

## ABOUT WEATHERBYS SCIENTIFIC

**Weatherbys Scientific** commenced parentage testing thoroughbred horses using blood typing technology in **1985**, and established operations at a facility on the same site as the Irish Equine Centre in Johnstown, County Kildare, Ireland.



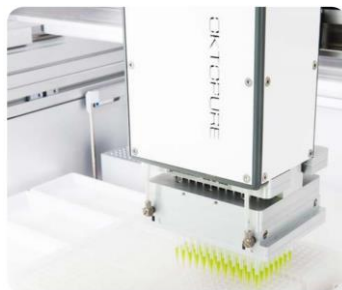
In 2000, the technology for parentage verification changed to **Microsatellite DNA** markers. We started offering parentage testing services for other species bovine, ovine, canine, companion and exotics. As the level of scientific expertise developed in the business, so too did the suite of DNA based services offered, and in 2010 our laboratory commenced genotyping cattle using **SNP technology**. The team quickly developed a reputation for service and versatility and genotyped cattle using the **Illumina** 7K low density SNP chip in 2012.



Our reputation for service has been strengthening over time. We were co-collaborators in the **development of a customised bovine SNP chip (IDB)** for **Dairy and Beef** breeds which is used in the largest global cattle genotyping project, where we genotype **25,000 cattle/week (the largest program of its type in the world)**.

We have achieved significant technical milestones – we are an institutional member of the scientific body of the **International Society of Animal Genetics (ISAG)** and we are also accredited by the **International Committee for Animal Recording (ICAR)**. We hold **ISO17025** accreditation in bovine SNP genotype and our laboratory is also approved with Propel certification by Illumina, and we have been selected as an Illumina Beta testing laboratory for new technologies

## TECHNOLOGY PLATFORMS



As one of Europe's premier facilities, we can offer services to customers anywhere in the world for Equine, Bovine and other animal species. Utilising our array of **LGC, Illumina and ThermoFisher Scientific** technology.

## SERVICES OFFERED

- DNA Extraction
- SNP Genotyping
- Microsatellite Genotyping
- Parentage Verification
- Traceability
- Species Identification
- Breed Assignment/Composition
- Animal Forensic Services
- Coat colour e.g. Cream, Red factor
- Genetic Disease/Traits Screening
- Equine Haemolytic Screening
- Consultation

## CAPACITY

- We have delivered over 1million samples over the past 3 years
- We have a throughput of greater than 25,000 samples/week

## BENEFITS OF GENETIC IMPROVEMENT

- Breed better animals
- Increase profit margins
- Select animals with best genes of economic importance
- Continuous improvement with every generation
- Improves food security

## RESULTS\* USING GENOMICS

- More profitable (+\$100/cow)
- Increased Replacement Indexes
- More carbon efficient
- Reduces variability in production
- Genetic gain advanced by 3 years per generation

*\* as cited on [www.icbf.com](http://www.icbf.com)*

## BOVINE SERVICES

### GENOMIC TESTING

Using the **Illumina iScan** platform the laboratory provides a range of genotyping services from custom low density arrays to the **IDB V3**, (54K SNP chip) and 770K (HD) SNP chips used to produce **genomic breeding values** and in Genome wide association studies



### PARENTAGE VERIFICATION

The Laboratory uses a panel of **18 internationally recognised** microsatellite DNA markers which includes the **ISAG recommended** markers for routine parentage verification. This panel can be supplemented with a secondary panel of 10 markers to assist with problematic cases

### SNP PARENTAGE VERIFICATION

SNP based parentage verification is carried out with the **recommended ISAG SNP markers**.

### PEDIGREE SEARCHING

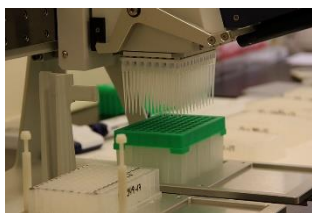
Archived microsatellite DNA profiles held on the database provide an **excellent resource for pedigree searching** and solving incorrect parentage

### BREED ASSIGNMENT

Established **reference populations** for Angus, Hereford, Holstein, Friesian, Simmental, Limousin and Charolais cattle

### FORENSIC TESTING

The Laboratory also assists with the investigation of animal biological material as evidence in **legal matters**.



## BOVINE SINGLE GENE TESTING\*

The laboratory offers a **wide range of single gene tests** including but **not limited to:**

- Beta casein (A2)
- Fawn Calf (CA)
- BLAD test
- Freemartin testing
- Brachyspina Syndrome
- Hypotrichosis,
- Complex vertebral malformation (CVM)
- Idiopathic Epilepsy
- Congenital muscular dystonia I
- Congenital muscular dystonia II
- Kappa Caseins
- Myostatin
- Crooked Tail Syndrome
- Neuropathic Hydrocephalus (NH)
- Curly Calf (AM)
- Polled
- Deficiency of uridine monophosphate synthase
- Protoporphyrin
- Developmental Duplication
- Red Factor
- Dilutor gene
- Robertsonia Translocation
- DUMPS
- Tibia Hemimelia (TH)

*\*Royalties may apply*

## EQUINE SERVICES - Services to thoroughbred and non-thoroughbred horses

Our Laboratory in Ireland has been carrying out investigative testing on equines for **over thirty years**, and is today a **leading authority in this field**. There are a number of different test panels available.



### PARENTAGE VERIFICATION

For both owners and breeders of Thoroughbred and Non-Thoroughbred horses, correct parentage information is vital for both breeding planning and ensuring the integrity of the animal identity.

The Laboratory uses a panel of **17 internationally recognised** microsatellite **DNA markers for routine parentage verification** including the **ISAG recommended markers** which can be supplemented by a secondary panel of 14 markers to assist with **problematic cases**.

### PEDIGREE SEARCHING

Archived microsatellite DNA profiles held on the database provide an **excellent resource** for pedigree searching, investigations and **resolution of incorrect parentage records**

### JAUNDICE FOAL SYNDROME SCREENING

**Prevention and diagnosis** of jaundice foal syndrome by checking of mare's blood and colostrum for antibodies Risk Categorisation - All mares can be **categorised based on specific blood groups** into High, Moderate or Low risk of producing a foal affected by Neonatal Isoerythrolysis (N.I. or jaundice foal syndrome). There is no such category as a "no risk" category.

Antibody identification - Mares who have been categorised, or who have a history of NI, can be screened prenatally for the presence of antibodies in their blood which are associated with NI. Postnatally, mares blood and colostrum can be screened and cross matched with the foal's red blood cells to see if the antibodies that are present will affect the foal.

### COAT COLOUR SCREENING

- Blue eyed cream (B.E.C) screening for Connemara ponies
- Tobiano testing for coloured horses (Homozygosity Test)
- Base coat colour testing i.e. Red factor and Agouti
- Lethal white Overo testing
- Other coat colours available on request

### KARYOTYPING

Used to detect chromosomal abnormalities, and is recommended for animals that present with reproductive problems

### DISEASE TRAIT SCREENING

- **Hoof Wall** Separation Disease (HWSD) in Connemara ponies

### SPECIES IDENTIFICATION

Mitochondrial analysis of species specific haplotypes can be determined from biological material.

## FOOD TESTING - SPECIES COMPOSITION ANALYSIS

Providing **authentication of food sources** has become a requirement in certain retail markets. Our laboratory can perform on request composition screening for the presence of Equine (Horses), Porcine (Pigs), Bovine (Cattle), Ovine (Sheep) and Galline (Chicken) in food samples.

### OTHER ANIMAL SPECIES - SERVICES OFFERED BY THE LAB TO OTHER SPECIES

The laboratory also provides testing services for other species, as well as our mainstay work with equines and bovines

#### DOG & CAT

- Parentage verification
- Pedigree searching
- Forensic testing

#### SHEEP

- High density SNP chip
- Ovine SNP 50K
- Low density SNP chip
- Parentage verification
- Pedigree searching
- Forensic testing

#### DONKEY & ZEBRA

- Parentage verification

## SOME OF OUR CUSTOMERS



## ACCREDITATION



## CONTACT US

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