

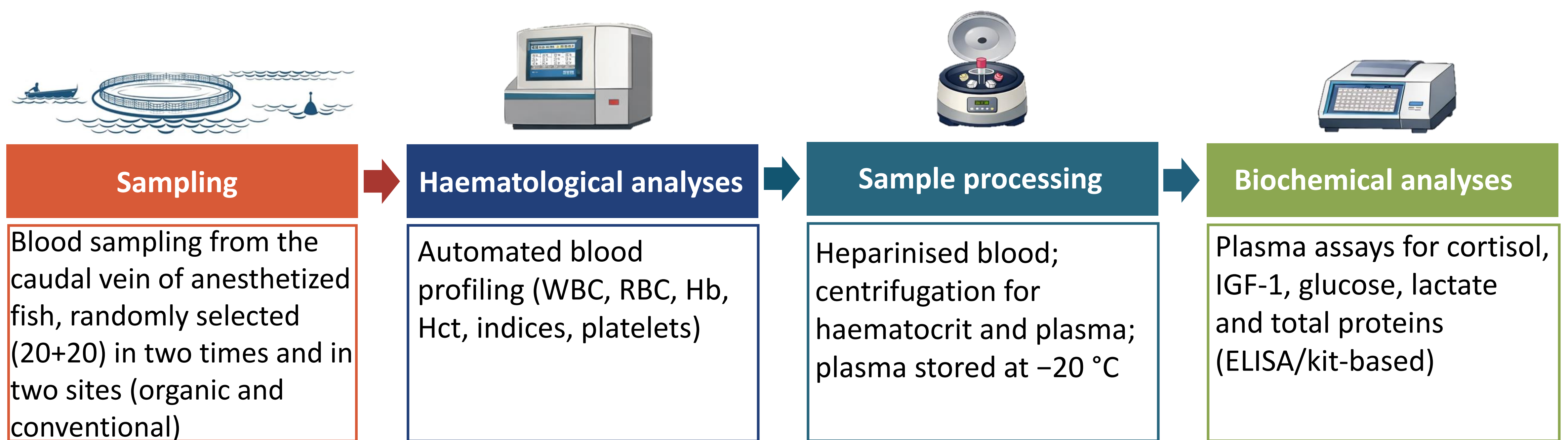
GILTHEAD SEABREAM WELFARE: DIFFERENCES BETWEEN ORGANIC AND CONVENTIONAL AQUACULTURE SYSTEMS

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INTRODUCTION

- Aquaculture growth demands reliable and standardised tools to assess fish welfare
- The aim of this study is to evaluate gilthead seabream, *Sparus aurata* (Linnaeus, 1758), welfare using physiological indicators, comparing organic (farm A) and conventional (farm B) farming systems

MATERIALS & METHODS



- This study was approved and founded by Italian Ministry of Health (RC IZS SA 05/21)
- Authorization of the experimental procedure n.522/2023PR

RESULTS

Parameter	Site Effect	Time Effect (Aug.-Nov. 2024)	Key Result / Trend
Haematocrit	✗ No	✗ No	Stable across groups
Glucose	✓ Yes	✓ Yes	Higher in farm A (Aug); divergence over time
Lactate	✓ Yes	✓ Yes	Increased over time in farm A; higher in Nov
Haemoglobin	✓ Yes (farm A >)	✓ Yes (↓ decrease)	Decreased over time in both sites
RBC	✗ No	✓ Yes (↓ decrease)	Declined over time
Cortisol	✓ Yes (higher in farm A)	✓ Yes (↓ decrease)	Higher in Aug; no difference in Nov
IGF1	✗ No	✓ Yes (↑ increase)	Increased over time
Total proteins	✓ Yes (interaction)	✓ Yes (interaction)	Increased in farm A; difference in Nov
WBC & Platelets	✗ No	✓ Yes (↓ decrease)	Declined over time

Most parameters were within expected ranges. Fish from organic site generally showed better conditions, although some indicators (e.g., lactate) showed inconsistent patterns.

CONCLUSIONS

- Fish welfare is shaped by a complex combination of haematological, biochemical and behavioural indicators
- Fish at biological site generally show better conditions, but with not fully consistent evidence
- A multiparametric approach and biotelemetry are effective tools for assessing welfare
- Further studies are needed to clarify site differences and temporal variability

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