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Postharvest Management in Agriculture

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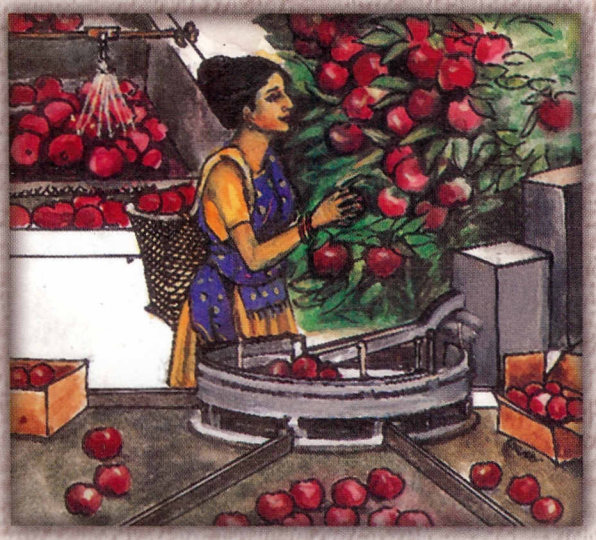

SAARC Agricultural Information Centre

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CONTENTS

contrast to a decrease in germinability. Toxigenic strains of *A. flavus* were isolated from both *S. oryzae* and *T. castaneum*.

290 YASIN, M; HANNA, M. 1989. **Potassium sorbate as a preservative for high-moisture corn**. *Transactions of the ASAE, American Society of Agri. Engineers*, 32: 1, 280-284, 290; 17 ref.

Shelled maize, initially at 18.7, 24 and 28% m.c., was treated with potassium sorbate, and potassium sorbate plus propylene glycol. The chemical treatment levels used were 0.1, 0.4, 1.0, 1.5 and 2.5% (wet weight basis). The treated and untreated grain were stored without aeration, and with a 0.11 m3 min-1 Mg-1 air flow rate at ambient temp. The treated grain samples were mould-free for 193 d with and without aeration. With aeration even the lower levels of chemical treatment gave the same numberof safe storage days for high moisture maize as the higher treatment levels without aeration. Potassium sorbate and potassium sorbate plus propylene glycol extended the safe storage time of even the 28% m.c. grain. There was, however, significant discoloration of the grain and an increase in kernel breakage susceptibility.

BARLEY

Postharvest handling

291 BALA, BK. 1991. **Convective heat transfer coefficient of a malt bed**. *Journal of Energy, Heat and Mass Transfer*, India: 13.

292 BALA, BK; WOODS, JL. 1991. **Physical and thermal properties of malt**. *Drying technology (USA)*, 9: 4, 1091-1104.

293 BALA, BK. 1992. **Shrinkage of malt bed during drying**. *International Agrophysics (Poland). A Quarterly Journal on Physical Properties and Processes Affecting Plant production*, 6: 1-2, 115-117.

294 BALA, BK; WOODS, JL. 1984. **Simulation of deep bed malt drying**. *Journal of Agricultural Engineering Research*, U.K.: 30: 3.

295 BALA, BK; WOODS, JL. 1992. **Thin layer drying models for malt**. *Journal of Food Engineering (UK)*, 16.

296 GUPTA, MEERA; ROY, AN. 1987. **Effect of certain chemicals on mould flora of barley in storage**. *Pesticides*, 21: 5, 28-29; 5 ref.

Seed of 2 cultivars was treated after harvest and then stored for 18 months. Of the 3 fungicides, Bavistin [carbendazim] gave the best control of storage fungi while maintaining a high percentage of seed germination. Phosfume [aluminium phosphide] was the best of 3 fumigants and calcium propionate the best of 3 organic acids.

MILLETS

Storage and storage decay

297 EMAYAVARAMBAN, N; RAMABADRAN, R. 1986. **Incidence of seed borne fungi of finger millet as influenced by moisture content, storage temperature, relative humidity and storage period**. *Seed Research*, 14: 2, 189-196; 12 ref.

Initially only field fungi such *as Drechslera oryzae* [*Cochliobolus miyabeanus*] and *Alternaria sp.* were isolated from finger millet [*Eleusine coracana*] seed. However, after prolonged storage, storage fungi (mainly *Aspergillus spp.*) predominated. Increased storage temp., storage period and RH markedly influenced the change in fungal population.

298 GAMBHIR, SP; KHAIRNAR, DN. 1989. **Impact of different liquid media on amylase production by seed moulds of pearl millet (*Pennisetum americanum (L.) Leeke*)**. *Current Science*, 58: 15, 863-864; 7 ref.

Fungi were isolated from *P. americanum* seeds collected from the field and from storage. Amylase production by the 17 fungi was studied using 3 media. *Aspergillus flavus* and *Curvularia lunata* [*Cochliobolus lunatus*] were highly efficient amylase producers. Starch medium was superior to *P. americanum* flour or glucose media for measurement of amylase production. Details of the agar plate method are described.

299 KAMBLE, MY; SALUNKHE, GN. 1992. **Development of storage grain insect *Tribolium castaneum* on grain and flour of pearl millet**. *Journal of Maharashtra Agricultural Universities*, 17: 3, 413-414.

300 PANDEY, KN. 1986. **Preservation of moist ragi grains with certain mild acids**. *Madras Agricultural Journal*, 73: 10, 579-584; 15 ref.

Acetic acid was superior to propionic acid for preserving grains of *Eleusine coracana*. A 3% concn of acetic acid prevented growth and multiplication of all the mycoflora associated with the grains except *Aspergillus*

fumigatus, which required a higher concn. The grains remained viable after treatment with 5% acetic acid but not after treatment with propionic acid (9.141 litres/t-on).

301 PATEL, KV; PARAMESWARAN, M. 1992. **Influence of storage container on keeping quality of bajra grain relationship with lipid changes**. *Gujarat Agricultural University Research Journal (India)*, 17: 2, 94-98.

302 RAO, AS; PRABHU, UH. 1993. **Effect of stage of harvesting and storage on forage and straw quality of finger millet (*Eleusine coracana*)**. *Indian Journal of Agricultural Sciences*, 63: 2, 120-122.

303 RAO, BM; PRAKASH, HS; SHETTY, HS. 1988. **Effect of different metalaxyl formulations on the incidence of seed-borne fungi of pearlmillet and sorghum**. *Geobios Jodhpur*, 15: 2-3, 57-61; 12 ref.

Sorghum and pearl millet [*Pennisetum americanum*] seeds were treated with 4 metalaxyl formulations. Ridomil MZ 72 WP was found to be most effective in reducing the incidence of seed-borne fungal pathogens followed by Ridomil ZN 380 FW. The seedling vigour increased after Ridomil MZ 72 WP and Ridomil Zm 280 FW treatments. Treatment with Apron 35 SD and Ridomil 25 WP enhanced storage fungal population (*Aspergillus* and *Penicillium*).

RICE

Postharvest handling

304 ABDULLAH, T. 1985. **Women in rice farming systems in Bangladesh and how technology programmes can reach them**. *Women in rice farming. Proceedings of a conference on Women in Rice Farming Systems*. (IRRI, Manila: 1983: 26-30 September). Brookfield, Vermont, USA: Gower Publishing, p. 209-220; 10 ref.

Rural women play a significant role in rice production in Bangladesh. The labour requirement of post-harvest processing of paddy, which is mainly women's responsibility, is approximately half the total man days required for its cultivation. The post-harvest technologies used by women are mostly traditional. Little attempt has been made to improve homestead post-harvest technologies. Neglect of homestead technology is a manifestation of a widespread ignorance concerning women's economic activity. The mill technology is being diffused rapidly into rural areas. It greatly reduces processing costs and at the same time brings a larger profit for its owners. However, the availability of rice mills displaces large numbers of female wage labourers. Finding alternative employment is often difficult for them. Group ownership of mills, as is being tried by the Grameen Bank, with pre-milling processing using bari technology, may provide some solution to the problem. This would increase the productivity of women, improve their economic status and have an educative function. However, more systematic study is needed to discover the relative economic and employment effects of this new system and its application for women.

305 BAJAJ, MUKTI. 1987. **Studies on the effect of irradiation on the milling, physico-chemical characteristics, storability and cooking quality of rice (Ph.D : thesis)**. Punjab Agricultural University, Ludhiana. 75 p.

The effect of irradiation, time and method of storage of paddy and rice on the milling, physico-chemical, cooking and nutritional quality of three rice varieties, trials were conducted to obtain the results. The samples were analysed for fat, S.N.F., total solids, titratable acidity and free fatty acids on 0, 2, 4 and 6 days at 30° +2° C and on 2,4,6 and 8 days at 8° +2° C storage period. The quality of *paneer* was determined by judging with score card method. Whey obtained from *paneer* was also analysed for fat, S.N.F. and total solids. Higher fat recovery was made from *paneer* prepared from unhomogenised milk during storage at room and refrigeration temperatures. There was significant variation in S.N.F. percentage in both the *paneer* samples stored at room and refrigeration temperatures. The total solids were higher in fresh *paneer* samples of unhomogenised milk than that of homogenized milk *paneer*. The rate of acid development was greater in homogenized milk *paneer* that of unhomogenised milk *paneer* during storage period at both the temperatures. The free fatty acids increased steadily in both the samples but in the *paneer* prepared from homogenized milk, the increase in acidity was slightly faster as compared to unhomogenised milk *paneer*. Homogenization of milk reduced the losses of nutrients in the whey and recovered more total solids of the milk. There was no adverse effect on the flavour value of *paneer* prepared from homogenized milk. In respect of colour, homogenized milk *paneer* obtained more score than unhomogenised milk *paneer*. Homogenization also improved body and texture of *paneer*. Overall acceptability of *paneer* was upto 2 days at room temperature and upto 6 days at refrigeration temperature for unhomogenised *paneer*, whereas for homogenized milk *paneer*, it was upto 8 days.