

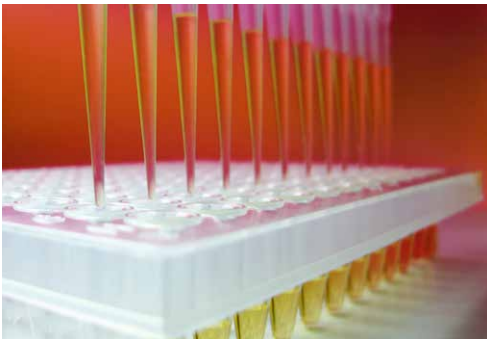
GENETIC SUPPORT FOR AQUACULTURE



ABOUT XELECT

Xelect provides advanced technologies and services to small, medium and large businesses across the entire aquaculture supply chain including breeding companies, integrated producers, feed manufacturers and processors. Xelect started as a spin-out company from the University of St Andrews, formed to commercialise many decades of expertise and research in fish physiology and genetics to build a world-class genetics service company for the aquaculture industry. The company occupies purpose built laboratories with state-of-the-art equipment in heart of the historic university town of St Andrews, Scotland.

- GENOMIC SELECTION
- MARKER ASSISTED SELECTION
- TRIPLOID TESTING
- GENE EXPRESSION
- FLESH QUALITY CONSULTANCY



BREEDING SUPPORT

The highly qualified team at Xelect provide specialist genetics expertise to support selective breeding programs for fish, shrimp and shellfish all at affordable prices. Xelect offers a complete range of services ranging from partial support to complete consultancy and management packages. Right at the heart of our service is an economic analysis of the cost of achieving the desired level of genetic gain designed to drive forward production efficiency and profitability in your business. Our goal is to provide every customer with a dependable and high quality service with an added personal touch.

BASIC SERVICES DNA extraction and normalisation with liquid handling robotics; medium throughput SNP genotyping, design of SNP arrays for paternity analysis for emerging species; genome resequencing for species with a reference genome.

MULTI-TRAIT FAMILY SELECTION Paternity analysis using SNP arrays and microsatellites; Management of trait measurement including protocols, standards, ontologies and databases; BLUP analyses and Estimated Breeding Values.

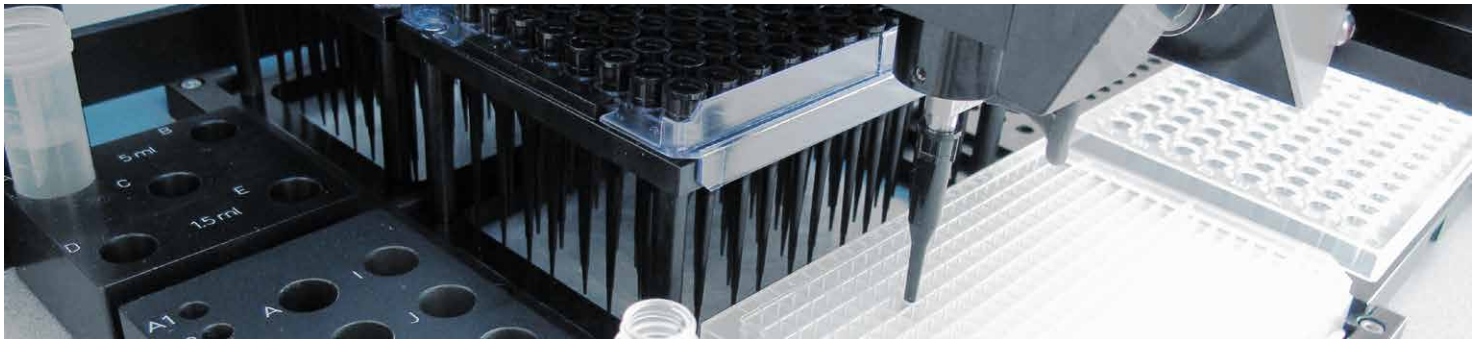
WITHIN FAMILY GENOMIC SELECTION Cost effective solutions available for species with a sequenced genome including Atlantic salmon, rainbow trout, tilapia, Pacific oyster and white legged shrimp.

MARKER-ASSISTED SELECTION (MAS)

Xelect has developed proprietary technology for marker-assisted selection focusing on meat yield and muscle cellularity – a key factor determining growth and product quality in fish. Our genetic markers have been licensed to Genomar AIS (a leading tilapia breeder) and to SalmoBreed AIS (part of Benchmark Holding's Breeding and Genetics Division). Other markers are currently undergoing extensive validation trials with Landcatch Natural Selection and Marine Harvest. "Functional" genetic markers are the gold standard in MAS and can be used in combination with genomic selection to bring substantial improvements in yield and flesh quality.



Finfish
Shellfish
Shrimps



OTHER SERVICES

DIET AND VACCINE DEVELOPMENT

Xelect has deep experience with gene expression analysis using quantitative real time PCR. The service includes primer design and validation by sequencing to distinguish between gene paralogues with high sequence identity and full statistical support. Typical applications include the measurement of marker genes for anti-nutritional properties, inflammatory responses and growth in multiple tissues in support of conventional dietary trials.

TRIPLOIDY TESTING

Xelect is the market leader in ploidy determination for fish and shellfish providing an independent certification service for hatcheries. Ploidy is determined on live or fixed eggs or fin clips using flow cytometry. Orders and certification are usually completed in 24-48h. Regular customers include AquaSearch, Aquagen, Dabie and University of Stirling.

CONSULTANCY ON FLESH QUALITY

Xelect offers a comprehensive consultancy package to reduce downgrading losses during secondary processing due to soft flesh and processing in fish. This includes farm audits, implementation and training for flesh quality monitoring (texture analysis, gaping, colour, yield determination, database set-up) and predictive modelling. Customers include Marine Harvest, Scottish Seafarms, Dawnfresh and Pacific Seafood.



**Highly skilled staff and
the latest laboratory
equipment**



RAPID



ACCURATE



**COST
EFFECTIVE**



BESPOKE



**GET IN TOUCH
TO DISCUSS YOUR
REQUIREMENTS**

**FOR FURTHER INFORMATION AND
SALES QUOTATIONS CONTACT**

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