Summary

Many ligands can form inclusion complexes with amylose. Their presence induces a conformation change involving the transformation of amylose to a single helix. This so called V-amylose is compact and has a central hydrophobic cavity in which the hydrocarbon chain of the ligand can reside. Amylose-lipid complexes are the best known amylose-inclusion complexes. They are e.g. formed during processing of starch containing food systems with added emulsifiers. Amylose-lipid complexes can be synthesized in different ways, either by mixing an amylose solution with dissolved lipids or by synthesizing amylose de novo using potato phosphorylase in the presence of lipids. By varying reaction conditions, different complex types (amorphous type I and semi-crystalline type II amylose-lipid complexes) can be obtained. It is well documented that amylose and lipid characteristics greatly influence the physico-chemical properties of the amylose-lipid complexes. However, not much is known about their possible function as additives in starch containing systems. A possible role as controlled release agents for the complexed ligand, on the one hand, and the short amylose chains, on the other, is suggested, resulting in starch gels with remarkable properties. Addition of amylose-lipid complexes during gelatinization may also result in an increased resistant starch fraction, as evidenced by an impacted in vitro degradability.

Beamer-Presentation shown at the meeting.

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