



**Best
Practice**

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Valorization of grey starch from the potato processing industry

The potato processing industry is growing rapidly in the EU. During heat processes such as blanching, side streams are created that are high in starch but unsuitable or unattractive for use in feed or food. Over one million tons of this 'grey starch' are produced in the EU every year. Grey starch has potential as a carbohydrate source for novel feed products such as microbial protein. The AgriLoop project is developing an effective microbial protein production process based on grey starch.

Project activity

Grey starch from potato processing is first hydrolyzed to release the sugars and then fermented to produce organic acids. All types of organics present in the grey starch can be used by a microbiome to create a mixture of organic acids.

After filtration, this mixture can be used as a substrate for a single type of microorganism. Alternatively, the sugar-rich substrate can be used directly by a single microorganism. This is a simpler process but does not use all the organics from the grey starch. We intend to dry the microbial protein produced and provide to a feed company who will test its performance as fish food.

Key findings and recommendations

From these tests, we conclude that:

- Direct microbiome-based fermentation of grey starch is possible but difficult due to the substrate's high viscosity. Dilution is needed, which causes lower substrate concentrations downstream.
- Grey starch can effectively be hydrolyzed with enzymes to produce a concentrated sugar solution.
- The sugar solutions obtained can be used by a single microorganism at laboratory scale, and we are now identifying key growth parameters for scale up.
- Mixtures of organic acids, created via the fermentation of the grey starch, can be used by a single microorganism to produce microbial protein. The quality of the product depends on the types of organic acid.



References

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Contact

For more information about the AgriLoop Project, visit:

agriloop-project.eu



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