



"The products of the Clextral Group have been created in partnership with the Group's customers throughout its 50-year history. In half a century, our Clextral Group has established a stable culture and a solid position. From 38 different countries, our numerous visitors to the scientific congress on 18 and 19 October demonstrated that our image is also strong: I am grateful to them for their loyalty. Our technologies and our company are also very young. By simply looking back on the high-quality conferences during the congress, we can appreciate the promising development perspectives for our customers and our company in the fields of global health and the environment. In this spirit of youth, enthusiasm, confidence and respect of our partners, we look forward to 2007 and the years to come".



Georges JOBARD
President of the Board

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CELEBRATION OF CLEXTRAL'S 50th ANNIVERSARY : OCTOBER 2006

50 years of existence, a major milestone in the development of a group like CLEXTRAL. It is a time to reflect on the know-how and skill gained in the past, yet also a time to express new ambitions, capitalise on the experience acquired and innovate in other promising sectors.

From left: M. D. CINIÉRI, Deputy- Mayor Firminy,
M. B. LAGET, Vice-President St. Etienne Métropole,
M. G. JOBARD, President of the Board, CLEXTRAL Group
M. J. L. GAGNAIRE, Vice-President of
the Regional Council
Octobre 18th, 2006

In this issue of CLEXTRUSION, we want to share with you the highlights of a day of privileged dialogue, followed by a scientific seminar of exceptional quality.



OPEN DAY : 14 OCTOBER

This day was an enthusiastic beginning of the CLEXTRAL 50th anniversary celebration, in conjunction with the science week organised by the Ministry of Research and the National Company Open Days program sponsored by the French Assembly of Chambers of Commerce and Industry.

CLEXTRAL opened its doors to the public on Saturday 14 October from 9 a.m. till 6 p.m. on 2 sites: Chazeau, with its 3000m² test centre, and Firminy, with its machining and assembly workshops as well as various technical departments.

Numerous stations were prepared to offer an instructive and engaging insight into CLEXTRAL's professions and its skills in the fields of mechanics, metallurgy, food processes (extrusion lines, pasta and couscous production lines), chemistry, speciality papers and liquid metering with DKM pumps.

1500 people were welcomed on this open day; in addition, in cooperation with the schools in the region, students and their teachers came to visit and communicate directly with CLEXTRAL employees.



This event was marked by its friendly atmosphere and rewarding cultural environment..

We were honoured by the presence of numerous VIP's, elected representatives, parents, and friends of CLEXTRAL, who took this opportunity to discover the Group's activities.

The guests observed an operating snack production line at the Chazeau pilot station, as well as



several numerically-controlled machining stations in the Firminy buildings. In the assembly workshop, visitors examined highly technical parts, learned about twin screw extruders and their accessories, plus packaging machines and dryers.

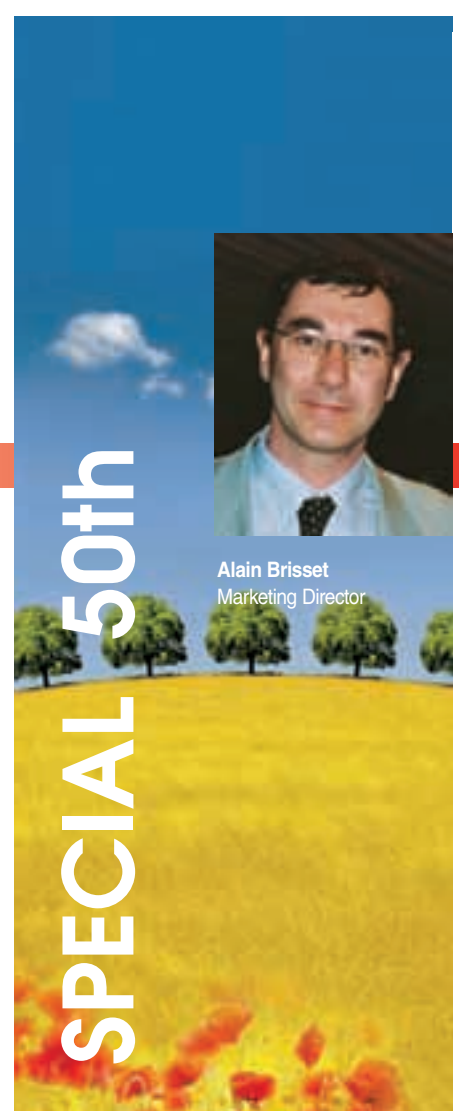


The electrical/process control system and design/documentation aspects were extremely popular: the CADD tools, technical explanations and variety of applications were admired by everyone (even creating

bottlenecks at some periods during the day!)

From the start, our partners actively communicated and contributed to the success of this day. The State and the Rhône-Alpes region, the Saint-Etienne Chamber of Commerce and Industry, the professional associations CLEO (entrepreneurs' club from Ondaine), ACCTIFS, Club Gier, SPF Mécaloire, technical centres such as the CETIM, the AFIL, etc. as well as many subcontractors exhibited their products and services, demonstrating the strong interdependence between a group like CLEXTRAL and local scientific and industrial expertise.

The day ended with a reception, open to CLEXTRAL employees, during which CLEXTRAL's 50 birthday candles were blown out in an very sociable atmosphere.



Alain Brisset
Marketing Director



The presentations illustrated the activities of the Group
14 October 2006



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Number 15 - February 2007

SCIENTIFIC CONGRESS

The highlight of the 50th anniversary celebration was a scientific seminar of exceptional quality, held on 18 and 19 October at the Saint Etienne Centre de Congrès. CLEXTRAL welcomed 250 customers coming from 38 countries over 5 continents.

Together with our local partners, 300 congress participants attended two days of captivating presentations. (see insert).

It would have been impossible to welcome such prestigious guests without presenting our cultural heritage: guests enjoyed a guided tour of a church designed by Le Corbusier, Saint Pierre, in Firminy. Le Corbusier was a designer who revolutionised modern architecture, and the exceptional wealth of his work in Firminy earns the town its international reputation. Afterwards, guests were treated to a dinner with the president to honour Mr Pierre Troisgros (one of the most renowned chefs in France) on 17 October.

During this reception, Mr. Dino CINERI, Deputy Mayor of Firminy, awarded the gold medal of the town to Mr. Georges JOBARD, President of the Clextral Group Board, for the outstanding work of the Loire company and all the Group's employees.

The tone was set to enthusiastically tackle the two days of intensive work on 18 and 19 October with the

seminar focused on the themes: environment and health.

In organising this event, the goal of the CLEXTRAL Group Management was to create a forum for discussion on the stakes of the planet regarding food and preservation of our environment, and the possible solutions based on its technologies.

Another objective was to showcase the progress made by CLEXTRAL customers: the themes discussed and the innovations presented during the high level scientific conferences on 18 and 19 October demonstrated the wealth and potential of the Group's expertise.

This was also an occasion to demonstrate the central role of the innovating and exporting industrial SMEs as a driving force of French presence throughout the world, while highlighting CLEXTRAL's roots in metallurgy at Saint-Etienne.

Lastly, the various regional players were associated with this event: the Loire department presented its sustainably creative values in the industrial and cultural sectors; representatives of the Saint Etienne Métropole, the town of Saint Etienne, the Chamber of Commerce and Industry, the University, the Ecole des Mines, the ENISE, INERIS, the VIAMECA pole, the Museum of Art and Industry, ... - the list is endless - actively communicated with the participants.

The atmosphere was exceptional; the visit to the Museum of Art and Industry on 18 October broke down the last cultural and linguistic barriers as visitors shared emotions while viewing the extraordinary

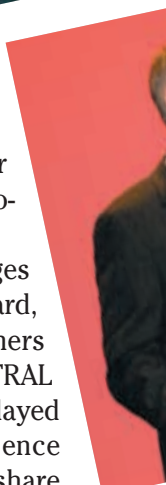
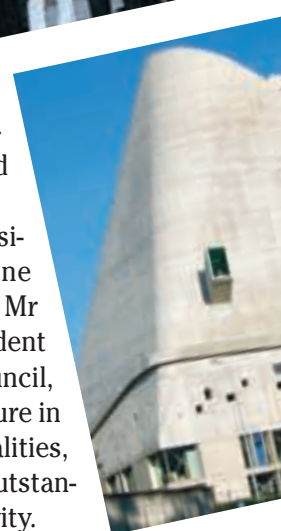


blend of technical innovation and aesthetics.

Mr LAGET, Vice President of Saint-Etienne Métropole and Mr GAGNAIRE Vice President of the Regional Council, expressed their pleasure in welcoming 38 nationalities, a demonstration of outstanding multisector activity.

These few days in October 2006 left an indelible mark on our memories and formed the foundation of the Group's future directions in line with our environment and global demographic resources.

In his closing speech, Georges JOBARD, President of the Board, thanked his customers, partners and shareholders of the CLEXTRAL Group for the confidence displayed over the years; "your presence today demonstrates that you share with us the determination to take up the challenges of tomorrow's world".



AL 50th



- 1 - The congress attendees at the Art and Industry Museum of St. Etienne
- 2 - St. Peter's Church by the architect Le Corbusier
- 3 - Mr. S. BOUILLON, Prefect of the Loire Department
- 4 - Visit to the Art and Industry Museum
- 5 - Preparations in the control room of the Centre of Congress
- 6 - M. Prof. M. MAZOYER
- 7 - Speakers' table
- 8 - The Deputy Mayor of Firminy presents the gold medal to CLEXTAL 17 October 2006
- 9 - Dr. S. KAUSHIK
- 10 - Sociable discussions and networking at lunch time
- 11 - A «welcoming» team at St. Exupéry airport

SUMMARY OF EXHIBITIONS ON 18 AND 19 OCTOBER 2006

18 OCTOBER

1 – THE GLOBAL DIVIDE BETWEEN AGRICULTURE AND FOOD AVAILABILITY

Professor MAZOYER – Institut National Agronomique Paris-Grignon, Vice-President of the French Association for the F.A.O (France) presents the global situation regarding cereal production and the enormous productivity differences (1 to 2000) in some regions of the world. These production inequalities affect hundreds of millions of people, mainly rural populations. These differences are reflected in the level of consumption of vegetable and animal proteins. Solutions are proposed to guarantee a sustainable food supply for a population estimated at 9 billion people 40 years in the future, in the form of exchanges protected by large common market areas with equivalent agricultural productivities.

2 – COUSCOUS TECHNOLOGY

Mr. J. MEOT, from the CIRAD (French Agricultural Research Centre for International Development), details the technology for manufacturing couscous from durum wheat semolina and makes a comparison between industrial and small-scale manufacture. The equipment used to manufacture couscous semolina provides consistent product with comparable quality to that produced on small-scale, and can be used to develop new types of products: e.g. rice-based semolinas.

Mr. TAIEB EZZRAIMI, Chief Executive Officer of the Semoulerie Industrielle de La Mitidja (Algeria), leading Algerian producer, kindly agreed to participate in the presentation.

3 – CO-EXTRUDED NUTRITIONAL BARS

The authors develop new nutritional foods using twin screw extrusion technology, especially co-extruded products enriched with mineral salts and vitamins for under-nourished populations.

4 – WELLNESS AND HEALTH

Mr. FRENIER, PepsiCo International (USA), outlines the vision of the international food group concerning consumers' well-being and health by defining their new product development policy and the company's efforts in the fight against obesity.

5 – THE STAKES OF AQUACULTURE

Mr. KAUSHIK, INRA-IFREMER (France) (National Institute for Agricultural Research) explains the central role of aquatic food (fish, molluscs, crustaceae) in our diet. Aquaculture represents the solution to meet the increasing global demand for fish, since the fishing level remains stable (population growth). He presents the importance of granulated recipes for aquatic animals, in particular the availabilities of meals and oils which constitute the major ingredients of compound feeds.

Solutions are proposed to establish environmentally-friendly sustainable aquaculture that guarantees development without disturbing the equilibrium of the essential global marine sources of proteins and fats; using products of vegetable origin to partially replace fish proteins and oil.

6 – DRYING TECHNOLOGY

After defining the moisture of the air and of the solid to be dried, the speakers, H. MILLER -and A. GEVAUDAN, CETIAT (France) provide a simple and concrete presentation of drying operations. After describing the various devices and the associated techniques, they explain the criteria which must be taken into consideration in developing the dryer. The design of the Clextral EVOLUM dryer is detailed.

7 – INNOVATIONS IN POLYMER PACKAGING FOR FOOD PRODUCTS

Professor LANGOWSKI, Fraunhofer Institute – Process Engineering and Packaging (Germany) introduces the issues of polymer-based packaging materials: they must protect foods from oxygen and water vapour flows. Numerous films of





SPECIAL 50th

varied compositions, with different permeability characteristics, may be used. Organic additives dispersed in the matrix or deposition of an aluminium or silica layer may enhance these properties.

The current trend (European Regulation) is the use of "active" or "intelligent" packaging, in order to control the composition of the gas in the packaging. Oxygen absorbers are also utilized.

19 OCTOBER

8 – ENVIRONMENTAL CHALLENGES FOR SUSTAINABLE DEVELOPMENT

Ms. SPREI, Environmental Sciences, Department of Physical Resource Theory, Chalmers University of Technology (Sweden), explains the environmental challenges, especially the relationship between emission of greenhouse gases and global warming. Multiple solutions are proposed to improve this situation: reduction in energy consumption, use of alternative energy sources, and storage, rather than release of CO₂.



A break between conference sessions

9 – INTENSIFICATION OF PROCESSES

J.LIETO, ISTIL, the Engineering School of Science and Technology of Lyon, (France), explains the importance of chemical engineering in the understanding and design of reactors. Then, he suggests an intensification of processes, to reduce the size of the installations by at least a factor of 100, using safer, cleaner, and more economical processes that provide higher product quality : the co-rotating twin screw extruder is a good example.



10 – SAFETY STAKES

Messrs CHOUNET and TAUZIA, SNPE (France)-Powders and Explosives National Company - Energetic materials.

Energy materials (explosives) are used in military and civilian applications. The authors define propergols using two concrete examples: booster rockets for Ariane and the composite materials for airbags.

The propergols employed on the rocket Ariane are manufactured using very large mixers. The propergol employed in airbags, however, is produced continuously using twin screw extruders: extrusion

offers numerous advantages: safety (confinement), low investment costs, wide range of suitable raw materials, consistent quality, etc. This mix-extrusion process may be used for other applications involving energetic products.



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SUMMARY OF EXHIBITIONS ON 18 AND 19 OCTOBER 2006



Mr. A. Mounier,
President of the Chamber
of Commerce and Industry
of St. Etienne /Montbrison



11 – REACTIVE EXTRUSION AND GREEN CHEMISTRY

Mr. STADLER President of
“Industry and agri resources”
competitiveness cluster, and
Mrs DUCATEL, CVG
(Carbohydrate upgrading
centre) (France).

Reactive extrusion (the chemical reaction in the extruder resulting from the effects of pressure, temperature and shear) can be usefully applied to the synthesis of molecules. Currently, these reactions are produced by discontinuous processes, which offer low yield, long synthesis time and generate polluting effluents. Reactive extrusion offers significant opportunities: increased yield, reduced overall cost, respect for the environment, and the use of renewable raw materials. Two concrete examples illustrate this highly promising approach.

12 – SUSTAINABLE ECONOMY IN THE PAPER INDUSTRY

Mr. LACHENAL, French School of Paper, (France) presents paper as having an excellent growth potential. Although the paper industry has made significant progress over the last few years, it still utilizes vast amounts of water and remains a

major energy consumer (mechanical pulp). Twin screw technology is a viable alternative because of its low water and energy consumption. Many sources of raw materials may be used: wood, annual plants, woody detritus, etc. This process does not use sulphur or chlorine for the delignification and bleaching operations.

13 – BIODEGRADABLE MATERIALS

Mr. Du JEU, Limagrain
Céréales Ingrédients
(France)

This presentation illustrates the environmental advantages of biodegradable products, used mainly in agriculture (mulching) and for packaging. The characteristics and standards are given and the main categories are described: natural, synthetic or composite materials. One example is the biodegradable plastic BIOLICE, produced on a CLEXTRAL line. Biodegradable materials may be incinerated, composted and recycled. They use renewable materials; consumption should progress by a factor of 15 over a period of 20 years; however, the need to reduce production costs will be a factor in their success.

14 – EXTRUSION: INNOVATION MODEL AND TRANSFER OF TECHNOLOGY

Mr. J-M BOUVIER, Vice-President
of CLEXTRAL

The speaker presents the advantages of extrusion technology, which emerged at the end of the 19th century, and describes the differences between single and twin screw technologies; the twin screw technology exhibits special characteristics, in particular a mixing function which has led to the development of technology transfers from the plastics industry to the agribusiness, chemical and paper industries. Co-rotating twin screw technology, a process implemented and refined by CLEXTRAL for half a century, is an essential vehicle of innovation.

15 – WEAR AND METALLURGICAL EVOLUTION

Mr. KERMOUCHE, ENISE
(Saint-Etienne national school
of engineers), and
Mr. LAZZOROTTO, CETIM
(Technical centre for mechanical
industries), ViaMeca,
(mechanical competitiveness
cluster) (France)

The presentation provides an informative and simple approach to the phenomena of equipment wear. After basic definitions, tribology and wear of materials, the authors analyse the various degradation modes and the means to limit them. The example of co-rotating twin screw extrusion and the work carried out by CLEXTRAL in the VIAMECA competitiveness cluster and the CETIM illustrate the methodology and

LOGISTICS

action of an SME to improve materials and reduce manufacturing costs.

16 - TEXTURING OF POROUS POWDERS.

Mr. SCOTT, INOVO (New Zealand) and Mr. MALLER, R&D CLETRAL (France) describe an invention related to the manufacture of porous powders using extrusion technology. This process is described and compared with the traditional process used to manufacture milk powder by spray drying. Research shows that the extruded "porosification" process is highly energy-efficient, requires a small production area and a lower investment. In addition, extruded milk powders' quality is identical to spray dried, and the extruder offers a safer processing alternative to spray drying equipment. This technology may be applied to products other than milk: e.g. instant drinks. This is a major innovation from CLETRAL, which filed a patent in 2006.



Mr.G.MALLER,
Director, extrusion
processes and
lines



It took more than one year to organise this event. Initially formed from a die-hard group of 5 people, the team was progressively increased according to specific requirements and, finally, a network of 15 actively participated in the days of October 2006, with occasional help by CLETRAL employees.

The book of presentations, produced by Mr. Prof. BOUVIER, Vice President of the Board, constitutes one of the major achievements of this event.



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SEEN AT CLEXTRAL'S 50 th ANNIVERSARY

The Evolum 25 twin screw extruder is a laboratory tool designed to simplify the development of new products, test new formulations and explore new recipes.

The new addition to
the EVOLUM range



This machine, the smallest extruder in the EVOLUM range, offers the same technological advantages and performance as the other models in this series: high torque, and fast screw rotation for high output. It features a temperature control system which heats and cools each barrel module independently and a variable speed drive to regulate the screw speed. An automatic barrel opening system is an available option.

Due to its diminutive size, the EV 25 can process small quantities, thereby reducing costs when developing a new product. With no wasted material, product designers can test their skills and explore many potential formulations and ingredients.

This model may also be used as a production unit to manufacture very small product quantities. Due to its modular design, this versatile machine is suitable for numerous product types: the barrel and the screw configurations are easily modified and the self-cleaning screw profiles allow fast production changeovers.

This machine is compact and easy to move. With its PLC conveniently located in the built-in electrical cabinet, the Evolum 25 is designed for "plug and play" implementation.

To ensure simple and reliable extrapolation to industrial production, the screw and barrel designs of the Evolum 25 are fully homothetic, obeying the same mathematical laws that govern the design of the production machines in the EVOLUM range.

Contact : for more information
clxsales@clextral.com

CLEXTRAL EXTRUSION SMARTLine

CLEXTRAL introduces small capacity lines, offering simple operation and reduced production costs for processing multiple products.

In the last several decades, crispy food products have gained prominence in the food market. All market analysts predict greater development of these products in the coming years, as they simultaneously provide energy, comfort and pleasure to consumers.



In this field, extrusion-cooking technology is usually utilized to manufacture cereal-based, crispy food products such as : snacks (curls, balls, rings, stars, 3Ds...), ready-to-eat breakfast cereals (pops, crisp rice, loops, cups, flakes), coextrudates (co-filled pillows), and flat bread.



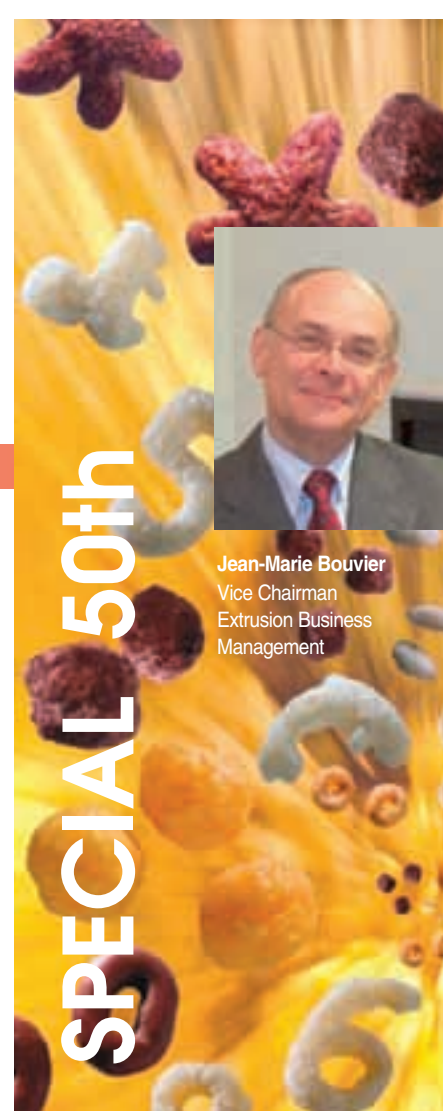
As opposed to single screw technology, twin screw technology clearly brings process-product determinant advantages to the manufacture of crispy food products :

- recipe and product flexibility
- product quality and consistency
- process productivity.

In addition, twin screw technology offers a high level of process evolution as it is easily adapted to include innovative clip-on technologies such as bicolouration, inclusion-addition... Yet, current lines available on the market require high capacities ranging from 400 to 1 500 kg/hour, making them prohibitive for newcomers and investors wishing to enter the market of crispy food products.

That is why CLEXTRAL, the world leader of twin screw technology, has designed and recently launched small capacity lines, called *Extrusion SMARTLines*, which meld the advantages of twin screw extrusion with CLEXTRAL's advanced process and product skills. CLEXTRAL SMARTLines will allow investors to enter the crispy foods marketplace with minimal capital investment and economic risk, utilizing a technology that is easy to manage with a gentle learning curve.

Recipes of crispy food products contain a high level of cereal flours, from 62% to 95%. This makes SMARTLines a good fit for cereal millers who want to add value to their products (cereal flours and semolinas) by



Jean-Marie Bouvier
Vice Chairman
Extrusion Business
Management

converting them into crispy food products.

Depending upon manufacturing and cost analysis, a cereal miller who decides to invest in extrusion SMARTLines would generate significant profit (gross margin of 30 to 50%) allowing a satisfactory pay-back in 9 to 18 months.



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THE CLEXTRAL FISH FEED OFFER :

In addition to standard product types, Clextral's expertise extends to the production of very small and large aquafeed pellets.

CLEXTRAL has supplied twin screw extruders for fish food production, especially salmonidae, since 1975. Numerous high-capacity fish food production machines have been installed in Scandinavia and South America; other major projects have been completed in Southern Europe and Southeast Asia. Clextral's customers benefit from our considerable experience in this application: we offer more than 60 twin screw machines for aquaculture production, half with screw diameters over 145 mm, and some producing up to 20 tonnes of pellets per hour.

This specific technical expertise and process skill has been transferred to the production of very large aquatic feeds (diameter greater than 30 mm) as well as very small products (diameter less than 0.6 mm). The constraints inherent to these types of products significantly impact the various individual operations on the production line.

Small Products

To manufacture products with very small diameters (e.g. 0.5mm products manufactured on an Evolum® extruder) the processor faces three main challenges: grinding of the raw material, granulation-die, and drying.

- To avoid obstruction of the die holes, the granulometry of the extruded meal must be controlled so that the maximum size of the meal pellets is 100 % less than three times the diameter of the die holes. To achieve this limitation, a micronisation-type system is used to prepare the raw materials.

- Concerning the die, flow management in the extruder head and insert geometry are critical factors to obtaining good product quality: density, compaction, regularity. In addition, product length must be perfectly calibrated due to the special cutting system.

- The drying step must also accommodate the size of these products. A traditional counterflow or belt dryer quickly reaches its limits. Over the last few years, CLEXTRAL has focused on optimising the Rotante-type rotary dryer manufactured by its subsidiary Afrem.



Floating and sinking products

Through gentle stirring of the product to eliminate build-up, the Rotante achieves excellent heat exchange close to that obtained in a fluidised bed. Other advantages include perfectly controlled residence time with virtually no dispersion, of type FIFO (First In, First Out) and precise product moisture homogeneity at dryer output.

Large products

At the other end of the spectrum, the manufacture of large products involves extensive experience in die design and the associated granulator as well as optimised drying control.

- It is essential to obtain good flow homogeneity in the die to manage the pellet expansion perfectly and deliver a large pellet displaying the proper and homogeneous characteristics: density, behaviour, regularity. Without the proper die design, there is



TECHNOLOGY



Gilles MALLER
CLEXTRAL
Director Extrusion
Processes and Lines

a risk of obtaining a heterogeneous, brittle product.

- Pellet drying is another important point. For a large product, the water must be extracted from the centre of the pellet and diffused homogeneously. Products dried too quickly can form a “skin” that prevents inside moisture from escaping, causes surface cracking, and adversely affects product behaviour in water. CLEXTRAL relies on the experience of its subsidiary Afrem in drying sensitive products, which are very similar in terms of technical barrier and quality objective.

For specialty fish feed products, CLEXTRAL’s know-how is vital, since raw material performance must be combined with advanced knowledge in extrusion cooking, die forming, and drying...all these factors contribute to achieve the quality and behaviour required for these special pellets.



CLEXTRAL BC160 twin-screw extruder



diameters
from 0,5 mm
to 30,0 mm



Drying with ROTANTE dryer



CLEXTRAL
Group

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ClexTRACE : THE TRACEABILITY SOLUTION ADAPTED TO YOUR PROCESS

▶ 1) WHAT IS TRACEABILITY?

Traceability was defined in France 20 years ago by standard NF EN ISO 8402 as: "the ability to trace the history, application or location of an entity by means of recorded identifications."

The entity may refer to:

- a product
- an activity, a process
- an organisation, a person

The successive food crises associated with quality problems in the agribusiness sector, well publicised in the press, generated increasing consumer concern about product quality. State authorities were forced to initiate detailed studies of the supply and transformation chains, and pass legislation to protect consumers. Consequently, the number of laws and regulations has increased over the last few years.

The European regulation CE 178/2002, published in the official gazette dated 28 January, 2002, lays down the general principles of food legislation, setting up the European Food Safety Authority and establishing food safety procedures. Through the application of this regulation, traceability has become a true legal requirement. This regulation concerns all companies in the agribusiness sector and article 18 specifies a general traceability obligation beginning 1 January, 2005.

Traceability is a necessity to comply with statutory requirements: In addition, it offers companies significant advantages:

- greater productivity
- consumer safety and loyalty
- quality control

It can also provide a competitive advantage (brand image, respect of quality commitments, etc.).

▶ 2) FEATURES OF THE ClexTRACE SYSTEM:

The key to a successful traceability project is the implementation of a solution fully adapted to the process in place. It has been observed that:

- 63 % of the traceability projects deviate from schedule and budget
- In 82 % of cases, the requirement is poorly defined
- 45 % of the failures are primarily due to focusing on a particular point rather than a global analysis

CLEXTRAL took the initiative to develop a computerised traceability solution: ClexTRACE, based on more than 50 years experience and supported by the process expertise of the CLEXTRAL group in various domains:

■ Extrusion lines:

- in agribusiness: breakfast cereals, snacks, pellets, petfood, etc.
- in chemistry and speciality papers

■ Couscous lines

■ Pasta lines

ClexTRACE consists of three modules:

Module 1

Batch Traceability

whose main functional characteristics are:

- Product identification (generation and identification of manufacturing batches)
- Batch follow-up
- Generation of links between manufacturing batches
- Data records (batch types, physical situation, ascending and descending consultation, etc.)

Module 2 : Production Performance Traceability

- Machine performance: analysis of shutdowns (type, cause, management), under-performance (slowdown management, etc.), TRS, TRG indicators, etc.
- Material performance: waste management, consumption management, goods in process management
- Labour performance: occupation time, attendance at station, etc.

Module 3 :

Process Quality Traceability

- Periodic controls on line
- Balance of instantaneous controls
- Assistance with control operations, etc





Sylvie BRUNEL
Extrusion Lines
Development Manager

3) TWO EXAMPLES OF ClexTRACE IN APPLICATION

■ Couscous production lines



During the global supply of a couscous line which included design, equipment manufacture, transfer of technology, commissioning, etc., the customer asked CLEXTRAL to install ClexTRACE module 1: Batch Traceability. This request was typical in the offer and supply of a complete line.

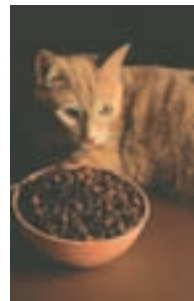
This module ensures the customer's compliance with applicable law; the data required during possible product recalls is available immediately (ascending traceability), action may be taken quickly to isolate a non-conforming product (descending traceability); the module simplifies audits and inspections by reducing or eliminating the need for paper files.

■ Dog and cat food production lines

In this example, the operator has an existing dog and cat food production unit: CLEXTRAL was asked to install ClexTRACE module 1: Batch Traceability.

To accomplish this mission, CLEXTRAL specialists first completed an audit on-site, to define the interfaces between the operator's existing equipment and ClexTRACE.

The second step included installation of a PC, computer and electrical connections.



The last step was to put the C l e x T R A C E module into service and provide special training.



Benefit from our 50 years experience in agribusiness, chemistry and specialty papers to install the traceability solution ClexTRACE, specially adapted to your process or your new or existing lines.

CONCLUSION

Traceability is becoming an essential tool to comply with regulations and increasing consumer requirements. It also represents an excellent way of improving productivity, controlling quality, developing brand image and taking the lead in a fiercely competitive marketplace.

Effective traceability involves an excellent knowledge of the processes involved.

As a designer and supplier of complete production lines with the associated processes, the CLEXTRAL global offer naturally includes traceability.

IN BREF

Inauguration of a new subsidiary in Algiers : CLEXTRAL – AFREM – Services.

Mr. Georges Jobard, President of the Clextral Group Board, officially announced the opening of the new Algerian subsidiary "Clextral Afrem Services" on 22 November 2006 at the Hôtel Mercure in Algiers.



The Group commenced activity as a full line supplier to this region in the early 1980's. Since then, Afrem International has sold and installed many production

lines for pasta and couscous. Today, Afrem lines produce more than 80 % of the couscous manufactured in the Maghreb.

Mr. Mohamed Tonkin, manager of the subsidiary, has contributed to increasing the Group's presence over the last ten years as representative for Afrem, then for the entire Clextral Group.

Within this structure, Mr. Zachariae Benjelloun will be responsible for providing technical support for all activities required by customers throughout the region.

The inauguration hosted customers, prospects and journalists from across Algeria. It was also attended by French companies on a mission in Algeria, organised by the Federation of Mechanical Industries (FIM) whose President for the Rhône-Alpes region is Mr. Georges Jobard. Mr. Yvon Jacob President of the FIM for FRANCE, honoured this event.

They retire :

Jean-Claude RIOCREUX ,
Simone DESPINASSE, Maurice
GRANGE, Jean CELLE

They have joined the CLEXTRAL Group teams :

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SHOWS AND EXHIBITIONS

PROPAK Vietnam	Ho Chi Minh City - VIETNAM	07-10 March 2007	stand 158
FOOD & FEED EXTRUSION	Bangkok - THAILAND	14-16 March 2007	
SNAXPO	Hollywood - USA	24-27 March 2007	
DJAZAGRO	Algiers - ALGERIA	16-19 April 2007	
VICTAM International	Utrecht - THE NETHERLANDS	08-10 May 2007	stand 7D045
IRAN Agro & Bev tec	Tehran - IRAN	22-25 May 2007	
SNACKEX	Barcelona - SPAIN	04-05 June 2007	stand 633
EXPO PACK	Mexico City - MEXICO	26-29 June 2007	

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