

Parallel Session RTD Line 5 / Consumer Responses to Food Products

Lecture 1: Food technology: application of resistant starch as source of dietary fibre in pasta products

Tímea Gelencsér
Budapest University of Technology and Development, Hungary

Abstract

In our studies the effects of high-amylose resistant starch (RS) on the functional and nutritional properties of pasta were investigated. Pasta samples with 20 % resistant starch addition were prepared in small scale (2 kg) and in a pilot plant installation (50 kg). The pastas were compared according to their sensory properties, cooking quality and in vitro digestibility characters. In the case of small scale pasta the in vivo glycaemic index (GI) was also measured followed the standard methodology*. The effects of cooking and microwave reheating on the nutritional characteristics of pasta were evaluated as well. Results proved that the resistant starch additive used as flour replacer can be a good source of dietary fibre, as the in vitro digestibility of the RS samples was lower after both processing compared to the proper control pasta. The sensory profile and cooking properties of products were not significantly influenced by the RS addition indicating the unchanged consumer value of samples. Resistant starch can be integrated into the dough without causing the disruption of its structure. The cooking and microwave heating led to lower RS content in the samples confirming the high heat sensitivity of the high-amylose starch. The in vivo GI studies showed that the product containing resistant starch had lower GI (62.11±35.82) compared to the control pasta without RS addition (72.08±29.95). The difference was not statistically significant; the dietary fibre content of RS pasta, however, was significantly higher. Taking all round it can be stated that the applied resistant starch can be used in pasta in order to enhance its dietary fibre content and improve the nutritional quality.

*Brouns, F., Björck, I., Frayn, K.N., Gibbs, A.L., Lang, V., Slama, G. & Wolever, T.M.S. (2005) Glycaemic index methodology, *Nutrition Research Reviews*, 18:145-171