The dual purpose Red and White

gembloux
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EuReCa
Towards self-sustainable European Regional Cattle breeds

Université
de Liège

Breed origins

The geographical situation of Belgium in the middle of Western Europe has always favoured a great intermingling of populations and also of their cattle.

From the 13th Century, cattle coming from Denmark, Germany and mainly the Netherlands were imported in the Provinces of Antwerp and Limburg. Colour of the coat was not already well defined, the black and white and red and white coats were fixed only since the end of the 19th Century. At the opposite, in the East Cantons (in the Province of Liège), where breeding was mainly organized with Germany, the red and white coat was established from a long time ago.

The real selection of Red and White cattle in Belgium started in the beginning of the 20th Century when the colour of the coat was definitively fixed by the first breeding associations. The complete standards of the breed were fixed in 1924.

Breed history form the Fifties to now

At the end of the Second World War, it was needed to provide both meat and milk to the population. This has encouraged dual purpose cattle breed in line with family farming. Dual purpose type was then advocated by Provincial breeding associations.

During this Post-War period, cattle were bred in racial zones and in pure breeds. There were two types of Red and White (RW) cattle, the RW from Kempen and from the East.

In 1970, provincial Herd-Books were merged into a single national Herd-Book, and racial zones were abolished. All red and white cattle were registered in the Belgian RW Herd-Book. Importation of Holstein bulls started, some MRY (Meuse-Rhine-Yssel) bulls and German RW bulls were also imported.

Since 1975, the increase in herd size and the generalization of mechanic milking has constrained dual purpose Red and White (dpRW) breeders to improve functional traits of their cows, notably the size and the udder shape. Later, in the Eighties, when the quotas were established, the dpRW breeders were also constrained to improve the genetic potential of their cows, to achieve their quota with the least possible cows. Consequently the use of Red Holstein sires started to become popular. The dairy characteristics were certainly improved, but there was a loss of musculaturity. Also, another part of the dpRW cows were crossbred with Belgian Blue Beef sires in ordre to obtain calves with better conformation.

In the Nineties, a great incertitude was already hanging over the dual purpose Red and White (dpRW). Breeders were hesitating between several solutions:

• To change the breed and buy Holstein animals (mostly with black and white cattle because of higher milk yield);
• To continue holsteinization of their herd by crossbreeding with Red Holstein (in order to keep the color and the milk protein content);
• To use dpRW sires with a certain percentage of Red Holstein blood (in order to improve milk yield but keeping a good conformation of the animals);
• To use alternatively dpRW sires and Red Holstein sires.

Moreover, the dpRW breed could hardly get positioned against the other breeds. The milk specialization was the domain of Holstein and the dual purpose niche was already occupied by French breeds and dual purpose Belgian Blue breed. A proposal to merge the management of several Belgian Red breeds (Flemish Red, White Red, and Red and White) was mentionned but it was rapidly forgotten.

Endangered breed

Finally, under all these external pressures started the extinction of the dual purpose Red and White (dpRW). Indeed, Belgian dpRW does not exist officially anymore. Nevertheless, few dpRW breeders still exist, but they use foreign bulls, notably MRY (Meuse-Rhine-Yssel), or unknown origin bulls to keep the original dual purpose type.

Under the European project called EURECA which aims at the conservation, the development and the use of regional cattle breeds, breeders of endangered European regional cattle breeds were interviewed in each country partner of this project. Eighteen dpRW breeders (and 23 dual purpose Belgian Blue (dpBB) breeders) were interviewed in Belgium. The Belgian results of this survey were presented in tables 1 and 2.

Table 1:
Characteristics overview of dual purpose Belgian Blue (dpBB) and dual purpose Red and White (dpRW) breeders

Breed	No. of interviewed farmers	No. of ha (ownership)	Average percentage of land reserved for grazing	Contribution to family income	Average age of farmers
dpBB	23	84 ha (41 ha)	61%	82%	49 years
dpPR	18	44 ha (12 ha)	>95%	98%	52 years

Geographical distribution

In 1959, a population of 120 000 dual purpose Red and White (dpRW) cows was spread in the Provinces of Limburg, Antwerp, Liège and Brabant.
In the Seventies, the breed was spread all over the country and the breed was composed of around 200 000 animals. Nevertheless, highest density of dpRW were still observed in Provinces of Antwerp and Limburg and in the East Cantons (Province of Liège).
To date, there are still few dpRW breeders in the Kempen and in the East Cantons, but few data are available from them.

Conformation

In 1959, the dual purpose Red and White (dpRW) cow from the Kempen was 1m27 high and weighed 450 to 600 kg. The coat was red and white. The head was short and thick. The hindquarter was well developed with a muscular thigh. The selection wanted to erase some common defaults like bad udder (badly conformed, hanging) and weakness of the skeleton. The cows in East Cantons were smaller and perhaps also more robust.
With the infusion of Red Holstien genes in the Eighties, the original type of the dpRW has changed. Cows became taller with lighter conformation. However the holsteinization was not uniform. Consequently, the standards of the whole population of dpRW in Belgium were hard to define.

Table 2:
Herd characteristics overview of interviewed farmers

	Characteristics		
Breed composition of the herd	dpRW	dpRW + BBB	dpRW and other dual purpose breeds
Percentage of visited farms	61%	11%	28%
Average herd size (dpRW percentage of the herd)	47 cows (100%)	105 cows (45%)	40 cows (85%)
Contribution of dpRW to income	100%	42%	64%

Dairy skills

From 1950 to 1960, the average milk yields of the dual purpose Red and White (dpRW) increased. The daily production of milk grew from 13.4 to 14.2 kg per day. In the Sixties, the milk yield had slightly decreased to 13.5 kg per day. This was perhaps due to fact that stakeholders were more inclinded to the meat type. Even if the meat conformation was still of importance, the will to have more milk appeared in the Seventies and, notably by crossing with Red Holstein, milk yield increased. At the end of the Eighties, yield reached 17.1 kg of milk per day (however it was 3 kg less than the Holstein cows). The fat rate has increased to 4% but was also lower than in Holstein breed (4.14%). At the opposite, the rate of protein was higher in dpRW (3.35%).

At the end of the Nineties, the Belgian dpRW had no public representation anymore. Furthermore, the dpRW Herd-Book was offically absorbed by the Red-Holstein Herd-Book. Since then, few data specific to dpRW animals are available.

Farmer's opinion on the breed

Some breeders still keep the dual purpose Red and White (dpRW). This breed has good features: rusticity and ease to manage in general. Therewith, the tradition of the region is also a major reason. This breed is the cattle of yesteryear, well rooted in this area. The dpRW is less demanding in feeding. So, by grazing of the dpRW, farmers can still valuable lands unproductive for fodder. Furthermore, the dpRW is perfectly adapted to the lands and the climatic conditions not suitable for the Holstein breed. Besides the lower quality of the udder (which breeders try to improve through the selection), the dpRW has good health and longevity. Moreover, unlike the specialized breeds, veterinary fees are lower (particularly due to the ease of calving and the absence of caesarean).
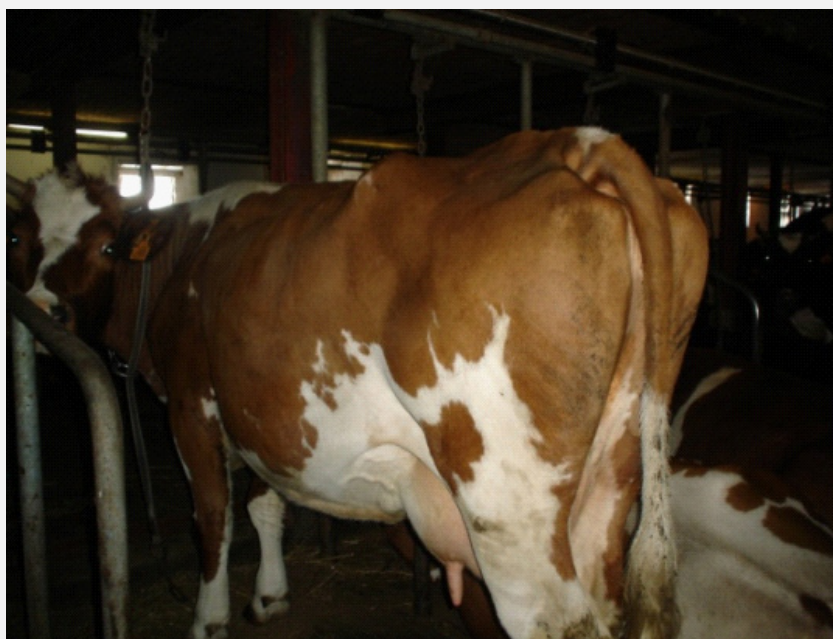
Conclusions and recommendations

The dual purpose Red and White (dpRW) is an endangered breed in Belgium. Few breeders are still in activity, especially in the Kempen and in the East Cantons (Province of Liège). In general, dual purpose breeds have a certain plasticity in the market and also represent a large reserve of genetics.

The European project EURECA is focused on endangered European regional cattle, and especially on the dpRW breed. The survey of farmers and stakeholders has helped to highlight the qualities of the dpRW breed but also the lack of organization of the breed.

Breeding associations believe that dpRW can not be managed properly in the absence of Herd-Book. The project EURECA and a first study conducted at the Gembloux Agricultural University had established a preliminary assessment of this endangered cattle.

It is undeniable that dpRW cattle is still present in Belgium, but unfortunately its survival is not assured. It would be advisable that the Public Authorities, the universities, the breeding associations and the breeders decide together to conserve the dpRW breed through a framework (creation of a racial commission, establishment of a Herd-Book…), financial supports (research projects, agri-environmental measures) and its valorization.

Colophon

This breed assessment is compiled by Elodie Bay, Frédéric Colinet, Christian Hick and Nicolas Gengler. Christian Hick is acknowledged for the photos. Farmers, stakeholders and the Walloon Breeding Association (AWE asbl) are acknowledged for providing the data. More information about the EURECA-project is available on the website: www.regionalcattlebreeds.eu.

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