Effects of processing and storage on almond (Prunus dulcis L.) amandin immunoreactivity

Su, M 2017
Food Research International
100(P1):87-95.

Abstract:
A murine monoclonal antibody (mAb)-based enzyme-linked immunosorbent assay (ELISA) was used to assess amandin immunoreactivity in processed and long-term stored almonds. The results demonstrated that amandin immunoreactivity is stable in variously processed almond seeds. Using the ELISA, amandin immunoreactivity could be detected in commercial whole raw and processed (blanched, sliced, dry roasted, and indicated combinations thereof) almond seeds stored for eleven years and eight months, defatted almond seed flours from several almond varieties/hybrids and their borate saline buffer-solubilized protein extracts stored for ten years and seven months, and several almond varieties grown in different California counties (full fat flours and their defatted flour counterparts). Roasting Nonpareil whole full fat almond seeds, full fat flour, and defatted flour at 170 °C for 20 min each with 2, 5, 10, and 20% w/w corn syrup or sucrose did not prevent amandin detection by ELISA. Similarly, amandin detection in select food matrices spiked with Nonpareil almond protein extract was not inhibited. In conclusion, amandin is a stable target protein for almond detection under the tested processing and storage conditions.