French Livestock

genetics and territories

Philippe Amé, Director, International Affairs
French Livestock Institute

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An introduction
Did you know......?

France
1st cattle herd
in EU27

Total UE 27: 87 800 000 heads
France
2nd EU27 dairy herd
3.8 million heads

1st world exporter of dairy products
France
1st EU27 beef herd (by far!)
4.1 million cows
France

a multifaceted physiogeography

- Plains and river basins
- Groves
- Plateaux
- High mountains
- Lower old mountains
- Foothills and hilly areas
France
a range of climatic zones

- Oceanic
- Semi-oceanic
- Continental
- Mountain
- Mediterranean
France

a wide array of breeds of all ruminants species

adapted to various production environments and production objectives
For the breeder, the best breed, the best genetic choice, is the one that fits with the specificities of the activity’s environment.
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an overview of cattle density

Dairy cattle

11 breeds under selection programs

+ 15 breeds under conservation programs

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Beef cattle

9 breeds under selection programs (incl. 3 hardy breeds)
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an overview of ovine density

Dairy sheep

Meat sheep

5 breeds under selection programs

19 breeds under selection programs
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major dairy breeds

- **Prim’holstein**: probably the best Holstein in the world

1 600 000 cows officially recorded

10 751 kg per lactation

F: 3.97 %
P: 3.37 %

Interbull 2010:
**French bulls ranked world 2nd** (ISU)
Montbéliarde: ever tried Comté cheese?

370 000 cows officially recorded

7 924 kg per lactation

F: 3,91 %
P: 3,44 %

Plus an excellent fattening capacity and carcass quality of bullocks!!
Normande: of course you heard about Camembert?

220,000 cows officially recorded
7,469 kg per lactation
F: 4.29%
P: 3.63%

Plus an excellent fattening capacity and carcass quality of bullocks!!
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Major beef breeds

- Charolais

1,700,000 cows
370,000 cows officially recorded
12-months bulls LW 509 kg
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Major beef breeds

- **Limousin**

1,000,000 cows
240,000 cows officially recorded
12-months bulls LW 478 kg
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Major beef breeds

- **Blonde d’Aquitaine**

  - 530,000 cows
  - 150,000 cows officially recorded
  - 12-months bulls LW 519 kg

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Major beef breeds

Outstanding fattening performance

Limousine  Charolais  Blonde d’Aquitaine

Daily gain: 1.4 à 1.8 kg
Carcass conformation and format
Feed conversion ratio

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• **RÉSISTANCE to extreme temperatures and feed variable availability**
• Excellent legs and hoofs (walking capacity)
• **Easy CALVING and FERTILITY (1 calf per year)**
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Motherhood type breeds

Salers

Aubrac

Gasconne
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Motherhood type breeds

Some of them in Siberia (2010) ...... like at home!

Salers
Limousine
Aubrac
Charolaise
Heterosis and economics: the other dimension in the equation

- **Management and feeding:** LESS DEMANDING
- **Daily gain during fattening:** 1200-1500 G
- **Carcass weight from 340 to 380 KG**
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Ovine meat breeds

SPECIALIZED BREEDS
Large formats (about 18 kg carcass)

Charollais
Ile de France

Smaller formats (12-13 kg carcass)

Charmoise

And more selection schemes for a large number of hardy breeds
Where a market exists for dairy products...

260 l/lactation

Lacaune
France breeds for milk selection only and proposes top genetics

In average 800 l. + per lactation (milk recording data) with selected mothers up to 1200 l.
French Selection Scheme
securing present and future performance

- Reliable information system (generalized identification, performance control, scoring, weighing)
- Outstanding sanitary monitoring and control
- Size of the selection nucleus and applied genetic pressure

Since 1966: the breeders are at the center of the setup

... and now: Investment in genomics!
French Selection Scheme
securing present and future performance

Genetic pressure in cattle

<table>
<thead>
<tr>
<th>3,1 million females</th>
<th>2,5 million cows</th>
<th>650 bulls subject to progeny testing</th>
<th>25 000 genomic analyses (males and females)</th>
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<th>MARKETING 2010</th>
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<tr>
<td>100 bulls selected for AI after conventional evaluation</td>
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<tr>
<td>230 bulls selected for AI after genomic evaluation</td>
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</table>

| 912 000 cows in performance recording | 726 000 purebred inseminated females | 12 000 bulls on-farm performance evaluation | 2 160 bulls on-station performance evaluation | 120 bulls subject to progeny testing programmes | 50 bulls selected for AI |
French Selection Scheme
securing present and future performance

Genetic pressure in small ruminants

- 378,000 goats in performance recording
- 80,000 purebreds females inseminated
- 150 bucks on-station performances evaluation
- 70 bucks subject to progeny testing
- 40 bucks selected for AI

- 835,000 ewes in performance recording
- 490,000 purebreds females inseminated
- 2,640 rams on-station performances evaluation
- 730 rams subject to progeny testing
- 250 rams selected for AI

- 285,000 ewes in performance recording
- 170,000 females inseminated
- 3,500 rams on-station performances evaluation
- 220 rams subject to progeny testing
- 100 rams selected for AI

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Genomics: Predictive genetic value of individuals

- from gene markers

- based on a reference population: to establish the relationships between markers and phenotypes
French Selection Scheme
SAMG and bull selection

**time is the essence: the generation gap!**

Until today
- CD dairy: 30
- CD fert.: 20

Genomic selection
- SAMG
- CD dairy: 70
- CD fert.: 60

Service
- 75
- 95

Progeny testing
- 45

Progeny control
- 95

Age of bull
- 8Y

Fine tuning
Case of dairy productivity

+ 80 to 110 l/y (depending on breed)

i.e.

+ 1000 l / lactation in 10 years
French Livestock adaptable and appreciated worldwide

French genetics is used successfully by breeders in more than 80 countries on the 5 continents