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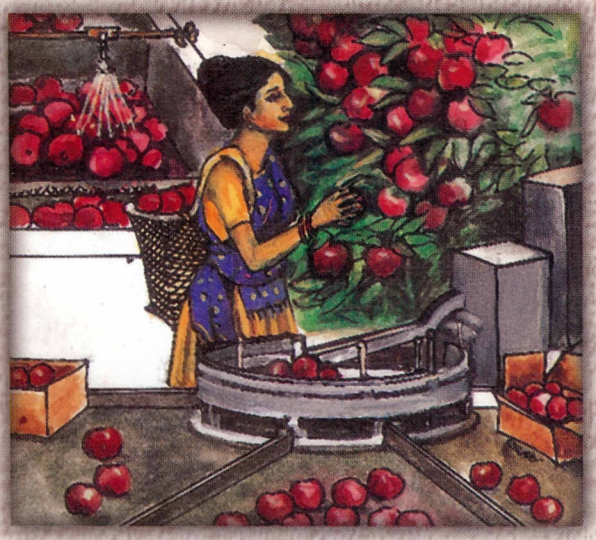

SAARC Agricultural Information Centre

Postharvest Management in Agriculture
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CONTENTS

Preface	i
Introduction	ii
POSTHARVEST EQUIPMENTS	1
PACKING MATERIALS	14
AGRICULTURAL PRODUCE	25
CEREAL GRAINS	27
WHEAT	31
SORGHUM	35
MAIZE	36
BARLEY	38
MILLETS	38
RICE	39
SOYBEANS	60
VIGNA	62
LENTILS	66
STARCH CROPS	66
CASSAVAS	68
TOBACCO	70
COFFEE AND TEA	71
GARLICS	72
GINGERS	73
TURMERICS	75
SPICES	76
OILS	77
FRUITS	78
APPLES	83
PEARS	89
APRICOTS	90
PEACHES	91
PLUMS	92
PRUNUS DOMESTICA	94
CHERRIES	94
LITCHI CHINENSIS	94
CITRUS	95
ORANGES	97
KINNOWS	98
LEMONS	101

GUAVAS 102
SAPOTA 105
MANGOES 107
NUTS 115
COCONUTS 116
DATES 117
POMEGRANATES 118
PAPAYAS 118
JACKFRUITS 119
AEGLE MARMELOS 120
AMLA 121
BERRIES 121
BANANAS 122
PINEAPPLES 126
ZIZIPHUS MAURITIANA 126
GRAPES 128
VEGETABLES 133
CARROTS 136
POTATOES 138
ONIONS 144
CAULIFLOWERS 151
TOMATOES 151
BRINJALS 156
PEAS 157
GROUNDNUTS 159
MUSHROOMS 162
OTHER VEGETABLES 163
FLORICULTURE 164
DAIRY SCIENCE 166
FOOD TECHNOLOGY 191
JUICES 205
WINE AND BEVERAGES 211
SEED TECHNOLOGY 213

Term Index i
Author Index xvi

27; 8 ref.

F. solani and *F. moniliforme* [*Gibberella fujikuroi*] cause rotting and losses in ashgourd [*Benincasa hispida*] during storage and transit. Radial growth of both pathogens in culture was checked by quinoline, Phaltan [folpet], Bavistin [carbendazim] and Tillax among the fungicides tested. The fumigants chlorobenzene and formaldehyde were also effective.

1234 UPADHYAYA, GIRJESH. 1991. **Some new rots of snap gourd in storage**. *Advances in Plant Sciences*, 4: 1, 194-195.

In the rainy season c. 15% of fruits of snap gourd (*Cucumis melo var. momordica*) were rotted in Rajasthan, India. Fungi isolated from surface sterilized fruits were identified as *Aspergillus niger*, *A. flavus*, *Fusarium oxysporum*, *F. solani*, *F. moniliforme* [*Gibberella fujikuroi*], *Curvularia lunata* [*Cochliobolus lunatus*] and *Drechslera halodes* [*Setosphaeria rostrata*]. Of these, *F. solani*, *G. fujikuroi* and *S. rostrata* were pathogenic. This is the first report of pathogenic fungi on snap gourds.

1235 VASUDEVAN, K; JOS, JS; PADMAJA, G. 1989. **Gamma ray induced mutants in *Colocasia* with improved storability**. *Mutation Breeding Newsletter*, No. 34, 5.

Variability in tuber storability was noticed among induced mutants of *C. esculenta*. Tubers of CM17 in particular retained their quality even after 180 days storage. Tabulated data on yield and quality characteristics are presented for CM17 and CM1 plus standards C9 and Rasmi. CM17 tubers were low in phenol and sugar content but high in DM and starch content, making them suitable for the production of taro chips.

FLORICULTURE

1236 BAJAJ, YPS. 1993. **A suggested method for in vitro long-term storage at 4°C of *Chrysanthemum* and *Petunia* germplasm**. *Plant Tissue Culture, Bangladesh*, 3: 1, 57-58.

1237 BALAKRISHNA, HV; REDDY, TV; RAI, BGM. 1989. **Post-harvest physiology of cut tuberoses as influenced by some metal salts**. *Mysore Journal of Agricultural Sciences*, 23: 3, 344-348; 17 ref.

A study was carried out during 1986 on flowering spikes of tuberose (*Polianthes tuberosa*) cv. Doubles. Spikes were harvested when one or two of the lower florets were open, cut to 55 cm in length and all but 2 or 3 leaves were removed. After recording FW, each spike was placed in a 500 ml bottle containing 300 ml of distilled water (control), or chloride or sulphate salts of Al, Ca and Mg (0.5, 1.0 or 1.5 mM), or cobalt sulphate (1.0, 1.5 or 2.0 mM). Results were similar for the chloride and sulphate salts. All the salts increased the cumulative water uptake and reduced the water loss to water uptake ratio compared with the control. Water balance (water uptake - transpirational loss) was positive up to the ninth day with all salts except Mg. FW increased initially then decreased, with the highest FW being maintained with Co salts throughout the period of vase life. Vase life was increased by all treatments compared with the control (7 days), the longest vase life being observed in 1.0 mM Al (10.63 days) followed by 2.0 mM Co (10.40 days).

1238 GOWDA, JVN. 1986. **Post-harvest life of China aster as influenced by chemical preservatives**. *Current Research, University of Agricultural Sciences, Bangalore*, 15: 12, 138-139; 5 ref.

In trials with the [*Callistephus chinensis*] cv. Ostrich Plume, the flowers were held in 8 different solutions at ambient temperatures of 25.4°C (during monsoon) or 22.2° (during dry season). Vase life was longest (13.17-14.63 days) in both seasons with 0.4% aluminium sulphate + 2% sucrose. Control vase life was 5.1-5.5 days. This treatment proved useful to prolong vase life.

1239 GREWAL, NS; GILL, APS; DHIMAN, JS. 1989. **Effect of different pre-storage treatments of carnation cuttings on their storage rot**. *Journal of Research, Punjab Agricultural University*, 26: 1, 51-56; 11 ref.

Scania carnation cuttings were treated with 0.3% captan, prior to storage and this protected them from storage rot, caused mainly by *Alternaria alternata*. Cuttings showing rot symptoms also had spores of *A. tenuissema* [*A. tenuissima*], *Botrytis*, *Mycosphaerella*, *Septoria* and *Stemphyllium spp*. Fungal inoculum accompanies cuttings from mother stocks to cold storage. Sanitary measures to prepare and store the cuttings are discussed.

1240 JANA, BK; BOSE, TK. 1987. **Effect of fungicides on bulb storage and subsequent growth and flowering of *Hippeastrum hybridum Hort***. *Indian Agriculturist*, 31: 2, 87-92; 8 ref.

Alternaria longipes and *Rhizopus sp.* caused rotting of *H. hybridum* bulbs during storage and the leaf spot disease caused by *Alternaria sp.* adversely affected growth and flowering. Benlate (benomyl), Dithane M 45 [mancozeb], zineb and ziram were evaluated for control

of these pathogens. Bulbs treated with 0.2% Benlate and 2 and 3% ziram for 2, 4 and 8 h showed no rotting during storage for 180 d. Treatment with 3% ziram and 0.2% Benlate for 8 h also reduced leaf spot disease and promoted growth and flowering.

1241 KHONDAKAR, SRK; MAZUMDAR, BC. 1985. **Studies on prolonging the vase life of tuberose cut flowers**. *South Indian Horticulture*, 33: 2, 145-147.

Some 30 cm long cut flowers of tuberose [*Polianthes tuberosa*] were held in 8 different preservative solutions for up to 96 h. The best results were obtained with 3% sucrose + 0.03% hydroxyquinoline citrate + 0.01% AgNO3.

1242 MURALI, T.P. 1988. **Pre-harvest and post-harvest physiology of *Gladiolus* (*Gladiolus hortensis L.*) (Ph.D : thesis)**. University of Agricultural Sciences, Bangalore.

In the present study the effect of pre-harvest factors such as spacing, growth regulating chemicals (cytokinin and triadimefon) and irrigation, different metal salts either alone or in combination with sucrose on growth, flowering and post-harvest physiology, and the mode of action of these metal salts in extending the vase life of gladiolus were attempted. The spacing trial was carried out using cv. Friendship with row spacing of 40. 30 and 20 cm and plant to plant spacing of 25, 20 and 15 cm. Closer spacing delayed the plant emergence and flower spike emergence, 30 x 20 cm spacing being optimum for the best quality flower production. Corm size and weight were better with moderate (30 x 20 cm) spacing. Closer spacing drastically reduced the cormel yield in terms of both number and weight. Triadimefon (TAF) 50-100 ppm corm dip resulted in early plant and spike emergence and higher concentrations delayed the processes in cvs. Friendship and Mansoer Red. Corm dip with benzylaminopurine (BAP) was effective in early plant emergence but not in spike emergence. Leaf area, chlorophyll content, flower spike characters as well as post-harvest quality were the best with TAF (100 ppm). Corm dip with higher concentrations of TAF and BAP as well as foliar sprays with TAF did not change the flower spike characters. Corm and cormel yield was significantly influenced by BAP treatments. BAP 90 ppm recorded 5.87 daughter corms per mother corm. Varietal variation in response to TAF corm dip was not significant. When gladiolus plants were irrigated once in 2,4,6 and 8 days, irrigation on alternate days resulted in early plant emergence, increased plant height and leaf area/plant. Spike emergence was delayed by lesser frequency of irrigation. Corm yield was maximum with plants which were irrigated once in 6 days. Cormel yield (both number and weight) was better with alternate day irrigation. *Gladiolus* plants were subjected to moisture stress for 0 to 5 days prior to harvest of the spikes. Number of fully opened florets was better upto 4 days stress and thereafter it decreased. Consequent to better water balance maintained in the cut flowers harvested from plants stressed for 3 days prior to harvest their post-harvest quality was better. Use of cobalt, nickel, silverthiosulphate (STS), calcium, aluminum and zinc (each at three different concentrations) in the vase solution found to have beneficial effects in terms of better water relations and increased vase life. Co, STS and Ni were more effective. Combination of sucrose and metal salts maintained positive water balance for a longer time resulting in a significant increase in the fresh weight of cut gladioli leading to increased vase life. Sucrose+cobalt combination proved the best, recording a maximum vase life of 12.33 days, followed by sucrose+STS combination (10.67 days) as against control in distilled water (7.0 days). Membrane permeability, as indicated by ion leakage and malondialdehyde content, was found to be delayed or reduced by the use of metal salts and sucorse. A reduction in ethylene evolution was also noticed. Opening of florets was better when cut gladioli spikes were pulsed with 10 and 20% sucrose for 6,12 and 24 h. Higher flower fresh weight was maintained even upto 9 days. vase life of flower spikes was improved by 2.5 days by pulsing with 10% sucrose for 24 h or 20% for 12 h.

1243 PATIL, MT; DESAI, UT; CHOUDHARI, KG. 1991. **Effects of storage conditions, date of planting and growth regulators on sprouting of *Gladiolus* corms**. *Journal of Maharashtra Agricultural Universities (India)*, 16: 3, 313-315.

1244 PATIL, MT; KALE, PN; CHOUDHARI, KG. 1992. **Periodical changes in the activity of GA and ABA like substances during storage of gladiolus corms**. *Journal of Maharashtra Agricultural Universities (India)*, 17: 2, 199-201.

1245 REDDY, TV; NAGARAJAIAH, C; RAJU, B. 1988. **Impregnating cut rose stems with nickel increases vase life**. *Current Research, University of Agricultural Sciences, Bangalore*, 17: 8, 108-109; 11 ref.

Stems of cv. Queen Elizabeth, harvested when the first petal unfurled, were cut to 30-cm lengths and stripped of all leaves except two 3-leaflet leaves and one 5-leaflet leaf. The stems were placed in (a) distilled water, (b) a 10 mM aqueous solution of nickel sulphate for 10

minutes, or (c) as (b) for 20 minutes. After pulsing, all variants were placed in flasks containing 250 ml distilled water. Vase life in (a), (b) and (c) was 2.6, 5.3 and 6.3 days, respectively.

1246 REDDY, TV; NAGARAJAIAH, C. 1988. **Silver nitrate pulsing of cut Queen Elizabeth rose stems to increase vase life**. *Current Research, University of Agricultural Sciences, Bangalore*, 17: 3, 37-38; 9 ref.

Vase life of cut roses, pulsed for 10 or 20 minutes with AgNO3, was 6.0 and 5.3 days, respectively. Vase life of the control (in water) was 3.0 days.

1247 SHROTRI, SC; GUPTA, JS; SRIVASTAVA, RN. 1986. **Seed-borne fungi of aster, their significance and the control**. *Journal of the Indian Botanical Society*, 65: 4, 446-449; 8 ref.

Of 31 seedborne fungi associated with 6 seed samples of aster (*Callistephus chinensis*), *Aspergillus flavus*, *A. niger*, *A. repens*, *Alternaria alternata*, *Botrytis cinerea*, *Curvularia pallescens*, *Fusarium spp.*, *Cladosporium sphaerospermum*, *Drechslera [Cochliobolus] hawaiiensis*, *Phoma putaminum*, *Myrothecium verrucaria* and *Trichothecium roseum* caused seed and seedling death. *A. alternata*, *B. cinerea* and *F. moniliforme* [*Gibberella fujikuroi*] also caused severe foliar disease. Seed treatment with Ceresan dry [methoxyethyl mercury silicate], Dithane M-45 [mancozeb] (0.3%) and aureofungin (0.02%) gave effective control.

1248 THANGARAJ, T; RAJAMANI, K; THAMBURAJ, S. 1990. **A study on the vase life of gerbera (*Gerbera jamesonii Bolus*)**. *South Indian Horticulture*, 38: 5, 265-267; 2 ref.

Freshly cut flowers of 24 accessions, placed in glass tubes with no water, were held at room temperature for 24 h. Data are tabulated on weight loss, flower stalk bending, petal drooping, petal necrosis and vase life. The following accessions were found suitable for use as cut flowers: GJ 8, GJ 10, GJ 16, GJ 18, GJ 23 and GJ 44. In these, no flower stalk bending, petal drooping and petal necrosis were observed after 24 h.

DAIRY SCIENCE

DAIRY INDUSTRY

1249 AHMED, M. 1991. **Pakistan's dairy industry**. *Indian dairyman*, 43: 3, 137-138.

Milk and milk products account, on av., for 25% of a Pakistani's food budget, and milk processing is an important part of the food processing industry in Pakistan. The processing capacity for UHT milk has increased considerably since 1983 to >1 million litres/day. The following problems that face the UHT milk industry are briefly discussed: over-capacity; high packaging costs; competition from raw milk; import duties on dried skim milk; unrealistic milk standards; poor product image; raw milk procurement; and seasonality and dried milk production. Indigenous products, none of which are produced at milk processing plants, are listed.

1250 BANERJEE, AK. 1991. **Problems of dairying in India in the nineties**. *Indian dairyman*, 43: 7, 293-305; 7 ref.

Many of the dairying problems in India arise from large human and cattle populations being sustained on a limited land mass. Cattle are kept mainly as draught animals, buffaloes being reared specifically for milk production only where the farmer has some access to the milk market. Seasonal and regional variations in milk production, the growing demand for milk and the establishment of milk supply schemes, particularly through Operation Flood, are discussed. Projected figures are presented for 2 targeted levels of milk demand in the 1990s, and ways in which these could be met through breeding, feeding/nutrition, ensuring regularity of milk supply, suitable packaging and reasonable prices are considered. Developments in the dairy industry in the 1990s are predicted to include modernization of dairy plants, product diversification, improved packaging and manpower training.

1251 BHATT, PK; UPADHYAY, KG. 1992. **In search of 'pointers of quantum-leap' as 'catalysts' for accelerated dairy development - some thoughts to ponder**. *Indian dairyman*, 44: 9, 451-454; 16 ref.

Recent successful developments within the Indian dairy sector that have resulted in increased productivity, and their potential to act as catalysts for accelerating development of the dairy industry in India, are discussed. These include the implementation of the Operation Flood programme, introduction of productivity awards by the National Productivity Council, and development of village cooperatives.

1252 CHAUDHRY, IM. 1989. **dairy production in Pakistan**. *World Farmers' Times*, 4: 11, 28-29.

The author reviews the current status of the dairy industry in Pakistan and highlights the major problem areas such as high packaging costs, requirements for new technology and the necessity to improve quality and throughput.