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Demonstration sessions of proposed strategies to industries

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D6.1.8.2 Demonstration session of proposed strategies to industries

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ABSTRACT

The demonstration of strategies for reducing salt content in dry-cured hams proposed to industries was organized by IRTA in Monells, Spain. Three sessions were held: the first one was conducted in English, on 24th February 2010, the second one in Spanish on 25th February 2010 and the third one in English on 24th March 2010. The first and the second demonstration sessions were performed by IRTA and ADIV whereas the third one was performed by IRTA.

The Demonstration sessions programme covered strategies related to the classification of raw material, optimization of elaboration process, development of new elaboration processes and treatments on the final product, in order to facilitate the reduction of salt addition in dry-cured ham.

It can be concluded that the demonstration sessions were highly successful with an attendance of 64 participants. All the technologies and methodologies presented aroused a great interest in the participant industries. At the end of the demonstration session, the majority of the participants declared that they were satisfied with the organization of the event and with the applicability of the training.

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 intake is perceived by consumers to have a positive effect on human health which 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 defect may appear if salt content is deficient.

In order to reduce the salt content but 1) obtain a final product of quality with no sensory or texture defects, 2) avoid over salted products and 3) decrease the salt content variation inter- and intra-batches, several strategies were proposed.

1. Classification of raw material:

Several new technologies may be used to this purpose. Raw material can be classified by pH using a meat quality scanner (Timpolot, S.A) and/or by fat content level using a categorizator expert system for hams (JMP, Spain). These apparatus permit the on-line classification of raw material as a function of pH and fat content. This classification is especially interesting in the case of salt reduced products in which readjusting of the salting processes are more important. Classification of raw hams can also be carried out using spectroscopic fluorescence technology. The use of the front face fluorescence spectroscopy prototype device was explained and demonstrated. High correlations between pH and fluorescence spectroscopy measurements were presented and lead to the conclusion that fluorescence spectroscopy could be used as a selection method for raw hams. This technology is non invasive, non destructive and the measurement is very rapid (<1 second). This technology requires also less calibration than pH measurement. Regarding the correlation with pH measurement and its advantages, developments on this technology could be continued in order to obtain industrial equipments.

2. Optimization of elaboration processes:

Computed tomography (CT) can be used to design or optimize the dry-cured ham elaboration processes. The previously developed calibration models in WP4 enabled the non-destructive prediction of salt and water contents in the more internal and critical areas of the hams. This is especially interesting in the case of dry-cured hams with a reduced salt content, in which microbiological hazards or sensory problems are more likely to occur.

3. Development of new elaboration processes:

The new “boning-salting-binding” methodology developed in WP4 (Deliverable D4.2.3-7) enhances salt diffusion because of the decrease in thickness. Furthermore, the use of substitutes such as K-lactate has a beneficial effect on the final product in terms of microbiological stability.

4. Treatments on the final product:

High hydrostatic pressure (HHP) and thermal treatments on the final product improve soft texture which is a common defect in dry-cured hams with reduced salt content. Freezing treatment before slicing or preparing in pieces is very useful to avoid the problem of white film.

Availability of these technologies or methodologies, adapted to dry-cured ham products in order to reduce salt content and improve their final product quality is of major interest to

industry. An important dissemination of these technologies to industry is called for. The aim of this activity was to organize demonstration sessions for European industries related to ham production, the preparation of leaflets and the presentation of these technologies and their possible uses in different events or exhibitions.

ACTIVITIES PERFORMED:

Three **demonstration sessions** were organized by IRTA at its facilities in Monells, Spain. The activities were performed by IRTA and ADIV. The demonstration sessions 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 the categorizator expert system for fat content, the meat quality scanner for pH, fluorescence spectroscopy, high hydrostatic pressure treatment, boning-binding salting methodologies, etc. 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.

There were 15 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/Organization	Representative	Country
Imperial Meat Products	Frank Vandendriessche	Belgium
University of Nanjing	Zongyuan Zhen	China
FICT	Pierre Le Strat	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/Organization	Representative	Country
Argal, grupo alimentario, S.A.	Jaume Palau Crivillé	Barcelona, Spain
ARIP	José Luís Echevarría Palacios	Logroño, Spain

Company/Organization	Representative	Country
Boadas	Jordi Buixeda	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 Espuña, S.A.	Mònica Gassiot	Olot, Spain
Esteban Espuña, 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	Soria, Spain
I.C.Villar, S.A.	Luís Alberto Sanz Álvarez	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 Ramírez	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 Llemenà	Carles Nadal i Soy	Barcelona, Spain
Pernils Llemenà	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/organization	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 highly successful, which was transmitted in the satisfaction survey completed by the participants. The survey was completed by 7 participants in the first session, by 29 in the second one and by 14 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

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 to what I had expected:

- 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

Researches have sufficient knowledfe 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

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

Teaching received corresponds to what I had expected:

- 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)

Researches have sufficient knowledfe for the session:

- c) Very good (19) c) Regular (1) d) Insufficient
 d) Good (9) e) Very deficient

Level of organization:

- c) Very good (14) c) Regular (3) d) Bad
 d) Good (12) e) Very bad

Level of global satisfaction in respect to the demonstration session:

Very satisfied 10 (4) 9(11) 8 (8) 7 (4) 6 (2) 5 (0) 4 (0) 3 (0) 2 (0) 1(0) 0 (0) Non satisfied

24th MARCH

Training received corresponds with the specified in the program:

- e) yes, absolutely (11) c) More or less d) In some parts
 f) yes, the main part (3) e) No

Teaching received corresponds to what I had expected:

- e) yes, absolutely (12) c) More or less (2) d) In some things
 f) yes, the main part

The demonstration session is equilibrated in respect to:

Its duration	yes (14)	NO
The relation between theory/practical	yes (14)	NO
Duration of different items	yes (14)	NO

Researches have sufficient knowledfe for the session:

- | | | |
|-------------------|------------|-------------------|
| e) Very good (14) | c) Regular | d) Insufficient |
| f) Good | | e) Very deficient |

Level of organization:

- | | | |
|-------------------|------------|-------------|
| e) Very good (11) | c) Regular | d) Bad |
| f) Good (3) | | e) Very bad |

Level of global satisfaction in respect to the demonstration session:

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

Globaly, the average punctuation of satisfaction level was 8.6. All the participants in the survey evaluated all the questions positively.

A **demonstration video** was edited. In this video, the above mentioned technologies are presented working on line in the industry. To make the maximum diffusion, this video will be available at IRTA and Truefood websites soon.

Leaflets about **new technologies** prepared and handed out to the industries participating in the demonstration sessions. These leaflets were also available at **Alimentaria**, the main 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.

CONCLUSIONS

It can be concluded that demonstration sessions were highly successful. All the technologies and methodologies presented aroused a great interest in the participant industries. Most of the participants were satisfied with the organization of the event, giving an average punctuation of 8.6, and with the applicability of the training.