
A NOTE ON STORAGE TESTS ON PADDY

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LIKE all other cereals, paddy is subject to deterioration on storage. The chief factor responsible for its deterioration is its moisture content. It is well known that a moisture content above 12 per cent is detrimental to the keeping quality of paddy. High moisture content encourages the development of insects and fungi. Excess moisture results in the grain being attacked by insects and also it soon becomes rancid and unfit for human consumption. It also loses its viability (germination properties).

An investigation was carried out to ascertain the changes in moisture content after harvesting, sun drying and storage over a period of 9 months, in view of the necessity to store seed paddy over this period for issue to cultivators and millers.

The paddy after harvesting and threshing, was thoroughly sun dried for 3 to 4 days before storage in gunnies and bins. Eight varieties of paddy were stored in this manner in store houses and protected from damp and rain, at Batalagoda, Maha Illuppallama and Polonnaruwa, Research Stations. The moisture contents were determined soon after harvesting and threshing and then after sun drying for 3 to 4 days. Thereafter, the moisture contents were determined every month, after storage in gunnies and bins.

The results of these investigations are shown in Table I and the trends of increase in moisture are shown in Graphs "A" and "B".

From the above results it was found that the average moisture content after harvesting and threshing was 16.0 per cent. After sun drying for 3 to 4 days the average moisture content was 7.3 per cent. The average moisture content increased to 10.0 per cent and 9.1 per cent when the paddy was stored in gunnies and bins respectively for 9 months.

It can be concluded from the above results that provided the paddy is thoroughly sun dried to bring the moisture content to below 8 per

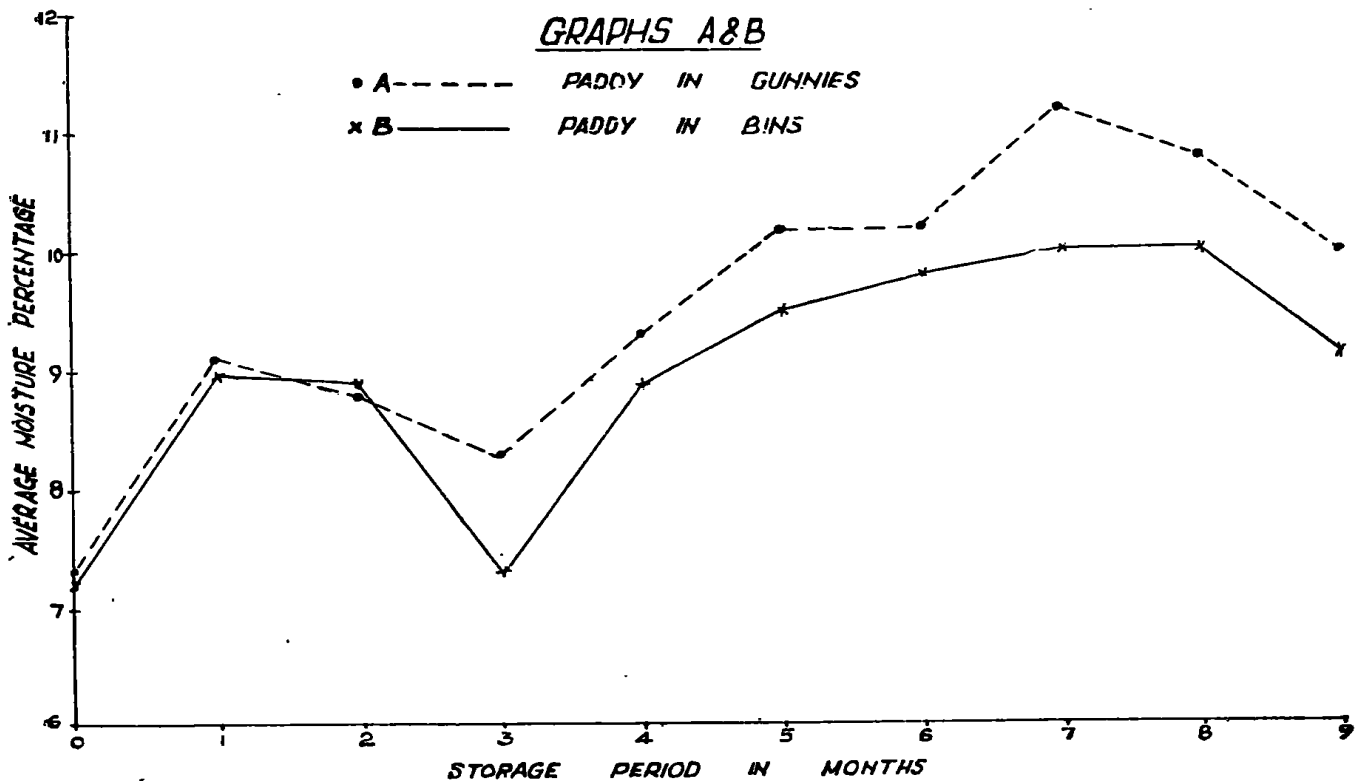
cent, there is no risk of the moisture level going above 12 per cent after storage in gunnies and bins for as long as 9 months.

It was also found that paddy stored at a moisture level below 12 per cent in glass jars, did not develop any rancidity over a period of one year. Rancidity development was detected only after 2 years.

Gunnies and bins are commonly used in Ceylon for storing paddy. These methods of storage are satisfactory, provided the paddy is kept in well-built store houses, protected from rain and damp and sealed off effectively from the outside atmosphere. Under these methods of storage, paddy can be kept for easily one year without any deterioration, if proper steps are taken to prevent insect infestation and fungal attack.

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Trends of increase in moisture in stored paddy.

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TABLE I

| Variety | %Moist. Harvest & threshing | %Moist. Sun Dried | %Moist. Storage | | | | | | | | | | | | | | | | | |
|--------------------|-----------------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|------|------|------|------|------|------|------|------|-----|
| | | | 1 month Gun. Bin. | 2 months Gun. Bin. | 3 months Gun. Bin. | 4 months Gun. Bin. | 5 months Gun. Bin. | 6 months Gun. Bin. | 7 months Gun. Bin. | 8 months Gun. Bin. | 9 months Gun. Bin. | | | | | | | | | |
| Molagu | 22.6 | 5.1 | 6.5 | 6.8 | 8.8 | 9.0 | 9.0 | 9.2 | 9.5 | 8.7 | 10.2 | 9.2 | 12.3 | 10.9 | 12.7 | 9.5 | 10.6 | 10.0 | 9.5 | 8.6 |
| Samba g18 | 16.4 | 6.3 | 7.5 | — | 8.5 | — | 8.7 | 8.8 | 10.2 | 8.4 | 10.3 | 9.0 | 11.0 | 12.8 | 10.6 | 10.1 | 10.9 | 9.6 | 10.1 | 9.0 |
| Ptb 16 | 16.2 | 7.6 | 8.8 | 7.2 | 7.9 | 8.0 | 7.9 | 7.8 | 10.7 | 9.5 | 10.1 | 10.9 | 12.9 | 12.2 | 10.6 | 10.4 | 11.2 | 10.4 | 10.4 | 9.6 |
| Mass M 24 | 18.5 | 6.5 | — | 7.8 | 8.8 | 8.7 | 8.7 | 8.5 | 10.2 | 9.7 | 10.3 | 9.3 | 12.2 | 12.1 | 10.8 | 10.1 | 10.4 | 9.9 | 10.0 | 9.1 |
| Siam 29 | 12.8 | 7.6 | 9.8 | 10.0 | 9.2 | 9.0 | 7.7 | 6.8 | 8.7 | 8.8 | — | — | 8.6 | 8.3 | — | — | — | — | — | — |
| H M C 20 | 14.8 | 7.6 | 9.8 | 10.5 | 9.1 | 9.1 | 7.8 | 6.5 | 8.6 | 8.7 | — | — | 9.2 | 8.7 | — | — | — | — | — | — |
| V I 28061 | — | 7.6 | 9.5 | 10.2 | 9.3 | 9.2 | 7.7 | 6.0 | 8.7 | 8.8 | — | — | 8.4 | 7.5 | — | — | — | — | — | — |
| Murunga-kayan 302 | — | 7.6 | 9.5 | 10.2 | 9.3 | 9.2 | 7.7 | 6.0 | 8.7 | 8.8 | — | — | 8.4 | 7.5 | — | — | — | — | — | — |
| H S 276 | 13.5 | 7.4 | 10.1 | 9.5 | 8.9 | 9.0 | 7.3 | 5.7 | 8.6 | 8.8 | — | — | 8.5 | 7.8 | — | — | — | — | — | — |
| Mas M 24 | 13.6 | 7.4 | 9.6 | 9.7 | 9.1 | 9.0 | 8.0 | 6.4 | 8.7 | 8.9 | — | — | 9.1 | 7.7 | — | — | — | — | — | — |
| Ptb 16 | 15.3 | 9.6 | 10.1 | 9.1 | — | — | 10.1 | — | 9.5 | — | — | — | 9.2 | — | — | — | — | — | — | — |
| Average % Moisture | 16.0 | 7.3 | 9.1 | 9.0 | 8.8 | 8.9 | 8.3 | 7.3 | 9.3 | 8.9 | 10.2 | 9.5 | 10.2 | 9.8 | 11.2 | 10.0 | 10.8 | 10.0 | 10.0 | 9.1 |