

PRESENTATION ABSTRACT

Haikou City Hainan

China Swine Industry Development Conference

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FRENCH PIG INDUSTRY

Production overview

After a 34% growth of pig industry in France between 1990 and 2005 , the trend is now to decreasing :

◆ National herd in april/may/june 2006 : 14,904 millions heads , 1,292 millions sows (- 1.4%/2005)

- ◆ Meat production : 2004 : 2.329 millions tons ; 2005 : 2.313 millions tons .
- ◆ Consumption /inhabitant : 35kg (average EU :43)
- ◆ Self sufficiency : 107% (idem EU)

France is the 3rd country for pig production in EU , after Germany and Spain , before Poland and Denmark .

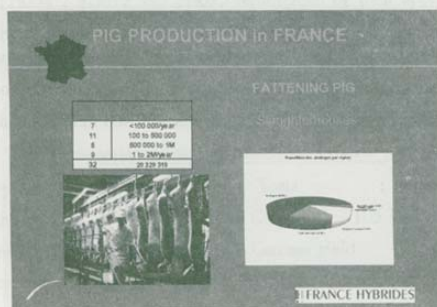
The main production is located in the west of the country (more than 70% , from which 57% in Brittany .

Slaughtering activity

24.93 millions of pigs were slaughtered in 2005 , 60% in Brittany .

Average of carcass weight : 90.8 kg , 61. % of TVM (lean percentage , french equation) , males 60% , females 62.5% .

60% of the production is processed .Hams , charcutery and dry saussages represent 80% of the processed products . 350 companies are involved in these activities .

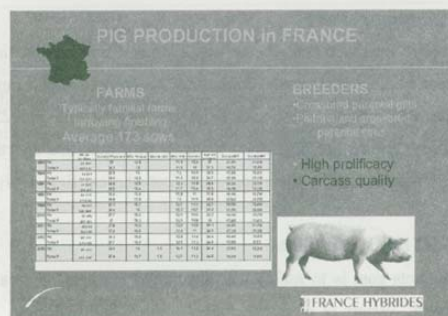


Breeders

Pig genetic improvement and breeders marketing is led in France by 9 companies (from which 2 foreigner) .

In female line , 20 pure breed populations (12 of different strains of Yorkshire and Landrace and 8 synthetic breeds) are improved . In male line , 19 , using basically Yorkshire , Duroc and Piétrain .

About the parental stock , the sows are 2 or 3 ways crossed : classical Yorkshire X Landrace types , 3 ways (17 types of crossbred GP are sold on the french market) ; 25 different genetic types are used . The terminal sire are cross-bred (generally 50% Piétrain) or pure Piétrain , with a recent strong trend for these type of boar . Semen of terminal boars are distributed through 10 AI stud companies , 2 doing 80% of the market .



Production , technical performances

The french pig production is done within familial farms (average 180 sows farrowing - fattening) . It is characterized

by a good numeric productivity, more than 25 piglets weaned per productive sow and per year (26.3 within the official survey on the parental sows productivity) . The best producers succeed to wean 31 piglets per productive sow and per year .

About fattening pigs , the trend is to produce heavier pigs than before, due to good growth and lean carcasses : 90.8 kg , 61. % of TVM in carcasses average in 2005.

The conversion indexes with standard diets are no more than 3 for the farrowing – finishing activity , 2.6 for fattening period in good management conditions .

Animal welfare

The European Union rules about animal welfare (increased surfaces per animal , sows free , transport conditions , ...) leads to increase the production costs without any significant advantages for the animals .

Health status France is free from swine fever and foot and mouth disease ; 80% of the territory is free from Aujeszky disease .

The economical incidences of respiratory diseases are decreasing , thanks to vaccines and better management . The main losses are due to PMWS , and , more, to PRRS , with waves of new contaminations .

Obviously , the demand for clean breeders incites to settle nucleus and multiplication farms in low pig densities area

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GENERAL PRESENTATION

FRANCE HYBRIDES has for activities the selection and genetic improvement of the pig, the distribution of the genetic progress through marketing of reproducers and semen from its nucleus , from farms of its multiplication network , or from its own centers of insemination or centers producing semen under contract.

FRANCE HYBRIDES, company of the group GLON, 1 – st French food processing group is present on three continents.

Selection and distribution of genetic progress

The FRANCE HYBRIDES genetic improvement scheme was approved for the first time on October 15, 1969.

It is now led on 5 original lines (Selected Animal Populations), properties of France Hybrides , managed in total autonomy, represented by the approved Genealogical Books FH004 , FH012 and FH025 for the female lines, FH016 AND FH019 for the male lines. These strains are developed for their own qualities and their complementarities.

The crossings of these lines are represented by their approved Zootechnical Registers: FH100, Galaxy 300 , 480 and 900 , Maxter304.

The purpose of the FRANCE HYBRIDES products

The FRANCE HYBRIDES products goal is to satisfy, in diversified markets, the varied users of the pig:

- . The consumers: safety, health, variety of products, tastes, nutritional qualities.
- . The slaughterhouses and transformers: homogeneity, composition of carcass, quality of meat, ability to various transformations.
- . The pig farmers: optimization of the meat production per sow and per year at the best economic cost.

THE SELECTED ANIMAL POPULATIONS

The genetic improvement is led on 5 " Animal Selected Populations " or lines, original. Three female lines and two male lines, properties of France Hybrides, are managed in total autonomy and developed for their proper qualities and their complementarities.

France Hybrides does all the steps of the selection: breeding, testing, individual indexations of the reproducers (BLUP animal Model), calculation of the genetic parameters of the populations (inbreeding rates ,traits heritability, genetic progress , selection differentials).

5000 GGP sows of these populations compose nucleus herds in France, Czech Republic, Vietnam, Canada.

THE FEMALE LINES

These are the populations FH004 , FH012 and FH025 represented by their approved Genealogical Books.

- ◆ FH 004 : Composite line , created and closed in 1995
- ◆ FH 012 : Landrace variety, lined created from 1971, closed in 1981.
- ◆ FH 025 : Large White variety, lined created from 1971, closed in 1981.

Selection traits and indexation criteria :

- | | |
|-------------------------------------|----------------------|
| - Prolificacy | - Teats |
| - Backfat thickness | - Growth 35 - 105 kg |
| - Feed conversion Index 35 - 105 kg | - Carcass yield |

THE MALE LINES

These are the populations FH016 and FH019 represented by their approved Genealogical Books.

- ◆ FH 016: Piétrain variety, lined created from 1971. Priority ton the conformation.
- ◆ FH 019 : Synthetic line created from 1971 .Priority to the growth

Selection traits and indexation criteria

- Backfat thickness
- Growth 35 - 105 kg
- Feed conversion Index 35 - 105 kg
- Loin area

Selection on the feed conversion

Fundamental goal, conditioning the saving on the first production cost in pig farming : the feed.

The feed conversion , although strongly correlated to the growth, justifies in itself a proper selection.

GENETIC IMPROVEMENT	
FEMALE LINES	MALE LINES
- Daily Gain : + 20 g / year	- Daily Gain : + 20 g / year
- Backfat 100kg : - 0,04 mm / year	- Loin area 100kg : + 0,4 cm ² /year
- Feed Conversion : - 0,01 pt / year	- Feed Conversion : - 0,01 pt / year
- Alive born / litter : + 0,15 / year	
- Efficient teats : + 0,1 / year	

FRANCE HYBRIDES

THE RANGE OF PARENTAL BREEDERS

The genetic potential of the parental animals directly conditions the economy of the production.

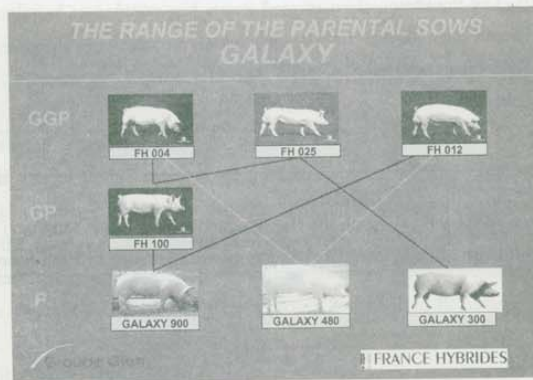
- ◆ Numeric productivity of the parental sows through prolificacy , dairy qualities , maternal behavior.
- ◆ Fattening pig directed preferentially to the growth or the percentage of lean according to the chosen terminal boar.

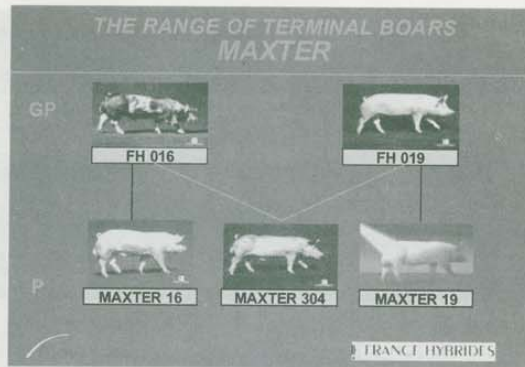
Different possible crossbreed allow production , at very competitive costs , of FH fattening pigs for the satisfaction of diversified markets .

What could be the particular purposes , the most general and the most significant economic criterion is the quantity of pig produced per sow and per year at a feed conversion rate as low as possible .

More than 3000 kg per sow and per year at less than a 3 “farrowing – finishing” global index , these are the performances realized by the crossing GALAXY – MAXTER .

The crossed parental breeders are represented by their approved Zootechnical Registers: FH 100 , 300 , FH 304 , FH900 .





FRANCE-HYBRIDES

The ability to produce :

- NUMEROUS : prolificacy , weaned
- FAST : growth
- LEAN
- HEAVY
- ECONOMIC : feed conversion , processing costs


FRANCE HYBRIDES

MAXTER 16 - GALAXY

26-th french official test (2004) under the authority of the Ministry of Agriculture
 FH one more time the best results in growth GALAXY 300 X MAXTER 16

	ADG (gD)	FC (kg/kg)	TVM
Large White witness	928	2,657	60.5
Galaxy 300 x Maxter 16	989	2,66	61.5
Average of the r4 schemes	930	2,72	60.9
	59	0.06	0.6

FRANCE HYBRIDES



MAXTER 304 - GALAXY

27-th french official test (2005) under the authority of the Ministry of Agriculture
FH one more time the best results in growth GALAXY 300 X MAXTER 304

	ADG (g/d)	IC	TYM
Large White/White	928	2,665	60.1
(Galaxy 300) x (Maxter)	1025	2,613	60.7
Average other scheme	939	2,645	61.0

+ 86 g of growth per day = 8.6 kg live weight in 100 days , 6,7 kg carcass more.
 21 fattening pigs/year/sow = 180.6 kg live weight more= 1.7 pig 105 kg more , 140.7kg carcass.

For 100 sows 14 tons of carcass more !

FRANCE HYBRIDES

ARTIFICIAL INSEMINATION

Artificial insemination and semen collection is also one of the France – Hybrides full job through its studs of Artificial Insemination and those of its associated companies . France – Gènes , France – Hybrides Vietnam , France – Hybrides CZ.

TECHNICAL SUPPORT

To accompany its development and to do that the breeders could use at the best the genetic potential of their animals, FRANCE – HYBRIDES, with the cooperation of the specialized teams from the GLON Group, provide them some technical services:

- Conception of pig farms and breeding buildings .
- Nutrition and feed formulation .
- Advice in breeding management
- Advice in management of artificial insemination center
- Veterinarian advice
- Testing and reproducers agreement

Some of these know – how are summarized in illustrated guides or booklets :

- Reception and adaptation of the young breeders
- Feed management of the GALAXY sow
- Guide of the semen collecting

RESEARCH AND DEVELOPMENT

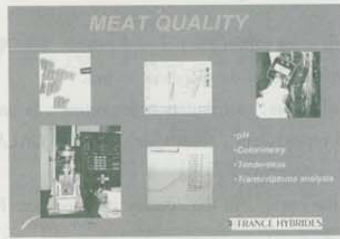
The current efforts of France – Hybrides in term of Research and Development are done mainly on the following topics:

- TO OPTIMIZE THE ACCUMULATION OF THE GENETIC PROGRESS FOR WIDENED SELECTION GOALS.
- TO UNDERSTAND AND TO USE BETTER THE AVAILABLE GENETIC VARIABILITY
- TO IMPROVE THE SAFETY OF THE METHODS OF DIFFUSION OF THE GENETIC MATERIAL.

WIDENED GOALS OF SELECTION

to come up to the pig producers expectations and to anticipate the evolutions :

- ◆ Quality of meat products
- ◆ Reduction of the feed and environmental costs



In France - Hybrides, automatized systems to record individual data accompany this evolution. They increase the accuracy of the measures, decrease the unit costs, allow the multiplication of the number of controlled traits.

In the same way, our data statistical analysis models must be able to describe the checked sources of genetic variability for the whole traits .

The creation of genetic progress is a material capitalization on long term of the most desirable emergent combinations.

THE VARIABILITY FROM GENETIC ORIGIN

can be analyzed today not only according to genealogical information but also from the segregation of DNA polymorphisms (markers , QTL) knew for their relation with studied traits, and traced within these same genealogies.

Biologic changes imputed to the action of a gene variant or allele can be confirmed within genetic types used in production

France - Hybrides owns high flow genotyping capacities (PCR , automatic sequencing), essential tools for the coordinated implementations of these complementary technologies of analysis.

The necessary relation at every step of this approach between DNA genotypes and phenotypic characteristics implies the production of varied and confirmed genotypes, as for "neutral" markers as a priori causal or candidate mutations.

THE DISTRIBUTION OF THE IMPROVED GENETIC MATERIAL

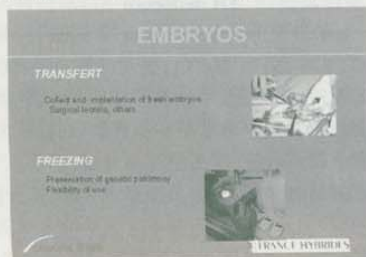
towards the production level is the purpose of the creation of the cumulated genetic progress inclosed population.

It is done today by the introduction of young breeders and semen , possible vectors of pathogenicagents potentially harmful to the production economy and to the safety of food productsThe relative hazard of introduction of pathogenic agents in a pig farm go decreasing as one introducesanimals, semen or embryos .

Our efforts go towards the mastery of the embryos transfer. The sanitary safety of this operation islinked to the possibility to clean not hatched embryos by successive dilutions , protected by the pellucide membrane .

The last developments of the pig embryos freezing technologies by "vitrification" (ultra fast freezing)and re - implantation through transcervical way allow to contemplate at medium - term a significantextension of the f application field of these technologies .

This will allow to improve very significantly the microbiologic safety of the genetic materialdistribution .



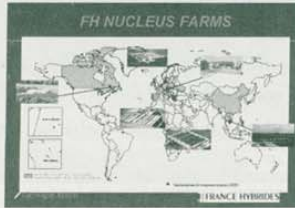
AN INTERNATIONAL NETWORK

Born in France, where it is an important actor within the pig production, FRANCE – HYBRIDES turned quickly to exportation. Since 1997 a new strategy of international development is led.

FRANCE – HYBRIDES, through subsidiaries, distributors or importers, is present in various zones and country.

In 2005, the FRANCE – HYBRIDES reproducers, from which 180 000 GALAXY parental sows, are produced in 8 countries and commercialized in 18.

Activities are managed, according to the cases, in the country itself or from France by the “Export” service.



FRANCE HYBRIDES DISTRIBUTORS

<u>EUROPE</u>	
◆ BELGIUM	Delco BVBA Hybrimo BVBA
◆ France :	FRANCE – HYBRIDES
◆ SPAIN/Portugal :	France Hybrides Iberica
◆ CZECH REPUBLIC/SLOVAQUIA :	France Hybrides CZ
◆ SERBIA :	Glon SEE
◆ ROMANIA/BULGARIA :	S. C. PICOVIT – ROM IMPEX S. R. L.
◆ GREECE :	Genetica Argyropoulos
◆ LITHUANIA/ BALTIC COUNTRIES :	Ziobiskis
◆ POLAND :	France Hybrides Polska
◆ UKRAINE :	France Hybrides Ukraine
<u>ASIA</u>	
◆ VIETNAM :	France Hybrides Vietnam
◆ CHINA :	BCR
◆ PHILIPPINES :	Infarmco
<u>AMERICA</u>	
◆ CANADA/USA :	HYQUAM
◆ MEXICO :	FH de Mexico

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