

Gastric protein hydrolysis of raw and roasted almonds in the growing pig.

Bornhorst, GM 2016

Food Chemistry

211:502-508.

Abstract:

Gastric protein hydrolysis may influence gastric emptying rate and subsequent protein digestibility in the small intestine. This study examined the gastric hydrolysis of dietary protein from raw and roasted almonds in the growing pig as a model for the adult human. The gastric hydrolysis of almond proteins was quantified by performing tricine-sodium dodecyl sulfate-polyacrylamide gel electrophoresis and subsequent image analysis. There was an interaction between digestion time, stomach region, and almond type for gastric protein hydrolysis ($p < 0.05$). Gastric emptying rate of protein was a significant ($p < 0.05$) covariate in the gastric protein hydrolysis. In general, greater gastric protein hydrolysis was observed in raw almonds (compared to roasted almonds), hypothesized to be related to structural changes in almond proteins during roasting. Greater gastric protein hydrolysis was observed in the distal stomach (compared to the proximal stomach), likely

related to the lower pH in the distal stomach.