Analysis report

Sylphium molecular ecology

RaportID: 260325Econsult
Date: March 25, 2026

Client: Econsult
Contact: J. Smith
Target species: *Neomys fodiens*, *Rana arvalis*, and *Misgurnus fossilis*
Email: J.Smith@econsult.com

Table 1. Yield and inhibition control of received samples.

Sample ID	Sample type	YIC	Remarks
E32687	Dual Filter (0.8µM)	Good	-
E32688	Dual Filter (0.8µM)	Good	-
E32689	Dual Filter (0.8µM)	Good	-
E32690	Dual Filter (0.8µM)	Good	-
E32691	Dual Filter (0.8µM)	Good	-
E32692	Dual Filter (0.8µM)	Good	-

YIC: yield and inhibition control. **Remarks**: any special observations on samples received by Sylphium are reported here.

Table 2. Number of positive amplifications in target species analysis.

Sample ID	*Neomys fodiens*-analysis	*Rana arvalis*-analysis	*Misgurnus fossilis*-analysis
E32687	**8/8**	**4/8**	0/8
E32688	**4/8**	**8/8 (3500 copies)**	0/8
E32689	0/8	**8/8 (2900 copies)**	0/8
E32690	0/8	0/8	0/8
E32691	0/8	0/8	0/8
E32692	0/8	0/8	**6/8**
Blank	0/8	0/8	0/8
PCR neg.	0/8	0/8	0/8
PCR pos.	Good	Good	Good

Blank: blank procedure- preservation buffer only, **PCR neg.**: PCR-negative control, **PCR pos.**: PCR-positive control. All analyses are performed in eight technical replicates. If all eight technical PCR replicates show positive amplification for the target DNA, the total number of DNA copies in the original sample will also be reported. Explanatory notes and quality assurance are provided on the last page of this report.

Conclusion

The submitted samples **E32687**, **E32688, E32689**, and **E32692** tested positive for the presence of *Neomys fodiens*, *Rana arvalis*, and/or *Misgurnus fossilis* DNA. All positive controls produced a positive result, and all negative controls produced a negative result. These controls confirm that no inhibiting substances, DNA degradation, or cross-contaminations of the target species were present and that all procedures were successfully completed. This rules out the possibility of false-negative or false-positive results in the analysis procedure.

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:** March 25, 2026

Jan Warmink
Molecular ecologist

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

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/