

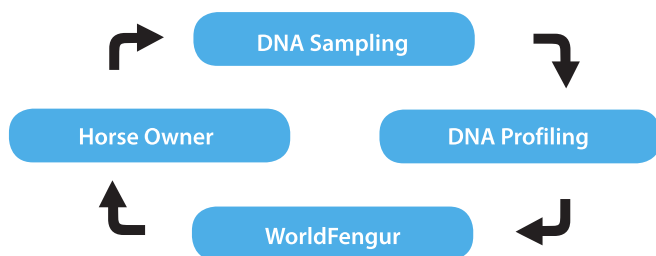
# DNA Profiling of the Icelandic Horse

## Identification power

Parental testing with the FengurPrint™ genetic markers is highly accurate. A wrong candidate father can be excluded in over 99,99% of the cases if the DNA identity of the mother is known and with over 99,7% certainty if the DNA identity of the mother is unknown. The DNA test is easily done by using a swab sample from the nose or by collecting hair (fig.1).

## Landmark project

The Icelandic Farmers' Association and Matis have collaborated in DNA testing of over 15.000 horses in Iceland with DNA registration in the WorldFengur database. Matis is offering DNA profiling of Icelandic horses in Europe in order to establish DNA identity of the horses and for parental testing. The overall process for DNA profiling and registration in the WorldFengur database is shown by the following scheme:



Horse owners may obtain DNA profiling with a swab or hair sample. Collected samples are sent to Matis for analysis. Matis then sends the profile results to the WorldFengur database. The owner can access the results through the database where the DNA profile is compared with the profiles of the claimed parents.



- DNA identification based on World Fengur genetic markers
- Easy sampling and registration in the World-Fengur database
- ISAG approved DNA markers



Fig.1

## Biological background

Today DNA FengurPrint™ represents a set of 17 genetic markers. These 17 markers have been approved by ISAG (International Society for Animal Genetics). Each marker has two copies, one from each parent and the DNA fingerprint of offsprings match the DNA fingerprint of their parents. Each copy of any given marker (an allele) is represented by a letter and a colour. The DNA fingerprint profile of any horse can be shown by a series of letters, two for each of the 17 markers, generating an individual DNA FengurPrint™ barcode (see figure below).

