

Sugar Beet By-product Turned into Healthy Food

M.S. Andreasen, C. Gravgaard, C.A.M. Holbek, M. Knudsen, C.G. Møller, and S.H. Rasmussen

DTU Food, Technical University of Denmark

ABSTRACT

For the 2012 edition of EcoTrophelia, the authors of this abstract have developed a tasty food snack based on sugar beet pulp, a by-product from sugar production from sugar beets.

The Healthy Snack

The developed product is some kind of a bread stick. It consists of pulp mixed with rye flour and a little salt. The sugar left in the pulp and the added salt give the product a well balanced taste suitable for more situations, both as e.g. cereals or as snacks. Beets are known for their high content of fibers. Fibers are healthy to humans due to the satiety effect they provide.

Business Aspects

Sugar production in Denmark is located on the South-East islands Lolland and Falster. This region is lacking economical growth, why it would be naturally to invest and place the production of this bread stick here. Further, the main raw material would be close by. It is expected to be a sustainable business due to the intensified focus on healthy and tasty food. Currently, sugar beet pulp is dried and then used for cattle feed. The process is energy-intensive and expensive. Therefore it is really value-adding to turn the pulp into human food.

Environmentally Friendly

Turning animal feed into human food is sustainable in this situation, where the raw material is not even used fully across the globe. The tremendous amounts of energy used for drying the pulp to feed pellets are also better spent on the baking of this bread product. Since the product has a low water content and thereby low water activity there are only few requirements for a packaging material. This allows choosing an eco-friendly material with only few considerations on barrier properties etc.

Finally, this new resource utilization will direct growth to a Danish region often connected with stories about industry shutdowns, high unemployment rates and socially low resourced families. A new business venture like this would therefore provide a very positive social impact on the environment.

Beet Snappers

The snack product is named Beet Snappers. Analyses have shown a sustainable market potential in the EU with expectations on increased consumer demands on eco-friendly foods. This product cannot claim to be organic. But it will, have low environmental impact compared to comparable products due to:

- Vast animal feed supply turned into human food
- A production chain where, an evaporation step is skipped, saving energy
- The positive social impact when creating new jobs and growth

The important steps considered in the LCC performed are the material and manufacturing stage. Use and disposal are hard to quantify since they take place in the human body.