <input type="checkbox"/> All modules | € 2.500 |

Pack4Food member

Reference Books

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- > 'Zakboek verpakkingen' by R. ten Klooster, J.M. Dirken, F. Lox and A.A. Schilperoord (€ 67 incl VAT) (optional).

Date: _____ Signature: _____

Return completed and signed form (use capitals):

Name: _____
First name: _____ M F
Private-address: _____
Street: _____ N°: _____
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Telephone: _____
Company: _____
Function: _____
Company address: _____
Street: _____ N°: _____
Zip: _____ City: _____ Country: _____
Telephone: _____ Fax: _____
E-mail: _____
VAT n°: _____

Invoice: Company Private

practical info

PRACTICAL INFORMATION

The program consists of different modules. Each module can be followed separately. Plenary sessions are organized as follows:

- > 16h00-17h30: session 1
- > 17h30-18h00: sandwich break
- > 18h00-19h30: session 2

All lessons take place on Thursday, except the penultimate lesson of Module 3 (is on Tuesday).

LOCATION

Ghent University, Institute for Continuing Education, Campus Engineering Faculty, Building Magnel, Technologiepark 904, 9052 Zwijnaarde, Belgium. Follow A2 and then IVPV classroom A.

LANGUAGE

English is used in all presentations, exercises and documentation, so a good knowledge of this language is required.

PARTICIPATION FEE

The participation fee includes the tuition fee, course notes, soft drinks, coffee and sandwiches. Payment occurs after reception of the invoice. All invoices are due in thirty days. All fees are exempt from VAT. Transfer and conversion costs are at the expense of the participant.

| | Fee |
|---|----------------|
| Module 0: Effect of packaging on the chemical, physiological and microbiological spoilage of food products | € 900 |
| Module 1: Production and thermal-mechanical characteristics of packaging materials | € 750 |
| Module 2: Specific requirements for packaging materials and new technologies | € 900 |
| Module 3: Filling techniques and marketing aspects of food packaging | € 600 |
| All modules | € 2.500 |

Pack4Food members receive a reduction of 20% on the prices mentioned in the table.

When a participant of a company subscribes for the complete course (module 0 till 3), a reduction of 20% is given to all additional subscriptions from the same company, even on single modules. Invoicing is then done by one company invoice.

Reductions can not be combined.

REFERENCE BOOKS

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Reference books are billed directly by the bookshop.

TRAINING CHEQUES

Ghent University has been recognized as an official training supplier within the framework of the training checks of the Flemish Community. Thereby you can save on the participation fee of this training (<http://www.vdab.be/opleidingscheques/werknemers.shtml>).

For employers we refer to the KMO-portefeuille (<http://www.kmo-portefeuille.be>; use authorization ID: DV.0103 194).

The IPV-IFP (Initiatieven voor Professionele Vorming van de Voedingsnijverheid – Initiatives de Formation Professionnelle de l'industrie alimentaire) can give financial support to participants of food processing companies.

CANCELLATION POLICY

When cancelling up to 10 days before the start of the course or module 25% of the participation fee will be charged. When cancelling less than 10 days before the start of the module, the full fee is due.

INFORMATION & DOCUMENTATION

More detailed information about the course in general or on particular modules can be found on the IVPV website: <http://www.ivpv.ugent.be>

The IVPV secretariat can also be contacted:

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Dates may change due to unforeseen reasons.