

## **DESCRIPTION FOR THE GENERAL PUBLIC**

The aim of project is to carry out a research on a phenomenon of microorganism neutralisation in grape must. Study on microorganism reduction will be carry out by means of ultraviolet radiation and nanomaterials.

Sulphur dioxide is permanently the only effective method to prevent the growth of microorganisms in grape juice and wine, but carries a risk of danger to human health. The wine industry is still looking for an alternative solutions to this method, therefore study on the phenomenon of microorganism neutralisation is a current research problem.

The investigation will be carry out by means of widespread used yeast (*Saccharomyces cerevisiae*) and bacteria (*Oenococcus oeni*). To preparation of grape must will be used fruits of the vine cultivar 'Regent', grown in the Research Station of the West Pomeranian University of Technology in Szczecin. Additionally, in association with international cooperation, the proposed methods of microorganism reduction will be tested for wine of other vine cultivar.

Preliminary research conducted by means of UV light and nanomaterials suggests that the methods may serve to reduce of microorganisms, however, it is crucial to work on further improvement of the process. The acquired fundamental knowledge of studied methods in aim of eliminate or reduce the sulphur-based compounds will allow to a better understanding of the wine sterilisation mechanisms, that may result in a safe product for the consumer health.