INSTITUT DE L'ÉLEVAGE

Ferrandaise and Villard de Lans Cattle Breeds : Factors affecting demographic dynamics of local cattle breeds

Given the danger that the extinction of local domestic breeds represents, action for conservation has been initiated since the beginning of the seventies. In 2007, a **European project named EURECA** was created : « Towards self-sustainable EUropean REgional CAttle breeds ». Ten countries currently participate in this project organised in several phases from *in-situ* to *ex-situ* conservation and the Institut de l'Elevage (Livestock Institute) is the partner for France.

Two French cattle breeds, **Ferrandaise** and **Villard de Lans**, are included in the work package WP1 : a detailed assessment of typical cattle breed cases. Action for the conservation of both of these breeds started at the end of the seventies. At present their demographic situation is different : the Ferrandaise population is greatly superior to that of the Villard Lans. The aim of this paper is to find the factors that affect demographic dynamics of local cattle breeds.

Presentation of the two breeds studied

> *Regions of origin*

The **Ferrandaise** breed originates from the Puy de Dôme, and more precisely in the Chaîne des Puys area south west of the town of Clermont-Ferrand. Another breeding area is situated around Ambert in the Livradois area.

The **Villard de Lans** breed originates from a local region called « Montagnes de Lans » which groups the municipalities of Autrans, Méaudre, Lans en Vercors and Villard de Lans, in the Vercors area in the Isere region.

Contribution to a European project EURECA

> *a Ferrandais herd*

> *a Villard de Lans breed*

> *Current situation of the two breeds*

For both breeds, conservation actions were initiated in the late seventies. The Villard de Lans and Ferrandaise populations were at that time respectively 80 and 150 cows approximately. After 30 years of management, the populations in both breeds have increased. However, the Ferrandaise population size is much larger than that of the Villard de Lans. It was therefore desirable to understand the reasons behind these evolutions.

Table 1 : Listed Ferrandaise and Villard de Lans populations (PETPE datafile) 3/4 bred or more

	FERRANDAISE			VILLARD DE LANS		
Year	**1990**	**2005**	**% of increase**	**1990**	**2005**	**% of increase**
Listed females	198	1090	451	136	358	163
Cows	151	729	383	99	235	137
Herds	39	171	338	30	54	80
Lives sires	3	51	-	6	19	-
Potential AI sires	13	29	-	15	27	-

> *Aptitudes*

Both breeds were formerly **triple aptitude** breeds (milk, beef, farm work). Nowadays, animal traction is no longer used.

Given the low number of sample records, especially for the Villard de Lans, the results of the milk recording (Table 2) are to be read with caution. However, for both breeds, the **adult** milk production of reference is around 3 500 kg in normal farming conditions. The fat production is higher for the Villard de Lans.

Table 2 : Overall 2006 results of the milk recording for the Villard de Lans and Ferrandaise breeds (France Contrôle Laitier, Institut de l'Elevage, 2007)

Breed	**Number of records**	**Lactation length**	**Average gross production (kg/year)**	**Fat content (‰)**	**Protein content (‰)**
Villard de Lans	37	218	2433	40,9	31,8
Ferrandaise	73	233	3106	37,5	31,7

Average daily gain of the calves and carcass yield seem very good for both breeds although, due to lack of data, no exact figures can be given. The double muscling gene (mh) is present in one in every three Ferrandaise cows (Ménissier, 2004).

Description of the herds

For both the Ferrandaise and the Villard de Lans breeds, 80 % of the herds are beef herds, representing 65 % of the listed females. 25 % of the Villard de Lans herds and 10 % of the Ferrandaise herds contain only Villard de Lans and Ferrandaise animals. The remaining fractions are multi-breed herds.
For each of the breeds studied, around 80 % of the herds have less than 5 reproductive females of the given breeds.

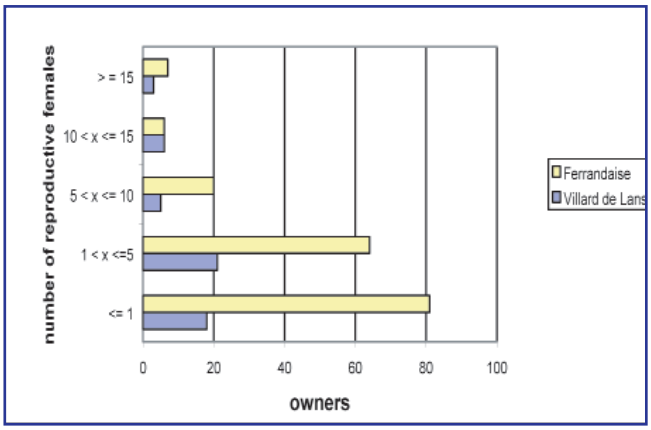

Figure 1 : Number of reproductive females of local breed per herd (12/31/2005)

The herd size is relatively small and there is a large **diversity** of farming systems. However, three Ferrandaise herds have more than forty reproductive females.

On-Farm Survey

> *34 farms surveyed*

In 2007, within the EURECA framework, the Institut de l'Elevage conducted a survey in Ferrandaise and Villard de Lans herds in order to describe the farming practices and have a better understanding of the farmers' motivations. An equivalent survey is being carried out for 13 other local cattle breeds in the other countries participating in the European project.

34 herds have been surveyed: 20 Ferrandaise and 14 Villard de Lans herds selected amongst the herds annually listed. The objective was to have a sample of the diversity in the various farming orientations as well as in the number of reproductive females bred.

The semi-structured questionnaire focussed on structure, management of the local breed herd (nutrition, reproduction…), conservation action, relations between farmers and the future of the breed.

> *Complementary interviews*

Complementary interviews have been conducted in agricultural organisations (EDE - identification and general administration of cattle - AI companies…) and Regional Parks situated in the breeding area of each breed.

The organisations have been selected through their involvement in the conservation of the local cattle breeds.

The interview presented a description of the organisation, and its role in breed conservation.

Type of herd

In the herds surveyed, farming management is generally similar for both breeds, whether the business is in the reproduction industry or in marketing products.

The **farming system is mainly traditional** based on hay forage feeding. In winter, the animals are kept in tied-up cow sheds. Direct selling from farmers to consumers is common practice, especially in suburbs and tourist areas.

The territory

The area of origin of the Villard de Lans breed is much smaller than that of the Ferrandaise breed, which could explain the lesser evolution of the Villard de Lans population. The **urban expansion** of Grenoble, **local tourism**, as well as the **agricultural land** being mainly occupied by large farms all could have limited the evolution of the breed.

Extending the Villard de Lans breed to the local regions formerly populated by the South East Blond breeds, today extinct, could be a solution for the future of the breed.

The breed as seen by the famers

> *Choice of breed*

The main reason for farmers to breed local cattle is the desire to participate in the **conservation of the breed**, but there are also **sentimental reasons** (breed remembered from childhood on parents' or grand parents' farms).

The Ferrandaise breeders express their wish to work with the **local breed**. The Villard de Lans breeders evoke rather a **strong attraction** for the breed.

> *Positive and negative aspects of the chosen local breed*

	Villard de Lans	Ferrandaise
Positive aspects	• Resistance to disease (8) • Docility (8) • Good carcass yield (6)	• Resistance to disease (9) • Adapted to local region, climate (7) • Can be milked without calf presence (7)
Negative aspects	• Could produce more milk (4) • Heterogeneity of performances (3) • Lack of genetic references (2)	• Could produce more milk (3) • Could be less nervous (4) • Lack of genetic references (3)

(between brackets : number of times cited by farmers)

The table above contains the three points most cited by the farmers surveyed.

Hardiness seems to be an important positive aspect : resistance to disease, adaptation to the local region or the quality of the animals' legs. The **good fertility** of these breeds can also be highlighted.

Even if it is difficult for a farmer to see the negative aspects of his/her chosen breed, those with dairy herds would prefer in general (particularly for the Villard de Lans) **more milk and more homogenous productions.**

Functions of the actors for conservation

> *Institut de l'Elevage*

The work involved is the same for both breeds. The Institut de l'Elevage provides **technical** and **methodological support** through on-farm visits, help in the choice of AI bulls, herd book keeping and data management.

> *Artificial insemination organisations*

The AI centres have always agreed to be active participants by **collecting and storing semen** from bulls in their centres. They provide an important service.

> *The EDE*

In the past, the EDE in the Isère manages the Villard de Lans program. This establishment played an important part in the management of subsidies and the running of the breeder association. For the Ferrandaise breed, the EDE acts punctually and is also a service provider.

> *The breeders*

They are the **main actors for conservation on the ground**. They are committed to farming with local cattle breeds and the conservation of the animals depends upon them. However, the climate between Villard de Lans farmers is more problematic as they reside in different areas and are more scattered. This could slow the development of the breed.

> *The breeder associations*

Two breeder associations exist for the Villard de Lans breed : an 'overall' association grouping all the farmers, and an association specific to the Vercors area. **One breeder association** exists for the Ferrandaise breed, enjoying good communication between breeders.

> *The regional natural parks*

The « Parc Naturel Régional des Volcans d'Auvergne » (Puy de Dôme) provides **administrative help and support** to the association for the conservation of the Ferrandaise breed (Association pour la sauvegarde de la race Ferrandaise).

The « Parc Naturel Régional du Vercors » (Isère) also provides **administrative assistance** but on a **more local scale** to the association for the conservation of the Villard de Lans breed (Association pour la réhabilitation de la race Villard de Lans sur le Plateau du Vercors).

The perception of the farmers surveyed of the functions undertaken by the Institut de l'Elevage, the EDE and the AI companies does not vary in either breed.

Areas for further study

These breeds are severely lacking in zootechnic, genetic and economic references.
Financial incentives for AI or performance recording (milk or beef) would be a way to **get more references**, enhance communication and attract new farmers.
On a long term prospective, more work needs to be done regarding the marketing of products coming from local breeds.

Conclusion

For both breeds there is a **diversity of farms**, particularly regarding animal management and marketing of products.
The **positive aspects** for the development of these breeds are the existence of artificial insemination, good relations between farmers, a well suited and open territory, an appropriate and permanent technical support, selling opportunities from farmer to consumers etc.
Further work has been identified involving the updating of references (performances, mensurations etc.) in order to improve communication of the breeds and to find new breeders. Also efforts could be directed towards improving local marketing opportunities for end products (cheese vendors, butchers).
However, not all the positive or negative aspects of farming and the consequences of choosing these breeds have necessarily been dealt with and therefore, the analysis undertaken should be pursued.
It would be interesting to compare these observations with those made by the collaborators in the other countries participating in the EURECA project on their own local breeds.

Acknowledgement goes to all the farmers and actors for conservation for their participation in this study.

This document was written by :
Lénaïg Menuet, Institut de l'Elevage
lenaig.menuet@laposte.net

Laurent Avon, Institut de l'Elevage, Projet EURECA :
01 40 04 52 06
laurent.avon@inst-elevage.asso.fr

Maquette : Semiha Peksoy, Institut de l'Elevage, Département Génétique

Pub ie 010772 071
ISBN 978-2-84148-442-4
December 2007