



Course Training in research for Agriculture, Food & Environmental Sciences

Subject Course

Plant cell walls. Characterization of Polysaccharides and Applications.

Description

The aim of this course is to introduce the student to the basic concepts of carbohydrate chemistry, cell wall architecture and analysis of its components. With this information, some special subjects, like hydrocolloids and their applications, procedures to obtain biofuels from lignocellulosic materials, will be introduced.

This course is intended for a small number of students (max. 5). Each one of them will receive a different raw material to work in the lab over the whole semester. This material could consist in a certain organ (leaves, stems, roots, bark) of a different organism, for example, a cereal, leguminous, grass, alga, etc. to work with. From this material, the cell walls will be obtained. Then a sequential extraction procedure will allow obtaining the different polysaccharide types. The most important extracts will be further purified and analyzed. The structure of one of the purified fractions will be determined by chemical and spectroscopic analyses. Results will be analyzed and compared between the students.

At the end of the semester, the students will prepare a small talk about a relevant research published in the international literature and will inform their experimental results and their interpretation as final work of this course.

Basic knowledge in Chemistry of Biomolecules and Biochemistry are prerequisites for participation in this course.

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