

## **DESCRIPTION FOR THE GENERAL PUBLIC**

In a fruit processing of berries, such as raspberries, which are grown extensively in Poland on a large scale, the major waste product is a pomace, in which 50% of mass is included in seeds. These seeds, with a content of 10-30% of fatty acids, are a valuable source of the unsaturated oils. Polish industry of fruits and vegetables, produces between 300 and 350 thousand tons of such waste per year, of which it is estimated that about 20% is a waste from berries. That's why it can be said that obtaining a target for such a pomace-“waste”, if proprietary justified is a very important scientific task. The present project proposes two studies, which have not yet been described in *in vitro* studies, and which are to investigate the effects of crushed raspberry a residue, as well as grinded seeds, on the cardiovascular system. The purpose of the project is to analyze the motor activity of isolated arteries, which will be dependent on the type of diet in a healthy and hypertensive rat model. In addition, activity of oxidative stress enzymes in the blood and myocardium will be determined. There are three arguments behind this research idea:

- Berries, including raspberries, are a rich source of many biologically active compounds with proven health related effects;
- Successive increase in fruit juice production results in a large proportion of biologically active fruit components remaining in the pulp;

Berries, including raspberries, contain a large amount of fine seeds (over 50%), where, without proper fragmentation, biological ingredients such as polyphenols and polyunsaturated fatty acids may not be available.

The results of the proposed experiments will provide new information on the bioavailability and impact of the scarce, biologically active compounds present in raspberries pomace and seeds, and the more easily accessible polyphenols on the antioxidant status, lipid profile and inflammatory mediators. At the same time, the effect of grinding of fruits' pomace with and without seeds on the content of desired biologically active compounds will be determined.