

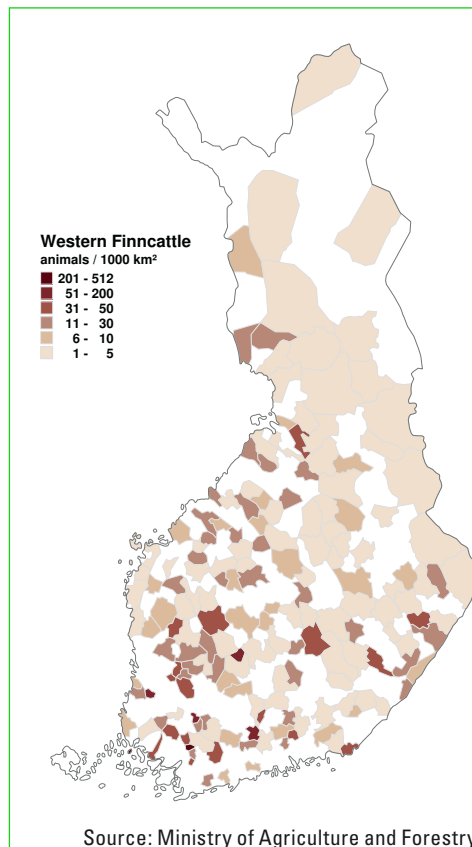
Western Finncattle

- traditional, hardy, healthy, well fitting to Finnish conditions
- high quality milk requires product development
- continued efficient selection on milk yield

The current history writing says that agriculture emerged in Finland more than 4000 years ago and use of domesticated animals was established 2500 - 3700 years ago. The Finnish cattle breeds belong to the distinct northern group of Fennoscandian cattle breeds. Over time the breeds have had genetic inputs from neighbouring cattle populations. Western Finncattle (WFC) has long been the most common breed in the favourable agricultural region of Southern and Western Finland.

Western Finncattle animals are beige-brown, with some occasional white markings or spots. They are smaller than Ayrshire and Holstein cattle. Practically all the present-day animals are polled. Originally the Western type animals were mostly horned, but there was selection for polledness. By 1930, only 2 % of the bulls and 30% of the cows were with horns.

The WFC farmers founded an own breed society in 1906. By the year 1927 almost 4000 herds had registered some 22 000 individuals of which 12 300 were cows and 3300 bulls. Around then 60 % of recorded cows in Finland were WFC. The Finncattle was divided into three types – Eastern, Western and Northern Finncattle. These breed types were merged in 1947. Very quickly the WFC features started to dominate the Finncattle appearance. Due to the rapid growth of Ayrshire population and the popularity of Finncattle x Holstein crosses, the Finncattle population declined, especially in the period 1950 - 70. A new attention was paid to Finncattle breeds in the 1980's. For contingency, WFC animals were collected even to a reservation herd in a



Distribution of Western Finncattle by municipality.



Earlier and until the 1950's, the breed was most common in the western part of the country. Now it is spread out to all parts of Finland.

government owned prison farm. When Finland joined the European Union in 1994, the subsidy programme was set to support the farms keeping native Finnish breeds. The eligibility for subsidies requires joining the animal register maintained by the breeding

organisation FABA Breeding. The subsidy payments have been effective and the population decline has slowed down. Now there are some 3000 LSK individuals in the register, with two thirds belonging to the milk recording scheme.



Number of cows and herds (the proportion of those in milk recording scheme is in brackets), average yields in Finland in 1998 and 2009.

| | 1998 | | | | | 2008 | | | | |
|-----------------|---------------|--------------|---------|-------|-----------|---------------|-------------|---------|-------|-----------|
| | cows | herds | milk kg | fat % | protein % | cows | herds | milk kg | fat % | protein % |
| WFC *) | 3918 (67 %) | 1713 (62 %) | 5789 | 4.51 | 3.39 | 2954 (65 %) | 1149 (63%) | 6776 | 4.39 | 3.50 |
| ayrshire | 233061 (89 %) | 22848 (72 %) | 7202 | 4.42 | 3.33 | 181364 (84 %) | 11394 (73%) | 8561 | 4.33 | 3.48 |
| holstein | 76516 (82 %) | 15117 (71 %) | 7496 | 4.09 | 3.25 | 91132 (80 %) | 9187 (72%) | 9248 | 3.99 | 3.40 |

*) The figures for 1998 include all the Finncattle breeds.

Source: Faba Breeding

Breeding goal and development of genetic variation

Finncattle breeding aims at improving the milk production traits to meet the expectations of milk processors and consumers and to strengthen the production profitability. The focus in selection is on protein yield, dry matter content, fertility, health, conformation and longevity. At the same time the genetic diversity within the breed and the special features of Finncattle sub-breeds are maintained.

Efficient dairy cattle breeding is based on getting information for bulls from a large number of progeny produced via artificial insemination. In the undersized WFC population, the progeny groups are small and therefore selection is now more on individual performance. Instead of proven bulls, there is more emphasis on ranking young bulls and cows. Some 70 % of inseminations are carried out with semen of unproven bulls.

The use of young bulls with diverse ancestral background guarantees that the genetic basis in selection is wide enough. If there were only few family lineages in a population, the genetic variation within population would start fading. Therefore it is important to use systematically lots of bull sires which are unrelated and prevent some popular bulls from becoming too heavily used.

The WFC population has declined over the recent few decades. The number of registered dams has varied also because of varying popularity for herd book registration. The number went down until the 1990's and started gaining some ground when the cows only with herd book number were entitled to receive subsidy. The more recent decline in cow number is, however, real. The efforts to increase the number of sires have been successful and the

AI organisation has an ample amount of bulls in the cryo-storage.

The state of genetic variation in a population is best described by the effective population size. The higher it will be, the more parents there have been and the more evenly they have been used. The effective population size is determined often by the lower numbered male parents. If the effective size is at least in the range 50 - 100, the changes in genetic variation are sound and under control. The effective population size of the Western Finncattle has recently been 90 - 100. It is sufficiently high for efficient selection and at the same time the risk for inbreeding is very low.



Interviews

An important goal in the EURECA project is to find out why some local cattle breeds are still popular while the number of cows in other breeds has abruptly collapsed. Why some cattle keepers have chosen Western Finncattle while the others are happier with another breed – e.g. the Ayrshire? What are the strengths and weaknesses of WFC?

In the EURECA project, there were 31 Western Finncattle, 30 Eastern Finncattle and 19 Ayrshire farmers interviewed. The interviewees were chosen to cover different types of farms. The WFC keepers had on average 30 cows (of which 15 were WFC) on 59 ha of arable land. Those farmers who had Eastern Finncattle and Ayrshire cattle, had on average 18 (4 Eastern Finncattle) and 52 (32 Ayrshire) cows on 63 and 69 ha, respec-

tively. Typically to Finnish dairy farms, the herds were mixed with breeds: the Eastern Finncattle was in minority at a farm, Western Finncattle made half of the herd and the Ayrshires were in majority. For all the breeds, the rented field makes usually one third of the total arable land at a farm. In 2007, the farms had on average 34.4 ha of arable land and the average herd size in dairy farms was 21.5 cows.

Majority (84%) of the interviewed WFC keepers received almost all (over ¾) the income from the farm. This was the same among the Ayrshire and Eastern Finncattle farmers.

The interviews were performed at the beginning of 2008, the interviewed WFC keepers were on average 46 years old, with the oldest one being 65 and the youngest one 26. Most of the WFC ones had a college degree, with one tenth having a university degree. The interviewed Ayrshire and Eastern Finncattle keepers had the same average age with the youngest ones being, however, 30 years old. Their education was also similar. One of the Eastern Finncattle keeper had a university degree, while every fifth of the Ayrshire farmers had a university degree.

Opinions on WFC

The Eastern and Western Finncattle and Ayrshire are all dual purpose breeds producing both milk and meat. The Eastern and Western Finncattle have better longevity and health and fertility than the main stream breeds. The keepers thought that Eastern and Western Finncattle are less demanding than the high producing Ayrshire and Holstein cows.

In general (43%), WFC cows were favoured in the herd due to the farm tradition. Almost third (28%) regarded the breed features as the second most important reason, such as high dry-matter content and good functional traits



(e.g. polledness). According to them, smaller sized cows fitted better to existing buildings. A third reason was most often (33%) pleasure attached to keeping WFC cows. Cows are good tempered, amusing and also easily manageable by children, 'they have more character and vigour, one does not need a herding dog; Finncattle is luring others to the milking robot'. The Ayrshire farmers had the similar aforementioned views about the reasons why the Western Finncattle keepers favoured the WFC breed.

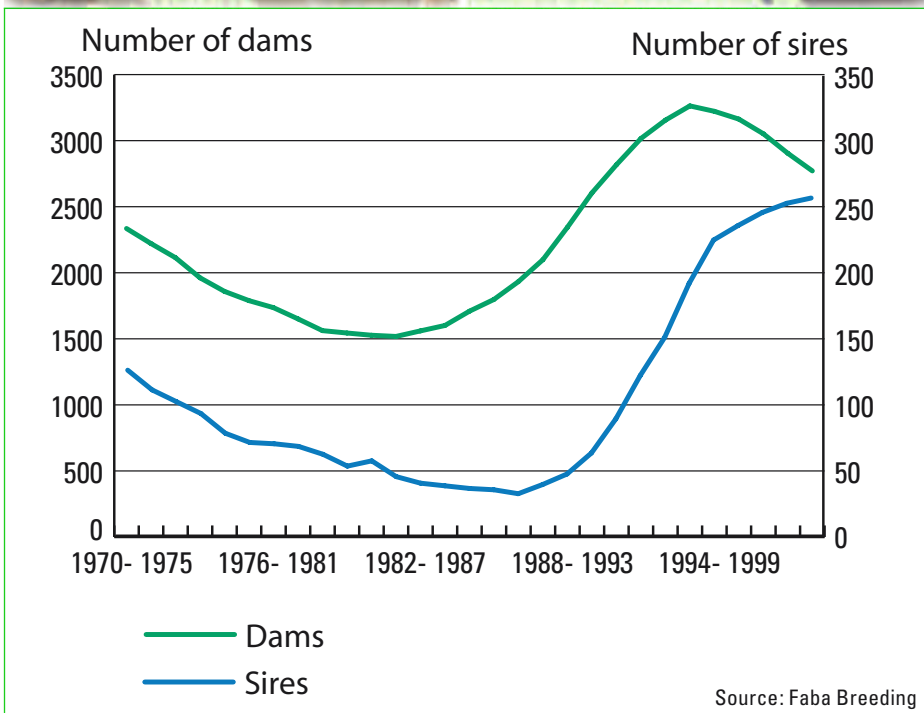
When the Western Finncattle were compared to the Ayrshires or Holsteins, the interviewed WFC keepers stated that the milk yield is low while in fertility, health, longevity and temperament they are superior to the latter ones. One third (32%) of the WFC keepers regarded their cows as more profitable than the Ayrshires and Holsteins and some 40% thought that WFC cows are less demanding with respect to production conditions.

Views on the breed's future

The future prospects were positive and WFC farmers would like to continue the dairy operation at a farm. They are strongly feeling that in WFC the improvement of milk yield and quality should be continued and utilised.

The farmers raising WFC cows thought that during the last ten years the attitude towards their breed has become more favourable. Today the breeding organisation technicians are listening to WFC keepers' wishes, a veterinarian is interested in the special characteristics of the breed, AI technicians are very cooperative and EU inspectors like the landrace animals. The main stream breed farmers have also forgotten their off-putting views on the breed. The tourists are stopping to admire pasturing Finncattle animals and media reporters are thinking highly about landrace breeds. 'Summer guests in the village are photographing our animals.' The slaughter house workers belittle the calves' growth.

The WFC farmers are expecting that breeding and AI organisations keep paying attention to improving the yield and maintain a good choice of bulls and include the special WFC features in the plans for on-farm selection. The consumers should be informed about the breed tradition and the special characteristics



The number of WFC dams and sires over the period 1970 - 2003 (rolling means with six-year window). Source: Faba Breeding

of products from the high quality milk and meat. The local and national authorities are expected to look after the subsidy schemes and to alleviate paper work. The research should take part in projects improving the profitability, such as promoting the good features of cows and developing new milk products.

The Ayrshire farmers regarded the WFC milk yield as too low and thought that they would jeopardise the farm profitability if they switched to WFC breed. According to them the selection in landrace breeds has been neglected and the number of family lines in these breeds has declined. Some regarded the Finncattle as unsuitable for free stall or robot systems. Out of curiosity, many farmers were interested in purchasing one or two Finncattle. Keeping Finncattle is regarded as a respecting gesture to the work of previous

generations.

The interview was extended to cover also those operating in breeding organisations, food processing industry, research and consumer organisations and cultural institutions. It was performed via a web tool and altogether 60 replies were obtained. Out of the answered ones, 70 % had been in touch with landrace breeds. Most of the repliers could not tell apart Eastern and Western Finncattle. They were able to attach special features to the breeds, such as different kind of temperament and clear identity, on the other hand the landrace cows were considered as less productive and poorly profitable. The landrace keepers were thought to be a heterogenous group of farmers who are very attached to their own cattle breed and are carrying out versatile (including organic) production and are following the tradition at a farm.





EURECA

The 3-year EURECA project (Towards self-sustainability of European Regional Cattle breeds) started in March 2007. The project is funded from the EU AGRI GEN RES programme and is coordinated by Sipke-Joost Hiemstra of the Netherlands. It has partners from ten European countries. The purpose of the project is to learn from each other in Europe to develop better strategies to preserve the regional cattle breeds. In total, 15 cattle breeds from ten countries are being analysed in detail. For Finland, we have chosen the Eastern and Western Finncattle. We also interviewed the Ayrshire cattle farmers, experts in breeding organisations, food industry, research, consumer and cultural organisations.



SWOT analysis

The collected information was summarised also as a SWOT analysis to point out the strengths, weaknesses, opportunities and threats.

Strengths vs weaknesses

The cattle owners regarded their own Western Finncattle as suitable for Finnish production conditions and in long-term as a sound production animal type in Finland. WFC cows are hardier and healthier than the main stream breed cows – ‘milk income is not handed over to vets’. The Western Finncattle cows have higher dry-matter content in milk. The owners also thought that their cows are better in utilising the farm produced feed. Lighter conformation and polledness are beneficial in free-stall conditions.

The weakness the Western Finncattle farmers mention first was low yield compared to that of the Ayrshires and Holsteins. They were worried about the narrowing base in the breeding programme leading to shrinking genetic variation and diminishing supply of bull varieties and increased backwardness of the breed. Many felt that the profitability is heavily dependent of the subsidy paid to indigenous breeds.

Opportunities vs threats

Western Finncattle have special features: good cheese making properties, centuries old heritage and Finnish origin. Milk would be suitable for preparing special products and for attaching a regional image to them. Landrace animals may go hand in hand with organic production, traditional landscape, farm tourism or keeping companion animals. Interviewed WFC keepers did not have own enterprises, even starting one was not appealing on top of the labour demanding animal husbandry.

One of threats is the declining number of producers and cows. In consequence, the potential for breed improvement will be impaired. The idea about breeding may become obscured - ‘WFC keeping should be considered as something more than conservation, we’d like to improve the production characteristics’. On the other hand, old good WFC lineages are vanishing if selection is too tight. The preconditions for subsidies should be more flexible, ‘five year subsidy plan should also take into account the realities of life’. The declining Finnish milk production is seen to cast uncertainties also on the future of Finncattle.

Conclusions and recommendations

Raising Western Finncattle stems mainly from the farm tradition. Heritage over generations has also image bearing potential, ‘logos and short story on milk container or children’s book on landrace cattle would give new flavours to everyday life’. The middle-sized cows, typical to the Western Finncattle, fit well into old cow sheds. Milk with high protein content and quality are good prerequisites for developing WFC-branded food products. Improvement of production profitability and development of WFC features would benefit from continued selection programme and from discovery of new superior bulls. The current population has a healthy amount of genetic variation with low risk of inbreeding. In the coming years, the effective population size should be carefully monitored as the cow number keeps declining. The Western Finncattle breed represents a productive dairy breed and has excellent possibilities to keep its well deserved place in the Finnish animal production. For that we need high publicity, active marketing and well focussed partnership among the top producers. **n**

