

## Cooking Attributes of Rice Stored under Varying Temperature and Moisture Regimes

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**Abstract :** The objective of this research was to study the changes in eating quality of rice during storage under varying temperature and moisture regimes. Paddy (IR-36) with high amylose content (27%) was stored at a temperature range between 10 to 40°C and moisture content from 9 to 18% (d.b.) for 6 months. Drastic changes in color and parameters representing cooking qualities, cooked rice texture, and surface morphology occurred after 4 months of storage, especially at elevated temperature conditions. Head rice yield was stable throughout the storage except at extreme conditions of temperature and moisture content. Yellowing of rice was prominent at combinations of high temperature and moisture content, both of which had a synergistic effect on the b\* values of rice. The cooking time, length expansion ratio and volume expansion ratio of all the rice samples increased with prolonged storage. The texture parameter, primarily, the hardness, cohesiveness, and adhesiveness of cooked rice samples were higher following storage at elevated temperature. Surface morphology was also significantly affected in stored rice as compared to fresh rice. Storage of rice at 10°C with a grain moisture content of 10% for 2 months gave cooked rice samples with good palatability and minimal cooking time. The temperature was found to be the most prominent storage parameter for rough rice, followed by moisture content and storage duration, influencing the quality of rice.

**Keywords :** rice, cooking quality, storage, surface morphology

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