

## FLORICULTURE

### Evaluation of Gladiolus (*Gladiolus hybridus* L.) Varieties

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2001 MAJOR ADVISOR: Dr. B. SATHYANARAYANA REDDY

Gladiolus is the most suitable bulbous plant in India for cut flower production. It is used for bouquet preparation, for growing in herbaceous borders, beddings, rockeries and for pot cultivation.

A field experiment was conducted at the Floriculture and Landscape Gardening, Kittur Rani Channamma College of Horticulture, Arabhavi during the rabi season of 2000-2001 with nine gladiolus cultivars for evaluating their performance and to find out the promising cultivars for maximising the production of quality cut flowers. All the cultivars differed significantly for growth and flowering characters. The cultivars Sylvia, American Beauty and Melody were early to sprout, while Majic was late. Cultivars

Snow White, Yellow Cup, Sylvia and Melody were medium in growth, while the cultivars Majic and Trust were dwarf in their growth.

Among the nine cultivars, cultivars Snow White, American Beauty and Sylvia were early in spike emergence and flowering. Cultivars Vedanapoli, Sylvia, Melody and American Beauty produced maximum number of spikes per plant. The cultivars Summer Sunshine, Melody and Vedanapoli were found superior for spike characters like spike length, rachis length and number of florets per spike. Cultivars Sylvia, Vedanapoli, American Beauty, Yellow Cup and Summer Sunshine produced maximum number of daughter corms and cormels.

### Effect of Dates of Planting on Growth and Flowering of China Aster (*Callistephus chinensis* Nees.)

NAGARAJU

2001 MAJOR ADVISOR :Dr. B.SATHYANARAYANA EDDY

China aster is an important annual commercial flower crop grown for its flowers. As a cut flower it is used for interior decoration and as a loose flower used for worshipping, garland preparation and hair decoration by woman and as a whole plant for herbaceous borders and for growing in flower beds in gardens.

An investigation to study the effect of different dates of planting on growth and flowering of China aster (*Callistephus chinensis* Nees.) cv. Kamini, was carried out during 2000-2001 at farmers field near Kittur Rani Channamma College of Horticulture, Arabhavi.

Dates of planting had a significant influence on growth parameters. The plants of May planting followed by those of October planting expressed better vegetative growth in terms of plant height, girth, number of branches and leaves. Further, these plants had comparatively longer flowering duration as compared to the plants of August and July plantings which flowered early and had shorter flowering duration.

Yield and quality parameters were also significantly influenced by dates of planting. Among different dates of planting, May planting followed by October and June plantings produced higher quality flowers as compared to August, September and July plantings.

### Evaluation of Standard Carnation (*Dianthus caryophyllus* L.) Cultivars Under Protected Cultivation

RUDRAGOUDA T. PATIL

2001 MAJOR ADVISOR : Dr. B. SATHYANARAYANA REDDY

The carnation, an indigenous flower of Mediterranean region is one of the most important commercial flowers of the world. The carnation apart from growing for the production of cut flowers is also used for growing in garden as a bedding, border and rock garden plant.

An experiment was carried out in a low cost polyhouse at experimental unit of K. L. E. School of

Agricultural Research and Training during the year 2000 with ten cultivars to study the performance and to identify promising cultivars with respect to flower yield and quality, resistance against pests and diseases and calyx splitting. Wide variation in performance with respect to growth, flowering, flower yield and quality, resistance to pests and diseases and calyx splitting was recorded among the ten standard carnation cultivars studied.

## Abstract of Theses

Cultivars Madame Collette, Alma, Desio and Sugar Baby were vigorous in growth, while cultivars Leon, Sorisso and Danton were very weak.

Cultivars Leon, Sorisso and Desio were early in flowering, whereas cultivars Aicardi, Pirandello and Candy were very late in flowering. Cultivars Madame Collette, Desio, Alma and Sugar Baby were high yielding. Cultivar Leon was very low yielding one. Quality of flowers produced by cultivars Madame Collette, Alma, Desio, Sugar Baby and Candy was very good. Cultivars Leon and Aicardi produced poor quality flowers.

## OLERICULTURE

### Genetic Variability, Character Association and Path Analysis Studies in Winged Bean (*Psophocarpus tetragonolobus* (L.) DC)

A.MOHAMADALI

2001

MAJOR ADVISOR: Dr. M.B. MADALAGERI

Field investigation was undertaken to elicit information on genetic variability, character association and path analysis in winged bean at Department of Olericulture, Kittur Rani Channamma College of Horticulture, Arabhavi during 2000-2001.

Thirty six winged bean accessions planted in completely randomised block design with two replications. For forty six growth, yield (green pod, seed and root tuber) and quality characters were studied.

The results on genetic parameters (range, PCV, GCV, heritability and genetic advance over mean) revealed the existence of sufficient variability among the studied accessions. It also revealed that direct selection on characters like leaf area, pod dry weight, total pod number, late pod yield and total green pod yield, dry pod yield and seed yield per plant, tuber yield per plant would be gainful. The variability in quality component characters of edible

parts was least, suggesting need for generation of new variability. The accessions also varied in non-parametric characters like leaflet, pod and tuber shape, flower, pod wing and seed coat colour.

The characters, viz., early, late and total number of pods, late pod yield per plant and total dry weight of plant had strong positive association with green pod yield per plant. Seed yield per plant had strong association with seed weight per pod, dry pod number and dry pod yield per plant. The tuber yield per plant had strong association with length, girth and dry weight of tuber indicating possibility of improvement of the traits by simultaneous selection.

Path analysis revealed that the indirect selection on late and early pod yield and number of early pods per plant for green pod yield; shelling percentage, dry pod yield per plant and number of seeds per pod for seed yield and nodule weight and vine length for tuber yield improvement would be gainful as they had high direct effect.

## POMOLOGY

### Effect of VAM Fungi on Growth, Yield and Drought Tolerance of Papaya

NAGARAJAPPA ADIVAPPAR

2001

MAJOR ADVISOR: Dr. P.B. PATIL

A field experiment was conducted at Kittur Rani Channamma College of Horticulture, Arabhavi during 2000-2001 to study the effect of vesicular arbuscular mycorrhizal (VAM) fungi and graded levels of 'P' on growth, yield and quality of papaya (cv. Sunset Solo).

The inoculation of VAM fungi in the nursery resulted in significantly higher number of leaves, petiole

length, number of fruits, fruit circumference and fruit yield over control. The fruit yield was highest in *Glomus fasciculatum* (51.58 t/ha) followed by *Sclerocystis dussii* (41.35 t/ha) as compared to control (29.49 t/ha) during second year after planting. Application of 75 per cent of recommended dose of 'P' along with inoculation of *G.fasciculatum* was found to be on par with 100 per cent recommended dose of 'P' alone, thereby reducing 25 per cent of recommended dose of 'P'.

The quality of the fruits obtained from the plants inoculated with VAM was superior to control in terms of TSS, sugars and vitamin C content. In a pot experiment study, inoculation of VAM fungi viz., *G. fasciculatum* and

and *S.dussii* recorded higher N, P, K and micronutrients, viz., Zn, Cu and Mn in leaf compared to *A. laevis* and uninoculated control apart from enhancing the drought tolerance capacity of the seedling.

## POST HARVEST TECHNOLOGY

### Studies on Storage of Turmeric Seed Rhizomes

KIRANKUMAR GORABAL

2001

MAJOR ADVISOR: DR. A.K. ROKHADE

The investigation entitled "Studies on storage of turmeric seed rhizomes" was carried out to find out suitable method of storage and to reduce the storage losses due to diseases and insect pests at Kittur Rani Channamma College of Horticulture, Arabhavi, University of Agricultural Sciences, Dharwad during the year 2000 and 2001.

The influence of different storage methods, viz., storage in pits lined with sand, sugarcane, trash, wheat straw, dry turmeric leaves, storage in ZECC, polyethylene bag with 0.5 per cent vents, gunny bag and heap method and also the effect of pre-treatment of rhizomes with chemicals, viz., Carbendazim, Captan, Mancozeb, Contaf, Monocrotophos, single or in combination and biological antagonist, viz., *Trichoderma harzianum* on the storage losses, recovery of healthy rhizomes and germination percentage in the field were studied.

Among the different methods, storing in ZECC was found to be the best method with least per cent PLW

(12.31%), sprouting (18.61%), rotting (1.91%) and insect damage (0.00%) and maximum recovery of healthy rhizomes (95.86%) at the end of storage period (90 days) and highest percentage of germination (99.38%) in the field, followed by storing in polyethylene bag with 0.5 per cent vents and pits lined with wheat straw. The recovery of healthy rhizomes and per cent germination in the field were 90.39 per cent and 96.09 per cent in polyethylene bag and 89.89 per cent and 87.31 per cent in pits lined with wheat straw as compared to 57.73 per cent, 46.92 per cent in control (Heap method), respectively.

The pretreatment of rhizomes with Captan (0.3%) or Mancozeb (0.3%) along with Monocrotophos (0.1%) were found to be effective in minimising the storage diseases (3.20-3.65%) and insect pests (5.30-7.15%) as compared to untreated control (14.75% and 34.60%, respectively).

### Studies on Storage and Processing of Sapota (*Manilkara achras* (Mill.) Fosberg) Fruits

VISHWANATH PATIL

2001

MAJOR ADVISOR: Dr. A. K. ROKHADE

The studies to investigate the effect of storage conditions and storage behaviour of sapota hybrids (DHS-1 & DHS-2) and varieties (Cricket Ball & Kalipatti) on shelf-life and also to standardize the protocol for preparation of dehydrated sapota slices and preparation of sapota juice were conducted at Kittur Rani Channamma College of Horticulture, Arabhavi, during 2000 - 2001.

Storage of sapota fruits in zero energy cool chamber (ZECC) after treating with 500 ppm sodium benzoate was found to extend the shelf-life up to 13 days compared to 9 days in fruits packed in polyethylene bag containing paper shreds impregnated with saturated KMnO<sub>4</sub> solution and 7 days in fruits under ambient condition (ASC). Storage of fruits in ZECC was most effective in reducing the PLW and maintaining optimum TSS and sugar compared to fruits in polyethylene bag under ASC. The maximum shelf-life of 11 days was recorded in DHS-1 as

compared to 10 days in DHS-2 and 9 days in Kalipatti and Cricket Ball.

The maximum recovery of dehydrated slices (30.46%) and lowest dehydration ratio (3.28) were recorded in sapota slices exposed to sulphuring at 4 g per kg of slices for two hours, whereas, minimum recovery was observed in steeping of sapota slices in 0.25 per cent KMS solution for 30 minutes (24.46%). Sulphuring of sapota slices at 2g per kg for four hours recorded highest organoleptic scores for colour and appearance (3.85) and texture (3.30) and reducing and total sugars (34.22% and 62.92%, respectively).

The sapota juice obtained from the pulp treated with Pectinase-B enzyme at 0.3 per cent for four hours had maximum recovery (59.93%) with highest TSS, titratable acidity and sugars, while the least recovery 94.83%, TSS, titratable acidity and sugars were recorded in untreated control.

**Processing of Ber (*Zyzyphus mauritiana* Lamk) Fruits**

K.R.DEVARAJU

2001

MAJOR ADVISOR: Dr. A. K. ROKHADE

The investigation to standardise the protocol for preparation of ber juice and dehydrated ber slices from ber fruits Cv. Umran was carried out at the Department of post-harvest technology, Kittur Rani Channamma College of Horticulture, Arabhavi during the year 2000-2001.

The recovery of the clarified ber juice was maximum (55.37%) in treatment of pulp with pectinase-III at 0.1 g per kg pulp for 4 hours, followed by pectinase - I at 4g per kg pulp for 24 hours (46.39%), while the least juice recovery (19.03%) was obtained in untreated control. The treatment of ber pulp with pectinase - III enzyme at 0.1 g/kg pulp for 4 hours also resulted in highest levels of TSS (14.97%) reducing, non reducing, and total sugars (7.14, 3.35 and 10.49%, respectively). The non-enzymatic browning (expressed as O.D) was found to be minimum. The treatments of ber pulp with different pectinase enzymes however did not affect the organoleptic quality of the juice.

The dehydration per cent of the ber slices was maximum (31.75%) in treatment of blanching + slicing + steeping in 60° Brix syrup for 24 hours, followed by blanching +slicing+ steeping in 40°Brix syrup for 24 hours (29.40%), while the least dehydration percent (13.63%) was in control. The highest mean dehydration ratio was noticed (3.00: 1) in control, followed by slicing + steeping in 40° Brix sugar syrup for followed in slicing +steeping in 600 Brix sugar syrup for 24 hours (2.53: 1). The maximum level of reducing and total sugars were recorded in blanching +slicing+ steeping Brix sugar syrup for 24 hours (9.50 and 17.02% respectively). The scores for organoleptic characters like colour and appearance, texture, taste, flavour and overall acceptability did not show any significant differences due to the treatments.

**SPICES AND PLANTATION CROPS**

**Studies on Genetic Variability In Turmeric(*Curcuma longa* L.) Genotypes**

VIJAYAKUMAR B. NARAYANAPUR

2001

MAJOR ADVISOR: Dr. S.I. HANAMASHETTI

Studies on genetic variability in sixteen genotypes of turmeric (*Curcuma longa* L.) were undertaken at Agriculture Research Station, Arabhavi. The trial was laid out using finger rhizomes and mother rhizomes as planting material.

When finger rhizomes were used as plant material, Tekurpet was found superior in terms of plant height (35.20 cm), number of leaves (7.40), leaf area index (3.10) and cured yield (8.61 t/ha). Krishna (8.20 t/ha) was the next best cultivar in terms of cured yield. PCT-8 (24.37%) and Rajapuri (22.41%) showed higher curing percentage. Curcumin content (%) and curcumin yield (kg/ha) was maximum in PTS-24 (9.30, 545.91) and PCT-8 (8.20, 420.66).

The variability study indicated significant variation for all the characters under study. Curcumin content (99.00, 98.42), length of secondary fingers (91.00, 52.36) and yield per plant (97.60, 39.38) showed high heritability and genetic advance.

When mother rhizomes were used as plant material, CLI-315(40.30cm) and Krishna (39.20 cm) were taller, while number of leaves (9.40)and leaf area index (3.64) were maximum in PCT-14. Amalapuram(8.96t/ha), Krishna (8.10 t/ha) and Salem (8.03 t/ha) recorded higher cured yield. Curing percentage was higher in Salem (24.35%), PCT-8 (23.34%) and CLI-62 (22.47%). PTS-24 (9.30%), PCT-8 (8.18%) and PCT-14 (7.78%) recorded higher curcumin content. Curcumin yield was maximum in T-14 (546.16 kg/ha) and PTS-24 (451.98 kg/ha).

Wide range of variability was observed for all characters under study. High heritability and genetic advance was observed for curcumin content (99.00, 95.75), cured yield per hectare (92.60, 54.48) and fresh yield per hectare (93.50, 49.47).

Cured rhizome yield was positively and significantly correlated with plant height, number of leaves, leaf area, leaf area index, number of primary and secondary fingers per plant in both the experiment.

**HOME SCIENCE**

**FOOD AND NUTRITION**

**Nutritional Status and Physical Fitness of High School Athletes and Non-Athletes of Dharwad City**

KAMALABAI S. KOODAGI

2001

MAJOR ADVISOR: Dr. NIRMALA B. YENAGI

Sports is important in the life of today's young people as it maintains health, physique and physical fitness and occupies a prominent place in the recreation of millions of adults and families. Children are the valuable asset of the nation and their nutritional status rises the nation's development. An investigation was carried out to know the nutritional status and physical fitness of 240 high school male and female athletes and non-athletes of age group 13-16 years. Thirty children in each athletic events of running, jumping and throwing and non-athletes were selected randomly from different high schools of Dharwad city. Nutritional status was assessed by anthropometry, food and nutrient intake and adequacy, haemoglobin level and physical fitness of following standard procedures. Special information related to food practices and athletic performance was collected by questionnaire method and results were statistically analysed. Nutritional status

assessed at different dimensions concludes that the anthropometric measurements of high school children were below the standard norms and significant difference was observed among athletes of different events and non-athletes. Throwers were heavier and taller than runners and jumpers. The adequacy of energy giving food groups and nutrients were below the Recommended Dietary Allowance (RDA). While severe deficit was observed for protective food groups and micronutrients. Blood haemoglobin level and physical fitness were highly correlated. Runners physical fitness was better than other athletes. Prevalence of mild anaemia, poor physical fitness, irregular practice and physiological injuries were observed in majority of athletes. The study highlights need for proper linkage between nutritional status, physical fitness, guidance and facilities for adolescent athletes for better athletic performance.

**Dietary Habits and Lifestyle Pattern of Oesophageal Cancer Patients**

VIJAYALAXMI M. GAYATRI

2001

MAJOR ADVISOR : Dr. B. KASTURIBA

Cancer is increasingly recognised as an important public health problem in the world. Oesophageal cancer is the sixth commonest cause of cancer mortality worldwide. The study was conducted with an objective to assess the dietary habits and lifestyle of oesophageal cancer patients. Thirty oesophageal cancer patients and an equal number of matched and unmatched control subjects were selected for the study. The information on dietary habits and lifestyle pattern were collected through structured and pretested questionnaire. The nutritive value of the raw ingredients was computed using Annapurna VAR 3 software. The results revealed that, maximum percentage (36.66%) of the patients belonged to the age group of 50 to 60 years followed by 40 to 50 years. The patients were lighter with mean weight range of 32 to 62 kgs and most (70%) of them were below normal category of BMI. Dietary indiscretion i.e. consumption of hard roties with combination of red chilly powder was most prevalent (40%). Habit of drinking hot tea with an increased frequency (600-900 ml/day) and

percentage of pan chewers (83.3%), tobacco chewers (73.3%), smokers (68.4%) and alcoholics (68.4%) were more in patients group compared to their control counterparts. Arrack consumption was more common. Most of the patients were used to smoke 20 to 25 beedies per day. Combination of all the four habits (26.6%) increased the risk of oesophageal cancer. Duration of the habit in most of the patients was from 10 to 20 years and frequency of consumption of these carcinogenic substances was also more in patients. Most of the patients belonged to north transitional zone (58.6%). Soil and water sub samples used for selenium estimation revealed that, the mean selenium content of drinking water was significantly low (0.063 µg/ml) in patients sample and soil selenium content was found to about 169 ppm, which increased the risk of oesophageal cancer. The faulty food habits and lifestyle pattern has an influence on the risk of oesophageal cancer.

## Abstract of Theses

### Epidemiology of Fluorosis and Educational Intervention in Hungund Taluk

ANNAPOORNA B. KUBAKADDI

2001

MAJOR ADVISOR: Dr. PUSHPA BHARATI

A survey was carried out in two villages of Hungund taluk covering 300 subjects to study the prevalence of fluorosis, nutritional status of subjects by anthropometry and dietary intake and adoption of defluoridation technology. Nearly 35 per cent of the subject examined suffered from dental, 17 per cent from skeletal and 12.67 per cent from both dental and skeletal fluorosis. The prevalence of fluorosis was significantly associated with age, period of stay in fluorotic area, occupation, fluoride intake and habit of consuming tea, tobacco, arecanut and use of fluoridated dentrifices by fluorotic subjects, but was not significantly associated with gender.

Majority of the preschool children belonged to I (39.39%) and II (27.27%) degree malnutrition, whereas 40 per cent of the school children were stunted. Most of the fluorotic subjects exhibited significantly lower height, weight and mid upper arm circumference, than standards. The consumption of pulses, green leafy vegetables, milk and

milk products, fruits, other vegetables and fats and oils was inadequate compared to Suggested Balanced Diet (SBD) in all the subjects. Similarly, the intake of retinol, riboflavin, ascorbic acid, calcium and iron was significantly less than Recommended Dietary Allowances (RDA). The fluoride level of drinking water was 2.04 ppm in Nagur and 3.15 ppm in Chitwadagi and that of diet sample was 5.36 mg/100 g and 5.32 mg/100 g respectively. The serum fluoride level of fluorotic patients was significantly higher (0.164 ppm) than normal subjects of fluorotic (0.034 ppm) as well as non-fluorotic (0.013 ppm) villages.

The defluoridation technology, when demonstrated along with lecture on clinical symptoms and advantages of defluoridating the water, 20 families, out of 47 households included for intervention, adopted the technology and patients in these families experienced gradual reduction in body pain.

### Nutritional Profile and Risk Factors of Hypertensives in Dharwad City

MALLIKA PATIL

2001

MAJOR ADVISOR : Dr. PUSHPA BHARATI

The investigation focussed on nutritional profile, risk factors of hypertensives and knowledge about hypertension in Dharwad city during 1999-2000. The study included 100 willing hypertensives from six months' profile study. Equal number of age and sex matched normotensives served as control.

Profile study indicated that irrespective of age and gender, highest percentage of hypertensives were in the first stage (systolic blood pressure-34.93%, diastolic blood pressure-37.67%). Among selected hypertensives subjects highest per cent (41) were in the stage III according to SBP.

All the respondents (hypertensive and normotensive) were significantly heavier than the ICMA standard. According to body mass index (BMI), 52 and 65 per cent of hypertensives (HT) and normotensives (NT) respectively were obese. About 70 and 59 HT and NT respondents respectively were abdominally obese (WHR). Irrespective of gender highest percentage (23 HT; 29 NT) of respondents though normal according to BMI, were at risk according to WHR.

Hypertensive females had significantly higher intake of fat (38.8 g/day), though the adequacy was two to

three times the recommendation in all the respondents. The intake of saturated fat (14.68 g male; 16.88 g female), sodium (3857.6mg male; 3813.9 mg female) and calcium (380.2 mg male; 497.2 mg female) was highest among hypertensives. But that of polyunsaturated fat (12.38 g male; 15.90 g female) and potassium (1257.4 mg female) was significantly low.

Hypertensive respondents were having higher salt intake. More per cent of them (62) were in the habit of using salt at table. None of the female respondents were alcoholics or smokers but were exposed to passive smoking (38% HT, 53% NT). More number of alcoholics (9) and smokers (28) were among hypertensives. Only 31 and 19 per cent males and females undertook different exercises to control blood pressure.

None of the respondents (HT and NT) were in no risk category. The respondents with high risk were more among hypertensives (27%) than normotensives (5%).

Though majority had knowledge regarding foods to be avoided/restricted (92% HT; 96% NT) only 60 and 66 per cent of males and females respectively practiced.

**Nutraceutical Effects of Whey Protein Concentrate in Anaemic Adolescent Girls of Rural Dharwad**

CHANDRAKALA HANAGI

2001

MAJOR ADVISOR: Dr. PUSHPA BHARATI

A total of 200 adolescent girls of 13-17 years were selected from four villages of Dharwad taluka, to know the nutraceutical effects of whey protein concentrate (WPC) in rural anaemic adolescent girls. Assessment of nutritional status was carried out by nutritional anthropometry, dietary survey, clinical examination and haemoglobin analysis. All the respondents were lighter and shorter compared to NCHS standards and had inadequate intake of all blood forming nutrients and showed anaemia symptoms. Prevalence of anaemia was found to be 73 per cent. From baseline screening 150 anaemic girls were allotted to five groups for supplementation. Group 1 received single WPC (21g/d), group 2 received double WPC (42g/d) group 3, WPC along with FeSO<sub>4</sub> tablet (21g+60mg elemental iron/d), group 4, FeSO<sub>4</sub> tablet (60mg elemental iron/d) and group 5 did

not received any supplementation and served as control. supplementation, continued for a period of three months, improved the nutritional status of the girls. There was a significant increase in weights of all the supplemented groups, which was high in group supplemented with WPC and iron (2kg) followed by group supplemented with double WPC (1.71kg). But the increment in height was significant only in group 2 (0.5cm). Hemoglobin level also increased significantly, highest being in group 3 (2.42g/dl) followed by group 2 (1.85g/dl). Morbidity among girls reduced after supplementation and when compared to control counter parts. Bioavailability of food iron increased significantly by the substitution of non blended WPC to the diet (0.52mg) compared to control diet (0.50mg).

**TEXTILES AND CLOTHING**

**Effect of Scouring, Bleaching and Cleansing Agents on Naturally Colour Cotton Yarns**

SHIVALEELA M. HOSAMANE

2001

MAJOR ADVISOR : SHAILAJA D. NAIK

The present study entitled 'Effect of scouring, bleaching and cleansing agents on naturally colour cotton yarns' was carried out during 2000-2001 at Dharwad with the objectives to study the effect of scouring, bleaching and cleansing agents on single yarn strength and change in pigmentation of naturally colour cotton genotypes viz., Dharwad Brown Hirsutum 21 (DBH-21), Dharwad Brown Hirsutum-9812 (DBH-9812), Dharwad Brown Hirsutum-9817 (DBH-9817) and Dharwad Brown Hirsutum-5 (DBH-5).

This study consisted of two parts i.e., experiment and survey. The experimental study encompassed scouring, bleaching and cleansing. The selected genotypes were subjected for scouring using three scouring agents viz., soda ash (S<sub>1</sub>) mild alkali, caustic soda (S<sub>2</sub>) strong alkali and a mixture of soda ash and caustic soda (S<sub>3</sub>) moderate alkali. Further bleaching was carried out for S<sub>1</sub>, S<sub>2</sub> and S<sub>3</sub> scoured genotypes separately with two bleaching agents viz., hydrogen peroxide (oxidizing agent B<sub>1</sub>) and sodium hydrosulphite (reducing agent, B<sub>2</sub>). Each S<sub>1</sub>, S<sub>2</sub> and S<sub>3</sub> scoured genotypes were cleansed separately with three

cleansing agents viz., wheel, ariel and surf excel detergent powders. The single yarn strength was assessed after scouring, bleaching and cleansing so also change in pigmentation using computer colour matching system under daylight, tungsten, tubelight-84 and tubelight-83 illuminations. Scouring increased the single yarn strength and pigmentation of all the four genotypes. Higher improvement in the single yarn strength was evident on scouring with soda ash (S<sub>1</sub>). Moreover, the genotypes exhibited greater increase in pigmentation on S<sub>2</sub> scouring. Bleaching led to fading of the genotypes, however minimum fading was observed with sodium hydrosulphite. On the contrary there was increase in single yarn strength. Cleansing with alkaline detergent powders did improve strength and pigmentation. Pigmentation wash gradual up to fifth wash and there after much change was not observed in subsequent cleansing.

Scouring and cleansing enhanced the single yarn strength and pigmentation whereas bleaching led to fading, but the intensity of pigmentation was higher than control samples.

## Abstract of Theses

### Natural Dyeing of UAS Sheep Breed Wool Yarn With Fountain Flowers (*Spathodea companionata* Lin.)

SHILPA MUDGAL

2001

MAJOR ADVISOR: Dr. GEETA MAHALE

The present investigation was carried out during the period 2000-01. Objectives of the study were to optimize the natural dyeing conditions using fountain flowers, to study the physical parameters of UAS Sheep breed wool sample before and after dyeing and to assess colourfastness properties of dyed sample for different agencies like washing, rubbing, sunlight properties of dyed sample for different and perspiration.

The triple cross UAS Sheep breed wool was selected from Poultry, Sheep and Goat Farm, Main Research Station, University of Agricultural Sciences, Dharwad. Wool sample collected was of mixed lot from two different shearing seasons namely Spring clip (March) and Autumn clip (September). The wool sample was cleaned, carded and spun into yarn. Later it was scoured and dyed with fountain flower dye. The effect of scouring, and dyeing on wool was found out by assessing the physical parameters of wool yarn before scouring and after scouring

and after dyeing. Colourfastness tests to washing, rubbing, sunlight and perspiration were carried out and was assessed with help of grey scale. The results obtained were statistically analysed using completely randomized design and correlation test.

Results revealed that optimum dye extraction time was found to be 30 minutes and dyeing time was 45 minutes. Mordanting time for copper sulphate and ferrous sulphate was 15 minutes and 30 minutes for potash alum and potassium dichromate. Scouring had more effect on wool than dyeing. Higher dye absorption was noticed in acidic media than alkaline media. Simultaneous mordanting was found to be best in both acidic and alkaline media. After dyeing yarn strength was increased and least effect was noticed on yarn count and yarn elongation. Fountain flower dyed wool sample pre-mordanted with 2 per cent concentration of ferrous sulphate and potassium dichromate showed excellent colourfastness to washing, rubbing, perspiration and sunlight.

### Dyeing Silk With Parthenium Leaves (*Parthenium hysterophorus* L.)

M.B. SUNEETHA

2001

MAJOR ADVISOR : Dr. GEETA MAHALE

The present investigation was carried out during the period 2000- 2001. The main objectives of the study were to optimize the dyeing conditions with Parthenium leaves, to ascertain the physical . properties of silk yarn dyed with Parthenium leaf extract, to assess the colourfastness of the dyed samples and to study the allergy effect of Parthenium dyed silk yarn on the selected subjects.

Mulberry silk, multivoltine yellow race was collected from Demonstration Cum Training Centre (DCTC), central Silk Board, Rayapur, Dharwad. Fresh green leaves of Parthenium were collected, shade dried and powdered to prepare parthenium dye. The dyeing conditions like dye concentration, dye extraction time, dyeing time and mordanting time were optimized. The dyed samples were assessed for their colourfastness namely washing, rubbing, sunlight and perspiration. The parthenium dyed silk yarn samples were also tested for physical parameters like

strength and elongation. The result obtained was subjected to statistical analysis by using three factorial completely randomized design to analyse the effect of dye on strength and elongation and to check the per cent dye absorption of silk sample. Further the parthenium dyed silk was tested for its allergic effect on skin sensitive group by a modified patch test method.

Results revealed that four per cent dye concentration, 60 minutes dye extraction time, 30 minutes dyeing time and 15 minutes mordanting time were optimized for dyeing silk with Parthenium leaves. The strength and elongation of pre, simultaneous and post mordanted dyed samples both in acidic and alkaline media were found to be increased compared to the undyed sample. Colourfastness of all the dyed samples were ranged between good to excellent. None of the subjects were reported allergic for Parthenium dyed silk yarn.



## **HUMAN DEVELOPMENT**

### **Influence of Family Functioning and Social Climate on Adolescents's Adjustment**

M.VEENA

2001

MAJOR ADVISOR : Dr. PUSHPA KHADI

The study on influence of family functioning and social climate on adolescent's adjustment, conducted on a sample of 240 Pre-University students of Arts faculty (16-18 years), selected from 6 co-educational colleges of Dharwad taluk of Karnataka state, revealed that family functioning was significantly related to the adjustment of adolescents. Social activities of boys and parental support was significantly more than girls.

The family functioning and its dimensions viz., family cohesion, communication, enmeshment and conflict, of both 1 and II year boys and girls fell in the normal range. The family conflict had an adverse effect on the adolescent's adjustment. The family conflict was significantly lesser in joint families compared to nuclear families.

With regard to social climate, most of the adolescents were dissatisfied regarding their aspiration for

friendship. A higher percentage of adolescents had friendship with opposite gender, choose friends by personal characteristics, followed by academic standards. The parents also insisted such traits in selection of friends.

Sociometric status was significantly related to mother's education, but was negatively related to sibling size. While the choice of gender of friends was significantly related to sibling size indicating about 25 percent of both boys and girls had poor adjustment. Adolescents from joint families had unsatisfactory adjustment compared to the adolescents from nuclear families. Cohesion and enmeshment were negatively related to communication and conflict. Adolescents who lacked parental support aspired for more friends. But higher parental support suppressed adolescent's adjustment.

### **Aspiration, Study Habits, Study Problems and Academic Stress Among Pre- University Students**

MANJULA G. KADAPATTI

2001

MAJOR ADVISOR: Dr. PUSHPA KHADI

The study on aspiration, study habits, study problems and academic stress among Pre-university students studied on the sample of 360 PUC students of Science, Commerce and Arts selected from 4 Co-educational colleges in Dharwad revealed that the aspiration of the students varied significantly by faculty. Science students had higher aspiration than commerce and arts students. Aspiration was significantly related to caste.

First year PUC Students had significantly better study habits than Second year PUC students and Science students had significantly better study habits than Commerce and Arts students. Science students had more study problems than commerce and arts students. Socio-economic status affected the study problems significantly. Second year PUC students had significantly higher academic stress than first year PUC students and in all the faculties male students had significantly higher academic stress than female students. Academic stress was significantly related to mother's education, sibling size, family size and type of family, indicating that as the mother's

education and family members increased academic stress decreased. While academic stress increased with increase in number of siblings.

The students who had changed the medium of instruction from Kannada (upto 10th ) to English (in intermediate) had significantly more study problems and academic stress than the students who continued to be in the same medium of instruction either Kannada or English. academic stress was significantly and positively related to aspirations and study problems while it was negatively related to study habits.

Scales for assessing aspiration, socio-economic status and academic stress was used. A developed inventory for assessing study habits and study problems was self administered to the students. Factor analysis and Analysis of variance was employed to compare the aspiration, Study habits, study problems and academic stress by faculty, gender and class.

**Obstetric Practices Found Among Lambani Women**

GEETA PATIL

2001

MAJOR ADVISOR: Dr. K. SAROJA

This study was conducted in Gadag taluk of Gadag district during 2000-2001. 75 married women in their reproductive years living with their husbands were selected by randomization. Interview schedule, case study and personal observation were the methods used for data collection. Majority (50%) were illiterate agricultural labourers (53%). Majority had more than three children. Child wastage in the form of abortions, still births and neonatal death found in 22 per cent of respondents. Among these 82 per cent child wastage occurred when respondents were below 18 year. 75 per cent of respondents were unprotected by family planning. Because of method related problems users of all the temporary methods discontinued. No permission from parents-in-law was the common reason (34%) for not getting sterilized. Among those who were sterilized 28 per cent had health problems. Severe backache was the common problem (33%).

Majority of women found to practice traditional prenatal and perinatal practices and rituals, also expressed beliefs and taboos related to these periods. Food taboos observed during pregnancy were also reported.

Majority of respondents faced problems during obstetric periods. During- prenatal and postnatal period they used government health services and during perinatal period they found to use home remedies depending upon the severity of problems.

Inaccessibility of health centre was the main reason for nonutilization of PHC services (20%). As the ANM's visit was rare in Tandas. Only 47 per cent of the women received and took IFA tablets and 33 per cent were completely immunised. Majority (66%) of respondents not made any sort of preparation for delivery, 88 per cent of deliveries occurred at home were attended by relatives and neighbours (70%).

The results imply high prevalence of reproductive health problems and majority used home remedies. Most of these remedies were found to be effective as per 3 qualified practicing doctors in ayurveda, allopathy homeopathy and an allopathic doctor with training in indigenous medicines opined that most of these remedies documented in this research as being effective. The study highlights need for improving health facility which is accessible to Tandas in quantity and quality.