

## Upgrading residual streams into worm biomass

### Description

Organic waste sludges from the food industry are a source of bio-molecules which can be upgraded to fish feed when used to rear aquatic worms. Bob Laarhoven proposed in his thesis that for valorisation of waste streams by aquatic worms these streams preferably are free from contaminants such as organic micro pollutants, heavy metals and pathogens. Therefore, sewage (municipal) sludge can not be used as a substrate for the worms. However, these contaminated sludges might still be used for non-food applications. Ultimately, the quality of the applied waste stream determines the application potential of the worm biomass as well as the options for downstream processing and refinery.



Crop

Miscellaneous

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Potato

*Solanum tuberosum*

Wheat

*Triticum aestivum*

Croppart

Roots / Tubers

Seed

Application area

Food & feed

Status

Development stage

Relevant plant compounds

Starch

fibres

proteins

## Pros and cons

- + Residuals utilised to make a new product
  - + Show how waste in general can be used in a positive way
  - Challenges in upscaling the product
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## Used conversion methods

### Biochemical processes

Enzymatic conversion

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## Resources

<https://library.wur.nl/WebQuery/wurpubs/530452> Initiative website

[Aquatic Worms](#) Article