

Consumption
Trends

All about the French stick loaf

In this issue of Made in VMI, we are devoting two short articles to provide you with an accurate overview of current trends in French stick loaf consumption, including in the form of sandwiches

made in vmi



In France, 320 baguettes are produced every second

n°4

Baker and pastry chef issue

Spring 2011

We learn from each lesson

EDITO

From the very beginning of 2011, a lot of international news has constantly reminded us of the fact that nothing is definitive. Years of efforts and realizations one considered eternal can be reduced to nothing in a twinkling of an eye by factors that are stronger than we are. Those lessons must keep us humble and prepare us to permanently question our certitudes, knowledge, even beliefs. Our professional life can't escape these prescriptions and we do believe that putting our work on the test bank a hundred times will enable us to gain continuance. For this 4th edition of Made in VMI, we have gathered a certain number of articles that illustrate this statement and can show us how much we, at VMI, are tied to the fundamentals of our knowledge and contribute to the progress of our machines whilst respecting your traditions.

Didier Soumet
VMI Chief Executive Officer



The VMI
recipe

1 Electronics

Why electronics are considered nowadays a major constituent of mixers and planetary mixers? **(page 2)**



Research &
Development

2 Experimental design for the spiral mixer

Objective: To better master the geometric parameters of a spiral mixer in view of optimizing its performance. **(page 3)**



Brand new
and beautiful

3 PH 410 The Expert

A new Artisanal planetary mixer and a new Industrial spiral mixer just joined and extended the VMI line of products. **(pages 3 & 4)**

VMI, season's highlights

2010
a year of recovery

With an increase of its orders by 41% as compared to 2009 and 20% as compared to 2008, VMI has experienced 2010 which repositions it over a level of activity comparable

41%



to what it was before the financial crisis of 2008-2009. This growth is mainly due to a recovery of investments partly frozen in 2009, to a growing industrialisation of bakeries in the world and particularly in new territories such as Africa (which has itself given 20% of the industrial orders received by VMI in 2010), and to the strong dynamism of the export trade, encouraged by the offer of machines with quality/competitive price.

Machines available
immediately at VMI

Since the beginning of the year, VMI has committed to ship some of its mixers and planetary mixers on the same day of their order. These are spiral mixers SPI53S and SPI63S and planetary mixers PH402 4V and EV. Any order placed by a distributor for one of these machines and received by VMI before 10:00 in the morning will hence leave Montaignu before end of the day. An additional mark of care that VMI brings for bakers who should have their tool for work faster.

NEW



The VMI service gained in performance



French bakery industry badly affected by the earthquake in north-east Japan

With a strong presence on the Japanese archipelago, French bakers and confectioners have suffered considerably from the consequences of the recent earthquake of 11 March. Without mentioning that

some of these shops were totally devastated by this catastrophe, many of them are now facing shortage of raw materials. If we retain only the most famous French brands, there are no less than 75 shops which are lo-

cated in Japan (Fauchon 23, Kayser 16, Paul 21, Philippe Bigot 14). VMI, for whom the Japanese market is ranked second for exports of bakery industry equipment, shares with the entire profession, the pain and sorrow expe-

rienced and sends its encouragement to all the players present on ground, for the reconstruction phase which is going to be difficult.

Consumption Trends

The market for the fast food industry and sandwiches in France

2.9 billion sandwiches were consumed in France in 2010

(+2.5% as compared to 2009), which is close to 40 sandwiches per person older than 15 years of age...

These sales have generated a total sales turnover of Euros 6.39 billion.

The Jambon-Beurre® (Ham-Butter®) index of Gira indicates a deflationary change in price of ham/butter

sandwich. It is in fact sold in France on an average at €2.52, against €2.57 in 2009 and € 2.65 in 2008, whereas at the same time the Consumer Price Index witnessed a growth of 2.7% between 2008 and 2010. The most expensive pack of ham/butter returned to Paris (on an average €3.06), and that of the least expensive sandwich in Caen (on an average €2.08).



Consumption of baguettes in France

Although French consume today five times less bread than at the start of the century (from 328 kg per person per year in 1900, the average consumption has slipped to 58 kg today). A slight increase in the per capita consumption is observed since 2000 when it was at its lowest.

Every second there are 320 baguettes of bread produced and consumed in France, which is 10 billion per year.

The VMI recipe

Electronics

The history of electronics however dates back to a century: it began - in fact - in 1904 with the invention of the diode tube (Fleming), but today is prevalent in our daily lives with having helped innovations to such an extent that one wonders how things worked before...

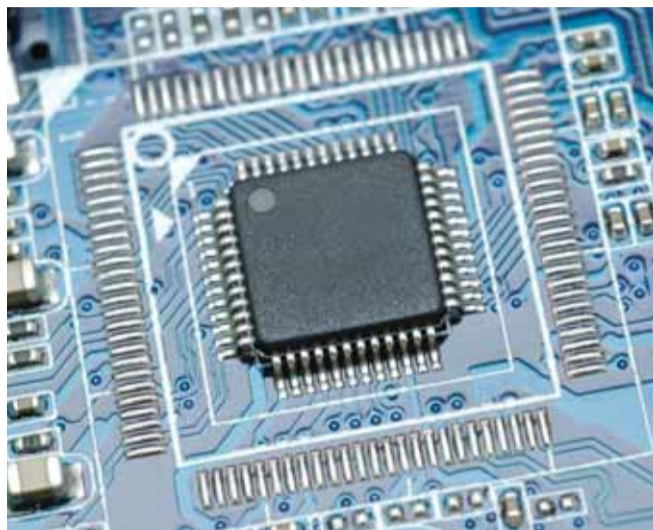
It is interesting to note that, probably more than many other new features, almost all advances in electronics have aroused strong reluctances. Remember our first reactions against the built-in electronics in our cars, our feelings about the music known as «electronic» or, more recently our doubtful view about the usefulness of tablet PC which however flooded the market.

Most of the arguments of critics of electronic revolve around its reliability and its captive effect in case of breakdown. We touch here the paradox of its main quality that is miniaturization. So many functions concentrated on so few components! But if it fails, nothing will work! And if it breaks down, I cannot repair anything!



But let us approach things positively. Let us temporarily forget the «ifs» (we will however return to it a little later), which should remain as assumptions of low probability, to retain only the beneficial contributions of electronics.

What are the real benefits that electronics brings to a mixer or a planetary mixer and what are the reasons which influence VMI to fit them in the machines that it offers to artisan and industrial bakers?



1 Electronics enable to offer new features at reasonable costs

- Flexibility and power of variation of speed at an affordable price (see article dedicated to this subject in no.3 of our magazine)
- Assistance for use with help of communicating interfaces
- Automatic sequencing of several phases (speed, time) of mixing or blending
- Real time control of the characteristics of the mixture made
- Storage of parameters for an optimum reproducibility
- Traceability of productions

2 Electronics reduces the number of mechanical parts necessary for operation of a machine that it equips. It simplifies and protects the mechanics, particularly via the use of electronic variators. Breakage of a transmission has now become extremely rare.

Yes, but “if there is a breakdown?”

This is where considerable progress has been made by electronics during all the recent years. Standard industrial micro-programmable

logic controllers, mass produced with enhanced reliability, are now available at reasonable costs. They have made electronic cards, tailor made for ten years, almost obsolete which are still produced in a number of copies

too low to be quickly and effectively made reliable.

Being fully convinced of the benefits that its users shall draw from electronics incorporated in its mixers and planetary mixers, VMI has cho-

sen a reasoned approach for electronics by committing to use only standard and tested electronic technologies in its mixers and planetary mixers, having already proven themselves on a large scale in industry.

Brand new and beautiful

The Expert

The latest industrial spiral mixers from VMI are now in an active phase of industrialisation after the sale of twenty units worldwide in recent months.

Designed with the major objective of improving the productivity of its users while maintaining or even improving in some cases the quality of mixing for which VMI mixers are already renown, the Expert benefits from the latest technological and innovative developments in terms of the material used and flexibility of use.

The qualities of the Expert can be summarised in 5 points:

- 1 Cleanliness: the choice of innovative materials reduces the need for frequent cleaning which in turn is more hygienic,
- 2 Reliability: the tubular type design is most resistant to mechanical strain induced by the stresses of mixing,
- 3 Reproducibility: the factory adjustable mixing tool/breaker bar combination enables a seamless reproduction of all types of doughs from one mixer to another,
- 4 Ergonomics: overall use, maintenance, and cleaning are greatly facilitated by means of a design which makes the controls and key parts very accessible,
- 5 Profitability: never has this level of finishing, especially the widespread use of stainless steel coupled with high performances, been so financially accessible.

Industrial mixer
EXPERT



To understand the influence of different parameters used in a spiral mixer

Similar to the work undertaken to optimise the efficiency of our planetary mixers (see Made in VMI n°3, Research and Development), our R&D department has executed a large program for understanding the influence of the different parameters used in a spiral mixer.



Research & Development

Based on an experimental design which shall not require less than 250 to 300 different tests, this study will eventually enable to fine tune the key parameters of a mixer in view of the possible specialisations with respect to any particular type of dough or consumer product to be manufactured. It shall enable us to understand how to progress from a generalised mixer (though often the subject of some technical compromises) to a “specialist” mixer.

This study is based on an in-depth analysis of the energy transmitted to the dough by the mixer according to the different configurations related to mixing speeds, shape and dimensions of the spiral, shape of breaker bar, and the air gap between the mixing tool spiral and the breaker bar. This approach conforms to the conclusions of the university works of numerical modelling of the power used during mixing, which has shown that the power used is based only these geometrical parameters:

$$P = f(Uch^2) = f(Kp.(N.D + Nc.Rc)^2)$$

where Kp = factor taking into account the shape of the spiral.

N = speed of rotation of the spiral

D = inscribed diameter of the cylinder of the spiral

Nc = vitesse de rotation de la cuve

Rc = speed of rotation of the bowl.

Moreover, it must be kept in mind that this total instantaneous power is expressed for

a dough status at a given moment and it is broken up into 3 distinct components:

$$P_{total} = P_{mixing} + P_{dough\ movement} + P_{mechanical\ heating}$$

Several test campaigns are currently in the process by multiplying the different possible configurations based on the following parameters:

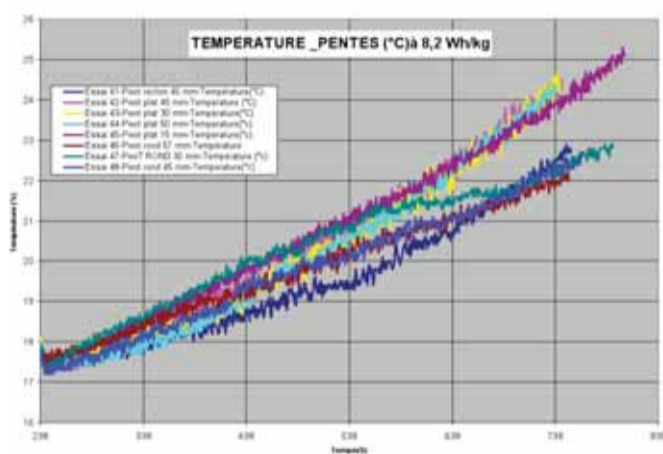
- 1.5 turn mixing tool spiral vs. 1 turn mixing tool spiral
- Low speed of mixing tool spiral rotation vs high mixing tool spiral speed
- 5 different mixing tool spiral/breaker bar gaps
- 3 different shapes of breaker bars

All the measurements and comparisons made are executed on the identical

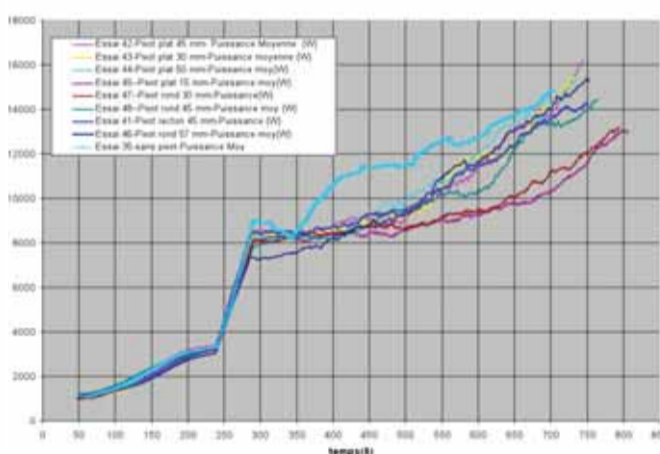
mixings pertaining to quantity of energy transmitted by the mixer (8.2 Wh/Kg). The tests are conducted till shaping and baking of doughs obtained for a sensory evaluation of the results in order to be sure of the reproducibility and comparative character of our experiments.

Although it is still too early to reach definitive conclusions, the tests conducted so far already allow us to identify characteristic behaviors or confirm the trends and therefore validate a certain number of rules that our experience of several decades in this matter has provided us intuitively.

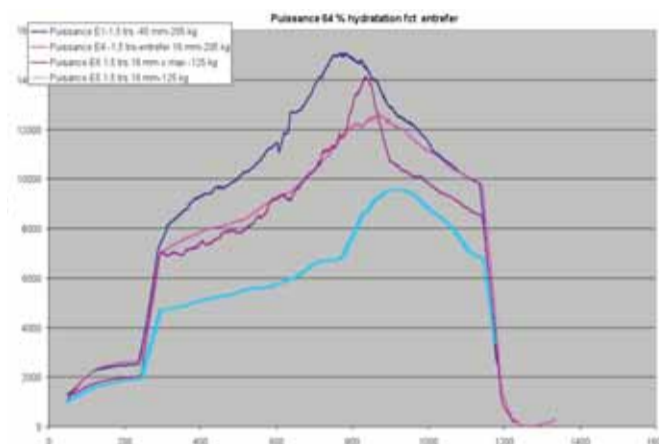
At this stage we accept, for example, that a 1.5 turn spiral transmits energy to a dough more rapidly than a 1 turn spiral, a reduced air gap increases the mixing time as well as the speed of heating of the dough, and a high speed of rotation of the spiral leads to a stage of over-mixing shorter than that at the time of slow speed mixing.



Tests highlighting the influence of the shape of the breaker bar on the mixing



Tests highlighting the influence of the size of mixing tool spiral/breaker bar gap on the mixing



Tests highlighting the influence of rotation speed of the mixing tool spiral on the mixing

Brand new and beautiful

Planetary mixer PH 410

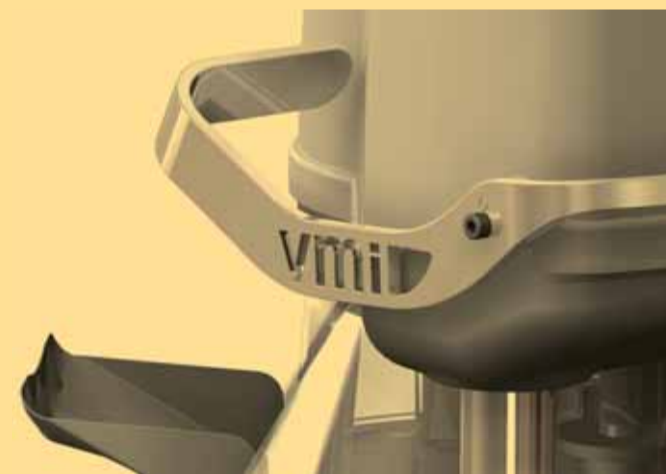
PH 410

A perfect illustration of the benefits that the expertise of VMI in industrial machinery can provide for the machines meant for bakers and confectioners, the new planetary mixer PH 410 will be available by this summer. In the tradition of its predecessors, this planetary mixer of the Phebus range continues with the tradition of quality and sturdiness.

If we had retained only 2 main features from among the many benefits provided by PH 410, we should highlight the quality of the mixing obtained and ease of use and maintenance of this machine.

Quality of mixing

The quality of the mixing relies on the design of a new transmission leading to an optimisation of the satellite speed / planetary mixer speed ratio (also see article R&D Made in VMI no.3), as



well as on the variation of these same speeds available in the EV and XV models.

Ease of use and maintenance

It is expressed by an ergonomic control panel, with stainless steel castors, bowl lighting, a soft-start tool, an assisted bowl raising and lowering system, a design with rounded shapes, absence of retention areas even at the sealed and flush

satellite, durable materials (stainless steel, ABS and aluminium), and a remarkably silent operation.

Let us hope that the PH 410, with a resolutely modern look also available in 20 litres and soon in an array of 10, 60 and 80 litres, will perfectly fulfill its purpose of productivity and quality in numerous bakeries and laboratories.

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