

Using bio-informatics to predict genetic value

Biobank: DNA repository of all breeding animals

Molecular breeding is the use of DNA information to uncover the genetic value of animals. This is an area that is developing rapidly. We store blood or tissue samples of all breeding stock centrally in the RTC laboratory. Samples are bar-coded and we use robots to exclude human error when processing thousands of samples for genotyping. The persistent and centralized storage of samples that span multiple farms and generations provides a structured sample collection across time and space that can be used for meaningful analysis of the molecular data.

Strong in-house research as well as close connections to academia worldwide

In addition to our own projects and research within the company, we also execute many RTC projects in close cooperation with universities and other academic institutions worldwide. The involvement of external experts ensures that our in-house knowledge and expertise are fully up to date. Our network of contacts with academics around the globe ensures that new ideas and technologies quickly find their way into our breeding programs.

RTC also hosts trainees: promising graduates who train for a maximum of two years at various Hendrix Genetics locations around the world to become the future international experts in our company.



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Capitalizing on the synergies of a multi-species breeding company

The Hendrix Genetics Research & Technology Centre (RTC) operates in Research and Development and in Information Technology (IT) for layers (ISA), pigs (Hypor) and turkeys (Hybrid Turkeys). We initiate and run projects in the development of new technologies in the fields of quantitative genetics, breeding IT, molecular genetics and reproduction technology. The RTC supports implementation within the Hendrix Genetics divisions, cooperates with partners and alliances, and provides a comprehensive science network and intellectual property management. The RTC supports geneticists with automatic data entry, breeding programs in extensive on-line databases and centralized storage of DNA samples in the BioBank, to ensure reliable genetic selections and meaningful analysis.

Genetics: a new world of breeding

Continuous genetic improvement is the objective of all breeding programs for livestock species and genetics is the science that is the basis for selection programs. Input for the selection programs consists of predictions of the genetic value that the breeding candidates pass on to their offspring. RTC scientists work on projects based on mathematical genetics to further improve the way by which multiple measurements on millions of breeding candidates are scientifically turned into these predictions.

We now test breeder candidates for over 60,000 SNP markers and use bio-informatics to translate massive amounts of laboratory results of DNA testing into predictions of genetic value. Our scientists are guiding the Hendrix Genetics geneticists into a new world of breeding.



Founding the future
with research and technology

Ensuring the best
combination of science and
animal husbandry

Breeding databases: data for millions of animals

We store individual pedigree and performance data of millions of animals in the Hendrix Genetics breeding programs in large databases. These are available on-line at all nucleus farm and office locations of the breeding divisions throughout the world. The geneticists use among other tools, information from the databases to carry out genetic selections of breeding stock. RTC software engineers ensure - through almost continuous re-design and upgrading- that the geneticists of all divisions can enjoy the newest features and functionalities in database technology.

Data entry: handhelds and interfaces

We load databases with data from breeders and breeder candidates. All data is entered on-line in the central database after automated meticulous checking for errors. All data entry is carried out automatically: either through handheld computers or through interfacing with measuring equipment. This ranges from pig or poultry feeding stations and weighing scales to various apparatus that measure product quality such as shell thickness of hen's eggs or muscle depth of pigs.

Besides that, interfacing with sow management systems is carried out worldwide to connect clients that are using the BioHypor system. Our engineers ensure that both hardware and software for data entry are up to the highest standards. Continuously, we add new functionalities as breeding programs evolve.

