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Resource use efficiency in vegetable production in Manipur State

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ABSTRACT: The study was undertaken in Thoubal district of Manipur state. Three vegetables viz., cabbage, cauliflower and peas were selected on the basis of cultivation acreage. Three stage sampling technique was employed for selection of block, villages and ultimate respondents. Al together, 60 vegetable cultivating farmers were selected for the study. To examine the resource use efficiency in vegetable production, log linear production function was fitted separately for each of the three vegetables taking yield as the dependent variable and per hectare expenditure on seed, expenditure on plant protection chemicals, expenditure on chemical fertilizers, expenditure on machine and bullock labour and expenditure on human labour were taken as the explanatory variables. It was observed that the vegetables were not cultivated according to the recommended package of practices and that these crops were grown without caring for resource productivity and resource use efficiency. The deviations from the optimal level of resource use which was found in all the three vegetables selected resulted in low productivity and efficiency of various inputs. In this regards, farmer's field trials and awareness campaigns on improved practices and correct method of use of inputs needs to be undertaken and this will ultimately benefit the producers

Drought assessment based on Meteorological Index in Nainital District of Uttarakhand

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ABSTRACT: Uttarakhand is primarily a mountainous state with only about ten percent of its total geographical area in the plains. Study carried out in Nainital district of Uttarakhand is located in the foothills of Kumaun region of outer Himalayas. Water scarcity is a burning problem for the hill agrarians of Nainital. Therefore, in this region timely information about rainfall amount, variability and distribution pattern is very imperative for planning and management of agriculture or natural resources. Considering the essential role of water in domestic purpose, agriculture, horticulture, animal husbandry, fisheries and forestry, etc., drought pattern were analyzed in Nainital district of Uttarakhand. Rainfall data were used to calculate Standardized Precipitation Index (SPI) for drought assessment. SPI values on 16 days interval were used to determine the spatial pattern of meteorological drought in Nainital. Impact of drought on rice crop yield of Nainital district was analyzed and year which was facing meteorological and agriculture drought was identified. Rainfall data was observed to be more useful for planning of irrigation schemes, cropping patterns, conservation and management measures so as to manage harvested rainfall in drought conditions.

Evaluation of ready mix of fluazifop and fomesafen (Fusiflex, 25 % SL) for effective weed control in Groundnut (*Arachis hypogaea*)

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ABSTRACT: To study the efficacy of ready mix of fluazifop and fomesafen (Fusiflex 25% SL) for weed control in groundnut, a field experiment was conducted in *kharif* season for two consecutive years *i.e.* 2011 and 2012 at Norman E. Borlaug Crop Research Centre of Govind Ballabh Pant University of Agriculture and Technology, Pantnagar, Uttarakhand. The experimental findings revealed that the treatment fusiflex @ 500 g ai/ha, recorded efficient weed control and highest grain yield (1140.0 and 1167.3 kg/ha, respectively) during both the years but remained at par with fusiflex @ 313 g ai/ha. The increase in groundnut yield over control was 19.7% and 43.4 %, respectively during 2011 and 2012 years. Yield attributes were also found higher under these treatments. Among the herbicides applied singly, imazethapyr was found effective. *Echinochloa colona* (30 %) among grasses, 38.9 % *Phyllanthus niruri* among non-grasses and 11 % *Cyperus rotundus* among sedge were the important weed flora. Reduction in grain yield of groundnut was 22.28 % during 2011 and 48.5 % during 2012 due to weeds competition.

Improvement in winter initiated Sugarcane (*Saccharum officinarum* L.) ratoon crop through agronomical manipulations under subtropical conditions

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ABSTRACT: To study the improvement in winter initiated sugarcane ratoon a field experiment was conducted during three consecutive years i.e. 2008-09 to 2010-11 at Norman E. Borlaug Crop Research Centre of Govind Ballabh Pant University of Agriculture & Technology, Pantnagar, Uttarakhand (India) having 8 treatments in randomized block design. Higher shoot population, NMC and Cane yield were recorded in the treatment of fresh sulphitation pressmud cake (SPMC) @ 20 ton/ha at the time of ratooning, which was closely associated with irrigation in planted cane crop 30 days before of ratooning and subsequent irrigations at 15 days interval during winter upto first week of February. Improvement in cane yield due to higher initial shoot population, NMC and CCS yield were also recorded in the treatment of 60 kg K₂O/ha + Zn SO₄ @ 25 kg/ha at 30 days before ratooning with irrigation water.

Suitability of different synthetic and non synthetic media for mass culture of entomopathogenic fungi, *Beauveria bassiana* (Balsamo) Vuillemin

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ABSTRACT: The present investigation was done to test the different growth media; synthetic liquid substrate and non synthetic (agro waste) substrate to find out their suitability for mass multiplication of entomopathogenic fungi, *B. bassiana*. Among the 15 synthetic media tested maximum biomass (1.67g) was recorded in Czapek Dox Broth (CDB). However maximum sporulation and viability was observed in Potato Dextrose Yeast Broth (PDYB) (3.60×10^8 conidia ml⁻¹, 91.33 per cent) followed by

Potato Dextrose Broth (PDB) (3.17×10^8 conidia ml⁻¹, 90.67 per cent) and Sabouraud's Dextrose Yeast Broth (SDYB) (2.87×10^8 conidia ml⁻¹, 89.67 per cent). Least suitable media with low spore count and low viability were Malt Extract Broth (MEB), Malt Extract Yeast Broth (MEBY) and Paris (P), while no growth, sporulation and conidial count was reported in JP(Jenkins Prior). Among different non synthetic media tested coconut water media was found best with respect to biomass (0.59 g), conidial count (2.00×10^8 conidia ml⁻¹) and spore viability (86.33 per cent) followed by sugarcane molasses, rice cooked water, rice wash water and press mud. PDB as a control have maximum spore count (2.63×10^8 conidia ml⁻¹) and viability (93 per cent).

Analysis of genetic components of variance and other quantitative characters in a high lysine maize, DQPMC-4(W) composite at two plant densities

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ABSTRACT: DQPMC(W)-4, an open-pollinated variety was used as an experimental material. Biparental progenies were developed using NC Design-I. Fourteen quantitative traits were measured in 128 full-sibs and 32 S1 randomly developed families derived from the maize population, DQPMC-4(W) which were grown in randomized block design at normal and high plant densities. Components of variance, genetic components of variance, degree of dominance, heritability and expected genetic gains from selection were estimated for each trait. Results obtained from the present investigation revealed that sources of variations differed significantly for most of the traits at both normal and high plant densities. Combined analysis over both the environments also depicted significant differences among source of variations for most of the traits. On the basis of expectation of mean squares, estimates of variances due to males (σ^2_m) and females (σ^2_f) were calculated along with their standard errors which showed that variances due to males and females were found to be significant for most of the traits at normal and high plant densities. Negative estimates of σ^2_m and σ^2_f were also recorded for some traits. Estimates of genetic components of variance revealed greater importance of additive genetic variance (σ^2_A) as compared to dominance genetic variance (σ^2_D) for most of the traits at both the plant densities. General mean, heritability and expected genetic gain studied at high plant density were found to be higher than normal plant density. Since, there was preponderance of additive genetic variance for most of the characters studied; further improvement can be made in this population through intra-population recurrent selection procedure.

Phenotypic stability for yield and other desirable characters in high quality protein maize (*Zea mays* L.)

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ABSTRACT: The genotypic response with respect to environmental fluctuations due to genotype \times environment interaction is less defined and non-predictable. The main objective of any maize breeding programme is to develop high yielding varieties/hybrids with better degree of stability over a wide range of environments. A set of 21 quality protein maize (QPM) inbred lines and 3 quality protein maize (QPM) inbred testers with their sixty three single crosses and three checks were evaluated in three different environments, like., normal (recommended dose of nitrogen, E_1), low-nitrogen (E_2) and excess soil moisture (E_3) in order to examine their yield stability across changing environmental conditions. Results indicated significant $G \times E$ interaction mean squares for all the traits suggesting impact of variable environments on the performance of the genotypes. Crosses having desired stability for grain yield may be released as promising hybrids.

Effect of growth retardant on flowering and fruiting characteristics of Jackfruit (*Artocarpus heterophyllus*)

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ABSTRACT: An experiment was conducted during the year 2010-11 and 2011-12 to study effect of growth retardant on flowering and fruiting characteristics of Jackfruit (*Artocarpus heterophyllus*). The experiment was conducted on eleven years old jackfruit trees cv. Pant Garima by using variable concentrations of paclobutrazol. Paclobutrazol was applied as soil drench @ 5, 10, 15, 20 and 25 ml with 5 litre of water in each treatment/tree and as foliar spray @ 2.5, 5, 7.5, 10 and 12.5 ml with 5 litre of water in each treatment/tree in the month of September. Findings revealed that increased flowering with more number of male and female flowers as well as fruit set were recorded with treatment T_3 (soil drench @ 15 ml paclobutrazol/tree. Maximum fruit yield per tree was also recorded in treatment T_3 (soil drench @ 15 ml/tree). In general it was

observed that paclobutrazol @ 15 ml/tree applied by soil drench method on jackfruit was proved beneficial to obtain promising results in respect of yield and quality.

Genetic variability and character association for yield and its component traits in kharif Onion genotypes

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ABSTRACT: A study was conducted involving 33 genotypes of kharif onion to discern the yield characters and component traits in relation to genetic variability and path coefficient analysis. The estimates of means due to genotypes were highly significant for all the characters, indicating the presence of genetic diversity in the existing material. The variation was highest for marketable bulb yield followed by average weight of marketable bulb. Genotype BSKO-1256 performed best in terms of yield and gave marketable yield of 296.90 q/ha followed by ASKO-1231 having 291.90 q/ha. Further, high heritability coupled with high genetic advance was observed in marketable yield followed by dry weight of bulb and average weight of marketable bulb. The association analysis revealed that onion genotypes can be improved by simultaneous selection of traits like plant height, collar thickness, polar diameter, equatorial diameter, fresh weight of bulb and TSS. Path coefficient showed these characters had positive direct effect on average weight of marketable bulb yield and hence purposeful selection based on these traits would help in improvement of kharif onion genotypes. It was concluded that genotype BSKO-1256 and ASKO-1231 could be utilized for onion crop improvement. The characters association and path analysis showed that selection of genotypes could be based on performance in terms of morphological characters involved in the improvement of marketable bulb yield.

Status of Karnal bunt of wheat in different wheat growing regions of Uttarakhand

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ABSTRACT: An attempt has been made to draw attention towards the status of Karnal bunt (KB) in major wheat growing areas of Uttarakhand. Karnal bunt of wheat is an important disease in Uttarakhand besides Rusts and Powdery mildew. The post-harvest grain sampling and analysis of grain samples was done for monitoring the status of

Karnal bunt disease in different wheat growing regions of Uttarakhand during two crop seasons 2012-2013 and 2013-2014. In both the years, variations occur in the disease as evident from the percent Karnal bunt free samples observed. A total of percent infected samples and percent rejection during 2012-2013 was found to be more as compared to crop season 2013-2014. It is inferred from survey and surveillance that disease incidence was higher during 2012-2013 and amongst all the districts, the disease was least in Udham Singh Nagar which may be due to the dependence of disease on the climatic factors.

Influence of gynocious cucumber varieties and spacing on yield and economics during off-season production under protected condition in North Indian plains

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ABSTRACT: Cucumber cultivation in northern India is hampered due to extremes of the temperature during September to March when crop cannot be grown using traditional methods in open field. To exploit this off-season crop can be grown under protected conditions for better economic gain. The experiment was carried out in randomized block design with three replication and 20 treatments combinations comprising 4 parthenocarpic cucumber varieties/hybrids and 5 spacing's. The four cucumber cultivar *i.e. Isatis, Kian, Hilton, DaPC6* (IARI variety) and five spacing viz, 30cm x 30cm, 40cm x 40cm, 50cm x 50cm, 30cm x 50cm and 60cm x 60cm were used for conducting experiment. The performance of three season's pooled data of parthenocarpic cucumber cultivar under different spacing were revealed that the *Isatis cultivar* showed significantly higher yield 15.50kg/m², fresh weight of fruit per plant 3.38kg, individual fruit weight 225.60g, fruit length 23.24cm, diameter 4.75cm, number of fruits per plant 15, the net return Rs. 261/m² and C: B ratio: 2.28 among all varieties in all season. However, *DaPC6* (IARI Variety) an OPV also found good in performance related to yield and remained at par with *Kian* which is better than the hybrid *Hilton*. Considering the seed cost of hybrid v/s OPV, *DaPC6* could be a very good option for small and marginal farmers at affordable seed price. The spacing 30cm x 50cm and 50cm x 50cm showed significantly at par with fruit yield (15.72 & 15.66 kg/ m²). But the net income of Rs.249/ m² and B: C ratio 1:2.12 was recorded in 50cm x 50cm. The interaction of variety and spacing was recorded non-significant. It was concluded that higher yield and net return during off-season fresh cucumber fruits under naturally ventilated polyhouse conditions could be obtained by planting *Isatis* variety at optimal spacing 50cm x 50cm respectively.

Genetic variability, character association and path analysis in early cauliflower (*Brassica oleracea* var. *botrytis* L.)

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ABSTRACT: Cauliflower (*Brassica oleracea* var. *botrytis* L.) commonly known as phool gobhi, is a valuable vegetable crop grown in India. Early cauliflower is grown from May to March for its curd which is immature inflorescence. Very few efforts have been made in early cauliflower to understand the associations of various yield components and their direct and indirect influence on yield. In present study significant differences were observed among genotypes suggesting sufficient variability for yield and quality characters. The overall values of PCV were higher than those of GCV. The highest estimate of GCV was observed for curd size index (18.86) followed by marketable curd weight (15.64), while highest heritability was recorded for plant diameter (90.00). High heritability along with high genetic advance as per cent of mean was estimated for plant diameter, curd size index, marketable curd weight, net curd weight and total yield. Total yield had significant positive genotypic and phenotypic correlation with marketable curd weight, followed by net curd weight, curd depth. However, yield was negatively genotypic correlated with plant diameter. Path coefficient analysis revealed that marketable curd weight, days to curd initiation had the highest positive contribution towards the total yield.

Analysing awareness and perception of apple growers regarding amended APMC Act in Himachal Pradesh

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ABSTRACT: Indian agricultural marketing system is suffering from various problems viz. improper warehousing, lack of grading and packaging, inadequate transport facilities, presence of large number of middlemen, malpractices of traders, inadequate market information and insufficient funds etc. Long chain of middlemen decrease the producer's share in consumer rupee and exploit the farmer. Though Agricultural Produce

Marketing Committees (APMCs) under the Agricultural Produce Marketing Committee Act, 1964 control and regulate buying and selling operations at all regulated agriculture marketing yards but there are lot of inefficiencies involved in practices of APMCs. However amended APMC Act prevents anticompetitive practices. There is no compulsion on the producer to sell their produce in APMC market yards, producer are quite free to sell directly to private companies or private market yards or farmers-consumer market under amended APMC Act. The present Study has analysed awareness and perception of apple growers regarding amended APMC Act. Two districts of Himachal Pradesh viz. Shimla and Kullu were selected on the basis of highest apple production. Apple growers were divided in two groups viz. Group 1 (growers who follow traditional supply chain) and Group 2 (growers who follow traditional and modern supply chain both).

Effects of dietary chromium supplementation on blood biochemical constituents and enzyme activities in lactating crossbred cows

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ABSTRACT: Crossbred lactating cows (16) were divided into 4 groups of 4 each and were supplemented with chromium at 0, 0.5, 1.0 and 1.5 mg per kg DM intake to discern the effect on blood biochemical constituents and enzyme activities. The feeding trial lasted for 90 days. Blood samples were collected from experimental cows at start and end of the feeding trial. The Cr-supplemented cows showed significantly higher blood glucose concentrations. There were no significant effects on the total protein, albumin, globulin, total cholesterol, total lipids and NEFA concentration in blood serum due to chromium supplementation. The Cr-supplemented cows showed significantly higher activities of serum glutamate pyruvate transaminase (SGPT) and serum glutamate oxaloacetate transaminase (SGOT) enzymes while the activity of alkaline phosphatase (ALP) remains unaffected.

Effect of dietary garlic (*Allium sativum*) and turmeric (*Curcuma longa*) powder incorporation on growth performance and nutrients utilization in Broiler Chickens

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ABSTRACT: A feeding trial was conducted to discern the effect of dietary incorporation of garlic and turmeric powder as feed additive on growth performance and nutrient utilization in broiler chicks. A total of 120, day-old broiler chicks were divided randomly into 4 treatment groups with 3 replicates each and 10 broiler chicks per replicate. Chicks of treatment T₁ (control) were fed basal diet without any supplementation. In the treatments T₂, T₃ and T₄, basal diet was incorporated with 3% garlic powder, 0.5% turmeric powder and 1.5% garlic powder plus 0.25% turmeric powder, respectively. The feeding trial lasted for 42 days viz., 0-21 days (starter phase) and 21-42 days (finisher phase). A metabolism trial was conducted during the 6th week of feeding trial. During the starter phase, the body weight gain of broiler chicks of treatment group T₂ (540.50g) was significantly (P<0.05) higher than other treatment groups T₁ (533.49g) T₃ (534.67g) and T₄ (536.41g). During 21- 42 days (finisher phase), the body weight gain of broiler chicks fed garlic T₂ (1183.91 g) and garlic plus turmeric powder T₄ (1173.71g) incorporated diet was significantly higher than broiler chicks fed diet incorporated with turmeric powder alone T₃ (1163.87 g) and control group T₁ (1160.62 g). FCR and performance index were also improved in broiler chicks of treatment groups T₂ and T₄. The overall body weight gain was recorded highest in T₂ fed garlic incorporated diet. Nutrient utilization in terms of dry matter, crude protein and crude fat was significantly (P<0.05) improved in broilers fed diet (T₂) incorporated with garlic powder. It was concluded that incorporation of garlic powder as feed additive @3% in broiler diet improved weight gain and feed efficiency as well as nutrient utilization.

Gross and histomorphological studies on infundibulum of adult indigenous chicken (*Gallus domesticus*) of Assam

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ABSTRACT: The present study was conducted on the gross and histomorphological structure of left infundibulum in indigenous chicken of Assam. The infundibulum consisted of a wide funnel shaped membranous part and a short tubular part. The mucosa of infundibulum was lined by pseudostratified ciliated columnar epithelium with primary secondary and tertiary folds and the lamina propria-submucosa was packed with branched tubular glands and it contained large amount of reticular fibres with scanty

collagen and elastic fibres. PAS stain reaction was intense in apical part of epithelium, moderate at central part of mucosal folds and weak at lamina propria-submucosa .

Optimal rotor design of a synchronous reluctance motor suitable for pumping operation

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ABSTRACT: This paper presents the performance analysis of a synchronous reluctance motor (SRM) fed by a non-conventional energy resource used for pumping operation in agriculture. An optimal rotor design is proposed for the SRM, which ensures maximum flux density at q-axis and simultaneously maintains low torque ripple. Finite element analysis is used to determine the characteristic of the drive system even under saturation condition. Effect of number of flux barriers, their width and position on the performance is also studied. The machine is simulated in Quickfield software and simulation results show the effectiveness of the proposed rotor design.

Formation and application of citronella oil and lemon grass finish on Rambouillet wool and assessment of their physical properties and durability

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ABSTRACT: Wool is one of the most useful of all textile fibers. Not only it is obtainable in very large quantities but also it is warm fiber with a soft handle and is thus particularly suitable for a variety of garments. Under the present study, pure Rambouillet wool fabric was used for the application of microcapsules which were made through two techniques i.e. simple and complex coacervation technique. Gums of two types (gum acacia & sodium alginate) and two types of oils (citronella & lemon grass oil) were used as wall and core materials respectively. It was found that after application of finish fabric weight, fabric thickness, bending length and thermal conductivity of the treated wool samples were increased. It was noticed that best results for the durability of fragrance in Rambouillet fabric were obtained from the fabric specimen which were microencapsulated with gum acacia + lemon grass oil by using simple coacervation

technique, followed by sodium alginate + lemon grass oil by using complex coacervation technique.

Impact of supplementation of broccoli powder (*Brassica oleracea* L var *italica* plenck) on blood glucose and lipid profile of non-insulin dependent diabetics

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ABSTRACT: Ninety non-insulin dependent diabetic male patients in the age group of 40-60 years free from serious complications of diabetics were selected from the Ludhiana Mediways Hospital who were under the supervision of Diabetologist. Selection was based on their fasting and post prandial blood glucose level followed by blood pressure. The selected subjects were divided into three groups I, II and III, each group having thirty subjects each. The subjects of group I was given no treatment. While the subjects of group II and III were supplemented with 10 gm of Broccoli floret and leaf powder by incorporating it in *missi roti* respectively for a period of 3 months along with nutrition counselling. The nutrition education regarding the disease, its symptoms, causes, complications and dietary modifications using appropriate charts, health benefits of broccoli, physical exercise benefits was given for 3 months during supplementation after 15 days interval to the subjects of group II and III through individual and group contact using demonstration. Based on the blood glucose, lipid profile and blood pressure analysis of the subjects, supplementation of 10 g of Broccoli (*Brassica oleracea* L var *italica* plenck) floret, and leaf powder along with nutrition counseling significantly (P 0.01) reduced the fasting blood glucose by 17.2 and 11.7 per cent, post prandial glucose level by 14.1 and 11.9 per cent in the subjects of group II, and III respectively. Significant (p 0.01) reduction in total cholesterol 8.4 and 9.5 per cent, triglycerides 10.7 and 6.2 per cent, LDL-C 11.1 and 8.0 per cent, VLDL-C 10.5 and 9.4 per cent, and an increase in HDL-C 6.8 and 3.7 percent in the subjects of group II and III was observed after supplementation of broccoli floret and leaf powder along with nutrition counseling respectively. The ratio of total cholesterol to HDL-C reduced to 14.6 and 9.4 mg/dl and LDL- C to HDL-C reduced to 16.6 and 11.2 mg/dl in the subjects of group II, and III respectively. Supplementation of 10 g of Broccoli (*Brassica oleracea* L var *italica* plenck) floret, and leaf powder significantly reduced the systolic blood pressure by 4.9 and 3.8 per cent, and diastolic blood pressure by 7.4 and 5.7 per cent in the subjects of group II and III respectively. Non significant changes were observed in the subjects of

group I. With the intervention of broccoli, significant improvement was observed in blood glucose, lipid profile and blood pressure of the selected diabetics.

Socio demographic and clinical profile of HIV patients attending ART centre of Susheela Tiwari Hospital, Haldwani, Uttarakhand.

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ABSTRACT: The study was conducted at Anti Retroviral Therapy (ART) centre of Susheela Tiwari Hospital, Haldwani, Distt. Nainital, Uttarakhand. The data for the study was collected by personal interview and case study. The study revealed that majority of the subject, 41.84 and 55.45 per cent were in the age group 18-30 and 30-60 years, respectively. A 77.28 per cent subjects were literate but only 10.92 per cent subjects were graduates. Majority of subjects were married (56.36 per cent), living in nuclear family (80.90 per cent) and had family size of 1-4 members (70.90 per cent). A 66.74 per cent subjects were working and majority (30 per cent) of them had private job. Heterosexual transmission was observed in 82.73 per cent. Majority of subjects were on ART and only 1.81 per cent subjects were not on ART. Majority of the subjects (56.37 per cent) were diagnosed HIV infection within a period of one year while 60.18 per cent subjects ART was initiated in that period. Majority (73.64 per cent) of the subjects were in I stage of infection with a mean CD4 count and Hb of 303.05 ± 133.5 cells mm^3 and 10.88 ± 2.15 g/dl, respectively.

Parent-adult child co-residence and relationship quality: Two views of a relationship

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ABSTRACT: The study explores the differences in perception of quality of relationship among members of generations co residing across the families of working and non-working daughters-in-law from middle socio-economic status. A total of 480 respondents (N=120 families) comprising of fathers-in-law (30), mothers-in-law (30), sons (30) and daughters-in-law (30) drawn randomly from Upper-middle socio-economic status families and fathers-in-law (30), mothers-in-law (30), sons (30) and daughters-in-law (30) drawn randomly from Lower-middle socio-economic status families equally divided further into families with working ($n_1=30$) and non-working daughter-in-law ($n_2=30$) constituted the sample. The analyses are based on self-reports of members of first and second generation living together. Results show that all the members of first as well as second generation of 'working' daughters-in-law families perceived their Quality of Relationship better in comparison to those from 'non-working' daughter-in-law families.

Role of siblings in social and emotional maturity of adolescents

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ABSTRACT: The present study has been carried out to study the influence of presence of siblings on the social and emotional maturity of senior school adolescents. The sample of the study comprised of 277 adolescents studying in class XI selected randomly from the schools located at Pantnagar, Uttarakhand. Social Maturity Scale by Rao, Emotional Maturity Scale by Singh & Bhargava and a self-designed questionnaire were employed to collect the requisite data. The study revealed that adolescents who had three or more siblings were significantly more personally adequate than those who had one or no sibling. Conversely, emotional progressiveness and personality integration of adolescents having one or no sibling were perceived to be significantly more than ones having two siblings. Non-significant differences were observed across composite social and emotional maturity of adolescents. Further, all the components of social and emotional maturity were found to be significantly and positively correlated with each other across number of siblings.

Socio-economic impact of industrial development on rural families

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ABSTRACT: Industrialization plays a significant role in the process of economic development. It helps in employment generation by generating gainful employment opportunities for the unemployed and under-employed labourers. It makes people dynamic, hard-working, mobile, skillful, efficient, and punctual. It brings a change in the way-of life of the people by improving their standard of living. Industrialization has helped in the development of agriculture by introducing improved seeds, fertilizers, farm-implements, storage and transportation facilities. The industrial revolution also has negative impact on environment like air pollution, green house gas emission, global warming, water shortages, water contamination and deforestation which are becoming threat to the life of human being. Present study was conducted to know the impact of industrial revolution in the life of rural people.

Effect of storage containers on germination, seedling growth and morphological parameters of satawar (*Asparagus racemosus* Willd.) seed

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Note: This is a short communication and as such, does not have an ABSTRACT. For details, see the print journal or contact the authors at above address.