Quantification of inositol phosphates in almond meal and almond brown skins by HPLC/ESI/MS.

Duong, QH 2017
Food Chemistry
229:84-92.

Abstract:
The extraction and measurement of all six forms of inositol phosphates (InsPs) in almond meal and brown skins were improved from existing methods by pH adjustment, supplementation of EDTA, and rapid analysis via anion-exchange high-performance liquid chromatography coupled with electrospray ionization mass spectrometry. The quantity of InsPs in six major almond cultivars ranged from 8 to 12 lmol/g in the meal and 5 to 14 lmol/g in the brown skins. InsP6 was the dominant form, but lower forms still accounted for 20% of the total InsPs molar concentration in a majority of the samples. InsPs contributed 32–55% of the organic phosphorus content and 20–38% of the total phosphorus content in the meal. In brown skins, these ranges were 44–77% and 30–52%, respectively. The successful application of this analytical method with almonds demonstrates its potential use for re-examination of the reported phytic acid contents in many other tree nuts, legumes, grains, and complex foods.

http://dx.doi.org/10.1016/j.foodchem.2017.02.031