Quality of regular and parboiled rice in long-term storage

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The objective of this research was to investigate the long-term storage of rice in cans treated to reduce oxygen levels and to determine the effects of long-term storage on quality. There is interest in storing food for long periods of time, especially for emergency situations. The quality of rice in long-term storage did not decrease over time. The slope for age versus overall acceptability for regular rice was significantly different from that for parboiled rice, meaning that parboiled rice decreased over time in sensory acceptability more than regular rice. No significant trend over time was found for either thiamin content or oxidative stability of bran lipids.

**RESULTS AND DISCUSSIONS**

**Headspace Oxygen, Can Seam, and Water Activity**

The results for the headspace oxygen and thiamin quality for each rice type are presented in Table 3. The results of the headspace oxygen for both regular and parboiled rice were either very high or very low. The percentage of rice with 0% oxygen ranged from 0.00% to 20.9%. The oxygen level for parboiled rice was much lower than that for regular rice. Oxygen percentage for parboiled rice ranged from 0.02% to 20.9%, with an overall mean of 1.7%. The high oxygen levels can be attributed to poor can seal quality or lack of proper oxygen removal.

**Sensory Evaluation**

The slope for age versus overall acceptability for regular rice was significantly different from that for parboiled rice, meaning that parboiled rice decreased over time in sensory acceptability more than regular rice. No significant trend over time was found for either thiamin content or oxidative stability of bran lipids.

**Thiamine and Headspace Hexanal**

Both types of rice had greater than 88% acceptance for aroma. Parboiled rice hedonic scores for aroma significantly decreased over time in acceptance (Figure 3). The slope for age versus overall acceptability for regular rice was significantly different from that for parboiled rice, meaning that parboiled rice decreased over time in sensory acceptability more than regular rice. No significant trend over time was found for either thiamin content or oxidative stability of bran lipids.

**Thiamine**

The results of the headspace oxygen and thiamin quality for each rice type are presented in Table 3. The results of the headspace oxygen for both regular and parboiled rice were either very high or very low. The percentage of rice with 0% oxygen ranged from 0.00% to 20.9%. The oxygen level for parboiled rice was much lower than that for regular rice. Oxygen percentage for parboiled rice ranged from 0.02% to 20.9%, with an overall mean of 1.7%. The high oxygen levels can be attributed to poor can seal quality or lack of proper oxygen removal.

**ABSTRACT**

There is interest in storing food for long periods of time, especially for emergency situations. The objective of this research was to investigate the least 30 years. There is interest in storing food for long periods of time, especially for emergency situations. The results of the headspace oxygen for both regular and parboiled rice were either very high or very low. The percentage of rice with 0% oxygen ranged from 0.00% to 20.9%. The oxygen level for parboiled rice was much lower than that for regular rice. Oxygen percentage for parboiled rice ranged from 0.02% to 20.9%, with an overall mean of 1.7%. The high oxygen levels can be attributed to poor can seal quality or lack of proper oxygen removal.

**METHODS**

**Samples**

Eighteen samples of white rice (11 regular, 7 parboiled) packaged in No. 10 cans were obtained from donors. The cans were trained to high headspace oxygen at an oxygen percentage ranging from 0.02% to 20.9% (Figure 1). The samples were prepared for sensory evaluation by treating the outer layer of the cans with a film of oxygen-free plastic and then treating the plastic with 3500 Series Headspace Oxygen Analyzer (Illinois Can Seam, Elmsford, NY). The results indicate that polished white rice is capable of being used for emergency situations did not decrease over time. Both long-term and short-term studies on hulled rice stored air tight containers, would not deteriorate for at least the 30 years stored in cans treated to reduce oxygen levels and to determine the effects of long-term storage on quality. The objective of this research was to investigate the long-term storage of rice in cans treated to reduce oxygen levels and to determine the effects of long-term storage on quality. There is interest in storing food for long periods of time, especially for emergency situations. The quality of rice in long-term storage did not decrease over time. The slope for age versus overall acceptability for regular rice was significantly different from that for parboiled rice, meaning that parboiled rice decreased over time in sensory acceptability more than regular rice. No significant trend over time was found for either thiamin content or oxidative stability of bran lipids.