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USE OF QUINOA, AMARANTH, KAÑIWA AND LUPINE FOR THE DEVELOPMENT OF GLUTEN-FREE EXTRUDED SNACKS

The present research focuses on the study of corn-based extrudates containing varying concentrations of amaranth/ quinoa/ kañiwa/ lupine flour (tested flours). This responds to the growing necessity for novel gluten-free products in Nordic countries.

This research consists of four sub-studies: (1) Investigation of the effects of extrusion variables on response variables, (2) sensory evaluation of expanded extrudates, (3) analysis of bioactive compounds and mineral bioavailability in sensory acceptable extrudates, and (4) evaluation of lipid stability of sensory acceptable extrudates in storage. The successful conduction of these sub-studies seeks to address questions raised during the conduction of preliminary studies which led to two publications: Master’s thesis and article manuscript.

According to our preliminary studies, corn-based extrudates containing (20% of solids) amaranth/ quinoa/ kañiwa showed significantly higher sectional expansion index (SEI) than pure corn extrudates (control); these extrudates also presented remarkable stability after exposure to high humidity conditions. For this reason, we found the necessity to continue with this research work by evaluating the effect of varying concentrations of tested flours.

The scheme of analysis comprising the present study is detailed below:

