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Postharvest Management in Agriculture

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financial and economic appraisal of the process in Sri Lanka.

880 CENTRAL PLANTATION CROPS RESEARCH INSTITUTE, KASARAGOD, INDIA. [1991] **Current status of coconut research and development in the world Summary report and recommendations of the international symposium on coconut research and development-II, 26-29 November 1991**/edited by MK Nair; EVVB Rao; HH Khan; P Gopalasundaram. 36 p.

This report summarizes the important results of papers presented at ISOCRAD-II, held at Kasaragod, and also the recommendations arising from the discussions. A list of delegates is included. The full proceedings of the 8 technical sessions on pest management, genetic resources, crop improvement, biotechnology and physiology, crop management and farming systems, disease management, harvest and postharvest technology, and economics, developmental programmes and transfer of technology is expected to be available from mid-1992.

881 KARUN, A; SAJINI, KK. 1994. **Short-term storage of coconut zygotic embryos in sterile water.** *Current Science*, 67: 2, 118-120.

Coconut zygotic embryos (cultivar West Coast Tall) can be stored for two months in sterile water, Eeuwens Y3 media without charcoal or Y3 media without sucrose. When the embryos were transferred to the retrieval media, respectively 80.0, 66.7 and 66.7% germination were observed. This is the first report of the use of sterile water as the storage medium for coconut embryos.

882 NARAYANA, D; NAIR, KN; SIVANANDAN, P; SHANTA, N; RAO, GN. 1991. **Coconut development in Kerala, ex-post evaluation.** Trivandrum, Kerala: Centre for Development Studies, 139 p.

This is an ex-post evaluation of credit schemes for the rejuvenation of coconut production in Kerala which were financed by the National Bank for Agriculture and Rural Development (NABARD). Part I (chapters 2 to 5) is an analysis of the coconut economy of Kerala and Part II (chapters 6 to 9) is an ex-post evaluation of the coconut development schemes. Chapter 2 analyses the trends in area, production and productivity of coconut in Kerala and compares this with the trends in other States. A limited analysis of the consumption of coconut and coconut oil is presented in Chapter 3. Chapter 4 is concerned with the determinants of the movement of coconut and coconut oil prices and whether the prices of coconut, copra and coconut oil are related. The productivity of coconut palm is low and has been declining in

Kerala. The fifth chapter investigates the technological and institutional factors responsible for this decline in production. The salient features of the coconut credit scheme and its progress in the target area are analysed in Chapter 6. A critical assessment of the procedures used in the identification and selection of beneficiaries by the implementing banks is carried out in Chapter 7. Agricultural credit schemes are analysed in Chapter 8. Chapter 9 analyses the quality of land brought under coconut production, spread and intensity of cultivation operations and yield, and output and income from the scheme gardens. The concluding chapter evaluates the balance of the combination of forces and provides an outlook for the sector.

883 POTTY, VH. 1991. **Coconut processing - trends and possibilities.** *Indian Coconut Journal Cochin*, 22: 6/7, 14-16.

Coconuts can be used to produce various products and byproducts which are used domestically and exported from developing countries. This article evaluates the potential for coconut processing in India and reviews past trends in processing. Research and development efforts are seen as essential for the problem of coconut processing.

DATES

884 INAYATULLAH; KHAN, SAIFULLAH; IMAM BAKHSH; BALOCH, AK. 1989. **Suitability of dhakki dates for dehydration and storage.** *Sarhad Journal of Agriculture*, 5: 6, 603-606; 7 ref.

Fruits of the late cultivar Dhakki are generally sun-dried locally on mats and packed for marketing after about a week. An investigation into improving dehydration and storage conditions was conducted, dates being sorted and cleaned before being dipped for 5 min in a 0.5, 1.0 or 1.5% potassium metabisulphite solution. Controls were dipped in water. The dates were dehydrated at 40°C for 15 h, in cabinets, to reduce the moisture content to 15%. They were then held at room temperature (about 37°) for a week in air-tight containers for moisture equilibration before being transferred to sealed polyethylene bags in which they were stored for 120 days at room temperature. Quality was evaluated every 2 months and data are tabulated on moisture content, the contents of reducing, non-reducing and total sugars and SO₂ retention. Increasing concentrations of pre-storage dipping solution improved the quality after dehydration; with the highest concentration the SO₂ content before storage was about 290 p.p.m. After 2 months of storage, there was significant deterioration in control dates

and those dipped in 0.5% solution. The SO₂ not only preserved the fresh flavour of the fruit but prevented a burnt sugar off-flavour developing and the loss of colour. The maximum sugar content of 34.4% was

retained during 4 months of storage by dates that had been dipped in the 1.5% solution.

885 SAJJAN KUMAR. 1989. **Studies on the processing of date palm fruits (*Phoenix dactylifera* L.)** (M.Sc: thesis), Haryana Agricultural University, Hisar.

Two products, viz. *chuhara* (dry date) and date candy were prepared to standardize their processing technology. Various processing treatments were applied before the preparation of final products. The effect of each treatment was studied on the processing nutritional and keeping quality aspects in cvs. Khadrawy and Zaglool at doka stage of maturity. *Chuhara* from fruits of cv. Khadrawy can best be prepared by water blanching, followed by osmosis in sugar syrup. Good quality *chuhara* can also be prepared from cv. Zaglool with water blanching+osmosis but organoleptically cv. Khadrawy ranked first. The candy prepared by steam blanching with slow method of processing from cv. Zaglool, followed by Khadrawy were rated better. The per cent recovery of *chuhara* was maximum in water blanching+osmosis in cv. Zaglool, followed by cv. Khadrawy. In candy, the per cent recovery was higher in steam blanching with quick method of processing. Both the products stored for 60 days at room temperature remained in good condition without any appreciable loss in quality.

886 SHARMA, RK; SINGH, IS. 1987. **Effect of post-harvest application of 2-chloroethyl phosphonic acid on ripening and quality of Hayani and Khadrawi dates.** *Progressive Horticulture*, 19: 1-2, 128-131; 12 ref.

Fruits of both cultivars, dipped for 5 minutes in ethephon solution at 0, 250, 500, 750 or 1000 p.p.m., were held in perforated polyethylene bags at room temperature and sampled after 5 days. The highest ethephon rate best enhanced ripening and fruit quality. Hayani was more responsive to treatment than Khadrawi.

POMEGRANATES

887 CHANDEL, SS; GUPTA, D; KHOSLA, PK. 1989. **Solar drying of *Punica granatum* Linn. seeds.** *Renewable energy for rural development. Proceedings of the national solar energy convention.* (Hyderabad, India: 1988: 1-3 December)/edited by VVN Kishore; NK

Bansal. New Delhi: Tata McGraw-Hill, p. 415-419; 4 ref.

The seeds of *Punica granatum* (wild pomegranate) commonly known as 'Anardana' were dried in a solar cabinet drier. It was found that solar drying of seeds with initial m.c. of 72% to a desirable m.c. of 5.2% is achieved in a much shorter period than by open sun drying which takes about 6 d. The drying rates of the solar drying and open drying methods were compared to emphasize the efficacy of solar drying. Drying curves for both methods are given.

888 CHAUHAN, SK; LAL, BB; SHARMA, R. 1994. **Development of instant dehydrated wild pomegranate chutney.** *Journal of Food Science and Technology - Mysore*, 31: 1, 58-59.

The methods for preparing instant wild pomegranate chutney were evaluated and the products were analyzed for physico-chemical and nutritional characteristics. The product (T3, combination) had good amounts of vitamin C, sugar, ash and fibre. It reconstituted well in cold water and possessed all characteristics of fresh chutney. The product had a shelf-life of more than 6 months.

889 SONAWANE, CS; UTIKAR, PG; SHINDE, PA. 1986. **Post-harvest fungal flora of pomegranate.** *Journal of Maharashtra Agricultural Universities*, 11: 1, 107-108; 11 ref.

A survey of the fruit in local markets yielded isolates of 11 fungal spp. including *Aspergillus niger*, *Penicillium frequentans*, *Rhizopus* sp., *Alternaria alternata*, *Aspergillus flavus*, *A. fumigatus*, *Glomerella cingulata*, *Phoma* sp., *P. punicae* and *Phomopsis* sp.

PAPAYAS

890 GANESHAN, S. 1986. **Cryogenic preservation of papaya pollen.** *Scientia Horticulturae*, 28: 1/2, 65-70; 29 ref.

Pollen of *Carica papaya* cv. Washington and *C. cauliflora* cryopreserved in liquid nitrogen for 485 days retained viability as high as that of fresh pollen when germinated in vitro. Pollen stored for 300 days could effect normal fertilization, producing fruit and seed set on a par with controls, indicating no loss of fertility. Pollen samples exhibited high tolerance to direct freezing at ultra low temperatures, uncontrolled thawing to ambient temperature and refreezing to cryogenic temperatures. This method of preservation is recommended to papaya breeders and gene banks involved in conserving genetic resources of *Carica* species.