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 Author: [ADVANCED](#) | Volume Page
 Keyword: |

[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1881-3984

PRINT ISSN : 1344-6606

Food Science and Technology Research

Vol. 8 (2002) , No. 1 pp.80-84


[\[PDF \(227K\)\]](#) [\[References\]](#)
Food Components in Fractions of Quinoa Seed
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(Received: September 21, 2001)

(Accepted: December 13, 2001)

Whole quinoa grain was separated into bran and milled grain, and the milled grain into perisperm and embryo. The proximate composition of the milled grain was similar to that of whole grain. The protein and lipid content of the embryo was 57% of total protein and 49% of total lipid, respectively. Mineral analysis showed that the quinoa grain was rich in K, Mg, Ca, P and Fe. The perisperm contained large oval starch aggregates 20–30 μm in diameter and polygonal granules around 1 μm in diameter. Differential scanning calorimetry data indicated a gelatinization temperature of 54.0 to 71.0°C and enthalpy of 11.0 J/g starch. The water-soluble protein and NaCl-soluble protein fractions composed 28.7–36.2% and 28.9–32.9% of total protein in each fraction. Unsaturated fatty acid accounted for 87.2–87.8% of total fatty acid. Phytate, a trypsin inhibitor activity and lipoxigenase activity in the embryo were highest. The saponin content of the bran was 86% of total saponin.

Keywords: [quinoa seed](#), [proximate composition](#), [mineral](#), [starch](#), [protein](#), [lipid](#), [antinutrients](#)


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To cite this article:

Food Components in Fractions of Quinoa Seed Hitomi ANDO, Yi-Chun CHEN, Hanjun TANG, Mayumi SHIMIZU, Katsumi WATANABE and Toshio MITSUNAGA, *FSTR*.
Vol. **8**, 80-84. (2002) .

doi:10.3136/fstr.8.80

JOI JST.JSTAGE/fstr/8.80

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