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Demonstration sessions of CT applications to industries

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PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission	
CO	Confidential, only for members of the consortium (including the Commission Services)	

D6.1.10.2 Demonstration sessions of CT applications to industries

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ABSTRACT

In previous studies, within the frame of WP4 Truefood project, Computed tomography (CT) was adapted to dry-cured ham. The developed calibration models enabled the non-destructive prediction of salt and water content in the more internal and critical areas of the hams. Knowledge of these parameters permits the optimization of elaboration processes. This is especially interesting in the case of dry-cured ham with a reduced salt content, in which readjusting or design of new processes is needed.

The aim of this activity was to organize demonstration sessions for European industries, the preparation of leaflets and presentation of CT and its possible uses in events or exhibitions. This subtask was performed together with subtask 6.1.8 which aimed to demonstrate the applicability of several strategies for the reduction of salt content in bone-in and boned hams.

There were 17 participants from Belgium, China, France, Italy and Spain in the first session, 34 participants from France and different regions of Spain in the second session and 15 participants from Hungary and Spain in the third session.

Leaflets about Computed Tomography were prepared and handed out to the industries present in the demonstration sessions. Besides, a collection of information about CT was given to the interested participants.

A demonstration video where CT is included was edited. In this video, how CT works and several dry-cured ham images obtained with this equipment are shown.

It can be concluded that demonstration sessions were greatly successful. CT technology and its applications aroused a great interest in the participant industries. Most of the participants were satisfied with the explanations and organization of the event.

INTRODUCTION

The improvement of quality characteristics of Traditional Food Products (TFP) “in line” with consumer expectations is considered an essential objective for maintaining the competitiveness of TFP in the future. A major quality focus should respond to the increasing consumer demand for food products that have an overall positive effect on human health.

The reduction of dietary salt uptake is perceived by consumers to have a positive effect on human health and it is in accordance with the Global Strategy on Diet, Physical Activity and Health (DPAS) of the World Health Organization (WHO). Nevertheless, reduction of salt content is not straightforward since sensory and texture defects may appear if salt content is deficient.

In previous studies, within the frame of WP4 Truefood project, Computed tomography (CT) was adapted to dry-cured ham. The developed calibration models enabled the non-destructive prediction of salt and water content in the more internal and critical areas of the hams. Knowledge of these parameters permits the optimization of elaboration processes in order to obtain a product with a reduced salt content but with no sensory or texture defects. This is especially interesting in the case of dry-cured ham with a reduced salt content, in which readjusting or design of new processes is needed.

Availability of this technology adapted to dry-cured ham product is of major interest to the industries of the sector. A dissemination of this technology and its possible applications to the industry is needed. The aim of this activity was to organize demonstration sessions for European industries, the preparation of leaflets and presentation of this technology and its possible uses in events or exhibitions. This subtask was performed together with subtask 6.1.8 which aimed to demonstrate the applicability of several strategies for the reduction of salt content in bone-in and boned hams.

ACTIVITIES PERFORMED:

Three **demonstration sessions** were organized at IRTA facilities which were held in English (24th February and 24th March) and in Spanish (25th February). The agenda included the demonstration of several technologies and methodologies such as a categorizator expert system (JMP, Spain), a meat quality scanner (Timpolot, S.A), high hydrostatic pressure system, boning-binding salting methodologies, etc. Special emphasis was made in CT equipment.

Initially, a maximum of 25 attendants per session was proposed, but finally, this number had to be increased in the Spanish session due the high demand for sessions in the Spanish language.

The basis and characteristics of this technology was explained to the participants and several scans of raw hams were taken in order to show how the equipment works. Distributional composition of lean and fatty hams was shown. The ability of CT as a tool for monitoring the evaluation of industrial products during their processing and the non-destructive detection of problems that can arise (internal holes, crustiness, hollow extent) was also shown.

There were 17 participants from Belgium, China, France, Italy and Spain in the first session, 34 participants from France and different regions of Spain in the second session and 15 participants from Hungary and Spain in the third session (See the list of participants below).

List of participants (24th February):

Company	Representative	Country
Imperial Meat Products	Frank Vandendriessche	Belgium
University of Nanjing	Zongyuan Zhen	China
FICT	Pierre Le Strat	France
ADIV	Eric Le Moine	France
ADIV	Jean Pierre Frenchia	France
SSICA	Virgili, Roberta	Italy
University of Udine	Mauro Vitale	Italy
CHR Hansen	Albert Vila	Spain
FIAB	Nuria Arribas	Spain
Casademont	Carles Pifarrer	Spain
IMCD España	Marta Poch	Spain
CENTA	Raül Encinas	Spain
CENTA	Eva Ogué	Spain
CENTA	Marc Permanyer	Spain
CENTA	Narcís Grèbol	Spain
IRTA	Hector Mora	Spain
IRTA	Eva Santos	Spain

List of participants (25th February):

Company	Representative	Country
Argal, grupo alimentario, S.A.	Jaume Palau Crivillé	Barcelona, Spain
ARIP	José Luís Echevarría Palacios	Logroño, Spain
Boadas	Jordi Buxeda	Girona, Spain
CRIC	Joan Cartanyà	Barcelona, Spain
CRIC	Juan Manuel Rodríguez	Barcelona, Spain
Embotits J.Curós, S.L.	Joan Curós	Les Preses, Spain
Embutits caula, S.L.	Xavier Caula	Girona, Spain
Esteban España, S.A.	Mònica Gassiot	Olot, Spain
Esteban España, S.A.	Eva Torres Baix	Olot, Spain
Explotaciones Agropecuarias Virgen de la Fuente SA.	Manuel Roch Boj	Teruel, Spain
Fundación Jamón Serrano	José Ramón Godoy	Madrid, Spain
Hijos de Florencio Sancho	Francisco Sancho	Segovia, Spain
Hijos de Florencio Sancho	Javier Sancho	Segovia, Spain
I.C.Villar, S.A.	Blanes Martínez Palacios	Los Rábanos (Soria) , Spain
I.C.Villar, S.A.	Luís Alberto Sanz Álvarez	Los Rábanos (Soria) , Spain
Jamones Arroyo, S.L.	Antonio Arroyo Sánchez	Spain
Jamones Bermejo, S.L.	Alfredo Bermejo	Cuenca, Spain
Jamones Bermejo, S.L.	Esther Alarcón toledo	Cuenca, Spain
JMP Ingenieros	Eduardo Remírez	La Rioja, Spain
Martínez Somalo	Lino Miguel Martínez	La Rioja, Spain
Martínez Somalo	Juan José Martínez	La Rioja, Spain
Mataderos Ind.Soler, S.A.(Prolongo)	Luís Polo Cózar	Malaga, Spain
Noël alimentaria	Guillem Alvarez	Olot/Girona, Spain
Pernils Bufalvent	Cristià Picola Corcoy	Manresa, Spain
Pernils Llémena	Carles Nadal i Soy	Barcelona, Spain
Pernils Llémena	Benet Bosch Alsina	Barcelona, Spain
Reserva Batallé, S.L.	Jaume Fauchs Vilà	Riudarenes, Spain

Resti Sánchez, SA	Mario L.R.Barea Permaut	Badajoz, Spain
Resti Sánchez, SA	Fidel Sánchez	Badajoz, Spain
Resti Sánchez, SA	Alberto Seco González	Badajoz, Spain
Salaison-terradou	Marie Ratero	Narbonne, France
Sánchez Alcaraz, SL	Luís Sánchez Alcaraz	Madrid, Spain
Timpolot	Jordi Bassols	Olot, Spain
Timpolot	Vicenç Bassols	Olot, Spain

List of participants (24th March):

Company	Representative	Country
Ramon Ventolà, S.A.	Manel Torrent Pagès	Spain
Zimbo Perbal Kft.	Kreisz Tamas	Hungary
Surjany Hus Kft	Toth Agnes	Hungary
FHFI / HSTF	Emese Karacsony	Hungary
Ilkotrade Kft	Pindur Tibor	Hungary
Babati & Tarsa KFT Kormend	Babati Zoltán	Hungary
Hungarian Meat industry federation	Mostisch Martina	Hungary
Pick Szeged ZRT	Kulich Eva	Hungary
MPROFOOD ZRT	Incze Zoltan	Hungary
Kometa 99zrt	Attila Skobrak	Hungary
Boratai serteshus ZRT	Gyorgy Kiss	Hungary
Eszak Hansagi Husfeldolgozo KFT	Kurdi Laszlo	Hungary
Szerencsihus Mezogazdasagi ZRT	Farkas Erika	Hungary
Konkoly KFT	Konkoly Jozsef	Hungary
FHFI / Federation of Hungarian Food Industries/	Pauer Istvan	Hungary

The demonstration sessions were greatly successful, which was transmitted in the satisfaction survey completed by all the participants. The survey was completed by 7 participants in the first session, 29 participants in the second one and 14 participants in the third session. The scores of the survey for each session are presented below.

**SATISFACTION SURVEY
DEMONSTRATION SESSION ON DRY-CURED HAM WITH A REDUCED SALT CONTENT**

24th FEBRUARY 2010

Training received corresponds with the specified in the program:

- a) yes, absolutely (6) c) More or less d) In some parts
b) yes, the main part (1) e) No

Teaching received corresponds with my expectations:

- a) yes, absolutely (3) c) More or less (1) d) In some things
b) yes, the main part (3)

The demonstration session is equilibrated in respect to:

Its duration	yes (7)	NO
The relation between theory/practical	yes (7)	NO
Duration of different items	yes (7)	NO

Researchers have sufficient knowledge for the session:

- a) Very good (5) c) Regular d) Insufficient
b) Good (2) e) Very deficient

Level of organization:

- a) Very good (4) c) Regular d) Bad
b) Good (3) e) Very bad

Level of global satisfaction in respect to the demonstration session:

Very satisfied 10 9(3) 8 (3) 7 6(1) 5 4 3 2 1 0 Non satisfied

25th FEBRUARY 2010

Training received corresponds with the specified in the program:

- c) yes, absolutely (18) c) More or less (1) d) In some parts
d) yes, the main part (10) e) No
e)

Teaching received corresponds with my expectations:

- c) yes, absolutely (12) c) More or less (5) d) In some things
d) yes, the main part (12)

The demonstration session is equilibrated in respect to:

Its duration	yes (28)	NO (1)
The relation between theory/practical	yes (27)	NO (2)
Duration of different items	yes (27)	NO (2)

Leaflets about **Computed Tomography** were prepared and handed out to the industries participating in the demonstration sessions. Besides, a collection of information about CT was given to the interested participants.

These leaflets and more information related to Computed tomography have been available at Alimentaria, the most important international food and beverages exhibition in Spain and one of the leading international events of this type. Its eighteenth edition was held from 22nd to 26th of March 2010 at Fira de Barcelona.

A **demonstration video** where CT is included was edited. In this video, how CT works and several dry-cured ham images obtained with this equipment are shown. To make the maximum diffusion, this video will be soon available at IRTA and Truefood websites.

CONCLUSIONS

It can be concluded that demonstration sessions were highly successful. Computed Tomography aroused a great interest in the participant industries. Most of the participants were satisfied with the explanations and organization of the event and with the applicability of the training.