



FishVet Group



A Benchmark
Company

Rapid Diagnostic Tools in Aquaculture

AQUAFARM

Pordenone, 15-16th February 2018





Fish Vet Group

Benchmark Holdings, www.benchmarkplc.com

Local focus, global expertise

- ▀ > 85 veterinarians and fish health professionals across 8 countries
- ▀ Many years experience in global aquaculture & diagnostic histopathology
- ▀ Unique ability to identify and consult on aquaculture disease worldwide





BENCHMARK HOLDINGS

- LOCAL PRESENCE, GLOBAL REACH -

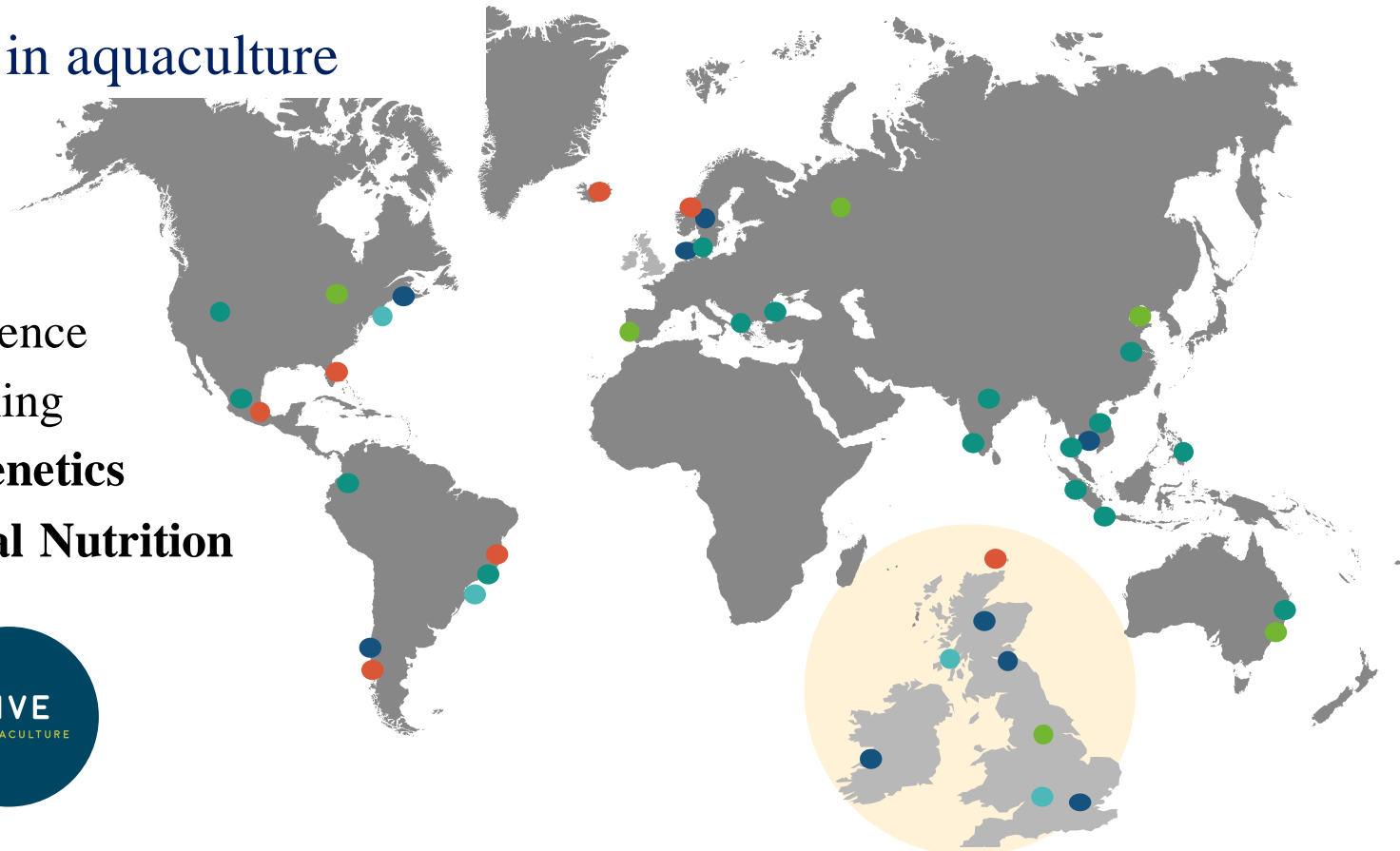
24 countries and customers in over 70 countries

85% business currently in aquaculture

- **Animal Health**
- **Sustainability Science**
- **Technical Publishing**
- **Breeding and Genetics**
- **Advanced Animal Nutrition**



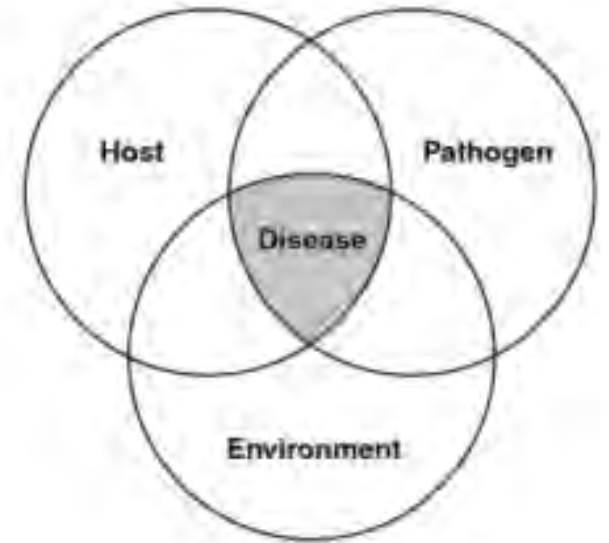
Benchmark
Animal Health





BALANCED HEALTH APPROACH

BENCHMARK'S APPROACH



RESILIENCE



SUSCEPTIBILITY



Disease is the largest hurdle for the sustainability and growth of the aquaculture industry

- ▀ Poor performance
- ▀ Animal welfare
- ▀ Mortalities
- ▀ Product downgrading
- ▀ Cost of treatments
- ▀ Environmental impact
- ▀ Public perception





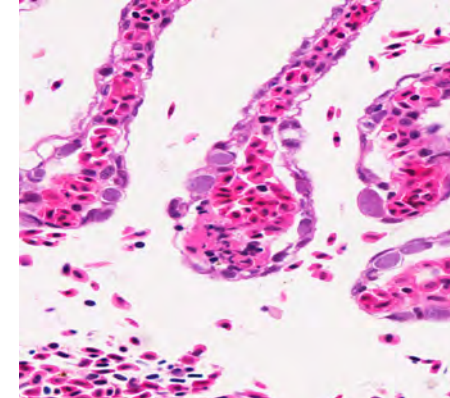
When do we use diagnostic tools?

- ▀ Surveillance programme
- ▀ Health monitoring
- ▀ Disease investigation



What do we expect from a diagnostic tool?

- ▀ Reliable
- ▀ Fast → early diagnosis is key
- ▀ Contribution to decision making





Approach to health assessment & disease diagnosis

On site:

- ▀ Farm and environmental data
- ▀ Clinical examination
- ▀ Fresh smears
- ▀ Quick tests: e.g. agglutination

At the lab:

- ▀ Bacteriology, virology
- ▀ Histology
- ▀ PCR
- ▀ Immunological tests
- ▀ Clinical chemistry, etc.



Need for more farm-based, rapid and improved tools

- ▀ Digital histopathology
- ▀ Mobile cPCR
- ▀ Lateral flow cassettes

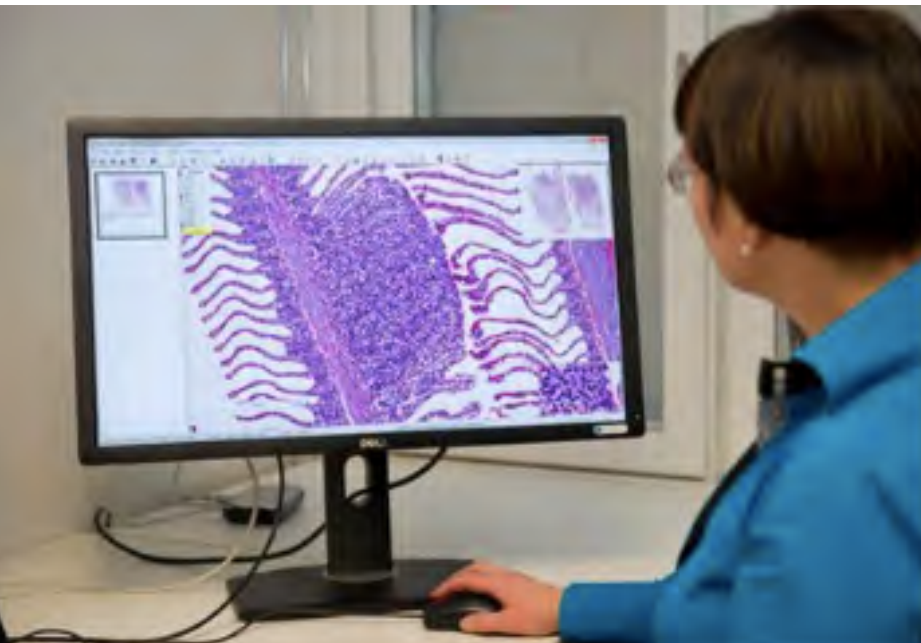
Histopathology

- Gold standard for disease investigation
- Health status overview
- Contribution to decision making
- Not just pathogen identification but characterization of the pathology, severity and time course of the disease
- Key for emerging, non-infectious, multifactorial and unknown aetiology diseases



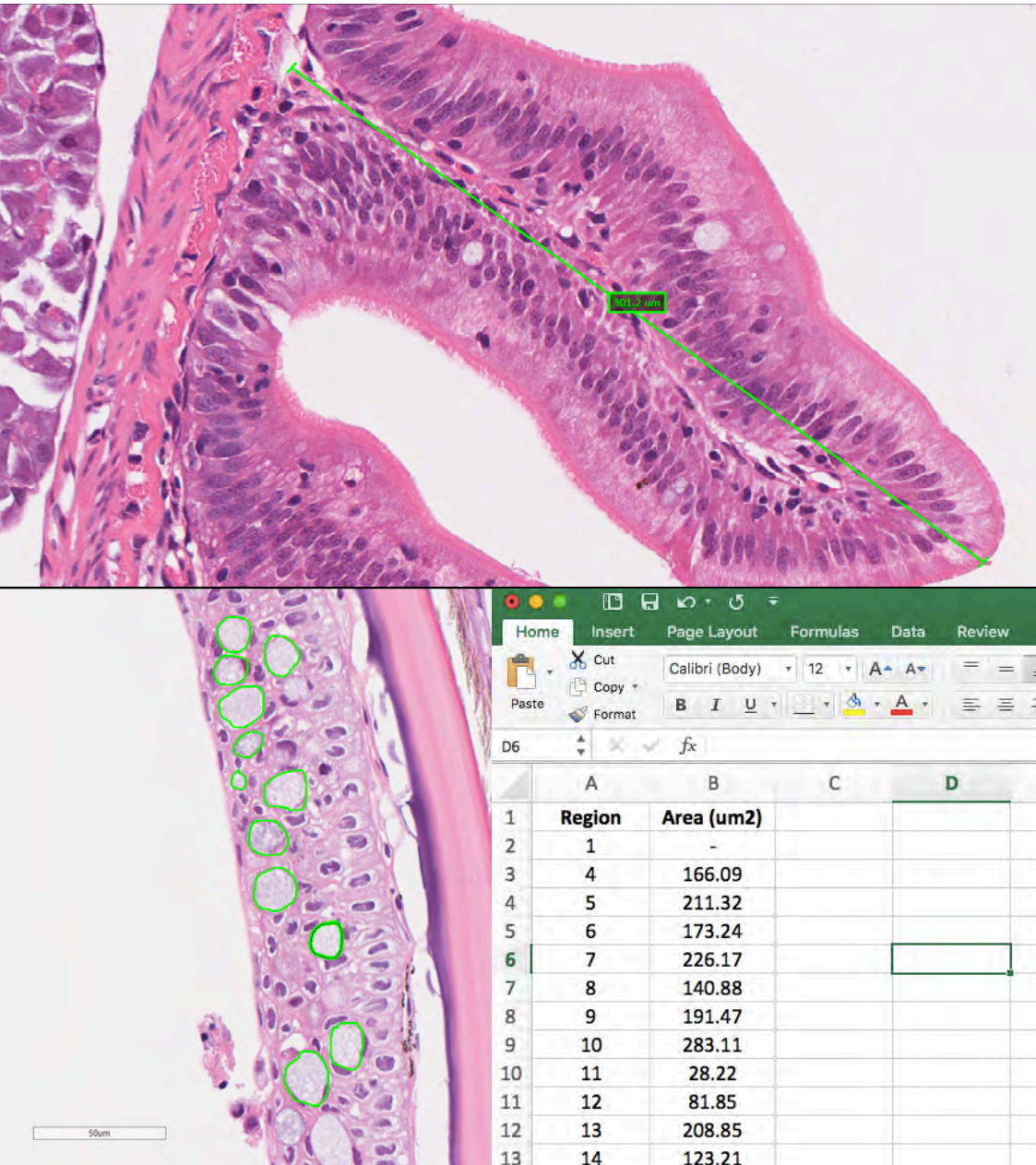
Digital histopathology

- ▀ Quicker and remote access (24h service)
- ▀ Easy sharing and consultation



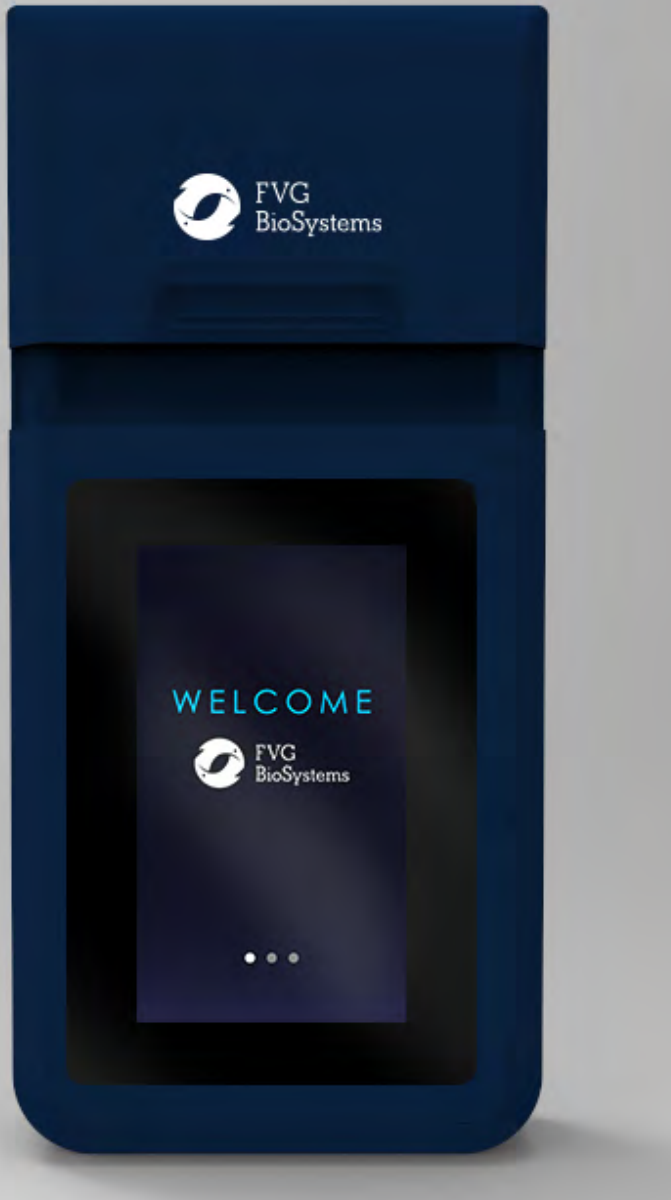
Digital histopathology

- Image analysis and scoring systems: more sensitive evaluation for farm trials (e.g. treatment, feed, genetics)
- Training / education
- Enhanced service



Farm test kits - mobile cPCR -

- On-farm testing of known pathogens
- Detection of non-culturable pathogens
- Very rapid turn-around (1h)
- Easy training – simple workflow
- Non-lethal methods available for certain pathogens (i.e. gills swabs, blood, fin)

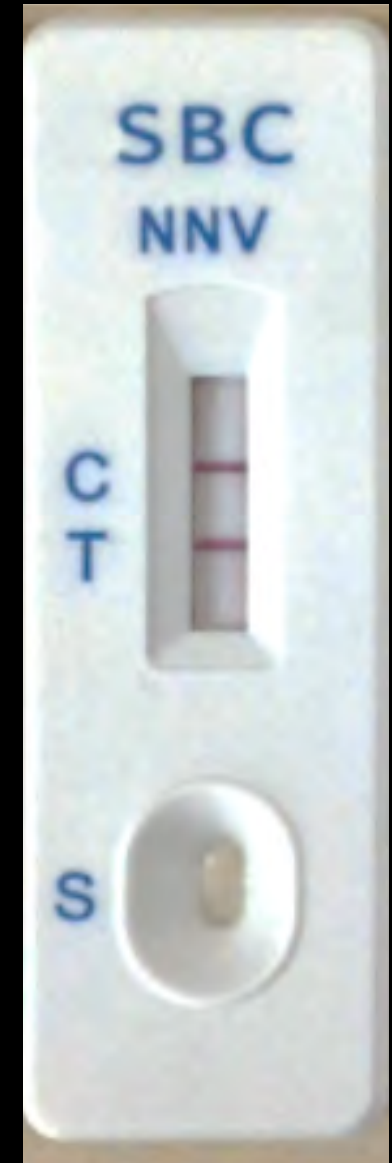




Farm test kits

- Lateral flow cassettes -

- On-farm testing NNV
- Time to result 5-10 min
- Capacity 1 sample
- Sensitivity: 10^5 TCID/ml
- Diagnosis/confirmation clinical outbreak
- Development ongoing to increase sensitivity and specificity





FishVet Group



A Benchmark
Company



*Grazie per la
vostra attenzione!*



www.fishvetgroup.com

www.benchmarkplc.com