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## **Resolving the problem of poor expansion in corn extrudates enriched with food industry by-products**

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**Abstract:** The aim of this study was to investigate the possibility of application of brewer's spent grain (BSG), sugar beet pulp (SBP) and apple pomace (AP) in production of corn snack products. Additionally, in the case of BSG and SBP the pectin (0.5% and 1% d. m.) was added in an attempt to resolve the problems of poor expansion and textural properties. Samples were extruded in the laboratory single screw extruder, and physical and sensory properties of obtained extrudates were determined.

By-products addition decreased expansion ratio and fracturability, whereas bulk density and hardness increased. Pectin addition at level of 1% resolved the problem of poor expansion in the extrudates with BSG and SBP, which resulted in successful incorporation of all three by-products in the production of acceptable expanded corn snack products. By-products addition and extrusion process had a significant effect on color change, water absorption and water solubility indexes.

**Keywords:** corn grits, by-products, extrusion, pectin, physical and sensory properties

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