

C627184 : MAJOR FOOD TECHNOLOGY
KEY WORD:

FROZEN COOKED RICE / AIR BLAST / CRYOGENIC / STORAGE / QUALITIES

SOMJIT PRAPALERTRASAMEE : EFFECT OF FREEZING AND STORAGE ON QUALITIES OF FROZEN COOKED RICE. THESIS ADVISOR : ASST. PROF. SUWANNA SUBHIMAROS, Ph.D.
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Cooked rice preparation and effects of freezing and storage of frozen cooked rice were studied. Ratio of rice to water for cooking White rice harvested from wet season crop (26% amylose) and jasmin fraganced rice (17.8% amylose) are 1:1.9 and 1:1.4 respectively. Steam cooking was the appropriate method for preparing cooked rice due to higher moisture content ,bright color for white rice and good color with good texture for jasmin fraganced rice. Appropriate freezing temperature for cooked rice which was packed into waxed paper box with liquid nitrogen freezing was -70°C . Three factors which might affect qualities of frozen cooked rice , i.e. rice varieties , freezing methods and thawing methods were investigated. Sensory test showed that fragrance rice had better score in appearance , odor , texture and acceptance than white rice. Thawing frozen cooked rice by steaming gave cooked rice slightly whiter color than using microwave. No difference was distinguished by panelists between the methods of freezing (liquid nitrogen and air blast freezing).

Effect of freezing methods , storage conditions and storage time on qualities of frozen cooked rice were studied. It was found that freezing with liquid nitrogen resulted in lower %weight loss and %broken cooked rice but higher appearance score than freezing by air blast . Storage of frozen cooked rice at constant temperature (-18°C) would reveal higher %weight loss , appearance score and acceptance score than those stored in fluctuated temperature (-8 to -18°C) . During storage %weight loss , firmness , sensory score of appearance , color and acceptance trended to be decrease while % broken rice and moisture content of frozen cooked rice increased . Even though the qualities of frozen cooked rice after 5 months storage differed significantly ($p \leq 0.05$) from beginning product are still in the rank of moderately like to mostly like by the panelists . Microbiological test showed a result of total plate count and yeast & mold count less than 30 colonies / gram .

ภาควิชา.....เทคโนโลยีทางอาหาร.....

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