THE EFFECTS OF PHOSPHINE AND BAG TYPE ON STORAGE FUNGI OF MILLED RICE

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The effects of phosphine and bag type on storage fungi of milled rice were investigated together with changes in moisture content.

Milled rice was stored in either jute or polypropylene bags under ware-house conditions for 49 weeks. Five stacks of each bag type were constructed, and their positions were selected at random. Each stack consisted of 50 jute bags of 100 kg or 100 polypropylene bags of 50 kg milled rice.

The rice was fumigated with phosphine at a dosage rate 10 tablets/ stack or 2 tablets/tonne and exposure period of 5 days. Fumigation was repeated throughout the experiment, at the interval of 3 months.

The fungal population on rice was determined using the dilution method on Dichloran 18% Glycerol Agar (DG18) before fumigation (at the beginning of storage, and subsequently at 11, 23, 35 and 47 weeks of storage), and immediately after fumigation (at 1, 13, 25, 37 and 49 weeks of storage).

During 49 weeks of storage, 21 and 22 species of fungi were isolated from milled rice packed in jute and polypropylene bags, respectively. In both bag types the predominant fungus was *Aspergillus penicilloides* which increased sharply from the first week after which the population almost constant, either before or after fumigation.

The total count of fungal and *A. penicilloides* populations on milled rice packed in jute bags were lower than that in polypropylene bags. The population increased until eleventh week of storage, thereafter declined slowly in line with the length of storage period.

The moisture content of milled rice packed in jute bags was lower than that of polypropylene bags. There was a variation in the moisture content with the increase of storage duration either in jute or polypropylene bags.