

In vitro and in vivo evaluation of the prebiotic effect of raw and roasted almonds (*Prunus amygdalus*).

Liu, Z 2016

Journal Of The Science Of Food And Agriculture
96(5):1836-1843.

Abstract:

Almonds contain considerable amounts of potential prebiotic components, and the roasting process may alter these components. The aim of this study was to compare the in vitro fermentation properties and in vivo prebiotic effect of raw and roasted almonds. In vitro, predigested raw and roasted almonds promoted the growth of *Lactobacillus acidophilus* (La-14) and *Bifidobacterium breve* (JCM 1192), and no significant differences were found between these two nuts. In a 4-week animal trial, daily intake of raw or roasted almonds promoted the population of *Bifidobacterium* spp. and *Lactobacillus* spp. and inhibited the growth of *Enterococcus* spp. in faeces and caecal contents of rats. Compared with roasted almonds, raw almonds had a greater bifidobacteria promotion effect. Besides, significantly higher β -galactosidase activity and lower β -glucuronidase and azoreductase activities in faeces or caecal contents of rats were observed with raw almonds than with roasted almonds. While, in terms of metabolic effects, the ingestion of roasted almonds resulted in significantly greater intestinal lipase activities. Both raw and roasted almonds exhibit potential prebiotic effects, including regulation of intestinal bacteria and improved metabolic activities. The roasting process may slightly reduce the prebiotic effects of almonds but significantly improve the metabolic effects.