

Novel food structuring agents

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It is widely known that the rheological properties are among the most important quality attributes of food products since they significantly affect both their physical appearance such as desired texture or prevention of phase separation during storage as well as the sensory perception upon consumption. More specifically, sensory perception plays a crucial role in consumer acceptance and liking of food since alterations in familiar foods are interpreted negatively by consumers. Various biopolymers including polysaccharides and proteins are currently used as structuring ingredients due to their ability to act as emulsifiers, thickeners, foaming and gelling agents. Examples include animal-derived proteins such as whey proteins or gelatin, or plant-based ones like pea, soybean, or canola. On the polysaccharide side, plant- or microbial-based polysaccharides such as pectins, carrageenans and gums have found common use. Moreover, these biopolymers can be used to assemble into hierarchically higher-ordered structures that give rise to new functionalities. However, there is an increased interest for the use of novel ingredients derived from unexplored sources or extracted from byproducts of the food industry in order to achieve modified structures that are more resistant to stresses such as pH, ionic strength and temperature. The aim of this review is to provide an insight to all these new sources and the current food applications.