UNDERSTANDING THE STRUCTURE-FUNCTION RELATIONSHIP OF ARABINOXYLAN AND DEXTRIN WITH REGARD TO BEER MOUTHFEEL QUALITY

A Data Management Plan created using DMPonline.be

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Project abstract:

Plant-based dairy products, low-fat cooking cream or non-alcoholic beers are just a few examples of emerging food products that require an innovative design regarding their textural properties. One of the main aspects that is often lacking in these products is the sensation of 'fullness' or 'body'. Improvement of the viscosity of non-alcoholic beers to the level of their alcoholic variants by the brewing industry has, however, not resulted in satisfactory mouthfeel properties yet. This suggests that viscosity alone is not a good predictor for mouthfeel and that research in the field of the mouthfeel of beverages should focus on mouthfeel quality rather than only one aspect like viscosity. This project aims to gain insight into the structure-function relationship of cereal carbohydrates with regard to beer mouthfeel quality. A set of food-grade arabinoxylan and dextrin samples will be used to research the mechanisms by which carbohydrate nature, content and structure impact the fluid dynamics of beverages and their mouthfeel perception, taking the substantial role of saliva into account. These fundamental insights might lead to practical solutions to improve mouthfeel perception in non-alcoholic, low-alcohol and light beers and aid the development of other innovative beverages.

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FWO DMP (Flemish Standard DMP)

1. Research Data Summary

List and describe all datasets or research materials that you plan to generate/collect or reuse during your research project. For each dataset or data type (observational, experimental etc.), provide a short name & description (sufficient for yourself to know what data it is about), indicate whether the data are newly generated/collected or reused, digital or physical, also indicate the type of the data (the kind of content), its technical format (file extension), and an estimate of the upper limit of the volume of the data.

				Only for digital data	Only for digital data	Only for digital data	Only for physical data
Dataset Name	Description	New or reused	Digital or Physical	Digital Data Type	Digital Data format	Digital data volume (MB/GB/TB)	Physical volume
		Please choose from the following options: • Generate new data • Reuse existing data	*Please choose from the following options:* • Digital • Physical	*Please choose from the following options:* • Observational • Experimental • Compiled/aggregated data • Simulation data • Software • Other • NA	*Please choose from the following options:* • .por, .xml, .tab, .cvs,.pdf, .txt, .rtf, .dwg, .gml, … • NA	*Please choose from the following options:* • <100MB • <1GB • <100GB • <1TB • <5TB • <10TB • <50TB • >50TB • NA	
Lab results		New	Digital	Experimental	.xml	<1GB	
Taste panel results		New	Digital	Observational/Experimental	.xml	<1GB	
Mathematical models		New	Digital	Compiled	tbd	<1GB	

If you reuse existing data, please specify the source, preferably by using a persistent identifier (e.g. DOI, Handle, URL etc.) per dataset or data type:

NA

Are there any ethical issues concerning the creation and/or use of the data (e.g. experiments on humans or animals, dual use)? Describe these issues in the comment section. Please refer to specific datasets or data types when appropriate.

- Yes, human subject data

Taste pannelists will be asked to disclose some personal data (age, drinking habits, eating habits). Given the nature of the questions and the anonymity of the questionnaire, the risk of ethical issues is minimal. This is covered by the tasting protocol that is approved by the social and societal ethics committee of the KU Leuven (G-2019 07 1695).

Will you process personal data? If so, briefly describe the kind of personal data you will use in the comment section. Please refer to specific datasets or data types when appropriate.

Irreversible anonymisation will be used during the tasting sessions.

Does your work have potential for commercial valorization (e.g. tech transfer, for example spin-offs, commercial exploitation, …)? If so, please comment per dataset or data type where appropriate.

- No

Do existing 3rd party agreements restrict exploitation or dissemination of the data you (re)use (e.g. Material/Data transfer agreements/ research collaboration agreements)? If so, please explain in the comment section to what data they relate and what restrictions are in place.

- No

Are there any other legal issues, such as intellectual property rights and ownership, to be managed related to the data you (re)use? If so, please explain in the comment section to what data they relate and which restrictions will be asserted.

- No

2. Documentation and Metadata

Clearly describe what approach will be followed to capture the accompanying information necessary to keep data understandable and usable, for yourself and others, now and in the future (e.g., in terms of documentation levels and types required, procedures used, Electronic Lab Notebooks, README.txt files, Codebook.tsv etc. where this information is recorded).

README.txt files will accompany the above mentioned datasets, including the methodology used to collect the data, analytical and procedural information, definitions of variables and units of measurement. This will be included in the RDR KU Leuven repository.

Will a metadata standard be used to make it easier to find and reuse the data? If so, please specify (where appropriate per dataset or data type) which metadata standard will be used. If not, please specify (where appropriate per dataset or data type) which metadata will be created to make the data easier to find and reuse.

- Yes

DataCite will be used as a metadata standard.

3. Data storage & back-up during the research project

Where will the data be stored?

Data is stored centrally on storage facilities of the research unit and university. Daily back-ups (with a mirror copy) and network maintenance are executed by the ICTS services of KU Leuven. Only specific lab members will have access to the shared folder and large volume storage. Unauthorised persons do not have access to this system.

How will the data be backed up?

Data is stored centrally on storage facilities of the research unit and university. Daily back-ups (with a mirror copy) and network maintenance are executed by the ICTS services of KU Leuven. Only specific lab members will have access to the shared folder and large volume storage. Unauthorised persons do not have access to this system.

Is there currently sufficient storage & backup capacity during the project? If yes, specify concisely.
If no or insufficient storage or backup capacities are available, then explain how this will be taken care of.

- Yes

Data is stored centrally on storage facilities of the research unit and university. Daily back-ups (with a mirror copy) and network maintenance are executed by the ICTS services of KU Leuven. Only specific lab members will have access to the shared folder and large volume storage. Unauthorised persons do not have access to this system.

How will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?

Data is stored centrally on storage facilities of the research unit and university. Daily back-ups (with a mirror copy) and network maintenance are executed by the ICTS services of KU Leuven. Only specific lab members will have access to the shared folder and large volume storage. Unauthorised persons do not have access to this system.

What are the expected costs for data storage and backup during the research project? How will these costs be covered?

Internal funding.

4. Data preservation after the end of the research project

Which data will be retained for at least five years (or longer, in agreement with other retention policies that are applicable) after the end of the project? In case some data cannot be preserved, clearly state the reasons for this (e.g. legal or contractual restrictions, storage/budget issues, institutional policies...).

All datasets will be retained for at least 10 years according to KU Leuven RDM policy.

Where will these data be archived (stored and curated for the long-term)?

KU Leuven RDR will be used.

What are the expected costs for data preservation during the expected retention period? How will these costs be covered?

NA

5. Data sharing and reuse

Will the data (or part of the data) be made available for reuse after/during the project? In the comment section please explain per dataset or data type which data will be made available.

- Yes, in a restricted access repository (after approval, institutional access only, …)

KU Leuven RDR will be used.

If access is restricted, please specify who will be able to access the data and under what conditions.

NA

Are there any factors that restrict or prevent the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party, legal restrictions)? Please explain in the comment section per dataset or data type where appropriate.

- No

Only irreversible anonymised data will be saved in repositories.

Where will the data be made available? If already known, please provide a repository per dataset or data type.

KU Leuven RDR will be used.

When will the data be made available?

Upon publication of the results.

Which data usage licenses are you going to provide? If none, please explain why.

Public domain.

Do you intend to add a PID/DOI/accession number to your dataset(s)? If already available, you have the option to provide it in the comment section.

- Yes

What are the expected costs for data sharing? How will these costs be covered?

NA

6. Responsibilities

Who will manage data documentation and metadata during the research project?

Promotor

Who will manage data storage and backup during the research project?

Niels Langenaeken

Who will manage data preservation and sharing?

Niels Langenaeken

Who will update and implement this DMP?

Niels Langenaeken