

Pig Bristles – An Underestimated Biomass Resource

Milena Gonzalo¹, Claus Mosby Jespersen²,
Kirsten Jensen², Susanne Støier² and Lene Meinert²

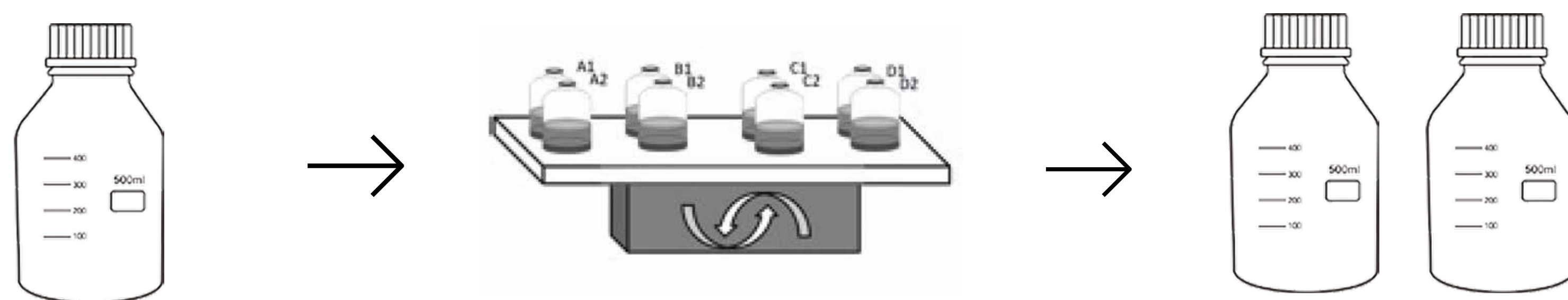
OBJECTIVES

The overall aim of this work was to develop a gentle method of processing pig bristles resulting in increased concentrations of intact amino acids, digestibility and nutritional value of the final product. The scope of this poster is to present an enrichment method and keratinase screening assays.

MATERIALS AND METHOD

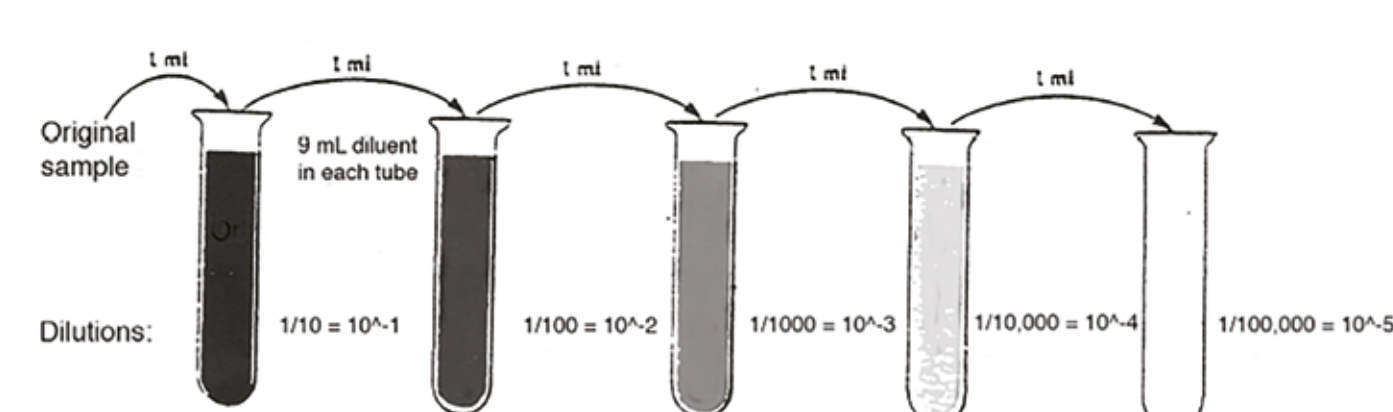
Microcosms: Environmental sample + substrate
(Only Nitrogen and carbon source)

25°C, shaking 200 rpm,
7-10 days



Vol=100 ml Basic salts Buffer,
1% bristles and hooves, aerobic

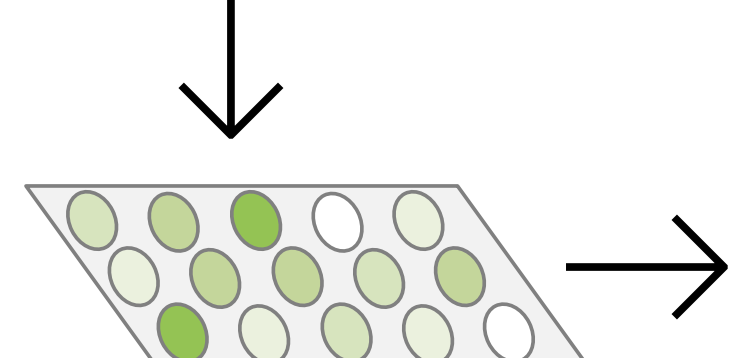
Dilution series



Optical Density



Bristles and hooves Agar
(24-72h, 25°C)



LB
(25°C, 24h)
KLM
(25°C, 24h)

Screening assay:
Protease activity



Azocasein



Azocasein



Milled
Bristles agar



Milled
Bristles and
hooves agar

RESOURCE OPPORTUNITY

A slaughtered pig delivers about 0.9 kg bristles, which in Denmark alone totals approximately 16,000 tons annually. The slaughterhouses collect bristles during the de-hairing process.

A successful development of a keratin degradation method will potentially turn a costly waste problem into a profitable product, thereby making food production more competitive, sustainable and environmentally friendly.

CONCLUSION

The developed method based on enzyme activity for isolating microbial strains able to degrade keratin proved successful. Therefore, this method is indeed suitable for screening for keratin degrading microorganisms, which potentially can be used to convert keratin from pig bristles into nutritional biomass.



Pig Bristles



CONTACT

LENE MEINERT, LME@DTI.DK