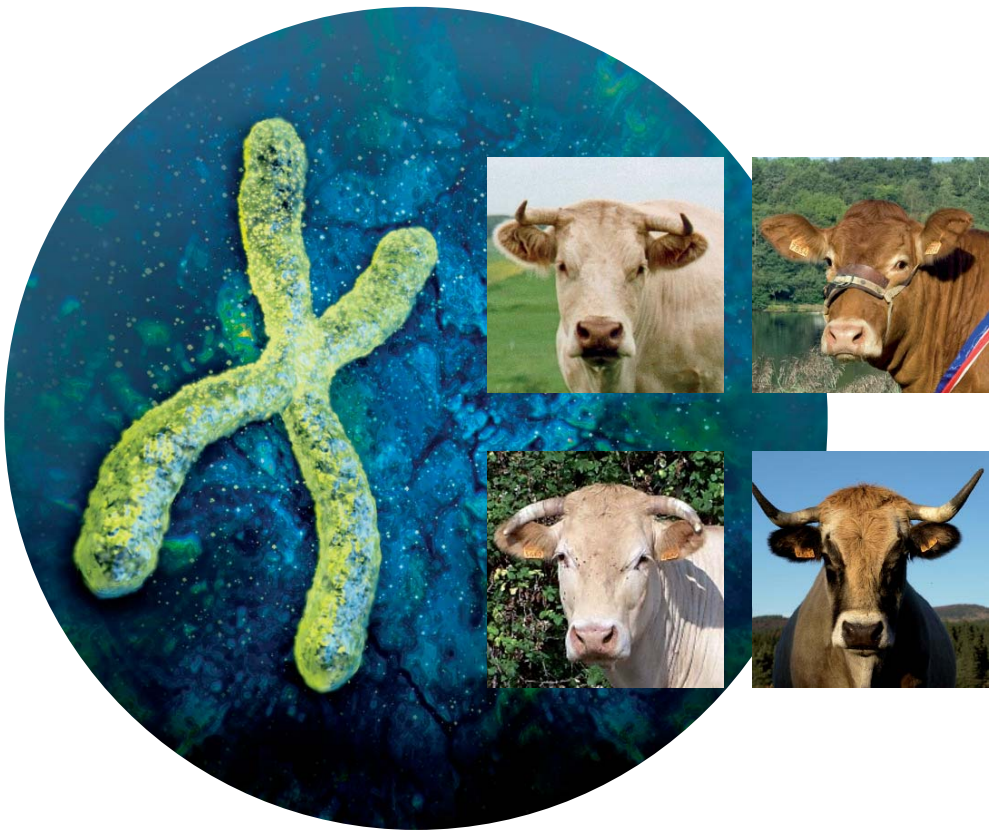
France Génétique Elevage



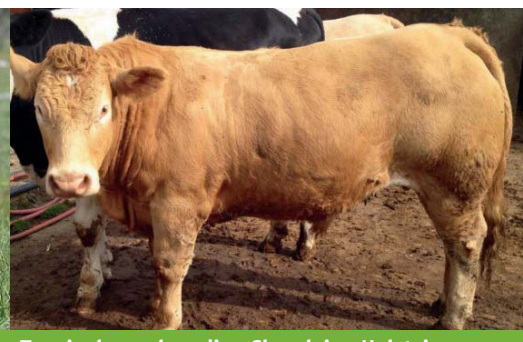
CROSSBREEDING WITH FRENCH BEEF GENETICS


Blonde Aquitaine x Brahman


Charolais x Brahman


Limousin x Angus


Charolais x Angus


Terminal crossbreeding Charolais x Holstein

KEY FIGURE:

+ 10 to 30 %

in productivity at weaning and at fattening

When genetic combination leads to added economic value

Coming from a long breeding tradition, exceptional genetic heritage and selection programmes at the cutting edge of technology, **the range of French dairy cattle breeds combines diversity and economic performance.** This makes France one of the world leaders in dairy production and genetics.

This **wide range of zootechnical aptitudes** makes it possible for all breeders to find the genetics to match their objectives, their production conditions and their market requirements.

Its increasing distribution in crossbreeding is also proof of its efficiency. The technical performances and economical results of animals crossbred with French breeds are substantially improved in commercial farms, whether family farms or large scale units, with a local maternal breed of cattle (bos taurus) or zebu (bos indicus).


Blonde d'Aquitaine x Nelore

1

Accessing a wide range of genetics thanks to crossbreeding

Charolais x Angus | Limousin x Brahman

French breeding offers an exceptional range of genetics. This includes as much the highly productive **specialized breeds of international importance (Charolaise, Limousine, Blonde d'Aquitaine)**.

But this offer also includes **productive hardy breeds (Aubrac, Salers, Gasconne,...)** which are more specifically adapted to difficult forage and climate conditions.

The efficiency of French selection programmes, integrating all progress in genomics, has enabled these breeds to achieve unequalled levels of efficiency, at the same time respecting the diversity of their aptitudes.

In crossbreeding, French beef genetics rapidly and at low cost produce convincing results within herds.

The addition of new aptitudes combined with the renowned hybrid vigor of crossbred animals is converted into technical performance and added economic value for farms.

2

Adding new genes and combining aptitudes

In hot zones, local populations of the Bos indicus type frequently present a hardiness and a good capacity to adapt to the agro-climatic production context : resistance to disease (trypanoresistant...) and to parasites, aptitude for the beneficial use of specific forage resources, resistance to extreme temperatures...

In extensive systems with less difficult context, Anglo-Saxon maternal breeds such as Angus are also often present.

Limousin x Brahman | Charolais x Brahman

In either of these situations, the introduction of blood from French selected beef breeds enables the combination of their aptitudes for meat production with those of the breeds present.

Blonde d'Aquitaine x Brahman

From the first generation, the crossbred animals accumulate the inherited qualities of their mother and the potential for production added by French genetics.

This genetic complementarity results particularly in a better feed conversion with noticeable gains in growth and conformation for crossbred animals.

At weaning, live weight gain oscillates between 10 and 30 % according to the type of crossbreeding and the capacity of the system to respond to the animals' needs.

3

Benefiting from the heterosis effect or « hybrid vigour »

Limousin x Angus

The heterosis effect, more commonly known as « hybrid vigour », leads to **superiority for a given trait in hybrid animal F1 over the average of its two parents.**

The heterosis effect is significant for aptitudes that are crucial for profitability in beef cattle breeding : **better precocity and fertility of crossbred females, better vigour at birth, health and survival rate at weaning for crossbred calves...**

This hybrid vigour is more significant the further apart the parents are genetically. Its effect is particularly noticeable for animals that come from crossbreeding French cattle breeds and zebu type breeds, even those kept for the double purpose of milk and meat.

4

Convincing results from the first generation

From the first generation F1, crossbreeding with selected French beef genetics results in marked improvements in meat production (weaned calves and young males), management traits (docility) as well as reproduction traits for females (fertility, precocity). The heterosis effect adds to the cumulative advantages of the two breeds.

In tropical zones, crossing commercial zebu herds with bulls from the Charolaise, Limousine or Blonde d'Aquitaine breeds is a convincing example. It leads to **a clear increase (10 to 30 %) of their productivity (number of weaned calves x individual weight).** The wide distribution of such crossings in the tropical zones of Latin America, southern Africa and Asia is the proof of its success on the ground.

In more temperate climates, the crossbreeding of British breed herds (Angus, Hereford...) or Simmental with the same French breeds has been practised for a long time. It is enjoying renewed popularity in recent years.

Thanks to Charolaise, Limousine or Blonde d'Aquitaine blood, **gains in feed efficiency and conformation in finishing periods are significant.**

Charolais x Angus

Blonde d'Aquitaine x Nelore

5

Crossbreeding rate adapted to the farm context

Blonde d'Aquitaine x Nelore

Limousin x Brahman

Crossing a maternal breed herd with a French beef breed can already at F1 represent a significant productive leap that can be sufficient when farming conditions are considered.

A 50/50 ratio between bloodlines often proves to be a good balance, whether it is in a tropical zone with blood from zebu breeds or in a more temperate zone with blood from Anglo-Saxon breeds.

Within any herd, crossbreeding beyond this first generation is to be pursued according to the level of technicality, the agro-climatic conditions and the socio-economic context of the farm.

A higher percentage of blood from French beef breeds is often found in regions of more abundant food resources or when the producer particularly wants to increase muscle yield.

6

Crossbreeding systems and composite bloodlines

Limangus (3/8 Limousin 5/8 Angus)

Continuous crossbreeding programmes of rotational type make it possible to maximise and stabilise the impact of crossbreeding.

The rotational crossbreeding system with 2 breeds (French breed x zebu or British maternal breed) is without doubt the most popular system in commercial farms. At every generation, the females are mated with a bull from the other breed, different and complementary to that of their father.

In the largest herds, **rotational crossbreeding with 3 breeds (generally French, zebu and British breeds)** is also successful. Its implementation remains however dependent on the confirmed technical prowess of the breeder to manage the reproduction groups.

In the most advanced systems, crossbreeding can lead to the creation of **composite bloodlines**, such as t**he Charbray** (5/8 Charolais 3/8 Brahman), **the Limangus** (3/8 Limousine 5/8 Angus) or **the Blonel** (5/8 Blonde d'Aquitaine 3/8 Nelore).

7

Terminal crossbreeding, a winning option

Terminal crossbreeding with French beef bulls constitute a technical leverage to increase the meat production of a herd, with a hardy, dairy or mixed breed. **Breeders have been using this type of crossbreeding for a long time, by sending all male and female crossbred products to fattening and slaughter.**

National policies to develop terminal crossbreeding are also materializing, such as the example of Morocco since 2010. Artificial insemination allows crossbreeding to become more accessible to all (small and large herds, specialised dairy or mixed herds).

Charolais x Aubrac Limousin x Holstein

On farms, the results show **a gain of 40 to 45 kg of live weight at weaning** (7 months) of crossed calves compared to dairy calves. At the end of fattening at 16 - 17 months, this difference in live weight reaches 100 to 130 kg.

With feeding management adapted to the genetic potential, **the Average Daily Gain (ADG) of crossed young males turns out to be higher by more than 20 %** of that of dairy young males of the same age.

Measurements in slaughterhouses provide significant differences in carcass yield (58 % and 54 %). Crossbred animals being heavier, this increase in yield leads to a gain of between 40 kg (average) and 90 kg of carcass (top half of the results) per young male.

That is from 15 to 25 % extra meat for the farmer and the industry thanks to crossbreeding with specialised French beef breeds.

France Génétique Elevage

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france-genetique-elevage@france-genetique-elevage.fr
www.france-genetique-elevage.fr
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