

Structural modeling of plant cell wall pectines

The basic groups of polysaccharides that constitute cell walls in fruit and vegetables are: cellulose, hemicellulose and pectins. Multiple lines of evidence indicate a role of polysaccharides in plant growth, development, signaling, wall structure, defense mechanisms, macroscopic mechanical properties and texture of organs. The research scope of this Ph.D. proposal has an original character and combines both, experimental and theoretical work (namely numerical modelling) to identify the underlying structural composition plant cell wall pectins extracted with sodium carbonate. The theoretical basis of the observed phenomena will be carried out on the basis of numerical modeling techniques. The structural characterization of visible objects will be provided by means atomic force microscopy and automatic image analysis procedures.