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Studies on Textural and Chemical Changes in Aged Rice Grains

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Chemical properties and textures of cooked rice prepared with aged rice grains were investigated and compared with those of cooked rice prepared with new rice grains. Differences in stickiness/hardness (S/H) ratios between new rice and aged rice were eliminated by the removal of the external layer of rice grains. Analysis by sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) showed that the proteins of the external layer in aged rice grains were oxidized to a greater extent than those of new rice grains. Addition of a reducing agent to cooking water increased the S/H ratio of aged rice to approximately that of new rice. The reducing agent cleaves the disulfide linkages of the proteins. Therefore, textural changes in aged rice were inferred to be due to oxidation of proteins in the external layers of grains.

Keywords: [aged rice](#), [texture in cooked rice](#), [oxidation of proteins](#), [intermolecular disulfide linkages](#), [external layer of grains](#)


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