Analysis report

Sylphium molecular ecology

RaportID: Sylphium260805
Date: August 5, 2026

Client: Sylphium molecular ecology
Contact: Eelco Wallaart
Target species: *Misgurnis fosillis* and *Triturus cristatus*
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Table 1. Yield and inhibition control of received samples.

Sample ID	Sample type	YIC	Remarks
E1964	Dual Filter	Pass	-
E1978	Dual Filter	**Deviating**	Low recovery of control DNA
E1994	Dual Filter	Pass	-
E1996	Dual Filter	Pass	-
E2000	Dual Filter	Pass	-

YIC: yield and inhibition control. **Remarks**: any relevant observations regarding the received samples are reported here.

Table 2. Results target species analysis.

Sample ID	*Misgurnis fossilis* analysis	*Triturus cristatus* analysis
E1964	0/8	0/8
E1978	0/8	0/8
E1994	**8/8**	0/8
E1996	**8/8**	0/8
E2000	0/8	0/8
Blanco	0/8	0/8
PCR neg.	0/8	0/8
PCR pos.	Pass	Pass

Blank: blank procedure – preservation buffer only, **PCR neg.**: PCR-negative control, **PCR pos.**: PCR-positive control. Explanatory notes and quality assurance are provided on the last page of this report.

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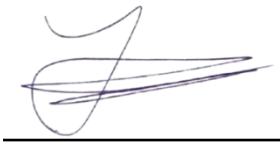
Conclusion

The submitted samples **E1994** and **E1996** tested positive for the presence of *Misgurnus fossilis* DNA. All positive controls, with the exception of the YIC for sample E1978, produced a positive result, and all negative controls produced a negative result. These control results indicate that no inhibiting substances, DNA degradation, or cross-contaminations of the target species were present and that all procedures were performed correctly. False-negative and false-positive results arising from the analytical procedure can therefore be excluded.

The recovery and inhibition control (YIC) for sample E1978 showed that the measured amount of control DNA was lower than expected. After spiking the sample with control DNA, a normal value was obtained and no further indications of strong PCR-inhibiting substances were found. The reduced recovery of the control DNA may indicate that DNA degradation occurred between sample collection and analysis. Therefore, the absence of target-species DNA in this sample cannot be established with certainty.

If sampling was performed according to the recommendations outlined in the manual of SYL009 – eDNA sampling set[1], a detection probability of 95% can be achieved.

Signed: **Date:** August 5, 2026



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[1] https://sylphium.com/webshop/product/syl009

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Explanatory notes and quality assurance

The eDNA-isolation and quality control were performed according to the manual and validation report of the SYL002 – Environmental DNA isolation kit[2]. The target species eDNA analysis was performed in according to the protocol and validation report of the respective detection kit, which is available on the website[3].

A sample is considered positive when at least one of the eight technical PCR replicates shows a positive amplification. When all eight replicates are positive, a quantitative value is reported, expressed as the total number of DNA molecules of the target organism present in the received sample. This value is calculated using the standard curve described in the target species detection kit.

Yield and inhibition control (YIC)

The yield and inhibition control (YIC) is intended to assess the usability and quality of the provided sample. This involves evaluating the DNA extraction efficiency and the potential presence of inhibitory substances in the DNA isolate. If inhibiting factors are detected, the isolate is purified with clean-up procedures and re-analyzed.

If the YIC indicates that DNA degradation occurred between sampling and analysis, the result of the target species analysis cannot be interpreted reliably; this will then be explicitly stated in the report.

Positive and negative controls

During each extraction and analysis round, several negative and positive controls are included to exclude contamination and analytical errors. Including these controls prevents false-positive and false-negative results and ensures the reliability of the extraction and analysis.

- Blank procedure: The blank consists of preservation buffer only and goes through all isolation and analysis steps. This control serves to prevent false-positive results and should not show amplification curves for target species DNA.
- PCR-negative control: De PCR-negative control consists of PCR reagents without target species DNA. This control serves to prevent false-positive results and should not show any amplification curves.
- PCR-positive control: De PCR-positive control consists of PCR reagents to which target species DNA of a known concentration has been added. This control must show amplification curves with the expected Cq value.

[2] https://sylphium.com/webshop/product/syl002
[3] https://sylphium.com/webshop/product-category/qpcr/

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