Popular Science Summary

Development of oat and bilberry-based beverages for a study about their effect on cardiometabolic markers in patients after acute myocardial infraction

Serap Özkan, Student
liv15soz@student.lu.se

Ana Rascón, Supervisor
Ana.Rascon@glucanova.com

Federico Gomez, Examiner
federico.gomez@food.lth.se

Attention to foods with health-promoting properties is increasing. Among those, bilberries are rich in beneficial compounds mainly polyphenols and anthocyanins. The intake of bilberries has been linked to a reduced risk of developing cardiovascular-related diseases. Similarly, studies show that oat consumption has cardiovascular benefits specifically due to its cholesterol-lowering capacity. Therefore, a group of scientists from Örebro University Hospital decided to design a clinical study to determine the effect of bilberry and oat intake on blood lipids, inflammation, and exercise capacity in patients suffering after acute myocardial infarction (AMI). AMI is also known as heart attack that mainly occurs due to blockage in one or more coronary arteries. For that study, approximately, 900 patients post-AMI will be participating in a 3-month intervention. Those participants will be required to consume study products that are produced by oat and bilberry on a daily basis. If the results of the study show that daily dietary intake of bilberry and oat together with standard medical therapy could

reduce the low-density lipids (LDL) cholesterol and inflammation more than the standard medical therapy itself, this could be a good prevention of heart attack which is also cost effective and a safe dietary strategy.

The aim of this project was to design study products for that clinical study. The test products were thought to be ready-to-drink beverages with high functionality and good taste. Therefore, the first step of the project was to design beverages with either dried bilberry and enzyme-treated oat-bran. On the other side, possible additional impacts of bilberry and oat combination have not been studied in a clinical trial before. Therefore, a beverage that is a combination of oat-bilberry was also designed as the third study product. Furthermore, a need of reference beverage without any active substances also arises to be able to compare the tested results. These four study products should have the appearance and taste as if all they contain oat and bilberries to ensure preventing bias. Additionally, all study products were balanced in energy content to provide the same calorie intake to all participants.

Three active beverages and a corresponding reference beverage, providing approximately 155 kcal/day, were formulated in this project. The main concern was to develop study products having significant level of active compounds, having the same caloric intake and being as similar as possible regarding color, texture and aroma to provide with blinding towards the participants. All these four-study beverages were designed to be ready to drink with good taste and freshness to ensure subjects compliance. This aim has been achieved with the applied recipes.