

# Early Sex Discrimination in Sturgeons

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A novel technique to save costs in caviar production





## ANNOUNCEMENT

### TUNATECH GmbH

TUNATECH GmbH has the pleasure in announcing the first DNA based solution for “**Early Sturgeon Sex Discrimination**” (ESSD) for those enterprises involved in the raising of sturgeon in captivity for caviar production. This novel and customized solution for sex discrimination for multiple sturgeon species at early live stages will be made available in 2021 for a limited number of clients. Based on new scientific evidence together with laboratory and field experience in analysis, sampling and tagging it has been made possible to provide a customized service package to suit all aquaculture facilities be they large or small.

*“The innovative technologies used are tried and tested but if you need further evidence for the potential for your enterprise then please send us six ID labelled only, tissue samples of your choice from known male or female origin and we will furnish you with details of their sex. If you are not satisfied with the results there is no obligation to take up ESSD.”*

Please contact us at [info@tunatech.de](mailto:info@tunatech.de) for further details to arrange a blind pilot test of your own discriminated males and females. A short sampling protocol can be supplied and the samples dispatched to our laboratory in Germany. On successful completion of any trial then an NDA should be signed by both parties and a customized detailed outline of the suggested solution for your enterprise will be provided.



[www.tunatech.de](http://www.tunatech.de)

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# Early Sturgeon Sex Discrimination (ESSD)

## Commercial Concept Template

TUNATECH GmbH

## Executive Summary

One of the major cost driving factors in caviar production is the inability to determine the sex of individual juvenile fish at an early age thus promoting the uneconomical feeding of males until sex determination can be made at anything from 3 to 14 years after hatching.

This commercial template briefly describes the various steps involved in applying our Early Sturgeon Sex Discrimination (ESSD) solution to your commercial environment. The initial step requires the marking or tagging of individuals usually with a passive integrated transponder (PIT) tag such that they can be recognized at a later stage. TUNATECH has over 20 years of experience in this field on numerous fish species. Secondly the process of obtaining DNA samples from individuals is then required using a tissue sampling unit followed by the molecular analysis to identify sex-specific markers based on recent scientific evidence and our own proof of concept. A number of scenarios have been developed and have taken into consideration the large numbers of fish to be examined in some cases. A high throughput can be achieved in the first instance at some cost, followed by software analysis and combination of tagging and molecular results to provide a relatively automated sorting system for separation of males and females. The techniques and tools used can be further applied to breeding programs to distinguish between fast growers and also single sex propagation scenarios (all females) with proof of concept/treatment within a short period of time. The ESSD template can be customized for commercial farms from small (500) to larger industrial production sites (10,000) according to the customer's wishes.

